CI/SfB (35) Xy
01/2014

CEILING&WALL SYSTEMS

Between us, ideas become reality®

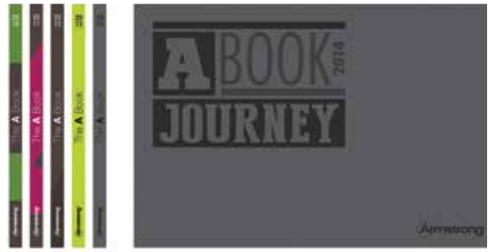
ceiling catalogue **2014/2015**

mineral | metal | wood | fabric

Armstrong®

Our expertise
FOR YOUR UNIQUE NEEDS

Armstrong Project Gallery



Need acoustic advice?

www.acousticalceilings.co.uk
www.armstrong-ceilings.ie

Our animated robot ALPH-E will guide you through our acoustic mini site! Directly accessible from the home page:
www.armstrong-ceilings.co.uk
www.armstrong-ceilings.ie

Environment

www.armstrong-ceilings.co.uk
www.armstrong-ceilings.ie

When designing an energy-efficient building, people tend to focus on everything from insulation to window placement.
But, in fact, ceiling systems can also play a major role in effective energy conservation. Here are a couple of key things to consider for your next green-building project…

OVERVIEW OF THE FULL RANGE

Discontinuous ceilings

> MINERAL Canopies

OPTIMA CURVED Canopy

OPTIMA Canopy

OPTIMA L Canopy

> AXIOM Canopies

AXIOM C & KE Canopy

AXIOM CIRCLE & CURVED Canopy

> METAL Canopies

METAL Canopy

EASY Canopy

> FABRIC Canopies

FABRIC Canopy X

FABRIC Canopy Y

> BAFFLES

OPTIMA Baffles

METAL Baffles

Mineral ceilings (for more details see p. 30)

ULTIMA +

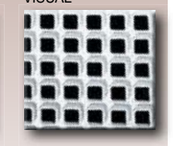
OPTIMA

PERLA

NEVADA*

SIERRA

VISUAL



DUNE*

CIRRUS**

PLAIN**

FINE FISSURED*

TATRA***

CORTEGA***

*Available in colours **Available in design options ***Products visible on our website

Specific solutions

> Hygiene (ISO 3 to 5)

BIOGUARD PLAIN

BIOGUARD ACOUSTIC

BIOGUARD METAL

CLEAN ROOM FL

PARAFON HYGIEN

CLEAN ROOM

> Humidity resistance (100% RH)

CERAMAGUARD

HYDROBOARD

NEWTONE

CORROSIVE RESISTANT

Metal ceilings

> Surfaces

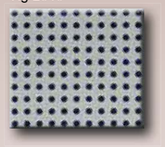
Plain

Ultra Microperforated Rg 0501

Extra Microperforated Rg 0701

Microperforated Rd 1522

Standard Perforated Rg 2516

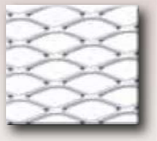


> MESH Metal

KD100

RB25

RB35



RB55

CELLIO

> Effects on Metal

Ash (ASH)

Oak (OAK)

Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)

Bronze (BZ)

Chrome (AM)

Wood ceilings

> Veneers

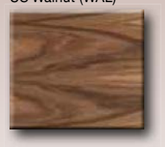
Ash (ASH)

Oak (OAK)

Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)



> Laminates

Curly Maple (CM)

Pear (PH)

Canadian Maple (MD)

Suspension systems

AXIOM Profiles

AXIOM Transitions

MICROLINE

INTERLUDE

SILHOUETTE

PRELUDE 15

PRELUDE 24

PRELUDE SIXTY²

PRELUDE 35

BANDRASTER

SYSTEM Z

PRODUCT SELECTOR
by performance

Discontinuous ceilings

> Mineral

	Recycled content (%)	Light reflectance (%)	α_w up to	Sound absorption class	NRC up to	D_{ncw} / D_{nfw} (dB) up to	R_w (dB) up to	Fire reaction	Humidity Resistance (%) up to	Anti microbial	Air quality	Scratch resistance
OPTIMA CURVED Canopy	80	87	see detailed data on product pages					B-s1, d0	90	-	-	-
OPTIMA Canopy	80	87						B-s1, d0	90	-	-	-
OPTIMA L Canopy	80	87						B-s1, d0	90	-	-	-

> Metal

METAL Canopy	30	85	see detailed data on product pages					B-s2,d0	90	-	-	-
EASY Canopy	30	85						A1	95	-	-	-

> Fabric

FABRIC Canopy X	-	-	-					B-s1, d0	70	-	-	-
FABRIC Canopy Y	-	-						B-s1, d0	70	-	-	-

> Axiom

AXIOM C & KE Canopy	25	≤ 90	see detailed data on product pages					-	-	-	-	-
AXIOM CIRCLE & CURVED Canopy	25	≤ 90	-					-	-	-	-	-

> Baffles

OPTIMA Baffles	80	87	see detailed data on product pages					B-s1, d0	90	-	-	-
METAL Baffles	≤ 30	65						B-s1, d0	90	-	-	-

Mineral ceilings

> Laminated

	Recycled content (%)	Light reflectance (%)	α_w up to	Sound absorption class	NRC up to	D_{ncw} / D_{nfw} (dB) up to	R_w (dB) up to	Fire reaction	Humidity Resistance (%) up to	Anti microbial	Air quality	Scratch resistance
ULTIMA+	≤ 47	87	≤ 0.75 (H)	C	≤ 0.75	≤ 40	18	A2-s1, d0	95	-	ISO 5	✔
ULTIMA+ OP	33	87	1.00	A	0.95	25	10	A2-s1, d0	95	-	ISO 5	✔
ULTIMA+ dB	64	87	0.60(H)	C	0.65	≤ 43	21	A2-s1, d0	95	-	-	✔
OPTIMA	77	87	≤ 1.00	A	≤ 1.00	24	7	A2-s1, d0	95	-	-	✔
SIERRA OP	≤ 42	84	0.90	A	0.85	≤ 29	≤ 12	A2-s1, d0	95	-	ISO 5	✔
PERLA	47	86	0.65(H)	C	0.70	35	18	A2-s1, d0	95	-	ISO 5	✔
PERLA OP 0.95	≤ 42	85	0.95	A	0.90	≤ 27	≤ 12	A2-s1, d0	95	-	ISO 5	-
PERLA OP 1.00	33	85	1.00	A	0.95	25	12	A2-s1, d0	95	-	ISO 5	-
PERLA dB	64	86	≤ 0.60(H)	≤ C	≤ 0.65	≤ 43	21	A2-s1, d0	95	-	ISO 5	✔
NEVADA	20	82	≤ 1.00	A	≤ 0.95	≤ 28	7	A1 (1)	95	-	-	-
COLORTONE NEVADA	20	-	1.00	A	0.95	24	7	A1 (4)	95	-	-	-

> Fine

DUNE SUPREME	≤ 44	≤ 85	≤ 0.65	C	≤ 0.65	≤ 35	17	A2-s1, d0	≤ 99	-	-	-
DUNE MAX	46	84	0.65	C	0.60	35	17	A2-s1, d0	99	-	-	-
DUNE dB	59	84	0.60	C	0.55	39	20	A2-s1, d0	95	-	-	-
COLORTONE DUNE	44	-	0.55	D	0.55	35	-	A2-s1, d0	95	-	-	-
CIRRUS	61	83	0.55(H)	D	0.50	36	-	A2-s1, d0	95	-	-	-
CIRRUS IMAGE	61	83	0.55(H)	D	0.55	36	-	A2-s1, d0	70	-	-	-
CIRRUS CONTRAST	61	83	0.55	D	0.50	36	-	A2-s1, d0	95	-	-	-

> Plain

PLAIN	≤ 42	87	0.20(L)	E	0.20	35	-	A2-s1, d0	95	-	-	-
GRAPHIS	52	92	0.15(L)	E	0.15	36	-	A2-s2, d0	70	-	-	-

> Fissured

FINE FISSURED	≤ 51	85	0.60(H)	C	0.60	34	-	A2-s1, d0	95	-	-	-
COLORTONE FINE FISSURED Black	≤ 51	-	0.60(H)	C	0.60	36	-	A2-s2, d0	95	-	-	-

> Open Cell

VISUAL	70	-	≤ 0.95	A	≤ 0.90	-	-	A2-s1, d0	70	-	-	-

Specific Solutions

> ISO

	Recycled content (%)	Light reflectance (%)	α_w up to	Sound absorption class	NRC up to	D_{ncw} / D_{nfw} (dB) up to	R_w (dB) up to	Fire reaction	Humidity Resistance (%) up to	Anti microbial	Air quality	Scratch resistance
BIOGUARD ACOUSTIC	45	85	0.60(H)	C	0.60	36	18	A2-s1, d0	95	Anti-microbial	ISO 5	-
BIOGUARD PLAIN	43	87	0.20(L)	E	0.20	35	19	A2-s1, d0	95	Anti-microbial	ISO 5	-
METAL BIOGUARD Extra Microperforation Rg 0701 with Premium B15	up to 30	70	0.65	C	0.60	40	18	A2-s1, d0	95	Anti-microbial	ISO 5	✔
METAL BIOGUARD PLAIN	up to 30	85	0.10(L)	-	0.10	44	19	A2-s1, d0	95	Anti-microbial	ISO 3 (3)	✔
PARAFON HYGIEN	20	82	0.95	A	0.95	-	-	A2-s1, d0	95	-	ISO 5	-
CLEAN ROOM FL	39	78	0.15	E	0.10	36	-	A2-s1, d0	95	-	ISO 5	-

> RH

CERAMAGUARD	37	≤ 79	0.55(MH)	D	0.60	39	-	A1	100	-	-	-
NEWTONE	-	84	0.10(L)	-	0.10	37	-	A2-s1, d0	100	-	-	✔
HYDROBOARD	20	82	0.95	A	0.90	22	-	A1	100*	-	-	✔

*Hydroboard can resist permanent RH up to 95% at 30°C without sagging, warping or delaminating and temporary conditions of up to 100% RH.

Metal ceilings

Ultra Microperforated Rg 0501	≤ 30	83	0.45(L)	D	0.55	18	8	A1	95	-	-	✔
Extra Microperforated Rg 0701 (2)	≤ 30	80	0.55(L)	D	0.65	21	10	A2-s2, d0	95	-	-	✔
Microperforated Rd 1522 (2)	≤ 30	65	0.70	C	0.70	16	6	A2-s2, d0	95	-	-	✔
Standard Perforated Rg 2516 (2)	≤ 30	70	0.75(L)	C	0.80	18	8	A2-s2, d0	95	-	-	✔
Plain (Unperforated)	≤ 30	85	0.10(L)	-	0.10	44	19	A1	95	-	ISO 3 / ISO 5 (3)	✔
Premium B15	≤ 30	depends on perforation	0.65	C	0.60	47	21	A2-s1, d0	95	-	-	✔
Premium OP19	≤ 30	depends on perforation	1.00	A	0.90	31	15	A2-s2, d0	95	-	-	✔

Wood ceilings

WOOD Veneers	-	≤ 57	≤ 0.65(L)	≤ C	≤ 0.70	41	-	B-s2, d0	70	-	-	-
WOOD Laminates	-	≤ 72	≤ 0.10(L)	-	≤ 0.10	41	-	B-s2, d0	70	-	-	-
WOOD Concealed	-	≤ 57	≤ 0.70(L)	≤ C	≤ 0.75	-	-	B-s2, d0	70	-	-	-

Our tests have been conducted in an independent third party quality assured laboratory in accordance with current standard (EN ISO...). Armstrong conducts extensive and regular tests on its products. Inevitably slight variations occur over a range of results for the same product. The results above do not necessarily represent the highest achieved but indicate values that can be consistently and confidently offered.
(1) NEVADA White. (2) Typical values for product with fleece acoustic inlay. For other acoustic solutions, see metal technical pages. (3) Valid for Q-Clip (ISO 3) and R-Clip F (ISO 5). (4) Except Cement (A2-s1,d0) and Metal (A2-s2,d0).

Latest information available on www.armstrong-ceilings.co.uk www.armstrong-ceilings.ie

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We make **green solutions**

bright

Achieve
ENERGY SAVINGS

A light reflectance of 90% or more achieves 20% energy cost saving when used with indirect lighting, helping to yield total building energy savings of up to 11%.

With COOLZONE, the phase change material encased in the cassette stores and releases large amounts of energy, reducing cooling costs and maintaining a comfortable temperature in which to work, live, learn and play.

The thermal mass of the buildings structure absorbs daytime thermal gains and then, during the night time, the heat stored in the thermal mass of the building is released back to the room. There needs to be 'contact' between the air within the room and the buildings thermal mass in order for thermal transfer to occur.
Island ceilings provide an ideal solution in these instances by adding design elements to a space and helping to maintain acoustical and visual comfort.

Enhance
INDOOR ENVIRONMENT

A well designed ceiling with high light reflectance improves space illumination, allowing for fewer light fixtures, a reduced electrical light output, lower maintenance costs and a reduced cooling load.

• Acoustical comfort
With acoustics, you need to determine whether intelligibility, concentration or confidentiality is required? Armstrong can help you find the right acoustic solution for your space.
You can choose from a wide portfolio of products such as Armstrong canopies or standard suspended ceiling solutions.

• Air quality
Increasing attention is being given to the quality of the indoor environment and the presence of Volatile Organic Compounds (VOCs) within it.
In this respect, Armstrong offers a wide selection of ceiling systems with safe and low emissions.
Contact us for performance details.

Reduce
ENVIRONMENTAL IMPACT

Whatever your ceiling project, Armstrong helps you to reduce your environmental impact with responsible solutions, from product design & raw material selection to manufacturing & logistics.

• Raw material
Raw materials for our ceilings are renewable and abundant in nature - Biosoluble mineral wool (the wools used in our products meet the classification "exempt" as defined by EC directive 97/69/EC 1997), perlite, natural starch, recycled paper, recycled tiles and clay. None of our ceiling products contain asbestos.

• Recycled content
A significant proportion of our ceiling tiles are produced using recycled raw materials and recycled ceiling tiles (both during the manufacturing process and more recently post-consumer suspended ceilings returned to the plant). These recycled contents will now be indicated on all Armstrong's published literature in accordance with EN ISO 14021:2001.

• Cradle to Cradle®
In achieving Cradle to Cradle® certification Armstrong has become the first ceiling tile manufacturer in Europe to be recognised for using environmentally safe and healthy materials designed for material utilisation.

Simplify
WASTE MANAGEMENT

Recycling can be as good for you as it is for the environment. It reduces waste, saves money and is a smart alternative to our dwindling landfill capacity.
For more information, please contact us.

Launched in the UK, France, Benelux and expanding across Europe, we now offer a full acoustical ceiling recycling service during demolition, construction and renovation stages of your project.

Our "Green" tools and literature

GREEN BROCHURE

C2C LEAFLET

www.armstrong-ceilings.co.uk/greenbuilding www.armstrong-ceilings.ie/greenbuilding

E-TRADE BOOK

But also...

> Web update

> CoolZone brochure

> Datasheets...

DISCONTINUOUS CEILINGS

CANOPIES

- MINERAL
- METAL
- FABRIC
- AXIOM

BAFFLES

- MINERAL
- METAL

Architectural and Environmental Trends

Design trends are a direct result to changing social, economical and ecological influences. Today's architecture is eco-responsible and sustainable, combined with a design spectrum ranging from "minimalist" to fully exposed.
The consideration of energy efficiency and environmental impact (CO_2 footprint, waste, recycled content, recyclability) of building materials is paramount in the design and construction phases of the building.

Interior finishes equally set the levels of comfort and work efficiency when the space is occupied.
Ceilings, representing the largest exposed interior finish in a building, are a key contributor towards defining the aesthetics, acoustics and lighting performance of building interiors.
Whether considering an exposed structure that utilises the thermal mass properties of the concrete slab or creating a wall to wall ceiling surface, Armstrong offers ceiling designs, materials and performances to complement architectural concepts, ranging from monolithic to discountinous visuals.

FABRIC Canopy X

OPTIMA CURVED Canopy

OPTIMA Baffles and METAL Baffles

Discontinuous solutions with the canopy

In response to new architectural trends calling for acoustical and design solutions using exposed soffits and to address the increasing focus on end users' well being, Armstrong has designed a range of discontinuous ceilings, Canopies and Baffles to deliver the highest quality of workplace standards whilst supporting the original architectural concept.
Available to be designed in an exposed structure project or to complement an existing wall to wall ceiling solution, canopy elements may be:

- Visually **striking** for a **contemporary** accent;
- Aesthetically **integrated** and non obtrusive with an emphasis on **performance**;
- **Coloured** to create contrast and rhythm;
- **Shaped** to coordinate with furniture;
- **Grouped** to replicate key architectural features;
- **Curved** to create a cocooning effect and an intimate setting;
- **Textured** or **microperforated** to suit design themes;
- **Retrofitted** under an existing wall to wall solution;
- **Intelligent**, loaded with technology and service elements;
- **Environmental friendly,** with "no waste" on site;
- **Custom** because …you are one of a kind!

EDUCATION - Steelcase University Learning Center (US)
OPTIMA CURVED Canopy

OPTIMA CURVED CANOPY

- Enhance the acoustics of your office, atrium or any large open space with OPTIMA CURVED Canopy
- Very easy and quick to install under plasterboard ceilings, existing grid systems or exposed concrete soffits
- Exclusive finish with high light reflectance
- OPTIMA CURVED Canopy can be installed either as a concave or convex element, creating various design options from a single canopy
- OPTIMA CURVED Canopy enables you to accentuate an area and express your creativity

Acoustic performance

Wipeable with a dry cloth

80% EN ISO 14021 Recycled Content

87% EN ISO 7724-2 & 3 Light Reflectance

Intelligibility

Concentration

PHYSICAL DATA

Dimensions	1181 x 1870 x 30 mm
Colour	White (WH)
Edge	Painted on edges

CONCAVE CONVEX

ITEM NUMBERS

Item nr.	Pieces/carton
CS 2810 WH1	OPTIMA CURVED Canopy - 1pc/ctn
CS 2810 WH2	OPTIMA CURVED Canopy - 2pcs/ctn

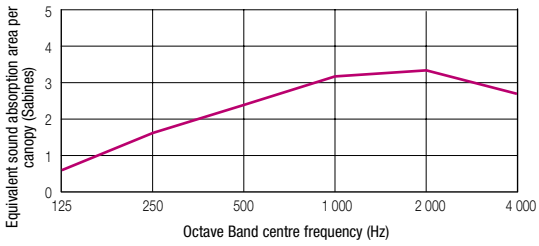
ACCESSORY KIT CONTENT*

CS 6636	2x	- Spiral anchors - Suspension cables - Cable adjustors - Cable finishing hooks - Gripper structure anchors - Gripper anchor caps

* 2 accessory kits included per Canopy

ACOUSTICAL DATA - 1000mm airspace

Sabines/Item: 2.93**



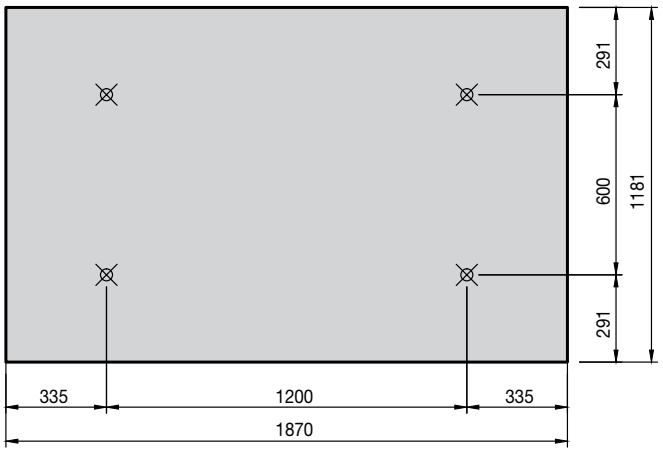
**Average of 500-4000Hz, laboratory measurements with items suspended at 1000mm from soffit. Contact us for further acoustic and product information.

TECHNICAL DRAWINGS (mm)

Concave installation

Convex installation

Plan view



EN 13501-1 EEA Euroclass B-s1, d0

90 % RH

8 kg/pc

RETAIL & LEISURE - North Carolina Dance Theatre (US)
OPTIMA Canopy Trapezoid

OPTIMA CANOPY

- Install individually or in groups to create your own unique design
- Enhance acoustics in open areas
- Aesthetically define spaces
- Ten standard flat panels in multiple sizes and shapes
- Custom shapes and colours available
- Adjustable to various heights and angles
- Quick and easy to install from the soffit, through a ceiling, directly attached to plasterboard, on a standard suspension system or on a wall
- Engineered and tested for use in seismic areas

OPTIMA Canopy Circle

Acoustic performance | Wipeable with a dry cloth | Colours available

80% EN ISO 14021 Recycled Content | 87% EN ISO 7724-2 & 3 Light Reflectance | Intelligibility | Concentration

PHYSICAL DATA

Colour*	White (WH)
Edge	Painted on edges

*other RAL colours available on request

FLAT — All OPTIMA Canopies are flat panels.

ITEM NUMBERS

Item nr.	Pieces/carton	Shape	Sabines/Item*
CS 5440 WH	1 / 2 / 4	Square	1.83
CS 5441 WH	1 / 2 / 4	Convex	1.47
CS 5442 WH	1 / 2 / 4	Concave	1.73
CS 5443 WH	1 / 2 / 4	Circle	1.61
CS 5444 WH	1 / 2 / 4	Hexagon	1.23
CS 5445 WH	1 / 2 / 4	Trapezoid	1.64
CS 5446 WH	1 / 2 / 4	Left Parallelogram	1.64
CS 5447 WH	1 / 2 / 4	Right Parallelogram	1.64
CS 5448 WH	1 / 2	Small Rectangle	2.77
CS 5449 WH	1 / 2	Large Rectangle	3.57

* Average of 500-4000Hz, laboratory measurements with units suspended at 1 metre, in accordance with EN ISO 354:2003. Contact us for further acoustic and performance information.

ACCESSORY KIT CONTENT

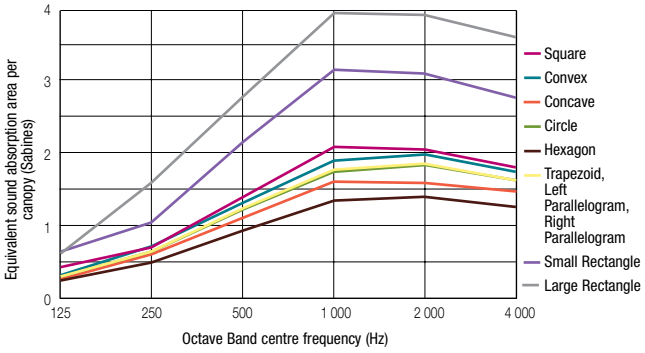
- OPTIMA Canopy panel with embedded aluminium frame
- Cardboard top fixing template
- Installation manual

NB: Suspension kit not included. Please order accessory kit based on installation configuration.

Various hanging kit options available.

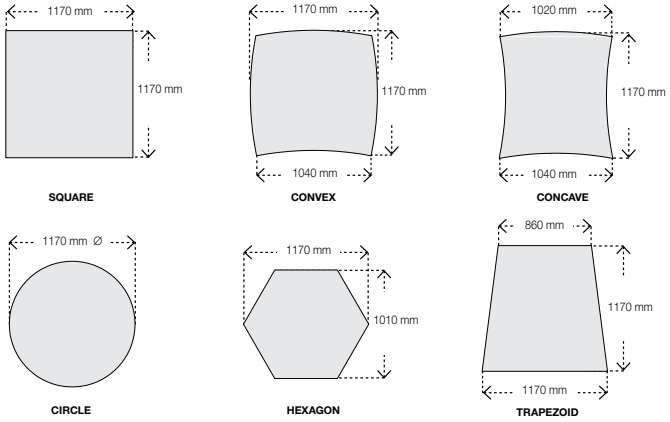
ACOUSTICAL DATA - 1000 mm airspace

See above for Sabine per item values

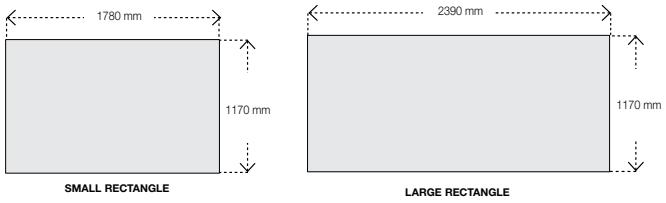


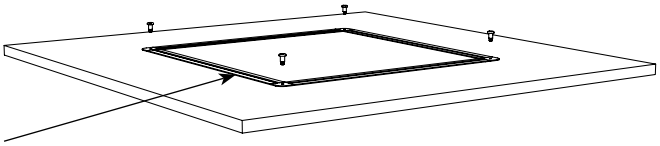
AVAILABLE SHAPES

Nominal 1200 x 1200 x 30 mm



Nominal 1200 x 1800 x 30 mm | Nominal 1200 x 2400 x 30 mm





Embedded aluminium frame designed to link to hanging and grouping accessories

Aluminium frame dimensions:
Modules 1200 x 1200 mm: 610 x 610 mm
Modules 1200 x 1800 mm: 610 x 1220 mm
Modules 1200 x 2400 mm: 610 x 1830 mm

EEA Euroclass B-s1, d0
EN 13501-1

90 % RH

Square: 4.9 kg/pc
Convex: 4.5 kg/pc
Concave, Circle: 3.9 kg/pc
Hexagon: 3.2 kg/pc

Trapezoid, Left Parallelogram, Right Parallelogram: 4.3 kg/pc
Small Rectangle: 7.5 kg/pc
Large Rectangle: 10.1 kg/pc

OPTIMA L CANOPY

- The OPTIMA L Canopy range provides a cost effective design solution for open areas providing excellent sound absorption and light reflectance.
- OPTIMA L Canopies can be used in new spaces or to rejuvenate or renovate an existing area.
- OPTIMA L Canopies are very easy and quick to install under plasterboard ceilings, existing grid systems or exposed concrete soffits.
- OPTIMA L Canopy is a mineral panel available in various sizes.
- It is white on all surfaces giving a high quality appearance

OFFICE - Cogeci Offices (F)
OPTIMA L Canopy

Acoustic performance

Wipeable with a dry cloth

80% EN ISO 14021 Recycled Content

87% EN ISO 7724-2 & 3 Light Reflectance

Intelligibility

Concentration

PHYSICAL DATA

Colour*	White (WH)
Edge	- Painted on edges (Circles) - Painted scrim on edges

*Other RAL colours available on special request

FLAT

All OPTIMA L Canopies are flat panels.

ITEM NUMBERS

Item nr.	Pieces / carton	Dimensions (mm)	Sabines /Item*
CS 5045 WH2	2	600 x 1200 x 40	1.38
CS 5045 WH4	4	600 x 1200 x 40	1.38
CS 4976 WH2	2	1200 x 1200 x 40	2.76
CS 4976 WH4	4	1200 x 1200 x 40	2.76
CS 4977 WH2	2	900 x 1800 x 40	3.05
CS 4977 WH4	4	900 x 1800 x 40	3.05
CS 5046 WH2	2	1200 x 1800 x 40	4.07
CS 5046 WH4	4	1200 x 1800 x 40	4.07
CS 4978 WH2	2	1200 x 2400 x 40	5.22
CS 4978 WH4	4	1200 x 2400 x 40	5.22
CS 5137 WH2	2	Ø 800 x 40	0.96
CS 5137 WH4	4	Ø 800 x 40	0.96
CS 5138 WH2	2	Ø 1200 x 40	2.17
CS 5138 WH4	4	Ø 1200 x 40	2.17

* Average of 500-4000Hz, laboratory measurements with units suspended at 1000 mm, in accordance with EN ISO 354:2003. Contact the Armstrong Technical Sales team for further acoustic and performance information.

ACCESSORY KIT CONTENT

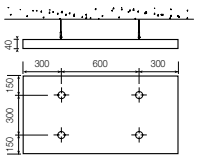
Item nr.	Description
CS 4979	OPTIMA L Canopy - Spiral anchor hanging kit - 2 x spiral anchors - 2 x hanging wires - 2 x connector hooks - 2 x cable adjusters

Number of hanging kits required per canopy size (to be ordered separately):

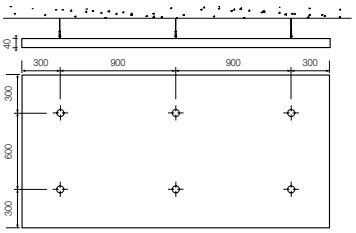
600 x 1200 x 40 mm = 2 hanging kits
1200 x 1200 x 40 mm = 2 hanging kits
900 x 1800 x 40 mm = 3 hanging kits
1200 x 1800 x 40 mm = 3 hanging kits
1200 x 2400 x 40 mm = 3 hanging kits
Ø 800 x 40 mm = 2 hanging kits
Ø 1200 x 40 mm = 2 hanging kits

NB: Hanging kit not included.

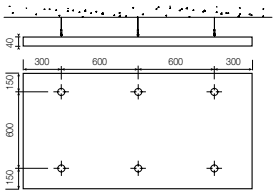
AVAILABLE SHAPES



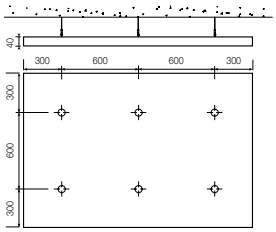
Small Rectangle
600 x 1200 x 40 mm



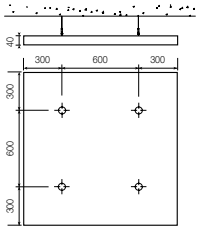
Large Rectangle
1200 x 2400 x 40 mm



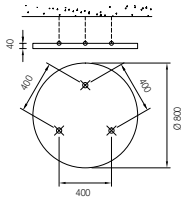
Medium Rectangle A
900 x 1800 x 40 mm



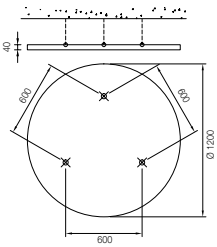
Medium Rectangle B
1200 x 1800 x 40 mm



Square
1200 x 1200 x 40 mm



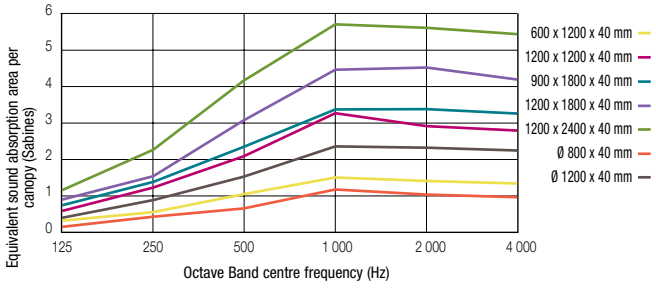
Small Circle
Ø 800 x 40 mm



Circle
Ø 1200 x 40 mm

ACOUSTICAL DATA - 1000 mm airspace

See above for Sabine per item values



EEA Euroclass B-s1, d0

EN 13501-1

90 % RH

Square: 6.9 kg/pc
Small Rectangle: 3.7 kg/pc
Medium Rectangle A: 7.8 kg/pc
Medium Rectangle B: 11 kg/pc
Large Rectangle: 13.8 kg/pc
Small Circle: 2.4 kg/pc
Circle: 5.4 kg/pc

TRANSPORT - Nice Airport (F)
METAL Canopy Concave

METAL CANOPY

- Define and accentuate spaces
- Easy installation
- Adjustable to special heights and angles
- Powder-coated steel panels
- Perforation options available for better acoustics
- Three panel types - flat, concave and convex
- Durable, easy to clean and maintain
- No visible frame, no visible grid

Acoustic performance

Damp sponge with mild detergent diluted in warm water

Scratch Resistance

30% EN ISO 14021 — Recycled Content

up to 80% EN ISO 7724-2 & 3 — Light Reflectance

Intelligibility

Concentration

PHYSICAL DATA

Dimensions	1890 x 1181 x 40 mm
Colour	White (RAL 9010)
Edge detail	- Curved (concave/convex): edge detail width: 47° edge detail length: 90° - Flat: all sides 47°
Surface/finish	- Front side : Rg 0701 Extra Microperforation 0.7mm, 1% open area, for a clean visual - Rear side: Rg 2516 Standard Perforation 2.5mm, 16% open area, for additional acoustical performance. Enclosed acoustical pad 20mm, 25 kg/m^3

CONCAVE CONVEX FLAT

ITEM NUMBERS

1 piece per carton	CS 600064	CS 600065	CS 600063

KIT CONTENT

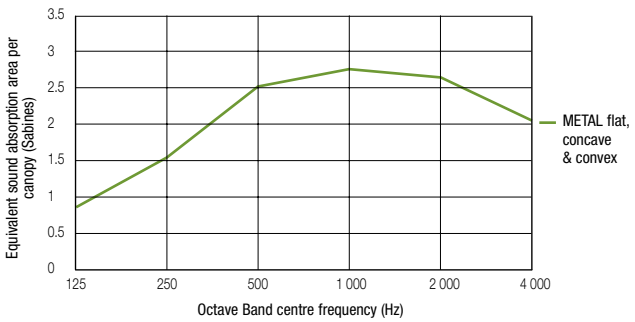
- METAL Canopy panel
- 4 x hanging cables (drop length 2 metres)
- 4 x gripper structure anchors
- 4 x anchor caps
- 4 x 50mm washer plates
- Installation manual

ACCESSORIES

Item nr.	Description
CS 600066	Standard hanging kit: drop length 2 metres
CS 600068	Flat washer

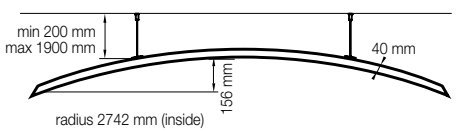
ACOUSTICAL DATA - 1000 mm airspace

Sabines/Item*: 2.50

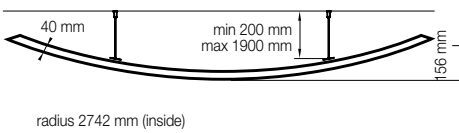


AVAILABLE SHAPES

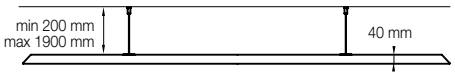
Section view



CONCAVE



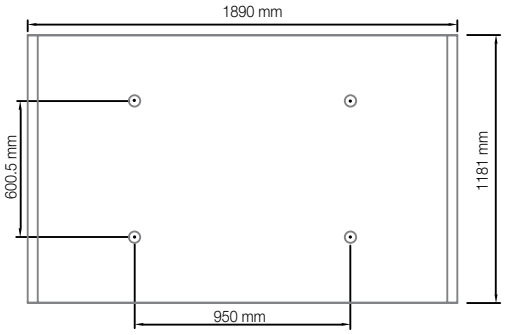
CONVEX



FLAT

Plan view

Example of curved Canopy plan view.



*Average of 500-4000Hz, laboratory measurements with items suspended at 1000mm from soffit. Contact the Armstrong Technical Sales Team for further acoustic and product information.

EEA Euroclass B-s2, d0

EN 13501-1

90 % RH

Flat: 36 kg/pc
Curved (concave/convex): 39 kg/pc

OFFICE - Community Room City of Penzlin (D)
EASY Canopy

EASY CANOPY

The EASY Canopy is a flat metal canopy, available in both square and rectangular shapes.

The EASY Canopy is supplied as a complete kit and is quick and easy to install.

- Metal provides a high value appearance
- Resistant and durable
- Cost effective design solution
- High levels of sound absorption performance

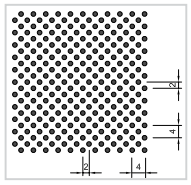
PHYSICAL DATA

Colour	White RAL 9010
Edge detail	Square and rectangular module, galvanised steel, square edge, suspended by 4 steel cables
Perforation / Acoustic Infill	Microperforation Rd 1522, with 30mm plain border, with acoustic fleece and acoustic inlay 20mm, 45 kg/m^3

KIT CONTENT

Canopy is supplied with suspension kit;
The kit includes a set of four 2m length cables and accessories

Hanger & accessories



Microperforation Rd 1522

Suspension system with EASY cross bar

REFERENCES

Item nr.	Dimensions (mm)	Pieces/carton	m^2/carton
CS 5169 M	1200 x 1200	1	1.44 m^2
CS 5170 M	1200 x 1800	1	2.16 m^2

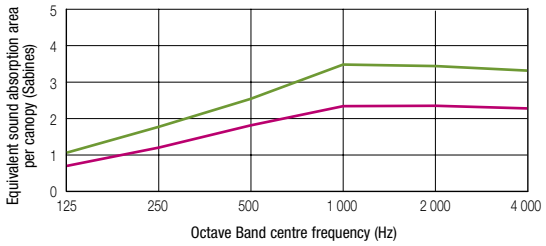
ACOUSTICAL PERFORMANCE

EN ISO 354

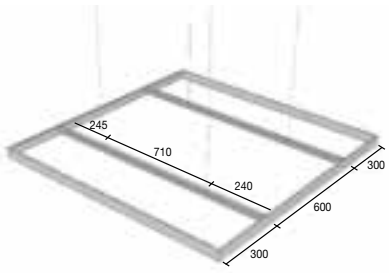
Sabines/Item*

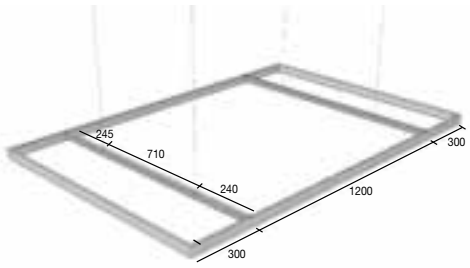
Frequency (Hz)	125	250	500	1000	2000	4000
• **CS 5169 M**						
2.18	0.83	1.20	1.93	2.30	2.30	2.20
• **CS 5170 M**						
3.15	1.03	1.83	2.67	3.43	3.33	3.17

* Average of 500-4000Hz, laboratory measurements with units suspended at 1 metre, in accordance with EN ISO 354:2003. Contact the Armstrong Technical Sales team for further acoustic and performance information.



Plan view





EN 13501-1
A1

95 % RH

Kg
1200 x 1200 mm: 13 kg/pc
1200 x 1800 mm: 21 kg/pc

RETAIL & LEISURE - Cutty Sark Entreprises LTD (UK)
FABRIC Canopy X

FABRIC CANOPY X - Braced

Create 3 dimensional sculptural forms using a tensile fabric braced on a light weight metal frame. Translucent material allows you to play with natural and artificial lighting effects.

- Available in a selection of standard colours and sizes and bespoke options
- Simple and fast installation and removal for access and maintenance
- Ideal for areas where you wish to express creativity, such as atriums, public spaces, transportation hubs
- High elastic fabric from Armstrong, formed using curved stainless steel tubes
- Washable material
- Fabric is ventile, preventing condensation or moisture build up on the fabric in normal interior environments

Wipeable with a dry cloth | Wipeable with a moist cloth | Colours available

TECHNICAL DETAILS

The 3 dimensional form is provided by a tensile fabric braced on two curved Ø25 mm stainless steel tubes, suspended by a central hanging point. Two bracing points along each of the tubes can be used to avoid possible rotation (due to air movement in the room). Suspension and bracing cables are not provided as standard with the product.

KIT CONTENT

1x tube concave
1x tube convex
1x centre suspension point
1x fabric canopy with end-caps

ACCESSORIES

Recommended accessory (not included):
CS 4979 suspension cables (2 per pack).

STANDARD COLOURS

White (WT) similar to RAL 9003

Cream (CR) similar to RAL 1014

Yellow (YW) similar to RAL 1018

Red (RD) similar to RAL 3000

Green (GN) similar to RAL 6029

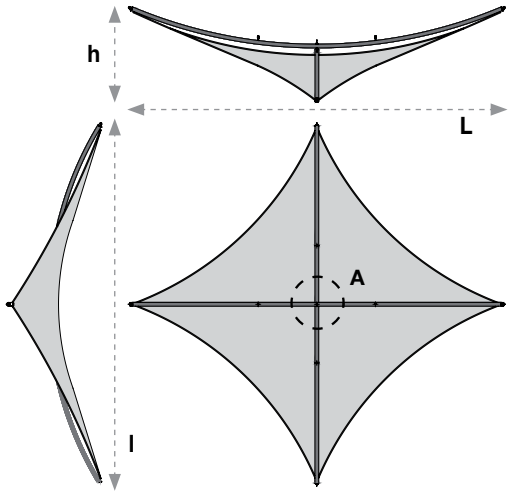
Light Blue (LU) similar to RAL 5024

Dark Blue (BE) similar to RAL 5017

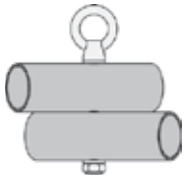
Further colours on request

STANDARD DIMENSIONS & ITEMS

Dimensions (l x L x h)	Item nr.
1500 x 1500 x 430 mm	CS 5034 M
2000 x 2000 x 580 mm	CS 5035 M
2500 x 2500 x 670 mm	CS 5036 M
3000 x 3000 x 820 mm	CS 5037 M



Centre suspension point (A)



CLEANING METHODS

1. Dry cloth
2. Damp cloth
3. Washing machine*

Use cold water, no bleach. Do not iron. Can be tumble dried using the synthetic setting.

*To protect your machine, please remove all metal components before washing.

EN 13501-1 — EEA Euroclass B-s1, d0

70 % RH

1500 x 1500 x 430mm: 3.4 kg/pc
2000 x 2000 x 580mm: 4.7 kg/pc
2500 x 2500 x 670mm: 5.8 kg/pc
3000 x 3000 x 820mm: 7 kg/pc

FABRIC CANOPY Y - Frameless

Elements that create a vibrant and colourful accent to your space using light weight tensile fabric forms. The translucent material allows you to play with natural and artificial lighting effects.

- Simple and fast installation and removal for access and maintenance
- Available in a selection of standard colours and sizes and bespoke options
- Ideal for areas where you wish to express creativity, such as atriums, public spaces, transportation hubs
- High elastic fabric from Armstrong, with stainless steel rings. Clear nylon suspension wires provided
- Washable material
- Fabric is ventile, preventing condensation or moisture build up on the fabric in normal interior environments

FABRIC Canopy Y

Wipeable with a dry cloth | Wipeable with a moist cloth | Colours available

KIT CONTENT

1 x 2000 mm length clear nylon line, supplied per fixing point.
Ø 0.65 mm. Load capacity = 40 lb / ~18 kg

STANDARD COLOURS

White (WT) similar to RAL 9003

Cream (CR) similar to RAL 1014

Yellow (YW) similar to RAL 1018

Red (RD) similar to RAL 3000

Green (GN) similar to RAL 6029

Light Blue (LU) similar to RAL 5024

Dark Blue (BE) similar to RAL 5017

Further colours on request

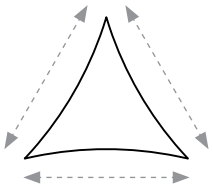
CLEANING METHODS

1. Dry cloth
2. Damp cloth
3. Washing machine*

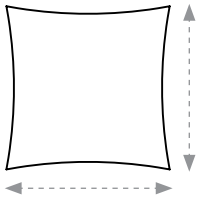
Use cold water, no bleach. Do not iron. Can be tumble dried using the synthetic setting.

*To protect your machine, please remove all metal components before washing.

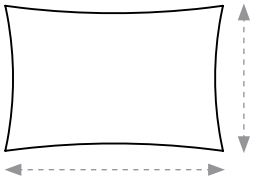
AVAILABLE SHAPES



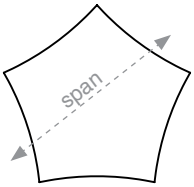
Triangular



Square



Rectangular



Pentagon

DIMENSIONS

Triangular	Item nr.
2000 x 2000 x 2000 mm	CS 5022 M
2500 x 2500 x 2500 mm	CS 5023 M
3000 x 3000 x 3000 mm	CS 5024 M
Square	
2000 x 2000 mm	CS 5025 M
2500 x 2500 mm	CS 5026 M
3000 x 3000 mm	CS 5027 M
Rectangular	
2000 x 1500 mm	CS 5028 M
2500 x 1500 mm	CS 5029 M
3000 x 2000 mm	CS 5030 M
Pentagon	
2000 mm span	CS 5031 M
2500 mm span	CS 5032 M
3000 mm span	CS 5033 M

Further shapes and sizes on request

EEA Euroclass B-s1, d0
EN 13501-1

70 % RH

Up to 1.2 kg/pc

RETAIL & LEISURE - King Church (UK)
AXIOM C Canopy

AXIOM C & KE CANOPY

- Ideal for acoustically-challenged or exposed structure spaces in initial design or as a quick fix, Canopies:
  - reduce reverberation time in the space
  - reduce noise levels in the space
  - increase speech intelligibility
  - profile: 25% recycled content
- Canopies appear to float - a clean, contemporary visual requiring fewer suspension hangers
- Wide selection of panel, multi-plane, multi-size design options
- Variety of compatible grid colours
- Perimeter trim cut to size:
  - Factory engineered for precision & quality
  - Pre-assembled mitred corners
  - Factory to site in a single kit
  - No site cutting required
  - No wastage
- Layout and sizing for full-size panel installation

Acoustic performance

Colours available

25% EN ISO 14021
Recycled Content*

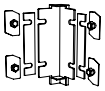
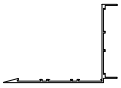
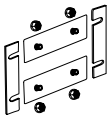
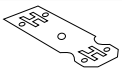
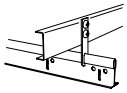
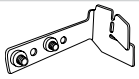
up to 90% EN ISO 7724-2 & 3
Light Reflectance

Intelligibility

AXIOM C CANOPY SPECIFIC

AXIOM KE CANOPY SPECIFIC

AXIOM C AND AXIOM KE CANOPY KIT COMPONENTS

	Item nr.	Description
	55 14 11	AXIOM C Tegular Vector profile
	A 345	AXIOM C Tegular Vector corner post
	CS 57 42 06	AXIOM KE profile
	CS 57	AXIOM KE Canopy Mitre corner piece
	A 361	AXIOM KE Canopy Mitre corner splice connector
	A 338	AXIOM universal splice plate
	C 3000 A WDN 21	Primary C channel Tee bar hanger
	A 348	Channel bracket
	CA 97	Clamp for C channel
	A 347 A 346	24mm XL² connector clip 15mm XL² connector clip
	A 339 H	Universal T bar connector clip

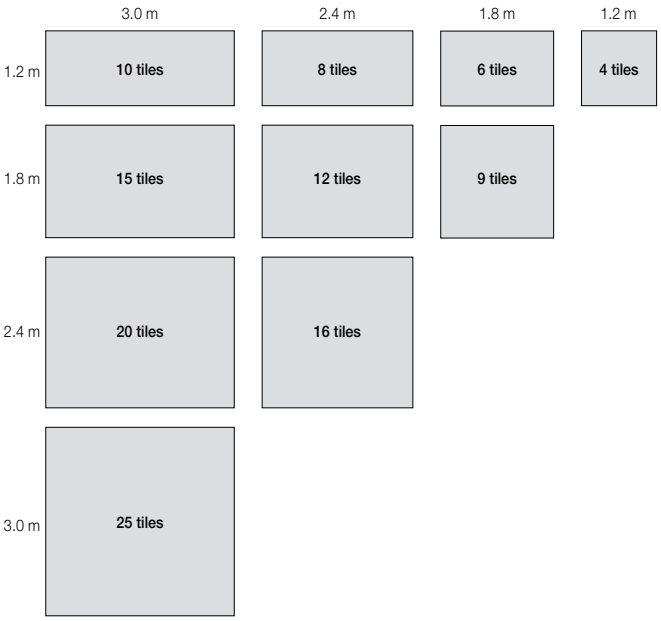
NB: the AXIOM kit will be available either with 15mm or 24mm grid.
Tiles are not included.

PHYSICAL DATA

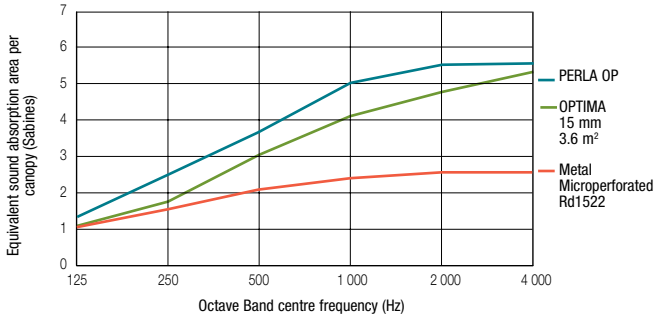
Colour*	Global White / RAL 9010
Material	Extruded Aluminium

*other RAL colours available on request

AVAILABLE SHAPES - STANDARD KITS



ACOUSTICAL DATA - 1000 mm airspace



15 YEAR guarantee
30 YEAR system guarantee
with ≥ 95% RH tiles

*Note that recycled content is only for the frame. See product page for the recycled content of the infill tile.

AXIOM CIRCLE & CURVED CANOPY

- Ideal for acoustically-challenged or exposed structure spaces in initial design or as a quick fix
- Canopies:
  - Reduce reverberation time in the space
  - Reduce noise levels in the space
  - Increase speech intelligibility
  - Profile: 25% recycled content
- Canopies appear to float - a clean, contemporary visual requiring fewer suspension hangers
- Wide selection of panel, multiplane, multi-size design options
- Variety of compatible grid colours
- Perimeter trim cut to size:
  - Factory engineered for precision & quality
  - Pre-assembled mitred corners
  - Factory to site in a single kit
  - No site cutting required
  - No wastage
- Layout and sizing for full-size panel installation
- Easy installation

OFFICE - Unilever Food Solutions (US)
AXIOM CIRCLE Canopy

Acoustic performance

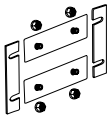
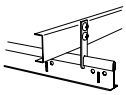
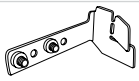
Colours available

25% EN ISO 14021
Recycled Content*

up to 90% EN ISO 7724-2 & 3
Light Reflectance

Intelligibility

AXIOM CIRCLE & CURVED CANOPY KIT COMPONENTS

	Item nr.	Description
	62 42 06	Axiom Circle and Curved Profile
	30 40 33 31 40 32	Prelude Peakform Main Runner T15 or Prelude Peakform Main Runner T24
	30 20 33 31 20 21	Prelude XL² Cross Tee 600 mm T15 or Prelude XL² Cross Tee 600 mm T24
	A 361	Splice connector
	C 3000 A WDN 21	Primary C channel Tee bar hanger
	A 348	Channel bracket
	CA 97	Clamp for C channel
	A 339 H	Axiom universal T bar connector clip for cut tees with screws
	A 156	Perimeter fill-in for 15 mm grid
	A 246	Perimeter fill-in for 24 mm grid

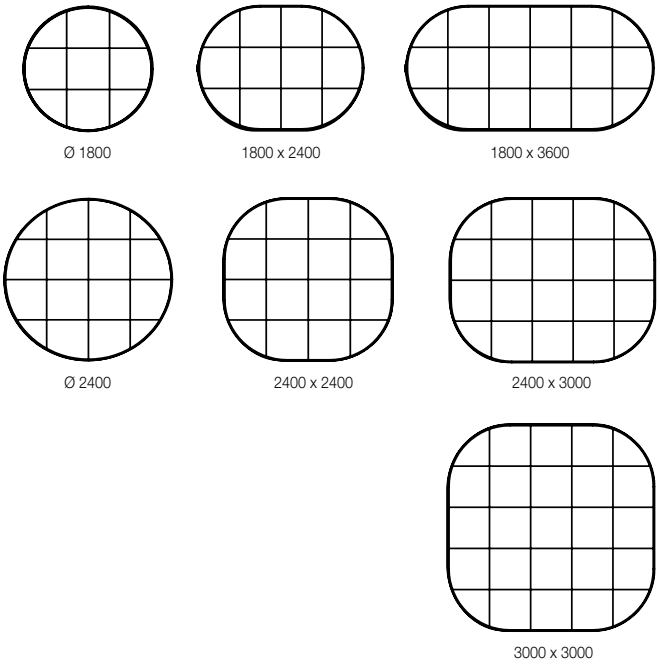
NB: the Axiom kit will be available either with 15mm or 24mm grid.
Tiles are not included.

PHYSICAL DATA

Colour*	Global White / RAL 9010
Material	Extruded Aluminium

*other RAL colours available on request

AVAILABLE SHAPES - STANDARD KITS



15 YEAR guarantee
30 YEAR system guarantee
with ≥ 95% RH tiles

*Note that recycled content is only for the frame. See product page for the recycled content of the infill tile.

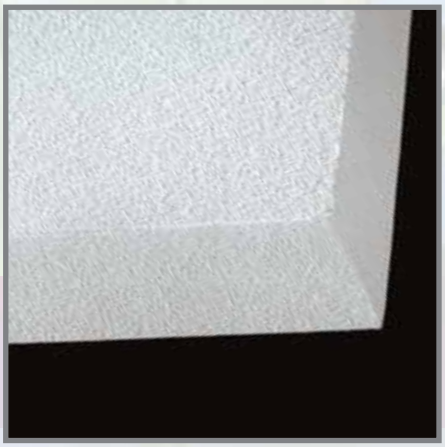
RETAIL & LEISURE - Family Services Center (US)
OPTIMA Baffles

OPTIMA BAFFLES

- Modern linear appearance
- Great acoustic performances: Reduce noise levels, increase speech intelligibility and reduce reverberation time in the space
- Integrated suspension anchor factory fitted for easy alignment and installation
- Install individually or in groups
- High light reflectance for energy savings

Application areas

Typically used to provide high levels of acoustic absorption in schools, offices, leisures centres, transport hubs, etc.



Acoustic performance

Wipeable with a dry cloth

80% EN ISO 14021 — Recycled Content

87% EN ISO 7724-2 & 3 — Light Reflectance

Intelligibility

Concentration

PHYSICAL DATA

Colour*	White (WH)
Edge	Painted on edges

*other RAL colours available on special request

ITEM NUMBERS

Item nr.	Dimensions (mm)	Pieces / carton
CS 5133 WH	400 x 1200 x 40	2pcs/ctn
CS 5134 WH	400 x 1800 x 40	2pcs/ctn

Other dimensions available on request

ACCESSORY KIT CONTENT

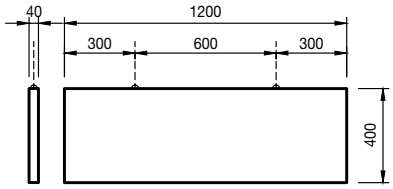
1 Hanging wire kit for 2 Baffles:

CS 5135
- 4x hanging wires
- 4x cable adjustors
- 4x cable finishing hooks

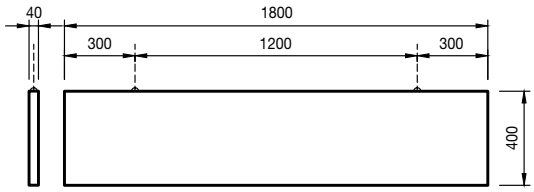
Hanging kit to be ordered separately.

DIMENSIONS

Module 400 x 1200 x 40mm



Module 400 x 1800 x 40mm



ACOUSTICAL PERFORMANCE

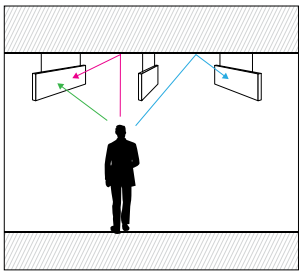
EN ISO 354

Armstrong OPTIMA Baffles can significantly reduce background noise levels and reverberation times within spaces and enhance speech intelligibility. They provide absorption on all surfaces of the product either as a 'planar' absorber (α_w), when installed as a linear array; or as a 'discrete' absorber (EAA) when installed as separate decorative elements.

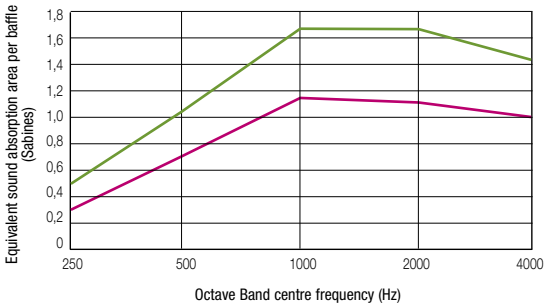
Acoustical data
1000 mm airspace

Dimensions	EAA - Sabines/m²*
• OPTIMA Baffles - 400 x 1200 mm	1.00
• OPTIMA Baffles - 400 x 1800 mm	1.45

* Average of 500-4000Hz, laboratory measurements with units suspended at 1000 mm, in accordance with EN ISO 354:2003. Contact the Armstrong Technical Sales team for further acoustic and performance information.

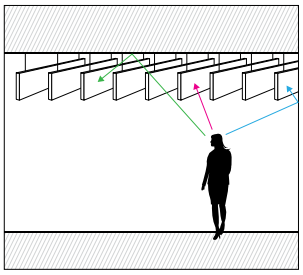


Discrete absorption

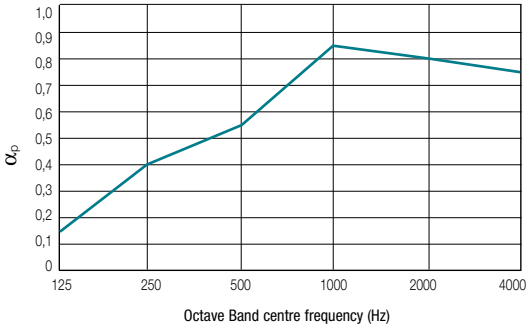


Acoustical Data
1000mm total depth (600mm void)

Dimensions	α_w
• OPTIMA Baffles 400mm (450mm centres)	0.60(MH)



Planar absorption



EN 13501-1

EEA Euroclass B-s1, d0.

90 % RH

400 x 1200 x 40mm: 2.3 kg/pc
400 x 1800 x 40mm: 3.5 kg/pc

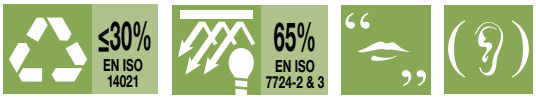
Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

TRANSPORT - Wrocław Airport (PL)
METAL Baffles

METAL BAFFLES

- Modern linear appearance
- Different perforation options available
- Excellent acoustic performance: Reduce noise levels, increase speech intelligibility, reduce reverberation time in the space
- Install individually or in groups
- Robust, engineered solution
- Quick and easy to install
- High light reflectance

Application areas
Typically used in acoustically-challenged spaces, in airports, rail terminals, semi-exposed soffit buildings, offices, retail, leisure centres, etc.



PHYSICAL DATA

Material	Galvanised steel sheet.
Colour	RAL 9010 pure white post-coated powder painted visible surface. Other colours available on request.
Acoustic infill	Glass wool acoustic pad 25 mm, 25 kg/m^3 with black acoustic fleece on both sides.
Options	Separate end caps / item no. M300375.
Perforations	Both vertical sides Rd 1522. Microperforated with approx. 12 mm plain border. Other patterns available on request.

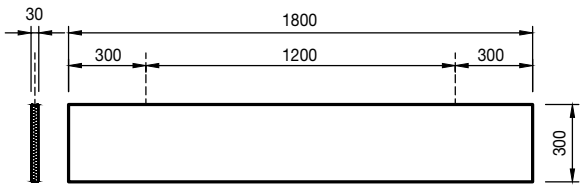
ITEM NUMBERS

Item nr.	Dimensions (mm)	Pieces / carton
CS 5128	300 x 1800 x 30	2pc/ctn

Other sizes available on request

DIMENSIONS

Module 300 x 1800 x 30 mm



ACCESSORY KIT CONTENT

1 Hanging wire kit for 2 Baffles:

CS 5136

- 4x Hanging wires
- 4x Cable adjustors
- 4x Cable finishing hooks
- 4x Eye bolts M6 x 14 mm
- 4x Suspension elements top part
- 4x Suspension elements bottom part

Hanging kit to be ordered separately.

ACOUSTICAL PERFORMANCE

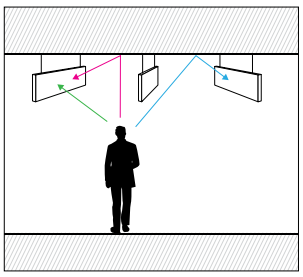
EN ISO 354

Armstrong METAL Baffles will significantly reduce background noise and reverberation time, and enhance speech intelligibility. Sound is absorbed via regular full depth perforations across the faces and edges of the panels, into the high performance glass wool acoustic filling – thus providing a greater level of sound control than a continuous ceiling of similar area.

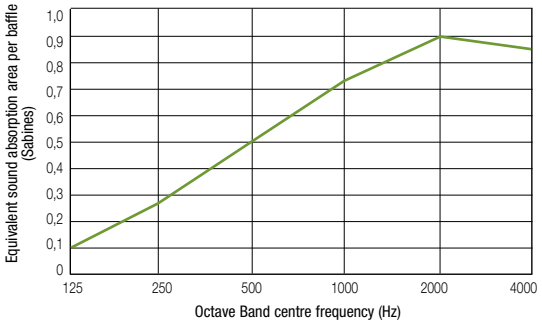
Acoustical Data
1000 mm airspace

Dimensions	EAA - Sabines*
• METAL Baffles Rd 1522 - 300 x 1800 mm	0.73

* Average of 500-4000Hz, laboratory measurements with units suspended at 1000 mm, in accordance with EN ISO 354:2003. Contact the Armstrong Technical Sales team for further acoustic and performance information.

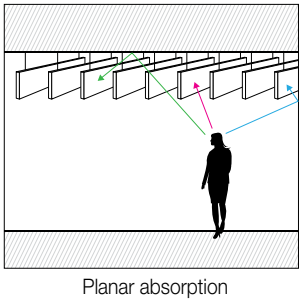


Discrete absorption

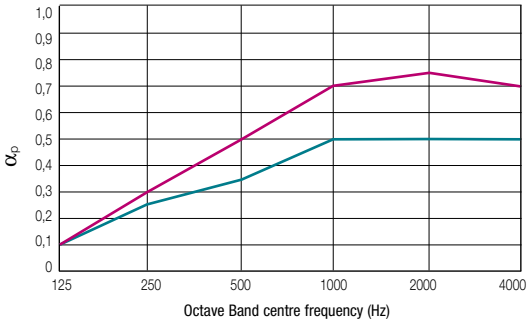


Acoustical Data
600mm total depth (300mm void)

Dimensions	Spacing centre (mm)	α_w
• METAL Baffles Rd 1522 300 x 1800 mm	300	0.55(H)
• METAL Baffles Rd 1522 300 x 1800 mm	450	0.45



Planar absorption



EN 13501-1

EEA Euroclass B-s1, d0

90 % RH

300 x 1800 x 30mm: 5.7 kg/pc

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

BPM Vita Milano (I) – TECH ZONE ▲

MINERAL SOLUTIONS

- LAMINATED
- NON LAMINATED
- DECORATIVE

Monolithic Solutions...

Suspended ceiling systems have moved from providing mainly functional features (masking the building's infrastructure whilst providing accessibility) to contributing on a much greater scale to the interior design, acoustics and overall environmental impacts with such innovations as TECH ZONE. Daylight optimisation with high ceiling tile light reflectance values has led to the increasing consideration of whiter and larger modules with finer textures. Aiming at minimising aesthetical intrusions in the ceiling plan, Armstrong has further developed Vector, an edge detail producing a concealed grid and more monolithic look. In spaces where eye catching visuals are the main drive, Armstrong's research in designer grids has also exciting new avenues to generate rhythm in the ceiling plane with the Interlude range.

ULTIMA+ Vector

Laminated

The Armstrong range of laminated products provide **clean, bright, non perforated visuals** which have been designed for today's challenging interior requirements.
These **durable surfaces, such as ULTIMA+,** provide **very high levels of scratch resistance** along with **up to 87% light reflectance.**
Our laminated range also provides **superior acoustical control.**
Depending on whether the end user requires intelligibility, confidentiality, concentration or a balance of these, Armstrong has a solution.

- **The OP range provides** up to **1.00 α_w** of sound absorption, helping to control the acoustical environment in open plan spaces.
- **The dB range** is designed to offer up to **43 dB** of sound attenuation, helping to provide improved confidentiality within closed office areas.
- **The standard range** provides both good sound absorption **and** good levels of sound attenuation to provide the perfect blend of acoustical comfort in general room spaces.

PERLA OP

DUNE Vector

Non Laminated

This classic range of products provides a blend of performance, quality and affordability for which the Armstrong ceiling brand is famous.
The range of DUNE finishes highlights the core line of ceilings from Armstrong. These finely textured visuals, either plain or perforated, provide good levels of sound absorption and sound attenuation.
DUNE MAX offers increased levels of absorption whilst **the DUNE dB range provides high levels of sound attenuation.**

Decorative

The Armstrong Decorative range recognises that there are many areas within a building where a designer or end user would like to express a theme, or use the ceiling to create added interest within a space.
From the **modern geometric designs of the GRAPHIS range** or by using **colour such as the COLORTONE ranges** through to the subtle **CIRRUS texture and designs,** Armstrong has a wide range of designs and colours to help sculpt the light in a space.

OVERVIEW OF THE MINERAL RANGE

See the icon definitions on pages 156 - 157

Mineral ceilings

ULTIMA+	C2C	≤ 47	≤ 0.75(H)	≤ 0.75	≤ 40	18	87	≤ A+	A2-s1, d0	95	*p. 32*
ULTIMA+ OP	C2C	33	1.00	0.95	25	10	87	A+	A2-s1, d0	95	*p. 36*
ULTIMA+ dB	C2C	64	0.60(H)	0.65	≤ 43	21	87	A+	A2-s1, d0	95	*p. 38*
OPTIMA		77	≤ 1.00	≤ 1.00	24	7	87	A	A2-s1, d0	95	*p. 40*
PERLA		47	0.65(H)	0.70	35	18	86	A+	A2-s1, d0	95	*p. 42*
PERLA OP 0.95	C2C	≤ 42	0.95	0.90	≤ 27	≤ 12	85	A+	A2-s1, d0	95	*p. 44*
PERLA OP 1.00		33	1.00	0.95	25	12	85	A+	A2-s1, d0	95	*p. 46*
PERLA dB		64	≤ 0.60(H)	≤ 0.65	≤ 43	21	86	A+	A2-s1, d0	95	*p. 48*
NEVADA*		20	≤ 1.00	≤ 0.95	≤ 28	7	82	A	A1	95	*p. 52*
SIERRA OP		≤ 42	0.90	0.85	≤ 29	≤ 12	84	A+	A2-s1, d0	95	*p. 50*

*available in colours : COLORTONE NEVADA (p. 68)

Specific Solutions - Hygiene (ISO 5)

BIOGUARD ACOUSTIC	45	0.60(H)	0.60	36	18	85	A+	A2-s1, d0	95	*p. 80*
BIOGUARD PLAIN	43	0.20(L)	0.20	35	19	87	≤ A+	A2-s1, d0	95	*p. 80*
PARAFON HYGIEN	20	0.95	0.95	-	-	82	A	A2-s1, d0	95	*p. 82*
CLEANROOM FL	39	0.15	0.10	36	-	78	A+	A2-s1, d0	95	*p. 84*

See the icon definitions on pages 156 - 157

Mineral ceilings

DUNE SUPREME*	≤ 44	≤ 0.15	≤ 0.20	35	17	≤ 85	≤ A+	A2-s1, d0	≤99	*p. 54*
DUNE MAX	46	0.65	0.60	35	17	84	≤ A+	A2-s1, d0	99	*p. 58*
DUNE dB	59	0.60	0.55	39	20	84	≤ A+	A2-s1, d0	95	*p. 60*
CIRRUS	61	0.55(H)	0.50	36	-	83	A	A2-s1, d0	95	*p. 62*
CIRRUS IMAGE	61	0.55(H)	0.55	36	-	83	A+	A2-s1, d0	70	*p. 70*
CIRRUS CONTRAST	61	0.55	0.50	36	-	83	A+	A2-s1, d0	95	*p. 72*
PLAIN	≤ 42	0.20(L)	0.20	35	-	87	≤ A+	A2-s1, d0	95	*p. 64*
GRAPHIS*	52	0.15(L)	0.15	36	-	92	A+	A2-s2, d0	70	*p. 74*
FINE FISSURED*	≤ 51	0.60(H)	0.60	34	-	85	≤ A+	A2-s1, d0	95	*p. 66*
VISUAL V49*	70	≤ 0.95	≤ 0.90	-	-	-	A+	A2-s1, d0	70	*p. 76*

*please see design options (p. 74)

*also available in Black colour (p. 66)

*also available in V64 (p. 76)

Specific Solutions - Humidity resistance (≤ 100%RH)

HYDROBOARD	20	0.95	0.90	22	-	82	A	A1	≤100	*p. 86*
CERAMAGUARD	37	0.55(MH)	0.60	39	-	≤ 79	A+	A1	100	*p. 88*
NEWTONE	-	0.10(L)	0.10	37	-	84	A+	A2-s1, d0	100	*p. 90*

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE – Woningbouwvereniging Compaen (NL)
ULTIMA+ Vector

ULTIMA+

The ULTIMA+ visual offers a new smoother, finely textured and durable surface with a brighter 'blue-white' colour providing class leading light reflectance. Available in various densities for mixed applications (Standard, OP and dB).

Benefits

- Good sound absorption: up to 0.75 (H) α_w
- Very high light reflectance: 87%
- Reinforced scratch resistant face
- Hard edge treatment
- C2C certified
- 30 year system guarantee

Application areas

Ideal for meeting rooms or waiting areas.

Scratch Resistance

Damp sponge with mild detergent diluted in warm water

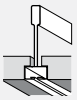
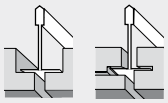
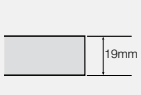
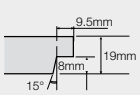
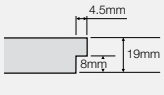
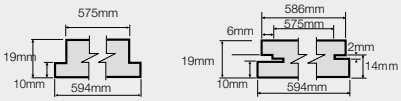
Product Handling & Durability

Air Quality

Recycled Content*

Light Reflectance

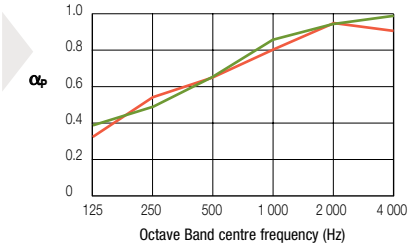
Intelligibility

ULTIMA+	BOARD	TEGULAR	MICROLOOK 90	VECTOR
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm	 Prelude XL² 24 mm Prelude Sixty²
				
500 x 500 x 19 mm			7673 M	
600 x 600 x 19 mm	7661 M	7664 M	7674 M	7681 M
600 x 1200 x 19 mm	7663 M	7666 M	7677 M	
300 x 1200 x 19 mm			7676 M	

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• Board, Tegular, MicroLook 90								
0.70(H)	0.75	0.40	0.50	0.65	0.85	0.95	1.00	α_p
• Vector								
0.75(H)	0.75	0.35	0.55	0.65	0.80	0.95	0.90	α_p

Sound Absorption Class = C



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

36 dB (Board, Tegular, MicroLook 90)

33 dB (Vector)

EN ISO 140-3 & EN ISO 717-1

R_w

18 dB (Board, Tegular, MicroLook 90)

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.052 W/m K

95 % RH

ISO 14644-1

ISO 5

≃ 5.2 kg/m²

*ULTIMA+ Board, Tegular & MicroLook 90 = 46%, ULTIMA+ Vector = 47%

OFFICE - Head Office Van Oord Marine Engineers (NL)
ULTIMA+ Planks

ULTIMA+ PLANKS

The ULTIMA+ visual offers a new smoother, finely textured and durable surface with a brighter 'blue-white' colour providing class leading light reflectance. New ULTIMA+ Planks provide flexible solutions for both open areas and corridors.

Benefits

- Good sound absorption: 0.65 (H) α_w
- Very high light reflectance: 87%
- Reinforced scratch resistant face
- C2C certified

Application areas

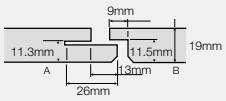
Ideal for corridors.

Scratch Resistance | Damp sponge with mild detergent diluted in warm water | Product Handling & Durability | Air Quality

46% EN ISO 14021 — **Recycled Content**

87% EN ISO 7724-2 & 3 — **Light Reflectance**

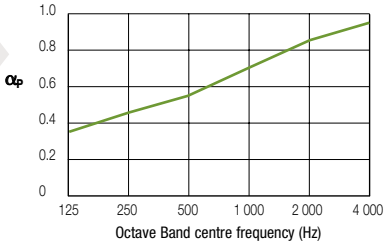
Intelligibility

ULTIMA+ Planks	SL2
	Prelude 24 mm Main Runner Prelude Sixty[2]
	System Z
	
300 x 1500 x 19 mm	7699 M
300 x 1800 x 19 mm	7701 M
300 x 2500 x 19 mm	7702 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.65(H)	0.65	0.35	0.45	0.55	0.70	0.85	0.95	α_p

Sound Absorption Class = C



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}
≤ 40 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.052 W/m K

95 % RH

ISO 5

ISO 14644-1

15 YEAR guarantee

30 YEAR system guarantee

≃ 5.2 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

OFFICE - Albis Plastic GmbH (D)
ULTIMA+ OP Tegular

ULTIMA+ OP

The ULTIMA+ visual offers a new smoother, finely textured and durable surface with a brighter 'blue-white' colour providing class leading light reflectance. The perfect combination between the acoustical performances of the OP range and the smooth ULTIMA+ surface.

Benefits

- Excellence sound absorption: 1.00 α_w
- Very high light reflectance: 87%
- Reinforced scratch resistant face
- C2C certified
- 30 year system guarantee

Application areas

Ideal for open spaces (call centres, cafeterias…).

Scratch Resistance

Damp sponge with mild detergent diluted in warm water

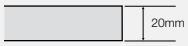
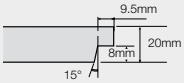
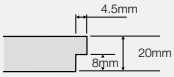
Product Handling & Durability

Air Quality

Recycled Content

Light Reflectance

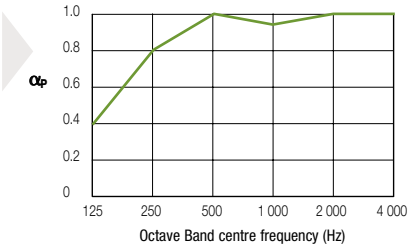
Concentration

ULTIMA+ OP	BOARD	TEGULAR	MICROLOOK 90
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm Silhouette XL² 15 mm
			
600 x 600 x 20 mm	7682 M	7678 M	7685 M
600 x 1200 x 20 mm	7684 M	7680 M	7687 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
1.00	0.95	0.40	0.80	1.00	0.95	1.00	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}
25 dB

EN ISO 140-3 & EN ISO 717-1

R_w
10 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.037 W/m K

95 % RH

ISO 14644-1

ISO 5

≃ 3.7 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - Head Office Van Oord Marine Engineers (NL)
ULTIMA+ dB SL2

ULTIMA+ dB

The ULTIMA+ visual offers a new smoother, finely textured and durable surface with a brighter 'blue-white' colour providing class leading light reflectance. New ULTIMA+ dB offers a superior combination between sound attenuation and absorption.

Benefits

- Eliminates the need for sound barriers in closed offices
- Very high light reflectance: 87%
- Reinforced scratch resistant face
- C2C certified
- 30 year system guarantee

Application areas

Ideal for individual / private offices.

Scratch Resistance

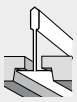
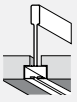
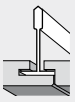
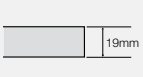
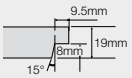
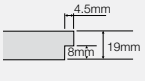
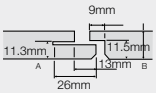
Damp sponge with mild detergent diluted in warm water

Product Handling & Durability

Recycled Content

Light Reflectance

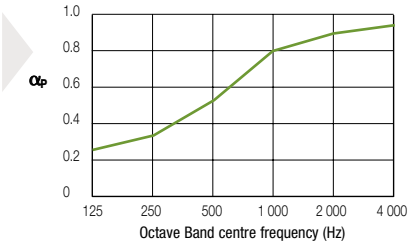
Confidentiality

ULTIMA+ dB	BOARD	TEGULAR	MICROLOOK 90	SL2	
					
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm	Prelude 24 mm Main Runner Prelude Sixty²	System Z
					
Board & Tiles					
600 x 600 x 19 mm	7688 M	7695 M	7697 M		
600 x 1200 x 19 mm	7690 M				
Planks					
300 x 1500				7691 M	
300 x 1800				7692 M	
300 x 2500				7693 M	

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
Board, Tegular, MicroLook 90								
0.60(H)	0.65	0.25	0.35	0.55	0.80	0.90	0.95	α_p

Sound Absorption Class = C



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

41 dB (Board, Tegular, MicroLook 90)

43 dB (SL2)

EN ISO 140-3 & EN ISO 717-1

R_w

21 dB (Board, Tegular, MicroLook 90)

EN 13501-1

EEA Euroclass A2-s1, d0

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.067 W/m K

95 % RH

≈ 7.6 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - Head Office SIMOBIL (SI)
OPTIMA Vector

OPTIMA

Covered with a glass fibre scrim, OPTIMA has a fine textured surface, available in a large variety of size and edge details.

Benefits

- Excellent sound absorption: 1.00 α_w
- High light reflectance: 87%
- Painted edges
- Excellent mechanical strength (fibre glass fleece at the back)

Application areas

Ideal for open spaces (call centres, libraries, cafeterias…).

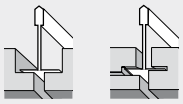
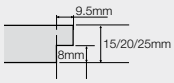
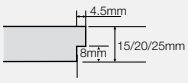
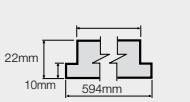
Scratch Resistance

Product Handling & Durability

77% EN ISO 14021 Recycled Content

87% EN ISO 7724-2 & 3 Light Reflectance

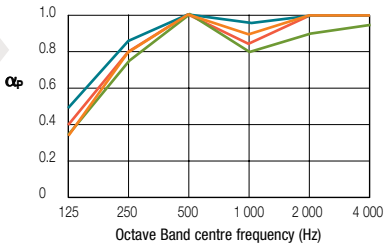
Concentration

OPTIMA	BOARD	TEGULAR	MICROLOOK	VECTOR
				
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm Silhouette XL² 15 mm	Prelude XL² 24 mm Prelude Sixty²
				
OPTIMA 15 mm				
600 x 600 x 15 mm	2327 M	2329 M	2331 M	
600 x 1200 x 15 mm	2328 M	2330 M	2332 M	
OPTIMA 20 mm				
600 x 600 x 20 mm	2335 M	2349 M	2363 M	
600 x 1200 x 20 mm			2364 M	
600 x 1800 x 20 mm	2337 M			
1200 x 1200 x 20 mm	2338 M	2352 M	2366 M	
OPTIMA 22 mm				
600 x 600 x 22 mm				2387 M
600 x 1200 x 22 mm				3413 M
OPTIMA 25 mm				
600 x 600 x 25 mm	2379 M	2381 M	2383 M	

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• Board, Tegular, MicroLook 15 mm								
0.90	0.90	0.35	0.75	1.00	0.80	0.90	0.95	α_p
• Board, Tegular, MicroLook 20 mm								
0.95	0.95	0.40	0.80	1.00	0.85	1.00	1.00	α_p
• Board, Tegular, MicroLook 25 mm								
1.00	1.00	0.50	0.85	1.00	0.95	1.00	1.00	α_p
• Vector 22 mm								
1.00	0.95	0.35	0.80	1.00	0.90	1.00	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

24 dB (OPTIMA 25 mm)

EN ISO 140-3 & EN ISO 717-1

R_w

7 dB (OPTIMA 15 mm)

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.032 W/m K

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

15 mm: 1.8 kg/m²
20 mm: 2.3 kg/m²
22 mm: 2.9 kg/m²
25 mm: 2.8 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

EDUCATION - Bolsover School (UK)
PERLA Board

PERLA

Covered with a glass fibre scrim, PERLA is a plain flat textured surface design tile. Available in various densities for mixed applications (Standard, OP, dB).

Benefits

- Winning balance of sound attenuation and absorption
- Enhanced product durability
- High level of light reflectance: 86%
- ISO 5

Application areas

Ideal for working and learning applications...

Scratch Resistance

Damp sponge with mild detergent diluted in warm water

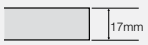
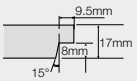
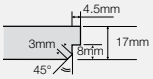
Product Handling & Durability

Air Quality

Recycled Content

Light Reflectance

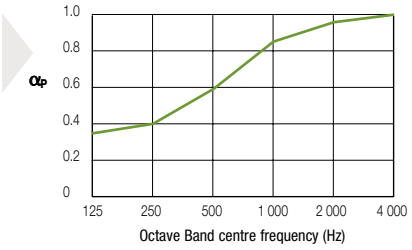
Intelligibility

PERLA	BOARD	TEGULAR	MICROLOOK BE
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm
			
600 x 600 x 17 mm	2801 M	2803 M	2804 M
600 x 1200 x 17 mm	2802 M		

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.65(H)	0.70	0.35	0.40	0.60	0.85	0.95	1.00	α_p

Sound Absorption Class = C



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

35 dB

EN ISO 140-3 & EN ISO 717-1

R_w

18 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.052 W/m K

ISO 14644-1

ISO 5

95 % RH

4.7 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE – Gemeentehuis Roden (NL)
PERLA OP 0.95 Tegular

PERLA OP 0.95

Covered with a glass fibre scrim, PERLA OP is a plain, flat textured surface design.

Benefits

- Excellent sound absorption: 0.95 α_w
- ISO 5
- High recycled content: ≤ 42%
- Certified C2C

Application areas

Ideal for open spaces (call centres, libraries, cafeterias…).

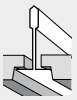
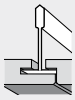
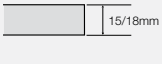
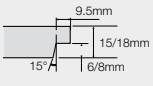
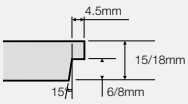
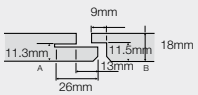
Damp sponge with mild detergent diluted in warm water

Air Quality

Recycled Content

Light Reflectance

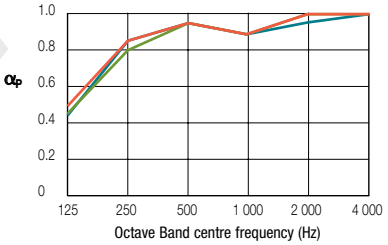
Concentration

PERLA OP 0.95	BOARD	TEGULAR	MICROLOOK	SL2	
					
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm	Prelude 24 mm Main Runner Prelude Sixty²	System Z
					
Tiles					
600 x 600 x 15 mm	3819 M	3824 M			
600 x 1200 x 15 mm	3821 M	3826 M	3829 M		
600 x 600 x 18 mm		2882 M	2883 M		
600 x 1200 x 18 mm	2881 M				
Planks					
600 x 1500 x 18 mm	3092 M				
600 x 1800 x 18 mm	3093 M				
300 x 1500 x 18 mm				3094 M	
300 x 1800 x 18 mm				3096 M	

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• Tiles 15 mm								
0.95	0.90	0.45	0.80	0.95	0.90	1.00	1.00	α_p
• Tiles, Board Planks 18 mm								
0.95	0.90	0.50	0.85	0.95	0.90	1.00	1.00	α_p
• SL2 Planks								
0.95	0.90	0.45	0.85	0.95	0.90	0.95	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

27 dB (SL2 Planks)

25 dB (Tiles, Board Planks)

EN ISO 140-3 & EN ISO 717-1

R_w

12 dB (Tiles 15 mm)

10 dB (Tiles 18 mm)

EEA Euroclass A2-s1,d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.036 W/m K

ISO 14644-1

ISO 5

95 % RH

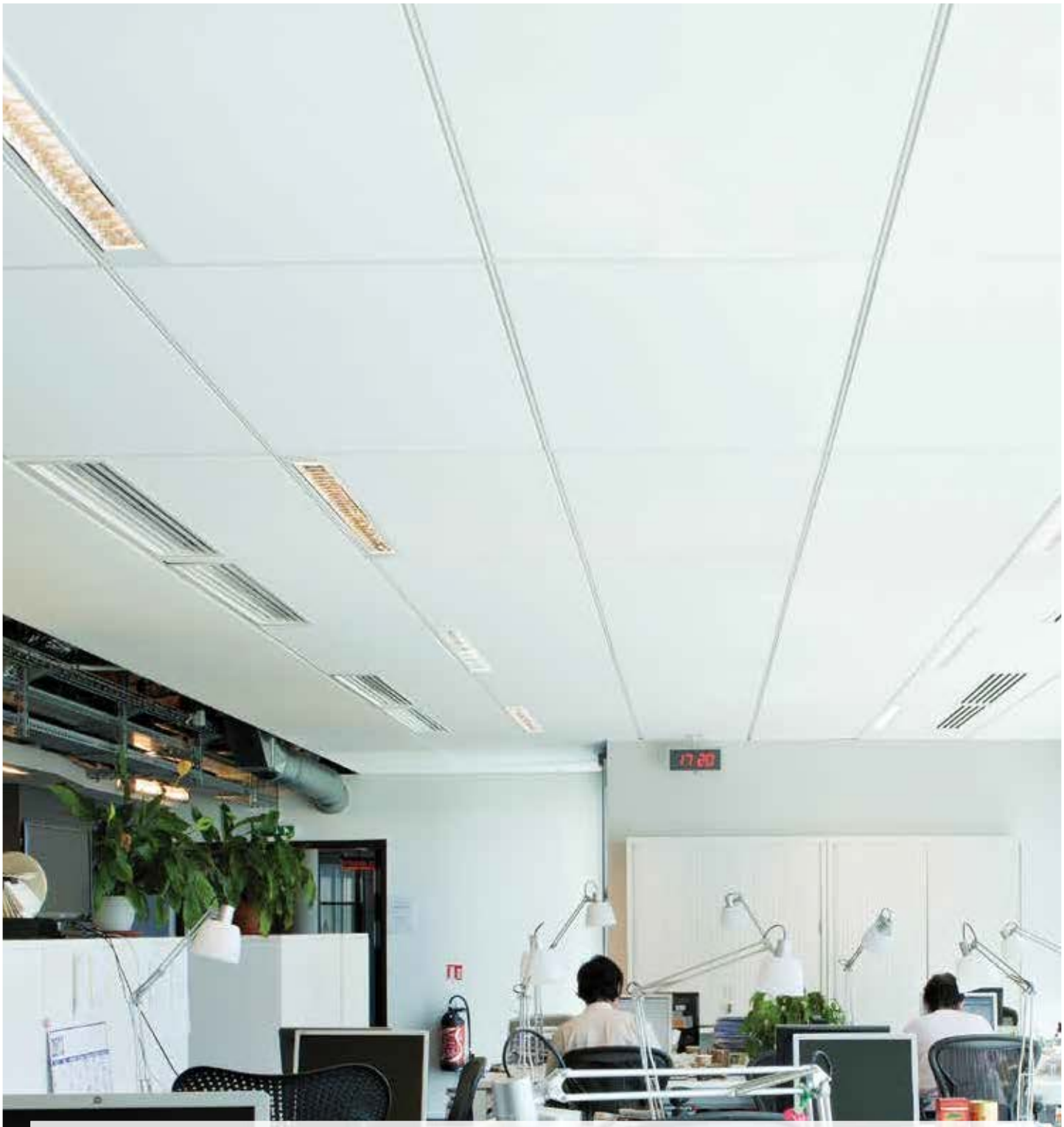
15 YEAR guarantee

30 YEAR system guarantee

≃ 3.3 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.



OFFICE - RFI Radio (F)
PERLA OP 1.00 MicroLook

PERLA OP 1.00

Covered with a glass fibre scrim, PERLA OP is a plain, flat textured surface design.

Benefits

- Excellent sound absorption: 1.00 α_w
- Good light reflectance: 85%
- ISO 5

Application areas

Ideal for open spaces (call centres, libraries, cafeterias…).

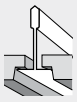
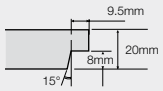
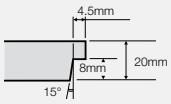
Damp sponge with mild detergent diluted in warm water

Air Quality

Recycled Content

Light Reflectance

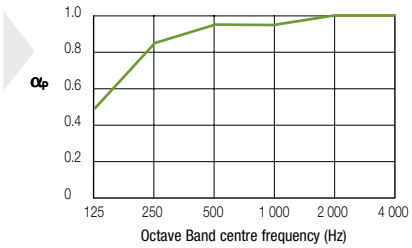
Concentration

PERLA OP 1.00	BOARD	TEGULAR	MICROLOOK
	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm
			
600 x 600 x 20 mm	3861 M	3866 M	3869 M
600 x 1200 x 20 mm	3863 M		

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
1.00	0.95	0.50	0.85	0.95	0.95	1.00	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

25 dB

EN ISO 140-3 & EN ISO 717-1

R_w

12 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.037 W/m K

ISO 14644-1

ISO 5

95 % RH

3.4 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - Jahrsdörfer & Co (D)
PERLA dB Board

PERLA dB

Covered with a glass fibre scrim, PERLA dB has a smooth plain appearance for a high performance product.

Benefits

- Excellent level of sound attenuation: up to 43 dB
- High recycled content: 64%
- High light reflectance: 86%
- ISO 5

Application areas

Ideal for individual offices.

Scratch Resistance

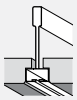
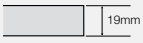
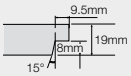
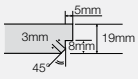
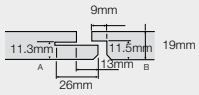
Damp sponge with mild detergent diluted in warm water

Air Quality

Recycled Content

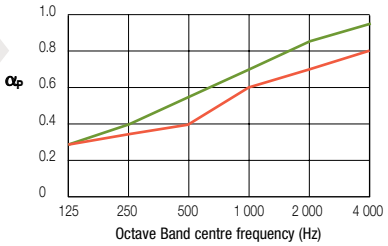
Light Reflectance

Confidentiality

PERLA dB	BOARD	TEGULAR	MICROLOOK BE	SL2	
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm	Prelude 24 mm Main Runner Prelude Sixty²	System Z
					
Board & Tiles					
600 x 600 x 19 mm	3191 M	3192 M	3193 M		
Planks					
300 x 1500 x 19 mm				3797 M	
300 x 1800 x 19 mm				3798 M	
300 x 2500 x 19 mm				3799 M	

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• Board, Tegular, MicroLook BE								
0.60(H)	0.65	0.30	0.40	0.55	0.70	0.85	0.95	α_p
Sound Absorption Class = C								
• SL2								
0.50(H)	0.50	0.30	0.35	0.40	0.60	0.70	0.80	α_p
Sound Absorption Class = D								



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}
43 dB (SL2)
41 dB (Board, Tegular, MicroLook BE)

EN ISO 140-3 & EN ISO 717-1

R_w
21 dB (Board, Tegular, MicroLook BE)

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

ISO 14644-1

ISO 5

95 % RH

7.6 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - De Meers Office (B)
SIERRA OP Board

SIERRA OP

Covered with a glass fibre scrim, SIERRA OP is an acoustic, sustainable ceiling solution with a smooth surface finish.

Benefits

- High level of sound absorption: up to 0.90 α_w
- Long-lasting solution, easy to clean
- ISO 5

Application areas

Ideal for open spaces (call centres, libraries, cafeterias…).

Damp sponge with mild detergent diluted in warm water

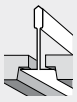
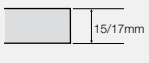
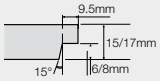
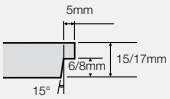
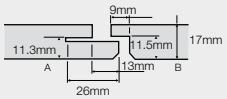
Scratch Resistance

Air Quality

Recycled Content*

Light Reflectance

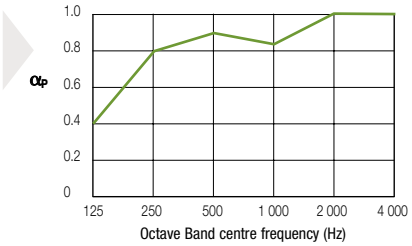
Concentration

SIERRA OP	BOARD	TEGULAR	MICROLOOK	SL2	
	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm	Prelude 24 mm Main Runner Prelude Sixty²	System Z
					
Board & Tiles					
600 x 600 x 15 mm	4115 M	4076 M	4067 M		
675 x 675 x 15 mm	4116 M	4077 M	4068 M		
600 x 1200 x 15 mm	4117 M		4069 M		
600 x 600 x 17 mm	3780 M	3783 M	3784 M		
675 x 675 x 17 mm			3785 M		
600 x 1200 x 17 mm	3781 M				
Planks					
300 x 1500 x 17 mm				3786 M	
300 x 1800 x 17 mm				3787 M	
600 x 1500 x 17 mm	3782 M				
600 x 1800 x 17 mm	3796 M				

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.90	0.85	0.40	0.80	0.90	0.85	1.00	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}

27 dB

EN ISO 140-3 & EN ISO 717-1

R_w

11 dB

EN 13501-1

EEA Euroclass A2-s1,d0

FZ 123

RUS KM1 (G1, V1, D1, T1)

EN 12667 & ISO 8301

λ = 0.036 W/m K (15 mm)
λ = 0.037 W/m K (17 mm)

95 % RH

ISO 14644-1

ISO 5

≃ 2.4 kg/m² (15mm)
≃ 3.2 kg/m² (17mm)

* SIERRA OP 15 mm = 42%, SIERRA OP 17 mm = 15 %

OFFICE - Dutch Technology (NL)
NEVADA Board 1200 x 1200 mm

NEVADA

Low density product with rock wool as the core material. The face scrim is made of glass fibre with a bright white paint; also available in colours (see p.69). Extensive design options with a variety of size and edge detail combinations.

Benefits

- Excellent sound absorption: up to 1.00 α_w
- Painted edges to improve the mechanical strength
- Fibre glass fleece on the back to add strength

Application areas

Ideal for open spaces (call centres, libraries, cafeteria...)

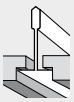
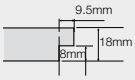
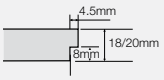
Wipeable with a dry cloth

Product Handling & Durability

20% EN ISO 14021 Recycled Content

82% EN ISO 7724-2 & 3 Light Reflectance

Concentration

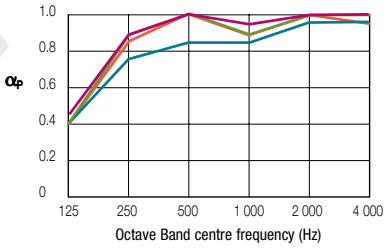
NEVADA	BOARD	TEGULAR	MICROLOOK
			
	Prelude XL²/TLX / CR 24 mm Prelude Sixty²	Prelude XL²/TLX / CR 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm Silhouette XL² 15 mm
			
Tiles NEVADA 15 mm			
600 x 600 x 15 mm	2691 M		
600 x 1200 x 15 mm	2692 M		
Tiles NEVADA 18 mm			
600 x 600 x 18 mm	2404 M	2414 M	2423 M
600 x 1200 x 18 mm	2405 M	2415 M	2424 M
1200 x 1200 x 18 mm	2406 M	2416 M	
Planks NEVADA 18 mm			
300 x 1800 x 18 mm	2408 M		
600 x 1800 x 18 mm	2407 M		
750 x 750 x 18 mm	2413 M		
Planks NEVADA 20 mm			
600 x 600 x 20 mm	2432 M	2439 M	2443 M
600 x 1200 x 20 mm	2433 M	2440 M	2444 M
1200 x 1200 x 20 mm	2434 M	2441 M	
300 x 1800 x 20 mm	2435 M		
600 x 1800 x 20 mm	2436 M		

COLORTONE NEVADA : Black (BK), Cement (CG), Navy (NY), Metal (MT).
Please refer to page 69.

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• NEVADA Board 15 mm								
1.00	0.95	0.40	0.90	1.00	0.90	1.00	1.00	α_p
• NEVADA Board 18 mm								
1.00	0.95	0.40	0.85	1.00	0.90	1.00	0.95	α_p
• NEVADA Tegular, MicroLook 18 mm								
0.90	0.85	0.40	0.75	0.85	0.85	0.95	0.95	α_p
• NEVADA Board 20 mm								
1.00	0.95	0.45	0.90	1.00	0.95	1.00	1.00	α_p

Sound Absorption Class = A



EN 20140-9 & EN 717-1

D_{ncw}

28 dB (Tegular, MicroLook 20 mm)
27 dB (Tegular, MicroLook 18 mm)
24 dB (Board 18 mm)
26 dB (Board 20 mm)

EN ISO 140-3 & EN ISO 717-1

R_w

7 dB (Board 15 mm)

EEA Euroclass A1 (White)
EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

EN 12667 & ISO 8301

λ = 0.033 W/m K

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

Board (15 mm) ≃ 1.20 kg/m²
Board (18 mm) ≃ 1.26 kg/m²
Tegular & MicroLook (18 mm) ≃ 2.52 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

EDUCATION - Matosinhos' School (PT)
DUNE Vector

DUNE SUPREME/ DUNE VECTOR

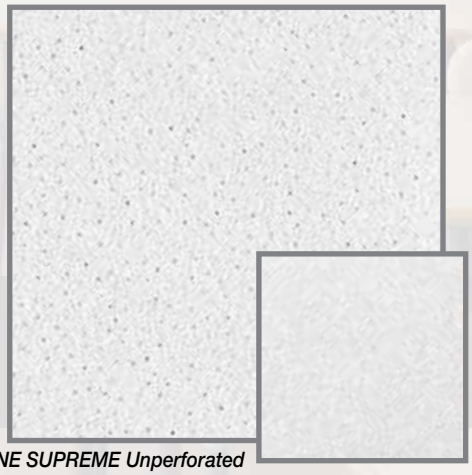
DUNE SUPREME is a microperforated, finely sanded surface texture. Also available in a variety of colours (p.69).

Benefits

- Enhanced acoustical intelligibility
- Wide variety of size and edge details
- Improved durability

Application areas

Ideal for school environments, classrooms, offices...



Option: DUNE SUPREME Unperforated

Damp sponge with mild detergent diluted in warm water

Product Handling & Durability

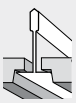
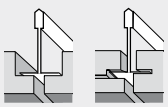
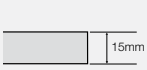
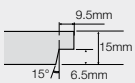
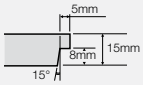
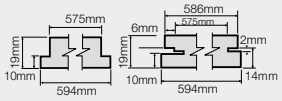
Colours

Recycled Content*

Light Reflectance**

Intelligibility

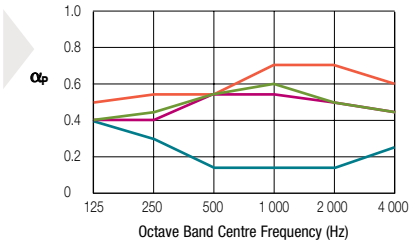
DUNE SUPREME/ DUNE VECTOR

	BOARD	TEGULAR	MICROLOOK	VECTOR
				
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm	Prelude XL² 24 mm Prelude Sixty²
				
DUNE				
500 x 500 x 15 mm			9813 M	
600 x 600 x 19 mm				3321 M
1200 x 300 x 15 mm			2020 M	
1200 x 600 x 15 mm		9687 M	2727 M	
DUNE SUPREME				
600 x 600 x 15 mm	2271 M	2273 M	2274 M	
600 x 1200 x 15 mm	2272 M			
DUNE SUPREME Unperforated				
600 x 600 x 15 mm	2276 M	2278 M	2279 M	
600 x 1200 x 15 mm	2277 M			

COLORTONE DUNE: Carrara (CA), Platinum (PN), Blue Mountain (BT).
Please refer to page 69.

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• DUNE SUPREME (Board/Tegular/MicroLook)								
0.55	0.50	0.40	0.45	0.55	0.60	0.50	0.45	α_p
Sound Absorption Class = D								
• DUNE (Board/Tegular/MicroLook)								
0.55	0.50	0.40	0.40	0.55	0.55	0.50	0.45	α_p
Sound Absorption Class = D								
• DUNE Vector								
0.65	0.65	0.50	0.55	0.55	0.70	0.70	0.60	α_p
Sound Absorption Class = C								
• DUNE SUPREME Unperforated Board/Tegular/MicroLook								
0.15(L)	0.20	0.40	0.30	0.15	0.15	0.15	0.25	α_p
Sound Absorption Class = E								



EN ISO 10848-2 / EN 2014069 & EN ISO 717-1

Dncw 35 dB (DUNE SUPREME/DUNE and DUNE SUPREME Unperforated)

Dnfw 35 dB (DUNE Vector)

EN ISO 140-3 & EN ISO 717-1

Rw 17 dB (15 mm)

EEA Euroclass A2-s1, d0
EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

99 % RH (DUNE SUPREME)
95 % RH (DUNE VECTOR)

15 YEAR guarantee
30 YEAR system guarantee

3.7 kg/m² (DUNE SUPREME)
≃ 6.2 kg/m² (DUNE Vector)

* DUNE SUPREME / DUNE SUPREME Unperforated = 44%, DUNE Vector = 43%. **DUNE = 84%.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - UNIJA Računovodska hiša d.d. (SI)
DUNE Planks SL2

DUNE PLANKS

Combining good sound absorption and sound attenuation, DUNE PLANKS offer a variety of sizes to suit the flexible requirements of modern office buildings.

Benefits

- Excellent sound attenuation: up to 38 dB
- Good level of light reflectance: 84%

Application areas

Ideal for corridors and circulation areas.

Damp sponge with mild detergent diluted in warm water

Product Handling & Durability

Recycled Content

Light Reflectance

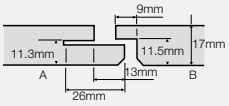
Intelligibility

DUNE Planks

SL2

Prelude 24 mm Main Runner
Prelude Sixty²

System Z

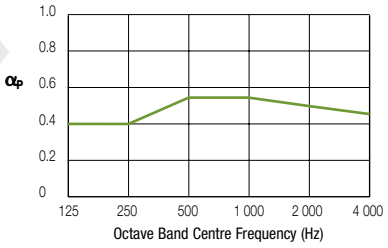


300 x 1500 x 17 mm	9633 M
300 x 1800 x 17 mm	9634 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.55	0.50	0.40	0.40	0.55	0.55	0.50	0.45	α_p

Sound Absorption Class = D



EN ISO 10848-2 & EN ISO 717-1

Dnfw

38 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

95 % RH

≃ 5.5 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

EDUCATION - Las tablas (ES)
DUNE MAX Board

DUNE MAX

DUNE MAX offers good levels of sound absorption and sound attenuation, with a finely sanded surface.

Benefits

- Very good mix between sound absorption and attenuation
- Easy to install, easy to clean

Application areas

Ideal for classrooms and general teaching conditions.

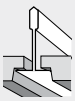
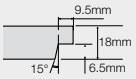
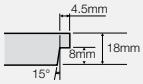
Damp sponge with mild detergent diluted in warm water

Product Handling & Durability

Recycled Content

Light Reflectance

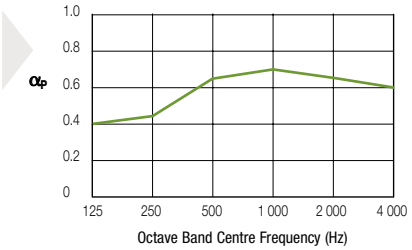
Concentration

DUNE MAX	BOARD	TEGULAR	MICROLOOK
	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm
			
600 x 600 x 18 mm	2250 M	2252 M	2253 M
600 x 1200 x 18 mm	2251 M		

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.65	0.60	0.40	0.45	0.65	0.70	0.65	0.60	α_p

Sound Absorption Class = C



EN 20140-9 & EN 717-1

Dnfw

35 dB

EN ISO 10848-2 & EN ISO 717-1

Rw

17 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

99 % RH

4.55 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - Kanzlei Jahrsdörfer & Kollegen (D)
DUNE dB Tegular

DUNE dB

DUNE dB offers a perfect solution to eliminate the need for sound barriers.

Benefits

- Excellent sound attenuation: 39 dB
- Reduces room to room noise
- High level of light reflectance: 84%

Application areas

Ideal for individual offices.

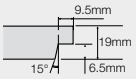
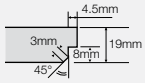
Damp sponge with mild detergent diluted in warm water

Product Handling & Durability

Recycled Content

Light Reflectance

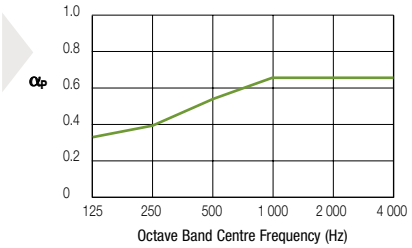
Confidentiality

DUNE dB	BOARD	TEGULAR	MICROLOOK BE
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm
			
600 x 600 x 19 mm	3010 M	3011 M	3012 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.60	0.55	0.35	0.40	0.55	0.65	0.65	0.65	α_p

Sound Absorption Class = C



EN ISO 10848-2 & EN ISO 717-1

Dnfw

39 dB

EN ISO 140-3 & EN ISO 717-1

Rw

20 dB

EN 13501-1

EEA Euroclass A2-s1, d0

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.067 W/m K

95 % RH

8.1 kg/m²

EDUCATION - St John College (IE)
CIRRUS MicroLook

CIRRUS

CIRRUS tiles provide a warm and smooth textured visual along with good acoustical properties.

Benefits

- Microperforations virtually imperceptible when installed
- High recycled content: 61%
- Good level of light reflectance: 83%

Application areas

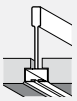
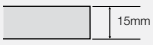
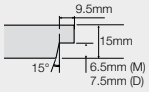
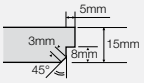
Ideal for reception areas.

Wipeable with a dry cloth

61% EN ISO 14021 — Recycled Content

83% EN ISO 7724-2 & 3 — Light Reflectance

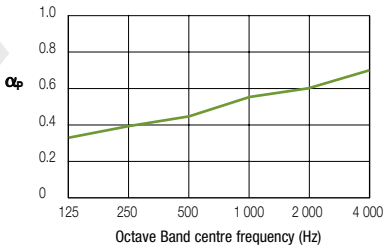
Intelligibility

CIRRUS	BOARD	TEGULAR	MICROLOOK BE
	Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TL 15 mm Silhouette XL² 15 mm Interlude XL² 15 mm
			
CIRRUS			
600 x 600 x 15 mm	9619 M	9620 M	9622 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.55(H)	0.50	0.35	0.40	0.45	0.55	0.60	0.70	α_p

Sound Absorption Class = D



EN 20140-9 & EN 717-1

D_{ncw}
36 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

≃ 4.0 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

RETAIL - Rostock (D)
PLAIN Board

PLAIN

The smooth and white surface of PLAIN meets today's trends for cleaner finishes whilst maximising light reflectance.

Benefits

- High light reflectance: 87%
- Energy savings due to high level of light reflectance
- Good sound attenuation

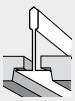
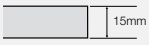
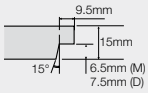
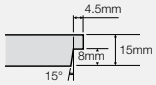
Application areas

Ideal for retail environments.

Wipeable with a dry cloth

≤42% EN ISO 14021 — Recycled Content

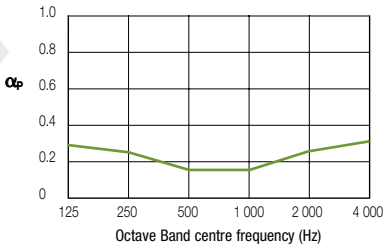
87% EN ISO 7724-2 & 3 — Light Reflectance

PLAIN	BOARD	TEGULAR	MICROLOOK
	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm
			
600 x 600 x 15 mm	9587 M	9589 M	9590 M
600 x 1200 x 15 mm	9588 M		

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.20(L)	0.20	0.30	0.25	0.15	0.15	0.25	0.30	α_p

Sound Absorption Class = E



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}
35 dB

EEA Euroclass A2-s1, d0
EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

95 % RH

15 YEAR guarantee — 30 YEAR system guarantee

4 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

FINE FISSURED

The non-directional FINE FISSURED surface is easy to install and effective for sound absorption.

Benefits

- Good sound absorption: 0.60 (H) α_w
- Available in black

Application areas

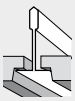
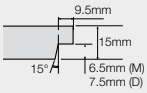
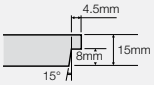
Ideal for circulation areas, meeting rooms etc.

OFFICE
FINE FISSURED Tegular

FINE FISSURED Black

Colours | Wipeable with a dry cloth

≤51% EN ISO 14021 Recycled Content | 85% EN ISO 7724-2 & 3 Light Reflectance | Intelligibility

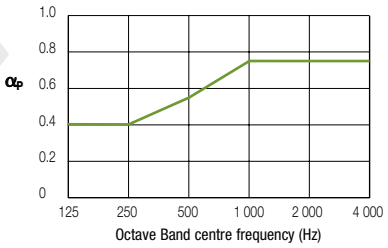
FINE FISSURED	BOARD	TEGULAR	MICROLOOK
	Prelude XL²/TLX 24 mm Prelude Sixty²	 Prelude XL²/TLX 24 mm Prelude Sixty²	Prelude XL²/TL 15 mm Interlude XL² 15 mm
			
600 x 600 x 15 mm	9121 M*	9122 M	9202 M
600 x 1200 x 15 mm	9120 M		

*Colours: Board 600 x 600 mm is available in Black (BK).

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.60(H)	0.60	0.40	0.40	0.55	0.75	0.75	0.75	α_p

Sound Absorption Class = C



EN 20140-9 & EN 717-1

D_{ncw}
34 dB

EEA	Euroclass A2-s1, d0	RUS	KM1 (G1, V1, D1, T1)
EEA	Euroclass A2-s2, d0 (Black)	FZ 123	

EN 13501-1

EN 12667 & ISO 8301

λ = 0.06 W/m K

95 % RH

15 YEAR guarantee | 30 YEAR system guarantee

≃ 3.5 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

LEISURE - Uttoxeter Cinema (UK)
COLORTONE NEVADA Black

COLORTONE

COLORTONE offers a simple way to play with colours in ceilings, available in DUNE or NEVADA surfaces to suit your acoustic requirements.

Benefits

- 3 edge details available (DUNE)
- Excellent acoustical absorption: 1.00 α_w (NEVADA)

Application areas

Ideal for cafeterias, cinemas, theatres.

Colours

Recycled Content* ≤44% EN ISO 14021

Intelligibility

COLORTONE DUNE

	CARRARA (CA)	PLATINUM (PN)	BLUE MOUNTAIN (BT)
Board			
600 x 600 x 15 mm	9095 MCA	9095 MPN	9095 MBT
600 x 1200 x 15 mm	9090 MCA	9090 MPN	9090 MBT
Tegular			
600 x 600 x 15 mm	9163 MCA	9163 MPN	9163 MBT
MicroLook			
600 x 600 x 15 mm	9113 MCA	9113 MPN	9113 MBT

COLORTONE NEVADA

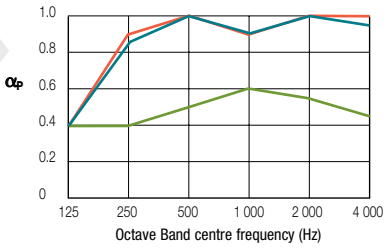
	BLACK (BK)	CEMENT (CG)	NAVY (NY)	METAL (MT)
Board				
600 x 600 x 15 mm	2695 DBK	2695 DCG	2695 DNY	2695 DMT
625 x 625 x 18 mm	2404 DBK	2404 DCG	2404 DNY	2404 DMT
600 x 1200 x 15 mm	2696 MBK	2696 MCG	2696 MNY	2696 MMT
625 x 1250 x 18 mm	2405 DBK	2405 DCG	2405 DNY	2405 DMT

COLORTONE DUNE - Colours: Carrara (CA), Platinium (PN), Blue Mountain (BT).
COLORTONE NEVADA - Colours: Black (BK), Cement (CG), Navy (NY), Metal (MT).

Note: Prelude suspension systems are available in following standard colours: Carrara (CA), Black (BK), Silver Grey RAL9006 (SG), Brass (BS), Chrome (CE), Brown (BN), White RAL9010 (WR).
A choice of over 180 RAL colours are available as a special order.

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• COLORTONE DUNE								
0.55	0.55	0.40	0.40	0.50	0.60	0.55	0.45	α_p
Sound Absorption Class = D								
• COLORTONE NEVADA (15 mm)								
1.00	0.95	0.40	0.90	1.00	0.90	1.00	1.00	α_p
• COLORTONE NEVADA (18 mm)								
1.00	0.95	0.40	0.85	1.00	0.90	1.00	0.95	α_p
Sound Absorption Class = A								



EN 20140-9 & EN 717-1

D_{ncw}
35 dB (COLORTONE DUNE)
24 dB (COLORTONE NEVADA 18 mm)

EN ISO 140-3 & EN ISO 717-1

R_w
7 dB (COLORTONE NEVADA 15 mm)

EEA	Euroclass A2-s1, d0 (COLORTONE DUNE)
	Euroclass A1 (COLORTONE NEVADA Black, Navy)
	Euroclass A2-s1,d0 (COLORTONE NEVADA Cement)
	Euroclass A2-s2,d0 (COLORTONE NEVADA Metal)

EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K (COLORTONE DUNE)
λ = 0.033 W/m K (COLORTONE NEVADA Board)

95 % RH

15 YEAR guarantee
30 YEAR system guarantee

COLORTONE DUNE ≃ 3.9 kg/m²
COLORTONE NEVADA (15 mm) ≃ 1.20 kg/m²
COLORTONE NEVADA (18 mm) ≃ 1.26 kg/m²

*Recycled Content: 44% COLORTONE DUNE - 20% COLORTONE NEVADA

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - Southampton Solent University (UK)
CIRRUS IMAGE

CIRRUS IMAGE

The geometric shapes helps disguise the grid and integrate services.

Benefits

- Disguises the grid system
- Easy integration for a variety of services
- Monolithic appearance
- High recycled content: 61 %

Application areas

Ideal for meeting rooms...

Wipeable with a dry cloth

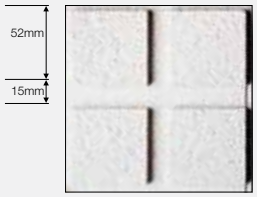
61% EN ISO 14021 — Recycled Content

83% EN ISO 7724-2 & 3 — Light Reflectance

Intelligibility

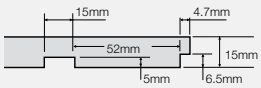
CIRRUS IMAGE

IMAGE



MICROLOOK

Prelude XL²/TL 15 mm



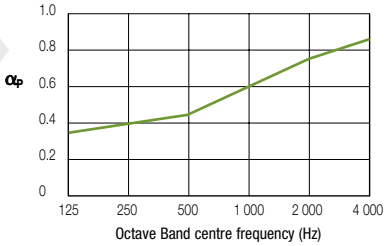
600 x 600 x 15 mm

8406 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.55(H)	0.55	0.35	0.40	0.45	0.60	0.75	0.85	α_p

Sound Absorption Class = D



EN 20140-9 & EN 717-1

D_{ncw}
36 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

70 % RH

≃ 4 kg/m²

OFFICE - School Schulzentrum Süd Kaiserslautern (D)
CIRRUS CONTRAST Squares

CIRRUS CONTRAST

CIRRUS CONTRAST offers aesthetical qualities and acoustical performances.

Benefits

- Available in Circle and Square designs
- Good level of sound absorption
- High recycled content: 61 %

Application areas

Ideal for meeting rooms and reception areas.

CIRRUS CONTRAST Circles

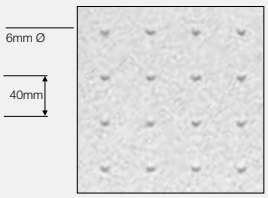
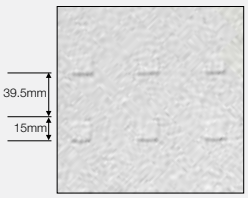
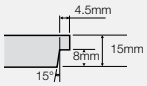
Wipeable with a dry cloth

61% EN ISO 14021 Recycled Content

83% EN ISO 7724-2 & 3 Light Reflectance

Intelligibility

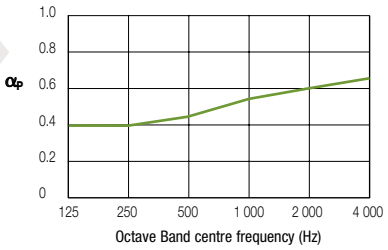
CIRRUS CONTRAST

	CIRCLES	SQUARES
		
	MICROLOOK	
	Prelude XL²/TL 15 mm Interlude XL² 15 mm	
		
600 x 600 x 15 mm	9902 M	9903 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.55	0.50	0.40	0.40	0.45	0.55	0.60	0.65	α_p

Sound Absorption Class = D



EN 20140-9 & EN 717-1

D_{ncw}
36 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

≃ 4 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

OFFICE - BDO Rotterdam (NL)
GRAPHIS Mix A

GRAPHIS

The plaster like design of GRAPHIS is suitable for areas requiring brightness and a smoothing atmosphere.

Benefits

- Very high light reflectance: 92%
- Available in MicroLook edge detail
- High recycled content: 52%

Application areas

Ideal for reception areas, shops or conference rooms.

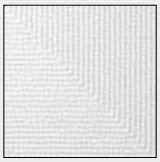
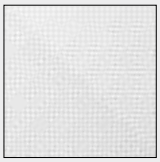
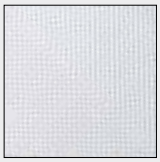
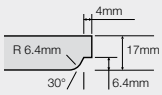
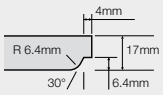
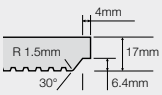
Wipeable with a dry cloth

52% EN ISO 14021 Recycled Content

92% EN ISO 7724-2 & 3 Light Reflectance

Confidentiality

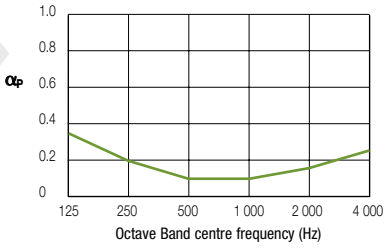
GRAPHIS

	PUNTOS	CUADROS	LINEAR	NEOCUBIC	DIAGONAL	MIX A	MIX B
							
	MICROLOOK						
			Prelude XL²/TL 15 mm				
							
600 x 600 x 17 mm	9900 M	9901 M	9220 M	9221 M	9222 M	9223 M	9224 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.15(L)	0.15	0.35	0.20	0.10	0.10	0.15	0.25	α_p

Sound Absorption Class = E



EN 20140-9 & EN 717-1

D_{ncw}

36 dB

EEA Euroclass A2-s2, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

70 % RH

6 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

RETAIL - City Lounge (NL)
VISUAL V49

VISUAL

VISUAL ceilings are available in two open cell options and are designed for installation on 15mm suspension systems.

Benefits

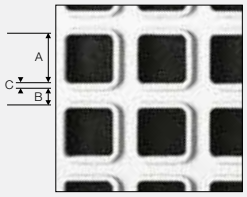
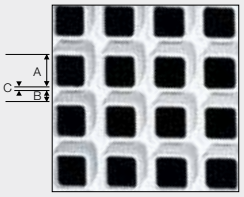
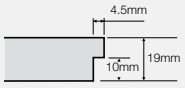
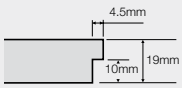
- Monolithic ceiling appearance
- Better sound absorption with fleece integration

Application areas

Ideal for shopping centres.

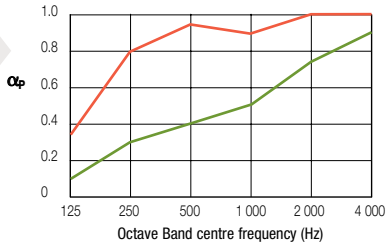
70% EN ISO 14021 Recycled Content

Intelligibility

VISUAL	V49	V64
	 A/58 mm B/15 mm C/6.35 mm Open area: 45.6 % Cut off angle: 18°	 A/47.20 mm B/15 mm C/6.35 mm Open area: 39.6 % Cut off angle: 22°
	MICROLOOK	MICROLOOK
	Prelude XL²/TL 15 mm	Prelude XL²/TL 15 mm
		
600 x 600 x 19 mm	8580 M	8581 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• V49 + fleece								
0.50(H)	0.50	0.10	0.30	0.40	0.50	0.75	0.90	α_p
Sound Absorption Class = D								
• V49 + fleece + 25 mm x 20 kg/m³ fibreglass overlay								
0.95	0.90	0.35	0.80	0.95	0.90	1.00	1.00	α_p
Sound Absorption Class = A								



EEA Euroclass A2-s1, d0 (without overlay)
EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

70 % RH

≃ 4 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

SPECIFIC SOLUTIONS

- BIOGUARD (ISO 5)
- PARAFON HYGIEN (ISO 5)
- CLEAN ROOM FL (ISO 5)
- HYDROBOARD (≤100% RH)
- CERAMAGUARD (100% RH)
- NEWTONE (100% RH)

Specific solutions for specific areas

BIOGUARD for Healthcare environments
The Bioguard treatment applied to mineral and metal tiles provides a good cleanability and resistance to disinfectants as well as anti-microbial and clean room performance.

CORROSION RESISTANT GRID
Our corrosion resistant grid is galvanised and organically coated in accordance with Durability – Class of Exposure Class C (EN 13964: table 8). In addition it has been tested for salt spray corrosion in accordance with EN ISO 9227 and achieved over 700 hours resistance.

PARAFON HYGIEN for clean rooms and kitchens
Suitable for high pressure water cleaning and providing high sound absorption the product is particularly adapted to greasy and noisy environments such as kitchens. The ISO 5 performance makes the product suitable for clean rooms.

HYDROBOARD for Higher Humidity areas
For solutions requiring higher than standard resistance to humidity, Hydroboard is stable at humidities up to 100%.

CLEAN ROOM FL for clean rooms
The surface and edges are sealed with a polyester film which doesn't attract dust and can be washed regularly. The product is suitable for ISO 5 clean rooms.

CERAMAGUARD & NEWTONE for High Humidity areas
With a true 100% RH resistance, these products are the ideal solution for swimming pools, shower areas, toilets and areas subject to extremes of temperature and humidity.

Note: For swimming pools and other potentially aggressive environments, there are many variables in the overall design that can impact the suitability of installed materials. Please contact us or visit our website for further information.

BIOGUARD Range

- **Bioguard** is a special treatment applied to Armstrong mineral and metal tiles.
- Bioguard products provide excellent **water-repellency** allowing frequent cleaning.
  - BIOGUARD PLAIN, BIOGUARD ACOUSTIC and Metal BIOGUARD Extra Microperforated with fleece and Premium B15 can be washed with a wet cloth or sponge.
  - Metal BIOGUARD PLAIN can be high pressure water cleaned with the appropriate installation.
- Bioguard products can be cleaned with diluted **disinfectants** containing active agents such as Quaternary Ammonium, Hydrogen Peroxide and Chlorine.
- **ISO 5 Clean Room** performance for BIOGUARD PLAIN, BIOGUARD ACOUSTIC and Metal BIOGUARD Extra Microperforated with fleece and Premium B15 (tested against ISO 14644-1).
- **ISO 3 Clean Room** performance for Metal BIOGUARD PLAIN (tested against ISO 14644-1).
- BIOGUARD ACOUSTIC Board is available with **fully painted edges** to provide the best guarantee for a clean room environment.
- The very **smooth surface** of BIOGUARD PLAIN, BIOGUARD ACOUSTIC and Metal BIOGUARD limits the accumulation of dust and micro-organisms (Kinetic of Decontamination test against NF S 90351).
- **Bioguard** provides **protection against bio-contamination.**
- **Bioguard** solutions have the following benefits:
  - They prevent the build-up of bacteria, mould and yeast.
  - They prevent the settlement of micro-organisms that land on the surface of the tile.
  - There is no radiation or spread of chemicals in the air.
  - They are harmless for people, animals and plants.
  - They are effective during the life-time of the ceiling as long as the surface is intact.
- Bioguard tiles meet the requirements for use in Zone 4 according to NF S 90-351.
- BIOGUARD PLAIN, BIOGUARD ACOUSTIC and Metal BIOGUARD PLAIN are suitable for use in category 2 - 6 areas as defined in HTM 60.
- **100% RH** performance for Metal BIOGUARD PLAIN when painted front and back.
- Cut edges of BIOGUARD PLAIN and BIOGUARD ACOUSTIC shall be sealed by applying standard edge paint.

Protection against Biocontamination

ISO Clean Room

Resistance to disinfectants

	MINERAL		METAL		GRID
	BIOGUARD PLAIN	**BIOGUARD ACOUSTIC**	**METAL BIOGUARD EXTRA MICROPERFORATED Rg 0701 with PREMIUM B15**	**METAL BIOGUARD PLAIN**	**CLEAN ROOM Grid**
HTM 60 Category	Category 2, 3, 4, 5, 6	Category 2, 3, 4, 5, 6	Category 2, 3, 4, 5, 6	Category 1*, 2, 3, 4, 5, 6	Category 2, 3, 4, 5, 6
Classification NF S 90-351	Zone 1, 2 & 3	Zone 1, 2 & 3	Zone 1, 2 & 3	Zone 1, 2, 3 & 4	Zone 1, 2 & 3
Particle emission class	ISO 5	ISO 5	ISO 5	ISO 3	ISO 4
Material	Mineral	Mineral	Steel with mineral fibre acoustic infill	Steel	Aluminium
Cleaning	Washable with a damp sponge	Damp rough texture sponge (medium pressure)	Washable with a damp sponge	High pressure** water cleaning	Washable with a damp sponge
Resistance to disinfectants	Quaternary Ammonium, Hydrogen Peroxide, Chlorine				

* HTM 60 category 1 calls for a smooth, imperforate and jointless soffit. Where access is required Armstrong propose a Clip-In concealed grid ceiling with the joints filled with an appropriate flexible silicone mastic to provide a 'jointless' solution.
** High pressure water cleaning solution is using METAL Clip-In Plain.

HEALTHCARE - Refaja Clinic (NL)
BIOGUARD Board

BIOGUARD (ISO 5)

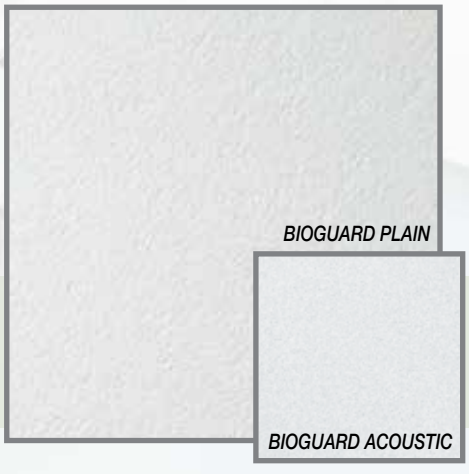
The Bioguard treatment provides an excellent resistance to disinfectants and an anti-microbial performance.

Benefits

- Safe use with disinfectants
- Enhanced water repellency: the product can be washed
- ISO 5
- Available in Plain (87% Light Reflectance) and Acoustic (0.60 (H) α_w) versions

Application areas

Ideal for healthcare environments with average or severe risk of infection.



Anti-Microbial

Resistant to Popular Disinfectants

Damp sponge with mild detergent diluted in warm water

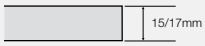
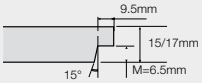
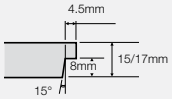
Damp rough texture sponge (only Bioguard Acoustic)

Air Quality

Recycled Content*

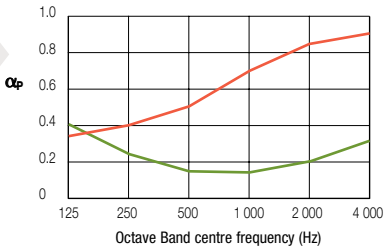
Light Reflectance**

Intelligibility

BIOGUARD	BOARD	TEGULAR	MICROLOOK
	Prelude XL²/TLX / CR 24 mm Clean Room Grid 24 mm	Prelude XL²/TLX 24 mm Clean Room Grid 24 mm	Prelude XL²/TL 15 mm Interlude XL² 15 mm
			
BIOGUARD PLAIN			
600 x 600 x 15 mm	2221 M	2223 M	2224 M
600 x 1200 x 15 mm	2222 M		
BIOGUARD ACOUSTIC			
600 x 600 x 17 mm	2549 M	2551 M	2552 M
600 x 1200 x 17 mm	2550 M		

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
• BIOGUARD PLAIN								
0.20(L)	0.20	0.40	0.25	0.15	0.15	0.20	0.30	α_p
Sound Absorption Class = E								
• BIOGUARD ACOUSTIC								
0.60(H)	0.60	0.35	0.40	0.50	0.70	0.85	0.90	α_p
Sound Absorption Class = C								



EN ISO 10848-2 / EN 20140-9 & EN ISO 717-1

D_{ncw} / D_{nfw}
35 dB (BIOGUARD PLAIN)
36 dB (BIOGUARD ACOUSTIC)

EN ISO 140-3 & EN ISO 717-1

R_w
19 dB (BIOGUARD PLAIN)
18 dB (BIOGUARD ACOUSTIC)

EEA Euroclass A2-s1, d0
EN 13501-1

RUS KM1 (G1, V1, D1, T1)
FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

ISO 14644-1

ISO 5

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

3.6 - 4.6 kg/m² (BIOGUARD PLAIN)
3.8 kg/m² (BIOGUARD ACOUSTIC)

*Recycled Content: 43% BIOGUARD PLAIN - 45% BIOGUARD ACOUSTIC
** Light Reflectance: 87% BIOGUARD PLAIN - 85% BIOGUARD ACOUSTIC

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

HEALTHCARE - Kitchen
PARAFON HYGIEN

PARAFON HYGIEN (ISO 5)

PARAFON HYGIEN offers a winning balance of white visual comfort, washability and hygiene performances.

Benefits

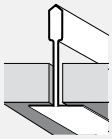
- ISO 5
- Suitable for high pressure water cleaning (max 80 bars)*
- Excellent sound absoption: 0.95 α_w

Application areas

Ideal for kitchen and healthcare areas.

High pressure water cleaning | Air Quality

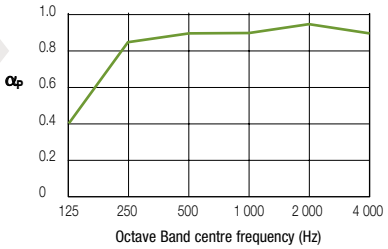
20% EN ISO 14021 Recycled Content | 82% EN ISO 7724-2 & 3 Light Reflectance | Intelligibility

PARAFON HYGIEN	BOARD
	 Prelude XL² / TLX / Corrosive Resistant 24 mm / Clean Room Grid 24 mm
600 x 600 x 18 mm	9702 M
600 x 1200 x 18 mm	9703 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.95	0.95	0.40	0.85	0.90	0.90	0.95	0.90	α_p

Sound Absorption Class = A



EEA Euroclass A2-s1, d0

EN 13501-1

EN 12667 & ISO 8301: λ = 0.033 W/m K

ISO 14644-1: ISO 5

95 % RH

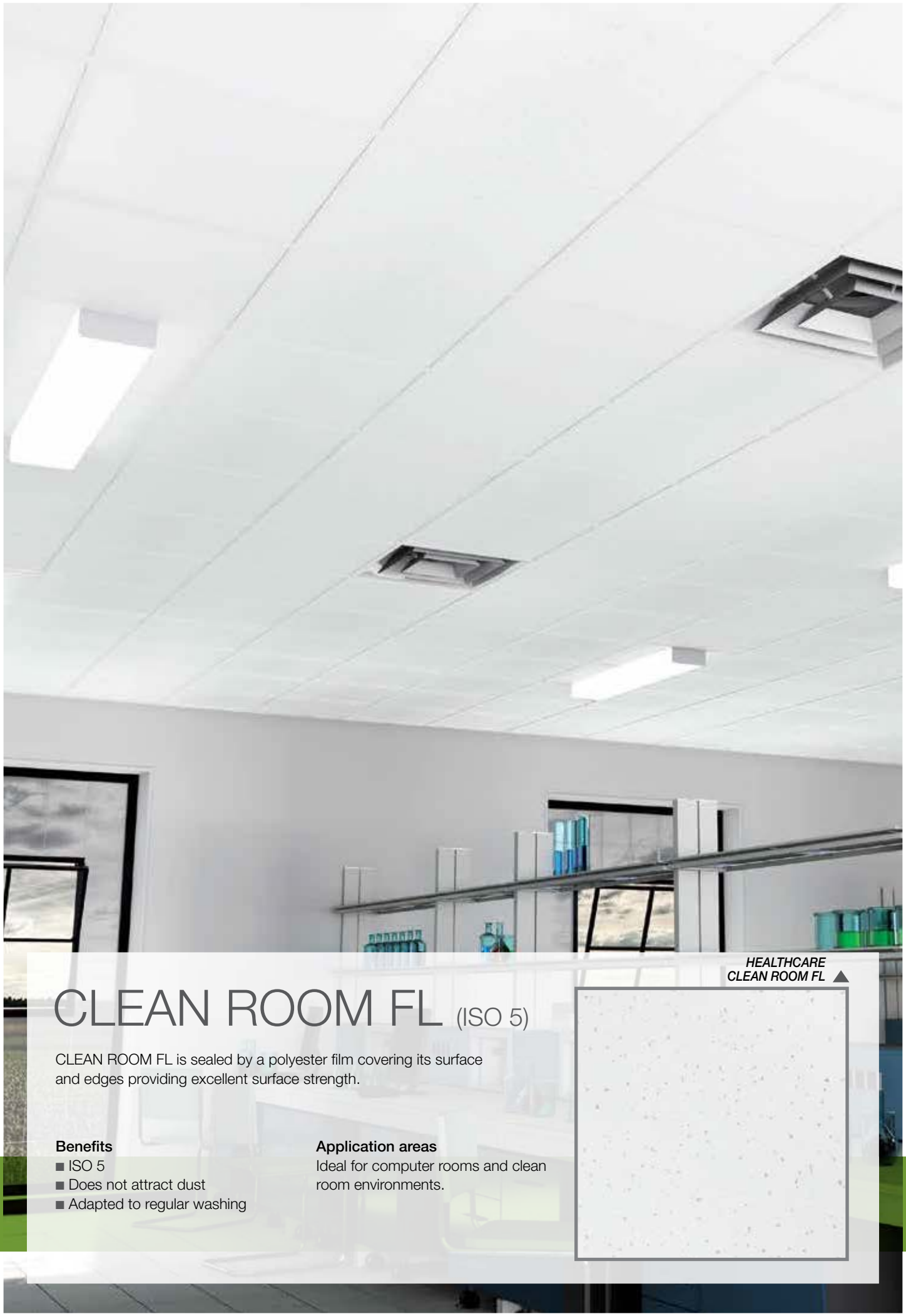
15 YEAR guarantee | 30 YEAR system guarantee

1.3 kg/m²

* The application must be in the form of a fan spray of min 30° angle and not a high pressure "cutting" jet. The suggested minimum distance between the nozzle and the ceiling tile should not be less than 300 mm and the angle of projection should be 45°. Parafon Hygien should be installed with Armstrong Corrosive Resistant 24 mm grid and be clipped for high pressure water cleaning. Cleaning recommended twice a year.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.



CLEAN ROOM FL (ISO 5)

CLEAN ROOM FL is sealed by a polyester film covering its surface and edges providing excellent surface strength.

Benefits
- ISO 5
- Does not attract dust
- Adapted to regular washing

Application areas
Ideal for computer rooms and clean room environments.

Damp sponge with mild detergent diluted in warm water*

Resistant to Popular Disinfectants

Air Quality

39% EN ISO 14021 Recycled Content

78% EN ISO 7724-2 & 3 Light Reflectance

CLEAN ROOM FL

BOARD

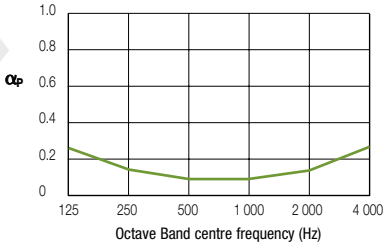
Prelude XL² / TLX / Corrosive Resistant 24 mm / Clean Room Grid 24 mm

600 x 600 x 15 mm	9527 M
600 x 1200 x 15 mm	9529 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.15	0.10	0.25	0.15	0.10	0.10	0.15	0.25	α_p

Sound Absorption Class = E



EN 20140-9 & EN 717-1

D_{ncw}
36 dB

EEA Euroclass A2-s1, d0

EN 13501-1

RUS KM1 (G1, V1, D1, T1)

FZ 123

EN 12667 & ISO 8301

λ = 0.06 W/m K

ISO 14644-1

ISO 5

95 % RH

15 YEAR guarantee

30 YEAR system guarantee

5 kg/m²

*Except when installed with silicone joints

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

HEALTHCARE - Hydrotherapy Room
HYDROBOARD

HYDROBOARD (≤100% RH)

HYDROBOARD can resist permanent RH up to 95% at 30°C without sagging, warping or delaminating and temporary conditions of up to 100% RH.

Benefits

- Stable at humidity levels of up to 100% RH
- Can be installed in temperatures ranging from 0°C to 40°C

Application areas

Appropriate for toilets, shower areas and hydrotherapy rooms and should be installed on Corrosive Resistant grid.

Scratch Resistance | Wipeable with a dry cloth | Product Handling & Durability

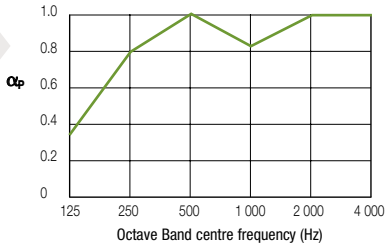
20% EN ISO 14021 Recycled Content | 82% EN ISO 7724-2 & 3 Light Reflectance | Concentration

HYDROBOARD	BOARD
	Prelude 24mm Corrosive Resistant
600 x 600 x 15 mm	3687 M
600 x 1200 x 15 mm	3688 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.95	0.90	0.35	0.80	1.00	0.85	1.00	1.00	α_p

Sound Absorption Class = A



EN ISO 10848-2 & EN ISO 717-1

D_{nfw}
22 dB

EEA Euroclass A1

EN 13501-1

EN 12667 & ISO 8301

λ = 0.033 W/m K

≤ 100 % RH

15 YEAR guarantee | 30 YEAR system guarantee

≃ 1.20 kg/m²

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

LEISURE - Cloakroom
CERAMAGUARD

CERAMAGUARD (100% RH)

CERAMAGUARD is made of a unique high density ceramic and mineral composite.

Benefits

- 100% RH resistance
- Durable, washable and scrubbable
- Resistant to growth of mould, mildew and bacteria

Application areas

Ideal for swimming pools, locker rooms, shower areas and indoor parking garages.

Damp sponge with mild detergent diluted in warm water

Recycled Content

Light Reflectance

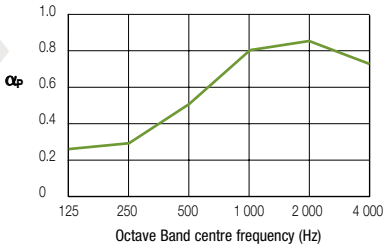
Intelligibility

CERAMAGUARD	BOARD
	Prelude XL² / TLX / *Corrosive Resistant 24 mm / Clean Room Grid 24 mm
600 x 600 x 15 mm	607 M
600 x 1200 x 15 mm	608 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.55(MH)	0.60	0.25	0.30	0.50	0.80	0.85	0.75	α_p

Sound Absorption Class = D



EN 20140-9 & EN 717-1

D_{ncw}
39 dB

EEA Euroclass A1

EN 13501-1

RUS KM0 (NG)

FZ 123

EN 12667 & ISO 8301

λ = 0.067 W/m K

100 % RH

7 kg/m²
20 kg/m² if wet

*CERAMAGUARD must be installed on Corrosive Resistant 24 mm (CR 24 mm) grid where humidity regularly exceeds 95% RH. CERAMAGUARD may need to have main runners at 600 mm centres due to increased weight in high humidity conditions.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Please see detailed acoustical data on pages 149-151.

LEISURE - Swimming Pool
NEWTONE

NEWTONE (100% RH)

NEWTONE is a hydrated calcium silicate ceiling tile suitable for use in areas subject to extremes of humidity and temperature.

Benefits

- 100% RH resistance
- Suitable for extreme temperatures and high humidity conditions
- Resistant to damage

Application areas

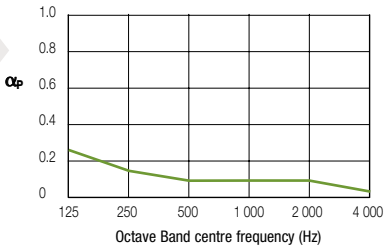
Ideal for spas and water parks.

NEWTONE	BOARD
	Prelude XL² / TLX 24 mm / *Corrosive Resistant 24 mm / Clean Room Grid 24 mm
	6mm
600 x 600 x 6 mm	1201 M

EN ISO 354 & EN ISO 11654

α_w	NRC	125	250	500	1000	2000	4000	Hz
0.10(L)	0.10	0.25	0.15	0.10	0.10	0.10	0.05	α_p

Sound Absorption Class = Not classified



EN 20140-9 & EN 717-1

D_{ncw}
37 dB

EEA	Euroclass A2-s1, d0	RUS	KM0 (NG)
EN 13501-1		FZ 123	

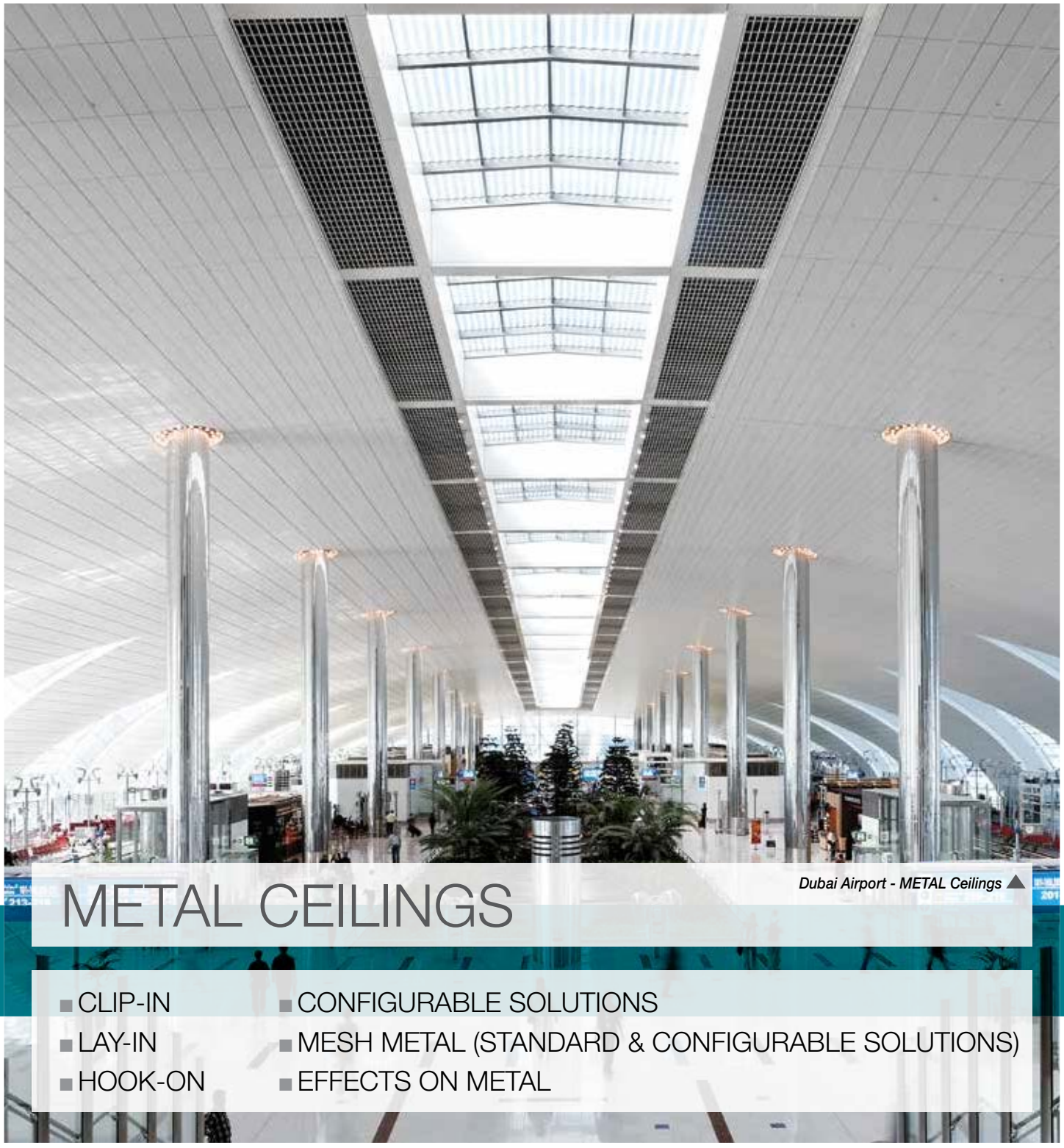
100 % RH

15YEAR guarantee | 30 YEAR system guarantee

≃ 6 kg/m²

*In all environments where humidity conditions could regularly reach and/or exceed 90% RH we recommend the use of our Corrosion Resistant grids and associated accessories.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.



Dubai Airport - METAL Ceilings

METAL CEILINGS

- CLIP-IN
- LAY-IN
- HOOK-ON
- CONFIGURABLE SOLUTIONS
- MESH METAL (STANDARD & CONFIGURABLE SOLUTIONS)
- EFFECTS ON METAL

Installation

All METAL Ceilings products are designed for simple and economical installation on standard exposed systems or purpose designed grids supplied by ourselves as part of our service package.

The Armstrong range of METAL ceiling solutions are produced and certified in accordance with EN 13964:2004 + A1(2006) and are CE marked. For technical details see page 94.

Flexibility

In addition to offering a range of different module sizes to suit different room scales and building modules, METAL Ceilings also offer a range of 1/2 module tiles and part tiles. If more flexibility of design is required then Armstrong can offer fully engineered and custom designed METAL Ceilings for special projects. For more information about our capabilities, please contact us.

Form

METAL ceilings offer a full range of plank and tile metal ceiling options:

- Standard tiles for installation in conventional grid systems,
- Flexible size plank and tile where modules must be adapted to the needs of building layouts and aesthetics,
- Choice of perforation pattern, and also Open Cell with our Cellio offer.

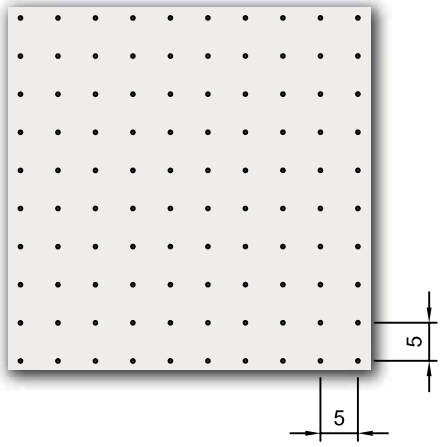
Standard perforation patterns

Ultra Microperforation

Rg 0501

Hole diameter: 0.5 mm
Open area: 0.64 %

Using fibre free absorbing technology (no inlay)

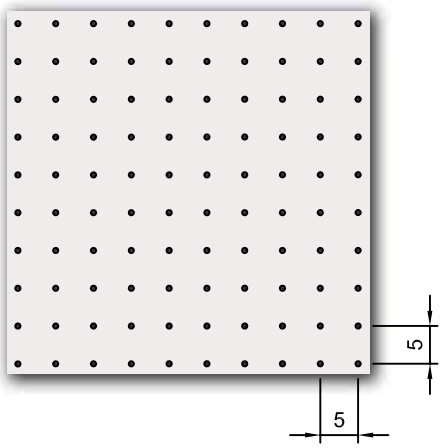


Extra Microperforation

Rg 0701

Hole diameter: 0.7 mm
Open area: 1.5 %

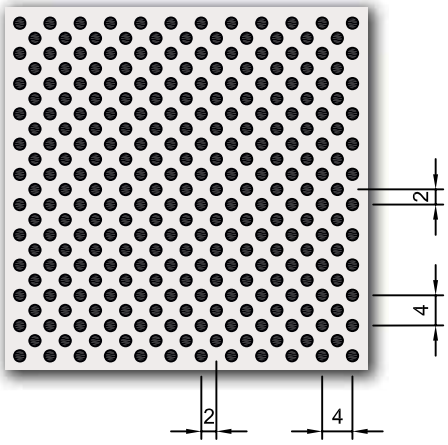
Standard acoustic infill



Micro Perforation Rd 1522

Hole diameter: 1.5mm
Open area: 22%

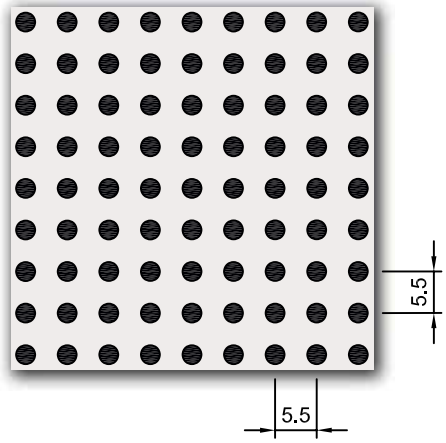
Standard acoustic infill



Standard Perforation Rg 2516

Hole diameter: 2.5mm
Open area: 16%

Standard acoustic infill



For Mesh Metal patterns, please refer to page 110.

Further perforations are available on request.

Hygiene

METAL Ceiling tiles in any edge detail or dimension within the Armstrong range, are available with a BIOGUARD finish. The METAL BIOGUARD treatment provides a good cleanability and resistance to disinfectants as well as anti-microbial and clean room performance.
For further information, please have a look on page 78 or contact us.

Security

METAL Ceilings products are naturally strong and impact resistant due to their steel construction. For additional security, Axal Vector, Q-Clip, R-Clip, T-Clip F, R-H 200, R-H 215 and R-H 220 products can be secured to their supporting grid structures making them suitable for areas where preventing unauthorised access to the ceiling plenum is a requirement. Q-Clip, R-Clip and R-H 200 products can also be back coated and secured for use in semi-external areas.

Finish

Products are finished with a durable, electrostatic factory applied polyester powder coat.

Semi-standard details

The ability to integrate building services equipment is a major feature of METAL Ceilings systems. Metal tiles can be engineered with cut-outs, apertures and special details to accommodate the proliferation of services utilised in today's modern building projects. Whether the specifier selects a standard metal tile or a more customised solution for his project, lighting fittings, air conditioning grilles and fire protection equipment need to be harmonised with the ceiling system. For us, this is standard practice, and the advanced manufacturing capabilities of our METAL Ceilings facilities enable METAL Ceilings products to be offered complete with engineered solutions for the incorporation of building services. Special size and half module tiles can also be produced when necessary to finish ceilings at perimeters and other junctions.

Colour

Standard colours

RAL 9010	20% gloss
Global White	12% gloss
RAL 9006	30% gloss
RAL 9007	30% gloss

RAL 9010 | Global White | RAL 9006 | RAL 9007

For Mesh Metal standard colours, please refer to page 110.

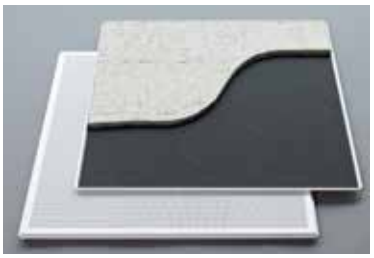
Materials

Products are made of zinc coated steel. Gauge of steel used varies as is appropriate to product type, size and configuration.

TECHNICAL INFORMATION

Acoustic fleece black, 63 g/m²

Premium B15



Premium OP19

Acoustic Fleece

Non-woven acoustic fleece provides a cost effective solution for general sound absorption requirements. As a solution that is bonded to the reverse of the metal tile it helps eliminate pattern staining issues that may occur with loose laid solutions.

Premium B15

Premium B15 solutions have been developed to achieve a wide range of performance values for both sound absorption and high sound attenuation performance. It combines the non-woven acoustic fleece with a 15mm mineral infill board as a factory fitted acoustic solution.

Premium OP19

Premium OP19 provides high sound absorption performance utilising specially developed lower density Armstrong mineral infill boards. Premium OP19 infill can achieve up to Class A sound absorption.

EN ISO 354 & EN ISO 11654

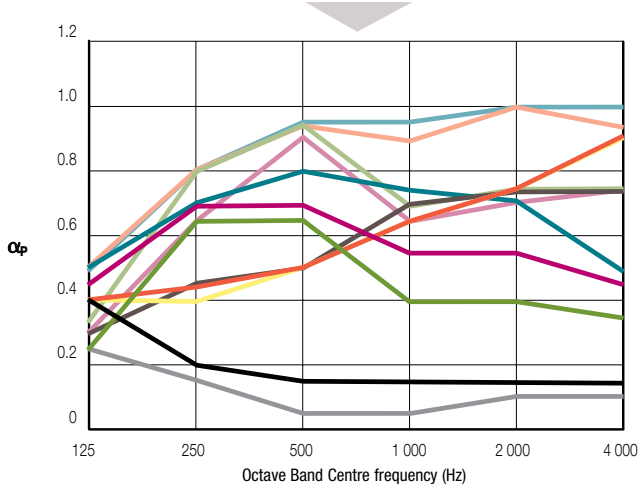
	α_w	Class	NRC	125	250	500	1000	2000	4000	Hz
Microperforated Rd 1522 with Premium OP19 (6713b)	**1.00**	**A**	0.90	0.50	0.80	0.95	0.95	1.00	1.00	α_p
Standard Perforated Rg 2516 with Premium OP19 (6715b)	**0.95**	**A**	0.90	0.50	0.80	0.95	0.90	1.00	0.95	α_p
Microperforated Rd 1522 with fleece (7332a)	**0.70**	**C**	0.70	0.30	0.65	0.90	0.65	0.70	0.75	α_p
Standard Perforated Rg 2516 with fleece (7333a)	**0.75(L)**	**C**	0.80	0.35	0.80	0.95	0.70	0.75	0.75	α_p
Extra Microperforated Rg 0701 with Premium OP19 (6714b)	**0.70**	**C**	0.75	0.50	0.70	0.80	0.75	0.70	0.50	α_p
Extra Microperforated Rg 0701 with Premium B15 (2334)	**0.65**	**C**	0.60	0.30	0.45	0.50	0.70	0.75	0.75	α_p
Microperforated Rd 1522 with Premium B15 (2337)	**0.60(H)**	**C**	0.60	0.40	0.40	0.50	0.65	0.75	0.90	α_p
Standard Perforated Rg 2516 with Premium B15 (2340)	**0.60(H)**	**C**	0.60	0.40	0.45	0.50	0.65	0.75	0.90	α_p
Extra Microperforated Rg 0701 with fleece (7331a)	**0.55(L)**	**D**	0.65	0.45	0.70	0.70	0.55	0.55	0.45	α_p
Ultra Microperforated Rg 0501 - no infill (6919)	**0.45(L)**	**D**	0.55	0.25	0.65	0.65	0.40	0.40	0.35	α_p
Plain with Premium B15 (6934)	**0.15(L)**	**E**	0.15	0.40	0.20	0.15	0.15	0.15	0.15	α_p
Plain - no infill (6935)	**0.10(L)**	**-**	0.10	0.25	0.15	0.05	0.05	0.10	0.10	α_p

EN 20140-9 & EN ISO 10848-2 & EN 717-1

D_{ncw} / D_{nfw}	
Plain with Premium B15 (2439)	**47 dB**
Plain - no infill (2438)	**44 dB**
Standard Perforated Rg 2516 with Premium B15* (2443)	**41 dB**
Microperforated Rd 1522 with Premium B15 (2443)	**41 dB**
Extra Microperforated Rg 0701 with Premium B15 (2427)	**40 dB**
Extra Microperforated Rg 0701 with Premium OP19 (6720b)	**31 dB**
Standard Perforated Rg 2516 with Premium OP19 (6721b)	**28 dB**
Microperforated Rd 1522 with Premium OP19 (6719b)	**27 dB**
Extra Microperforated Rg 0701 with fleece (6990a)	**21 dB**
Standard Perforated Rg 2516 with fleece (6993a)	**18 dB**
Ultra Microperforated Rg 0501 - no infill (3844-98-1)	**18 dB**
Microperforated Rd 1522 with fleece (6992a)	**16 dB**

EN ISO 140-3 & EN ISO 717-1

R_w	
Plain with Premium B15 (5937a)	**21 dB**
Extra Microperforated Rg 0701 with Premium B15 (7027)	**20 dB**
Plain - no infill (5936a)	**19 dB**
Microperforated Rd 1522 with Premium B15 (5941a)	**18 dB**
Standard Perforated Rg 2516 with Premium B15 (7028)	**18 dB**
Extra Microperforated Rg 0701 with Premium OP19 (6725b)	**15 dB**
Standard Perforated Rg 2516 with Premium OP19 (6726b)	**13 dB**
Microperforated Rd 1522 with Premium OP19 (6724b)	**12 dB**
Extra Microperforated Rg 0701 with fleece (7024a)	**10 dB**
Ultra Microperforated Rg 0501 - no infill (7022)	**8 dB**
Standard Perforated Rg 2516 with fleece (7026a)	**8 dB**
Microperforated Rd 1522 with fleece (5939a)	**6 dB**



* Estimated

1) All Sound Reduction Index (SRI) tests have been conducted in an independent third party quality assured laboratory in accordance with EN ISO 140-3 with the ceiling suspended horizontally between two vertical transmission suites.
2) Rw values are determined in accordance with EN ISO 717-1.
3) Values for Standard Perforated Rg 2516 (16% open area) are estimated as being not less than Microperforated Rd 1522 (22% open area).

EN 13501-1

Armstrong METAL Ceilings products have been tested to meet a variety of fire test classifications

Plain without acoustic infill

EEA	Euroclass A1 (RAL 9010)
EEA	Euroclass A2-s1, d0 (other colours)
EEA	Euroclass B-s1, d0 (with gasket)

No acoustic infill

Perforated ø ≤ 2.5 mm

EEA	Euroclass A1 (RAL 9010)
EEA	Euroclass A2-s1, d0 (other colours)
EEA	Euroclass B-s1, d0 (with gasket)

With fleece, aluminium foil black tissue faced (AFBTF) pad or B15 infill

Perforated ø ≤ 2.5 mm (acoustic fleece)

EEA	Euroclass A2-s2, d0

Perforated ø ≤ 2.5 mm (acoustic fleece and gasket)

EEA	Euroclass B-s2, d0

Perforated ø ≤ 2.5 mm (AFBTF pad)

EEA	Euroclass A1

Perforated ø ≤ 2.5 mm (Premium B15 infill)

EEA	Euroclass A2-s1, d0

Perforated ø ≤ 2.5 mm (Premium OP19)

EEA	Euroclass A2-s2, d0

Mesh metal

EEA	Euroclass A2-s1, d0

EN 12667
& ISO 8301

Thermal Conductivity

Pattern	Thermal conductivity W/mK
Plain (unperforated), no inlay	0,244
Plain (unperforated), with fleece	0,163
Plain (unperforated), with 8mm (100 kg/m^3) aluminium foil wrapped mineral wool pad	0,187
Plain (unperforated), with fleece and B15	0,073

EN 12114
& EN ISO 13829

Air Flow

When using Metal perforated metal suspended ceilings, the cavity above may be used as part of the mechanical air distribution system when it is used as a supply plenum. With this arrangement the air pressure in the plenum is always positive in comparison to the pressure in the room below. Specific tiles can be selected as open (active), and these will become air diffusers, while the remaining tiles will have their perforations blocked (inactive). In this way the air flow supply volume to the room can be controlled and balanced dependent upon the pressure differential and the air change requirements.
Armstrong conducts extensive tests of air flow on a range of its more common Metal products, in accordance with EN 12114 and EN ISO 13829, by third party accredited laboratories. Please contact your local ATS/MSC centre for further details of these results.

EN 7724-2 & 3

Light Reflectance

Pattern	RAL 9010	Global White
Plain (unperforated)	85%	75%
Ultra Microperforated	83%	73%
Extra Microperforated Rg 0701 with black acoustic fleece	80%	70%
Perforated Rg 2516 with black acoustic fleece	70%	65%
Microperforated Rd 1522 with black acoustic fleece	65%	60%

Measured in accordance with EN ISO 7724-2 & EN ISO 7724-3.
Not applicable for Mesh metal ceilings.

System Integration

	DESIGN GRID SILHOUETTE 15	DESIGN GRID INTERLUDE 15	DESIGN GRID MICROLINE	PRELUDE 15	PRELUDE 24 XL²	PRELUDE 24 TLX	SYSTEM 3000 with SPRING A-BAR	SYSTEM 3000 with J-BAR	SYSTEM 3000 with H-PROFILE 35	SYSTEM 3000 with H-PROFILE 28	C-CHANNEL with SPRING T
Axal Vector					✔						
MicroLook 8	✔	✔	✔	✔							
MicroLook 16				✔							
Tegular 2						✔					
Tegular 8					✔	✔					
Tegular 11 F					✔	✔					
Tegular 16					✔	✔					
Board						✔					
Q-Clip/Q-Clip F							✔				
R-Clip/R-Clip F							✔				
S-Clip F							✔				
T-Clip F											✔
Q-H 100 F								✔			
Q-H 120 F										✔	
R-H 200								✔			
R-H 215									✔		
R-H 220										✔	
Board Mesh						✔					
MicroLook 8 Mesh				✔							
Tegular 8 Mesh					✔	✔					

CLIP-IN

SQUARE & RECTANGULAR TILES

- Concealed suspension system using System 3000 with spring A bar
- Plain, monolithic surface, with no gap
- Downwardly demountable with demounting tool
- Can be installed in low ceiling void
- System height approximately 100mm
- Easy to clean surface
- For easy access, all CLIP-IN products can be ordered with the 'window' swing down function
- All CLIP-IN products can be locked by separate security clip
- Clean room: Q-Clip, Q-Clip F, R-Clip F
  Seismic: Q-Clip, Q-Clip F
  Exterior: Q-Clip, Q-Clip F, R-Clip, R-Clip F

OFFICE - Strabag Company (PL) ▲

METAL CLIP-IN > **Q-CLIP, R-CLIP**

Damp sponge with mild detergent diluted in warm water

Resistant to Popular Disinfectants

(1)

Product Handling & Durability

Scratch Resistance

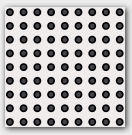
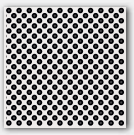
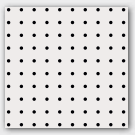
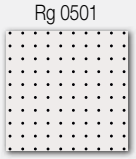
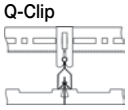
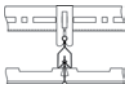
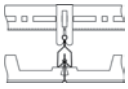
Recycled Content

Light Reflectance

Concentration

Confidentiality

Intelligibility

CLIP-IN		PLAIN	STANDARD PERFORATED	MICROPERFORATED	EXTRA MICROPERFORATED	ULTRA MICROPERFORATED
			Rg 2516	Rd 1522	Rg 0701	Rg 0501
						
			No perforation	2.5 mm dia. holes 16% Open area	1.5 mm dia. holes 22% Open area	0.7 mm dia. holes 1% Open area	0.5 mm dia. holes 0.64% Open area
Q-Clip						
 Square edge	600 x 600 mm	3809 M	3810 M	3811 M	2094 M	4955 M
Q-Clip F						
 3 mm bevel	500 x 500 mm	2059 M	2069 M	2078 M	2086 M	4956 M
	300 x 600 mm*	2058 M	2068 M	2077 M	2085 M	4958 M
	600 x 600 mm	2056 M	2067 M	2076 M	2083 M	4957 M
R-Clip						
Square edge	400 x 1500 mm	3813 M	3819 M	3825 M	3831 M	
	400 x 2000 mm	3815 M	3821 M	3827 M	3833 M	
	400 x 2500 mm	3817 M	3823 M	3829 M	3835 M	
R-Clip F						
 3 mm bevel	300 x 1200 mm	2061 M	2070 M	2079 M	2089 M	
	600 x 1200 mm	2062 M	2071 M	2080 M	2087 M	
	400 x 1800 mm	2063 M	2072 M	2081 M	2090 M	

* half sizes without swing down 'window' option

Swing down 'window' option

EN 12667 & ISO 8301

See page 95

95 % RH

5 kg/m^2 – Steel tile

(1) High pressure water cleaning. Only for plain tiles.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

CLIP-IN

SQUARE & RECTANGULAR TILES

S-Clip F

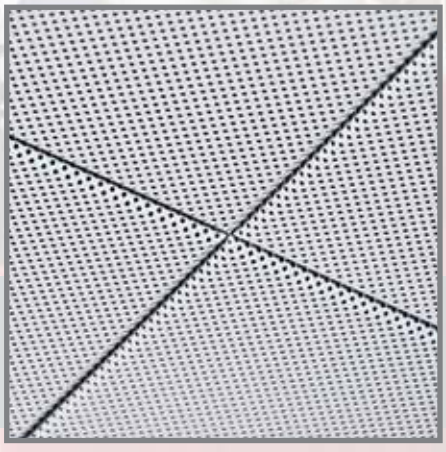
- Concealed suspension system using System 3000 with spring A bar

T-Clip F

- Concealed suspension system using C-channel with spring T. Locking option using a separate security clip

- Plain, monolithic surface, with no gap
- Downwardly demountable with demounting tool
- Can be installed in low ceiling void
- System height approximately 100mm
- Easy to clean surface

RETAIL - GGZ Oost Brabant (NL)



METAL CLIP-IN > **S-CLIP F, T-CLIP F**

Damp sponge with mild detergent diluted in warm water

Resistant to Popular Disinfectants

(1)

Product Handling & Durability

Scratch Resistance

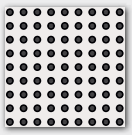
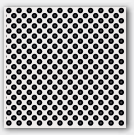
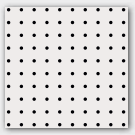
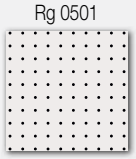
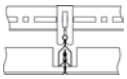
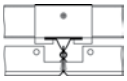
Recycled Content

Light Reflectance

Concentration

Confidentiality

Intelligibility

CLIP-IN		PLAIN	STANDARD PERFORATED	MICROPERFORATED	EXTRA MICROPERFORATED	ULTRA MICROPERFORATED
			Rg 2516	Rd 1522	Rg 0701	Rg 0501
		No perforation	 2.5 mm dia. holes 16% Open area	 1.5 mm dia. holes 22% Open area	 0.7 mm dia. holes 1% Open area	 0.5 mm dia. holes 0.64% Open area
S-Clip F						
 3 mm bevel	600 x 600 mm	2091 M	2092 M	2093 M	2770 M	4959 M
	300 x 900 mm	3706 M	3709 M	3712 M	3715 M	
	300 x 1200 mm	3707 M	3710 M	3713 M	3716 M	
	300 x 1500 mm	3708 M	3711 M	3714 M	3717 M	
T-Clip F						
 5 mm bevel	500 x 500 mm	9301 M	9309 M	9428 M	2746 M	
	300 x 600 mm	4330 M	4331 M	4332 M	2747 M	
	600 x 600 mm	9300 M	9308 M	9337 M	2744 M	
	750 x 750 mm	2575 M	2576 M	2577 M	2756 M	
	300 x 1200 mm	9304 M	9312 M	9430 M	2748 M	
	600 x 1200 mm	4314 M	4315 M	4316 M	2750 M	
	300 x 1500 mm	9305 M	9313 M	9431 M	2749 M	

EN 12667 & ISO 8301

See page 95

95 % RH

5 kg/m² – Steel tile

(1) High pressure water cleaning. Only for plain tiles.

OFFICE - Fortis Bank (NL) ▲

LAY-IN

SQUARE & RECTANGULAR TILES

Axal Vector

- Can be installed in low ceiling void
- Downwardly accessible, no tools needed
- Minimal disruption
- Strongly formed edge resists damage
- Ideal for renovation and upgrading existing ceilings
- Semi-concealed solution with 6 mm gap (partially covers grid)
- Suspension system Prelude 24 XL^2

Board

- An economical way to obtain the benefits of a metal ceiling
- Visible suspension system Prelude 24 TLX

MicroLook

- Available with 8 and 16 mm drop
- Visible suspension system Prelude 15 XL^2 / TL
- Optional Silhouette, Interlude or Microline designer grid for 8 mm drop

■ All LAY-IN products are fully demountable and easy to replace, without use of any tool

■ Easy to clean surface

Damp sponge with mild detergent diluted in warm water

Resistant to Popular Disinfectants

(1)

Product Handling & Durability

Scratch Resistance

Recycled Content

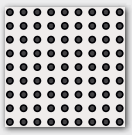
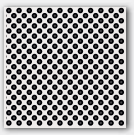
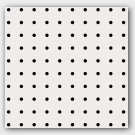
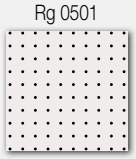
Light Reflectance

Concentration

Confidentiality

Intelligibility

LAY-IN

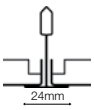
	PLAIN	STANDARD PERFORATED	MICROPERFORATED	EXTRA MICROPERFORATED	ULTRA MICROPERFORATED
		Rg 2516	Rd 1522	Rg 0701	Rg 0501
					
	No perforation	2.5 mm dia. holes 16% Open area	1.5 mm dia. holes 22% Open area	0.7 mm dia. holes 1% Open area	0.5 mm dia. holes 0.64% Open area

Axal Vector [2] [3]

6 mm reveal

500 x 500 mm	3072 M	3075 M	3078 M	3081 M	
300 x 600 mm	2578 M	2579 M	2580 M	2581 M	
600 x 600 mm	9418 M	9419 M	9420 M	2118 M	
750 x 750 mm	3074 M	3077 M	3080 M	3083 M	

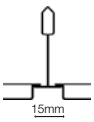
Board [4] [5]



Square edge

600 x 600 mm	9334 M	9335 M	9427 M	2771 M	4961 M
600 x 1200 mm	2123 M	2125 M	2132 M	2772 M	

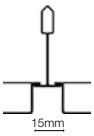
MicroLook 8



Square edge

500 x 500 mm	9321 M	9436 M	9325 M	2792 M	4962 M
600 x 600 mm	9320 M	9339 M	9324 M	2184 M	4963 M
750 x 750 mm	2588 M	2589 M	2590 M	2794 M	
300 x 1200 mm	3718 M	3720 M	3722 M	3724 M	
600 x 1200 mm	3719 M	3721 M	3723 M	3725 M	

MicroLook 16



Square edge

500 x 500 mm	2190 M	2194 M	2207 M	2788 M	
600 x 600 mm	4700 M	4701 M	4702 M	2787 M	4964 M
750 x 750 mm	2585 M	2586 M	2587 M	2789 M	

EN 12667 & ISO 8301

See page 95

95 % RH

5 kg/m^2 – Steel tile

(1) High pressure water cleaning. Only for plain tiles.
(2) Use with Prelude 24 XL^2 suspension system only.
(3) Axal Vector Rg 2516 & Rd 1522 : 20 mm plain border.
(4) Use with Prelude 24 TLX suspension system only.
(5) Board Rg 2516 & Rd 1522 : over border perforated.

HEALTHCARE - Infanta Elena Hospital (E) ▲

LAY-IN

SQUARE & RECTANGULAR TILES

Tegular 2

- With 2 mm drop. Visible suspension system Prelude 24 TLX

Tegular 8 or 16

- With 8 or 16 mm drop. Visible suspension system Prelude 24 XL² / TLX

Tegular 11 F

- With 11 mm drop. Visible suspension system Prelude 24 XL² / TLX

- ■ All LAY-IN products are fully demountable and easy to replace, without use of any tool
- ■ Easy to clean surface

Damp sponge with mild detergent diluted in warm water

Resistant to Popular Disinfectants

(1)

Product Handling & Durability

Scratch Resistance

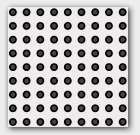
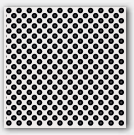
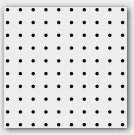
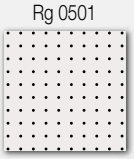
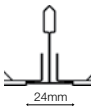
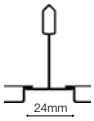
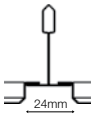
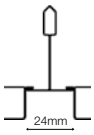
Recycled Content

Light Reflectance

Concentration

Confidentiality

Intelligibility

LAY-IN		PLAIN	STANDARD PERFORATED	MICROPERFORATED	EXTRA MICROPERFORATED	ULTRA MICROPERFORATED
			Rg 2516	Rd 1522	Rg 0701	Rg 0501
						
			No perforation	2.5 mm dia. holes 16% Open area	1.5 mm dia. holes 22% Open area	0.7 mm dia. holes 1% Open area	0.5 mm dia. holes 0.64% Open area
Tegular 2						
 Square edge	600 x 600 mm	9442 M	9443 M	9444 M	2786 M	4965 M
Tegular 8						
 Square edge	500 x 500 mm	4833 M	4834 M	4835 M	2784 M	
	600 x 600 mm	9683 M	9684 M	9685 M	2783 M	
	300 x 1200 mm	3726 M	3728 M	3730 M	3732 M	
	600 x 1200 mm	3727 M	3729 M	3731 M	3733 M	
Tegular 11 F						
 3mm bevel	600 x 600 mm	2147 M	2149 M	2150 M	3839 M	4966 M
	600 x 1200 mm	3836 M	3837 M	3838 M	3840 M	
Tegular 16						
 Square edge	500 x 500 mm	4803 M	4804 M	4805 M	2781 M	
	600 x 600 mm	9680 M	9681 M	9682 M	2779 M	
	750 x 750 mm	2582 M	2583 M	2584 M	2782 M	

EN 12667 & ISO 8301

See page 95

95 % RH

5 kg/m^2 – Steel tile

(1) High pressure water cleaning. Only for plain tiles.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.

OFFICE - The Council Building of St Gallen (CH) ▲

HOOK-ON

RECTANGULAR PANELS

- Available with or without gasket*
- Concealed suspension system System 3000 (with J-bar for R-H 200 and Q-H 100 F, H-profile 28 for R-H 220 and Q-H 120 F, H-profile 35 for R-H 215)
- Especially suitable for large ceiling areas that require a plain monolithic surface
- All HOOK-ON products are demountable and easy to replace, without use of any tool or can be locked by separate security bracket
- System height approximately 100mm
- Easy to clean surface
- Exterior application for R-H 200 available on request

METAL HOOK-ON > **R-H 200, R-H 215, R-H 220, Q-H 100 F**

Damp sponge with mild detergent diluted in warm water

Resistant to Popular Disinfectants

(1)

Product Handling & Durability

Scratch Resistance

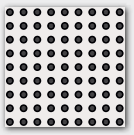
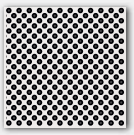
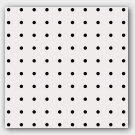
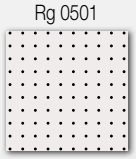
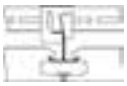
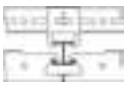
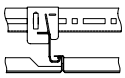
Recycled Content

Light Reflectance

Concentration

Confidentiality

Intelligibility

HOOK-ON	PLAIN	STANDARD PERFORATED	MICROPERFORATED	EXTRA MICROPERFORATED	ULTRA MICROPERFORATED
		Rg 2516	Rd 1522	Rg 0701	Rg 0501
					
	No perforation	2.5 mm dia. holes 16% Open area	1.5 mm dia. holes 22% Open area	0.7 mm dia. holes 1% Open area	0.5 mm dia. holes 0.64% Open area
R-H 200					
Square edge	400 x 1800 mm	3841 M	3846 M	3851 M	3858 M
	400 x 2100 mm	3842 M	3847 M	3852 M	3859 M
	400 x 2400 mm	3843 M	3848 M	3853 M	3860 M
	400 x 2700 mm	3844 M	3849 M	3854 M	3861 M
	400 x 3000 mm	3845 M	3850 M	3857 M	3862 M
R-H 215					
 Square edge	400 x 1800 mm	3863 M	3868 M	3873 M	3878 M
	400 x 2100 mm	3864 M	3869 M	3874 M	3879 M
	400 x 2400 mm	3865 M	3870 M	3875 M	3880 M
	400 x 2700 mm	3866 M	3871 M	3876 M	3881 M
	400 x 3000 mm	3867 M	3872 M	3877 M	3882 M
R-H 220 (2)					
 Square edge	400 x 1750 mm	3883 M	3889 M	3896 M	3922 M
	400 x 2000 mm	3884 M	3890 M	3897 M	3923 M
	400 x 2250 mm	3885 M	3891 M	3898 M	3924 M
	400 x 2500 mm	3886 M	3893 M	3899 M	3925 M
	400 x 2750 mm	3887 M	3894 M	3920 M	3926 M
	400 x 3000 mm	3888 M	3895 M	3921 M	3927 M
Q-H 100 F (2)					
 2 mm bevel	600 x 600 mm	4967 M	4968 M	4969 M	4970 M	4971 M

EN 12667 & ISO 8301

See page 95

95 % RH

5 kg/m² – Steel tile

(1) High pressure water cleaning. Only for plain tiles.
(2) Only for Swiss market.

* R-H 200 & R-H 215 with 3 mm black gasket on two sides, R-H 220 with 3 mm black gasket on one long side, Q-H 100 F with 2 mm black gasket on two sides.

CONFIGURABLE SOLUTIONS

Armstrong offers a large selection of configurable solutions. Please contact us for further information.

Corridor Ceilings

Corridor ceiling systems use rectangular panels which are fixed to the side walls perpendicular to the walking direction. 100 % of the ceiling cavity can thus be used for installations such as ventilation channels or cables. The individual ceilings elements can be easily disassembled at any time and thus ensure optimum access to the ceiling cavity.

Island Ceilings

Based on a clear modular concept, the D-Clip, D-H 700 opens up a new segment in the ceiling sector. The individual island ceilings meet the highest standards of acoustic qualification, both for the entire room and also for creation of acoustic focal points. Lighting of all types can be integrated into the islands and thus underline maximum system flexibility.

Linear Grid

Linear-grid systems, used especially in office complexes, are designed for large rooms with flexible partitioning. Partition walls can be easily positioned and moved within the grids. Visible support profiles set striking accents, a line is visually emphasised. Rectangular panels combined with different lighting make extremely cost-effective, efficient lighting possible and also offer many possibilities of visual and functional interior design.

Tartan Grid

Tartan grid systems are designed for large rooms in which a longitudinal and transverse sub-division is required. Various partition walls can be easily installed and removed under frames and enable individual square or rectangular room designs. The grid effect can be additionally emphasised with appropriate colouring of the crossing boxes and trim strips. Decorative accents can be set with pyramid or large area panels or also emphasised with lights.

Vertical Baffles

Vertical baffle systems are the ideal combination of perfect sound absorption and attractive design. This ceiling system is particularly suitable for rooms with a high sound level such as entrance halls, airports, restaurants or machine rooms. Also with regard to additional functions such as air conditioning, lighting etc., this aesthetic ceiling cladding allows almost limitless design possibilities.

For more details on this product, please see page 26.

Open Cell Ceilings

CELLIO, Armstrong's open cell metal ceiling, is suitable for all types of areas and is available in a number of cell sizes.

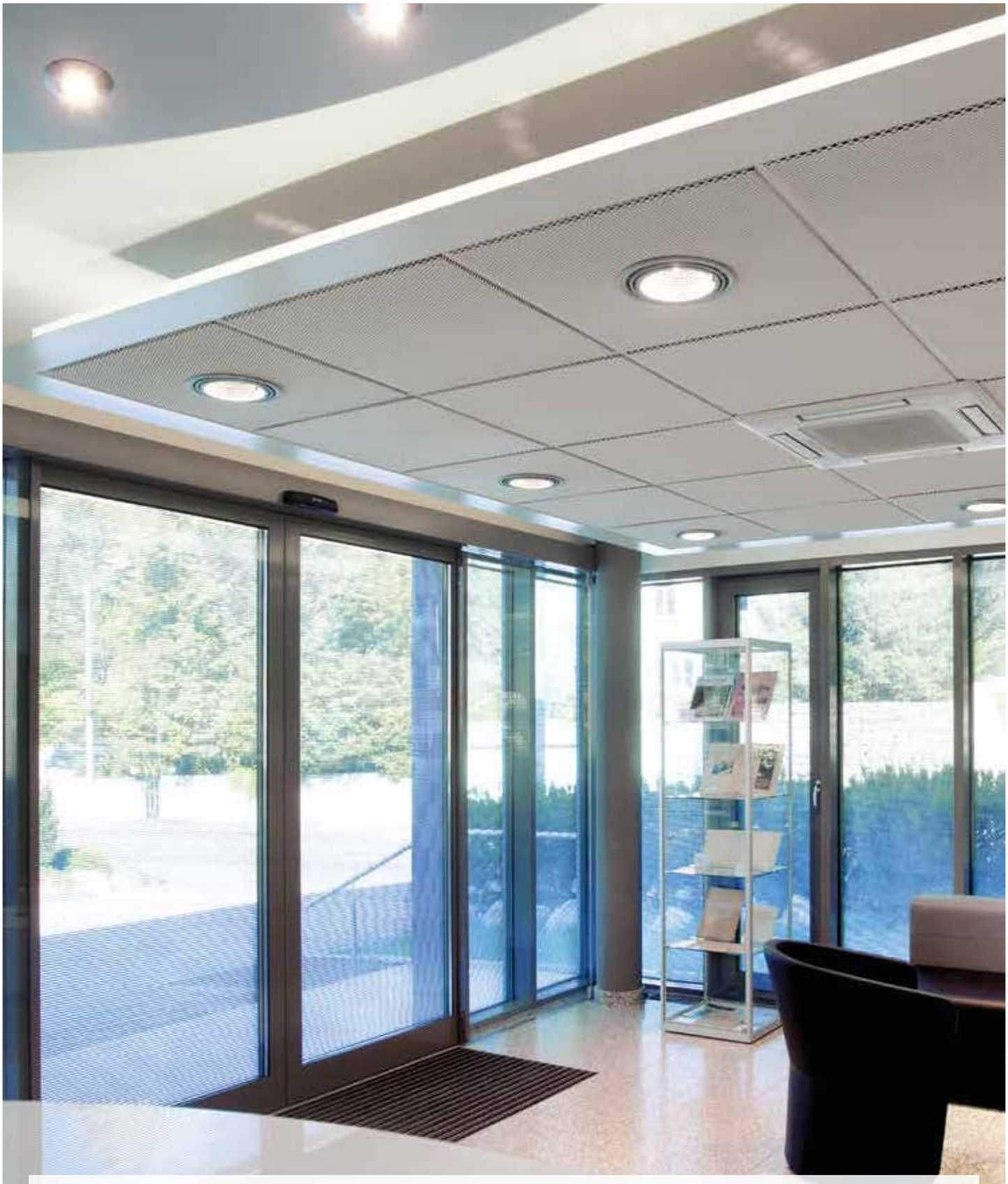
The monolithic appearance of CELLIO is achieved by the integration of the grid into the ceiling design.

This concept allows for unlimited design scope and flexible functional benefits. Detailing at the junction of wall and ceiling is a good example of this flexibility.

CELLIO is particularly ideal for refurbishing projects where a 15 mm exposed grid is already in place or in large areas where a perfect cell alignment is required.

Wall Cladding

The main advantages of the wall cladding systems are the variety of designs and applications and the simple assembly and disassembly. The system range is characterised by their simple planning, versatile uses and impressive appearance in any shape of room. Areas of application: as acoustic elements and architectural design elements.



OFFICE - Medical Association Baden (D) ▲

MESH METAL

- Mesh Metal provides a contemporary design aesthetic
- Available as standard Lay-In solutions in 4 colours for 24mm exposed grid systems (Board Mesh - Prelude 24 TLX Tegular 8 - Prelude 24 XL^2 / TLX) and 15mm exposed grid systems (MicroLook 8)
- Configurable solutions available on request for custom sizes and alternative edge details
- Additional Mesh patterns and colours available upon request

MESH METAL LAY-IN > **Board, MicroLook, Tegular**

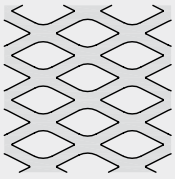
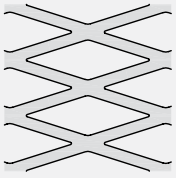
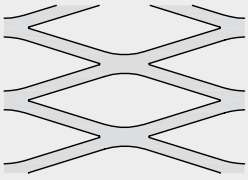
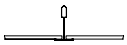
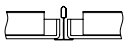
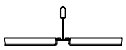
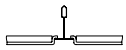
(1)

95 % RH

Product Handling & Durability

Scratch Resistance

Recycled Content

LAY-IN		KD100	RB25	RB35	RB55
	Scale 3/4	Q6x4,5-1,2x1 35% open area	 R16x8-2x1 50% open area	 R28x10-2x1.5 58% open area	 R43x13-2.5x1.5 62% open area
		4.15 kg/m²	4.00 kg/m²	4.80 kg/m²	4.35 kg/m²
Board Mesh					
 Flat sheet	600 x 600 x 1.5 mm	3975 M	3977 M	3979 M	3981 M
 Square edge	600 x 1200 x 35 mm	3976 M	3978 M	3980 M	3982 M
MicroLook 8 Mesh					
 Square edge	600 x 600 x 8 mm	3983 M	3984 M		
Tegular 8 Mesh					
 Square edge	600 x 600 x 8 mm	3985 M	3986 M		

(1) Scrubbable with water containing mild soap or diluted detergent.

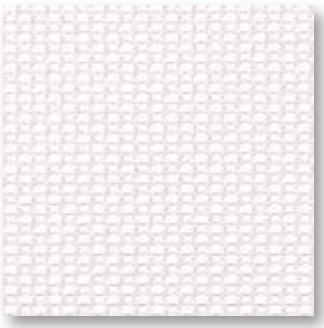
MESH METAL & CONFIGURABLE SOLUTIONS

R-Clip Mesh	▪ Clip-In solution with rectangular panels on System 3000 with spring A-bar
R-H 200 Mesh	▪ Hook-On solution with rectangular panels on System 3000 with J-bar
R-H 215 Mesh	▪ Hook-On solution with rectangular panels on System 3000 with H-profile 35
R-L 201 Mesh	▪ Lay-In solution with rectangular panels on System 3000 with L-profile
B-H 300 Mesh	▪ Hook-On solution with rectangular panels on System 3000 with 100mm C-profile
B-L 302 Mesh	▪ Lay-In solution with rectangular panels on System 3000 with 100mm Bandraster profile
K-H 400 Mesh	▪ Hook-On solution with rectangular panels on tartan grid with Crossing boxes and C-profile
F-Clip Mesh	▪ Clip-In corridor solution with rectangular panels on a half spring A-bar
F-H 600 Mesh	▪ Hook-On corridor solution with rectangular panels installed on a J-bar
F-L 601 Mesh	▪ Lay-In corridor solution with rectangular panels on a perimeter trim

Further solutions available on request

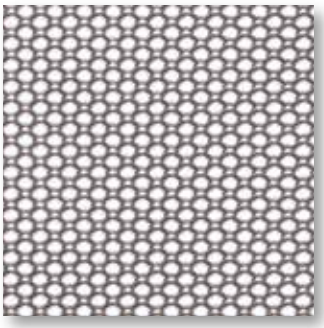
Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

MESH METAL



KD100
RAL 9010

KD100
RAL 9006



KD100
RAL 9007

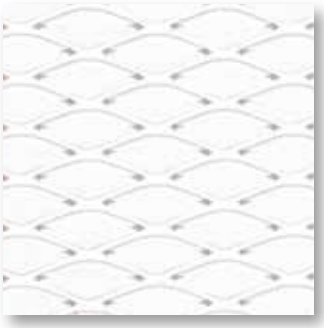
KD100
RAL 9005

RB25
RAL 9010

RB25
RAL 9006

RB25
RAL 9007

RB25
RAL 9005



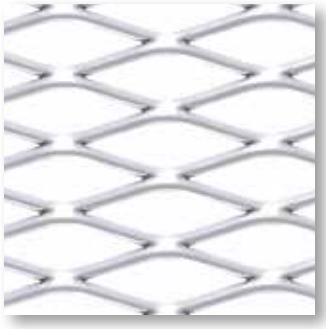
RB35
RAL 9010

RB35
RAL 9006

RB35
RAL 9007

RB35
RAL 9005

RB55
RAL 9010



RB55
RAL 9006

RB55
RAL 9007

RB55
RAL 9005

Installation

All MESH METAL ceilings products are designed for simple and economical installation on standard exposed systems, and concealed systems (configurable options).

Flexibility

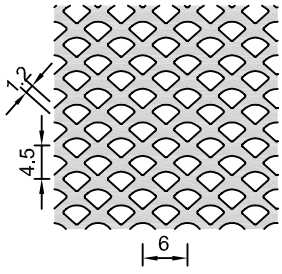
In addition to offering a range of different module sizes to suit different room scales and building modules. If more flexibility of design is required then Armstrong can offer fully engineered and custom designed MESH METAL ceilings for special projects. For more information about our capabilities, please contact us.

Form

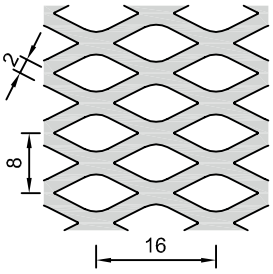
MESH METAL ceilings offer a full range of tiles and planks options:

- Standard tiles for installation in conventional grid systems
- Flexible size panels where modules must be adapted to the needs of building layouts and aesthetics
- Choice of MESH METAL pattern, and colours.

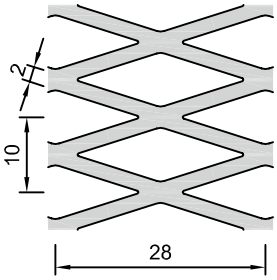
Standard MESH METAL patterns



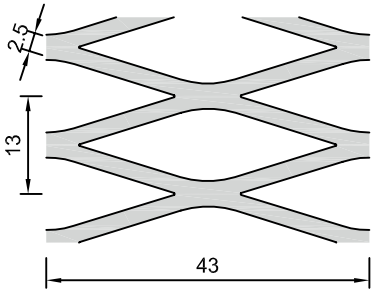
KD100
Q6x4,5-1,2x1
35% open area



RB25
R16x8-2x1
50% open area



RB35
R28x10-2x1.5
58% open area

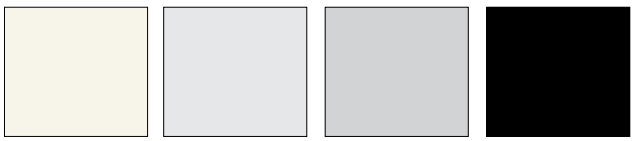


RB55
R43x13-2.5x1.5
62% open area

Further Mesh types on request

Colour

Standard colours



RAL 9010
15% gloss

RAL 9006
30% gloss

RAL 9007
30% gloss

RAL 9005
5% gloss

Materials

Products are made of zinc coated steel. Gauge of steel used varies as is appropriate to product type, size and configuration.

Finish

Products are finished with a durable, electrostatic factory applied polyester powder coat.

EN 12114
& EN ISO 13829

Air Flow

Air flow rates @50 Pa

KD100	791.45 l/s/m²	RB25	1331.91 l/s/m²
RB35	1881.59 l/s/m²	RB55	2028.97 l/s/m²

EN 13501-1

Fire

EEA Euroclass A2-s1, d0 (RAL 9010 / 9006 / 9007 / 9005)

EFFECTS ON METAL

- Suitable for prestigious high end projects
- 7 metal effects available: Ash, Oak, Red Oak, US Cherry, US Walnut, Bronze and Chrome
- 3 systems available: Q-Clip F, S-Clip F & Axal Vector
- Perforated or unperforated
- Configurable solutions available on request

Meydan Centre, Dubai (UAE) ▲

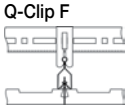
Colours available

≤30% EN ISO 14021 Recycled Content | Concentration | Confidentiality | Intelligibility

EFFECTS ON METAL

	PLAIN	EXTRA MICROPERFORATED
		Rg 0701
	No perforation	0.7 mm dia. holes 1% Open area

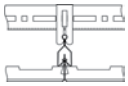
Q-Clip F



3 mm bevel

Ash	600 x 600 mm	2056 M ASH	2083 MF ASH
Oak	600 x 600 mm	2056 M OAK	2083 MF OAK
Red Oak	600 x 600 mm	2056 M ROA	2083 MF ROA
US Cherry	600 x 600 mm	2056 M CHE	2083 MF CHE
US Walnut	600 x 600 mm	2056 M WAL	2083 MF WAL
Bronze	600 x 600 mm	2056 M BZ	2083 MF BZ
Chrome	600 x 600 mm	2056 M AM	2083 MF AM

S-Clip F



3 mm bevel

Ash	300 x 1200 mm	3707 M ASH	3716 MF ASH
Oak	300 x 1200 mm	3707 M OAK	3716 MF OAK
Red Oak	300 x 1200 mm	3707 M ROA	3716 MF ROA
US Cherry	300 x 1200 mm	3707 M CHE	3716 MF CHE
US Walnut	300 x 1200 mm	3707 M WAL	3716 MF WAL
Bronze	300 x 1200 mm	3707 M BZ	3716 MF BZ
Chrome	300 x 1200 mm	3707 M AM	3716 MF AM

Axal Vector (1)

6 mm reveal

Ash	600 x 600 mm	9418 M ASH	2118 MF ASH
Oak	600 x 600 mm	9418 M OAK	2118 MF OAK
Red Oak	600 x 600 mm	9418 M ROA	2118 MF ROA
US Cherry	600 x 600 mm	9418 M CHE	2118 MF CHE
US Walnut	600 x 600 mm	9418 M WAL	2118 MF WAL
Bronze	600 x 600 mm	9418 M BZ	2118 MF BZ
Chrome	600 x 600 mm	9418 M AM	2118 MF AM

WOOD EFFECTS | **BRONZE** | **CHROME**

Ash | Oak | Red Oak | US Cherry | US Walnut

EN 12667 & ISO 8301

See page 95

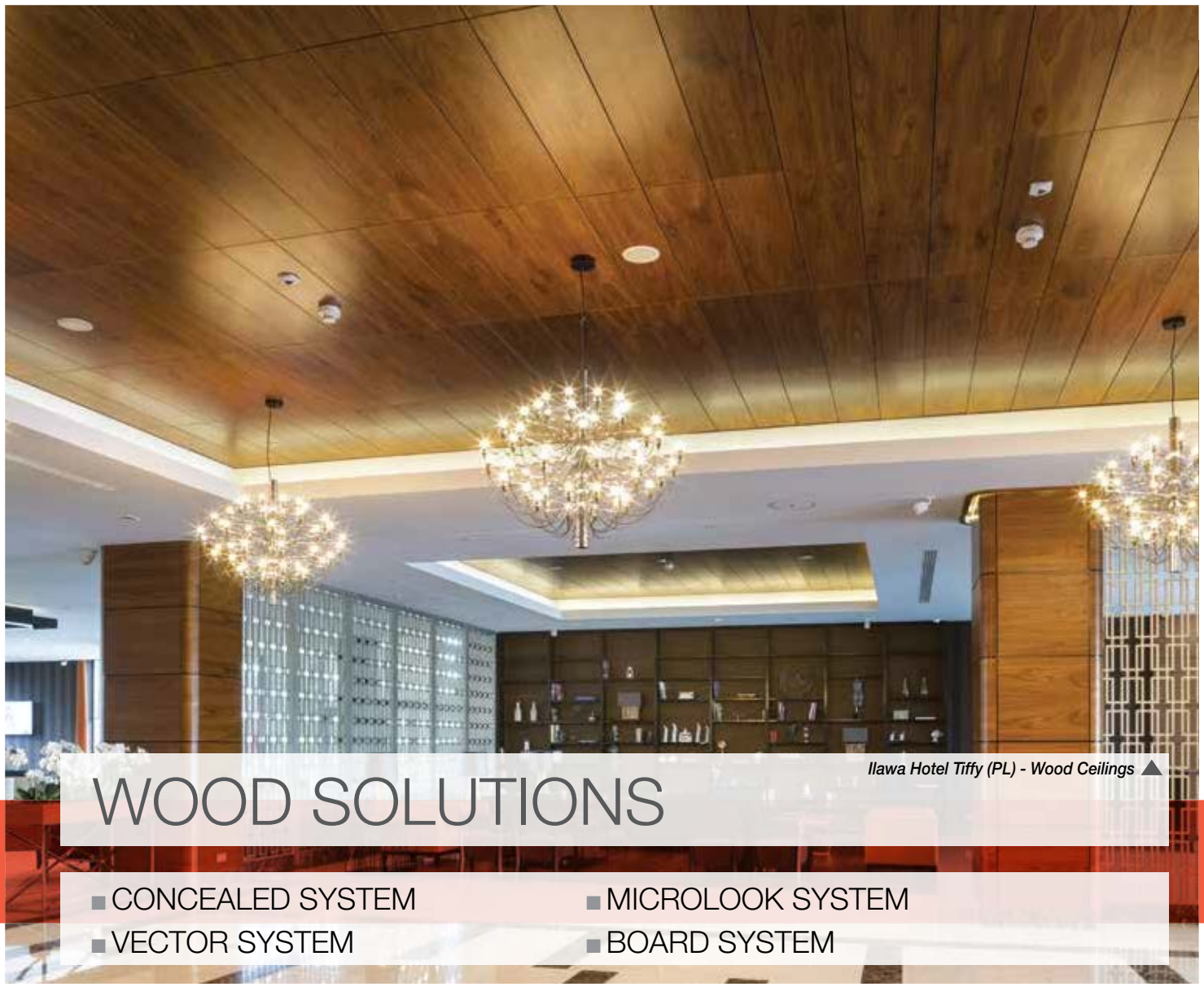
95 % RH

15 YEAR guarantee | 30 YEAR system guarantee

5 kg/m² – Steel tile

(1) use with Prelude 24 XL² suspension system only.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.
Please see detailed acoustical data on pages 149-151.



Ilawa Hotel Tiffy (PL) - Wood Ceilings

WOOD SOLUTIONS

- CONCEALED SYSTEM
- MICROLOOK SYSTEM
- VECTOR SYSTEM
- BOARD SYSTEM

Description

For timeless natural beauty and elegance – there's simply nothing to match it. Countless generations of building designers have turned to wood to bring richness and texture to their creations. No other material can provide the range of colours and patterns of this most natural building material. No two pieces are ever identical - every single piece is unique.
It can make a structure simple and elegant, sleek and modern, classic yet cool - skilfully used it can create exactly the ambience needed to make any space special.
Now Armstrong has harnessed the enduring beauty of wood in a range of ceiling tiles, giving you an almost endless choice of high performance linings for your building.
The Armstrong wood range – ceilings you'll look up to.

Armstrong wood ceilings – your choice
Designers are increasingly choosing Armstrong wood ceilings to provide an extra level of luxury for their buildings. In the US, wood already accounts for one in five of all Armstrong specialty ceiling installations – whilst in many other markets, our systemised wood ceilings have quickly become an established option amongst architects keen to bring quality and opulence to prestige environments.

It's not surprising when you see the benefits that Armstrong wood ceilings have to offer:
- Style and elegance for any interior
- Wide choice of real wood veneer finishes and design formats
- Meet all performance requirements
- Easy-plan, easy-fit grid system solutions
- Natural materials – solvent-free and fully recyclable at the end of life
- Engineered by Armstrong, the innovator of modern ceiling design

For looks that say something special about your interior - Armstrong Wood Ceilings have the edge.

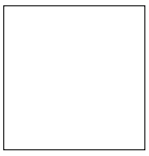
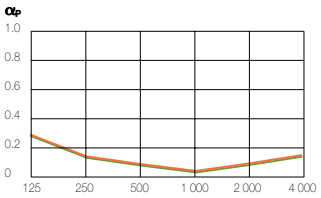
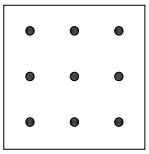
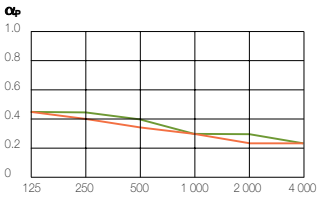
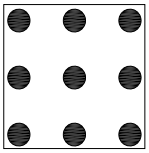
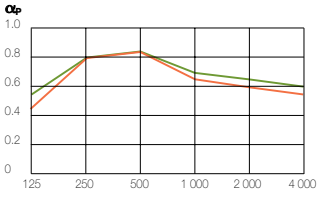
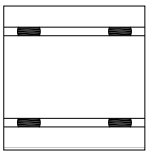
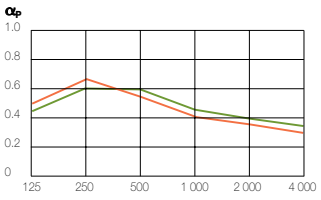
Armstrong wood ceilings are available in tiles and planks and in laminate (Concealed, Vector, MicroLook and Board edge) for a durable and more affordable option, or veneer (MicroLook edge), where real wood gives a particularly prestigious, high-class solution. Coloured suspension systems are available on request.
Our Wood Ceiling products are made with a medium density fibreboard (MDF) or chipboard base material specially selected to contain no allergic ingredients.
The surface is plain or perforated with an acoustical black tissue fleece on the back and all surface finishes are protected using solvent-free lacquers for long life.

Sound absorption

EN ISO 354 &
EN ISO 11654

Sound attenuation

EN ISO 10848-2
& EN ISO 717-1

	α_w	NRC	125	250	500	1000	2000	4000	Hz	Octave Band Centre Frequency (Hz)	D_{nfw*}
Plain											
 • **Standard** (Veneers & Laminates)	**0.10(L)**	**0.10**	0.30	0.15	0.10	0.05	0.10	0.15	α_p		**41 dB**
• **Concealed** (Veneers)	**0.10(L)**	**0.10**	0.30	0.15	0.10	0.05	0.10	0.15	α_p		
Rg 3003 (3%)											
 • **Standard** (Veneers)	**0.30(L)**	**0.35**	0.45	0.40	0.35	0.30	0.25	0.25	α_p		**35 dB**
• **Concealed** (Veneers)	**0.35(L)**	**0.35**	0.45	0.45	0.40	0.30	0.30	0.25	α_p		
Rg 8013 (13%)											
 • **Standard** (Veneers)	**0.65(L)**	**0.70**	0.45	0.80	0.85	0.65	0.60	0.55	α_p		**22 dB**
• **Concealed** (Veneers)	**0.70(L)**	**0.75**	0.55	0.80	0.85	0.70	0.65	0.60	α_p		
Lg 8002 Grooves (2%)											
 • **Standard** (Veneers)	**0.40(L)**	**0.50**	0.50	0.65	0.55	0.40	0.35	0.30	α_p		**29 dB**
• **Concealed** (Veneers)	**0.45(L)**	**0.50**	0.45	0.60	0.60	0.45	0.40	0.35	α_p		

Sound Absorption Class = up to Class C

* These attenuation values are not valid for Wood Concealed.

Conditions of installation

Wood tiles should be unpacked and stocked flat in an environment that is closed and not humid. Wood tiles should always be moved with care. Before installation, it is recommended to open the cartons and stack the tiles flat for 3 to 8 days in the room where they will be installed in order to stabilise the tiles in their future environment and conditions of use. Possible dimensional variations in a humid environment are those from typical wood-based tiles i.e. the differential between the driest and the most humid conditions can be up to 5 mm/m. The installation of Wood tiles should take place during the last phase of the job, in closed, and sometimes heated, rooms. No additional work potentially increasing the level of humidity in the room should be undertaken after the tiles are installed (concrete and plasterboards should be dry). Wood tiles should never be installed in rooms whose relative humidity is greater than 80% at 20°C. The optimum installation conditions are reached when the room temperature is between 12 and 24°C for a relative humidity between 45 and 70%. In rooms where relative humidity is kept below 45% or above 70%, additional care should be given for installation.

Installation recommendations

Wood Veneer ceiling tiles are made with natural wood veneers. As they are natural products, their colour and structure regularity cannot be guaranteed. In order to obtain the best decorative effect, we advise you to follow the points below:

1. Order all wood material at the same time.
2. Check the visual of all tiles before fitting.
3. Arrange them aesthetically with regard to their shade and grain.
4. Install the ceiling tiles accordingly.

With each order, it is recommended to allow for some extra tiles to accommodate for visual variations, as it will be very unlikely that similar looking tiles can be ordered later.

WOOD Veneer US Cherry, Perforation Rg 8013, Concealed, 1800 x 600 mm ▲

CONCEALED SYSTEM

When you need to create a clean seamless appearance using standard panels and grid, Armstrong Wood Concealed is the system for you. Standard Concealed Wood panels are simply fixed directly to our Main Runner and Cross Tee grid using special T-bar hooks to give a monolithic appearance while enjoying all of the speed and engineering benefits of our normal grid suspension.

Benefits

- Clean monolithic appearance
- Multiple layout options
- Large panel sizes (up to 2400 mm)
- Safe and secure downward accessibility
- Narrow 6 mm reveal, plus edge banding

Application areas

Larger ceiling expanses where a monolithic appearance is preferred.

STANDARD VENEERS

Ash (ASH)

Oak (OAK)

Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)

All veneers have a matt finish.
Variation between wood veneer panels may occur due to the natural characteristics of the wood and grain.
Custom veneers available on request.

MODULES

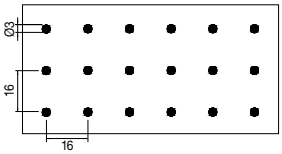
600 x 1200 mm

600 x 1800 mm

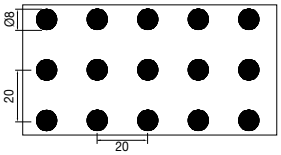
600 x 2400 mm

PERFORATIONS

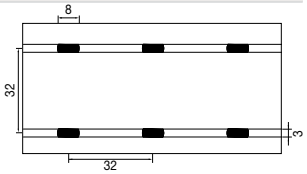
Plain



Rg 3003 (3%)

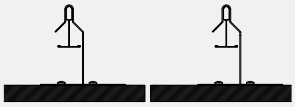


Rg 8013 (13%)



Lg 8002 Grooves (2%)
Groove size: 3 x 3 mm

RANGE

Perforations	Dimensions	Suspension System: Prelude 24 XL²/TLX  Concealed
Plain	600 x 1200 x 17 mm	CS 5145 M
Plain	600 x 1800 x 17 mm	CS 5146 M
Plain	600 x 2400 x 17 mm	CS 5147 M
Rg 3003	600 x 1200 x 17 mm	CS 5148 M
Rg 3003	600 x 1800 x 17 mm	CS 5149 M
Rg 3003	600 x 2400 x 17 mm	CS 5150 M
Rg 8013	600 x 1200 x 17 mm	CS 5151 M
Rg 8013	600 x 1800 x 17 mm	CS 5152 M
Rg 8013	600 x 2400 x 17 mm	CS 5153 M
Lg 8002 Grooves	600 x 1200 x 17 mm	CS 5154 M
Lg 8002 Grooves	600 x 1800 x 17 mm	CS 5155 M
Lg 8002 Grooves	600 x 2400 x 17 mm	CS 5156 M

EN ISO 354 &
EN ISO 11654

α_w / NRC: see page 115

EN 13501-1

EEA Euroclass B-s2, d0

EN 12667
& ISO 8301

λ = 0.12 W/m K

≤70 % RH

≃ 14 kg/m²

Note: Product availability may vary. Please contact us or visit our website for updated information or other sizes. Please see detailed acoustical data on page 115.

VECTOR SYSTEM

Benefits

- Narrow 6 mm reveal that gives a sleek monolithic look
- Distinctive ceiling finishing
- Available in planks, for a modern aesthetic solution
- Different panel sizes can be integrated in the same ceiling space, for a true flexibile ceiling solution

Application areas

Used in a variety of ceiling areas: entrance halls, lounge areas, executive office suites, meeting and conference rooms.

Ilawa Hotel Tiffy (PL)
WOOD Veneer Iroko, Plain, Vector Planks

STANDARD VENEERS

Ash (ASH)

Oak (OAK)

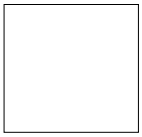
Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)

All veneers have a matt finish.
Variation between wood veneer panels may occur due to the natural characteristics of the wood and grain.
Custom veneers available on request.

MODULES

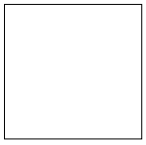

600 x 600 mm

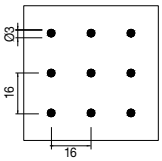
600 x 1200 mm

300 x 1200 mm

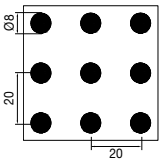
Custom sizes available on request.

PERFORATIONS

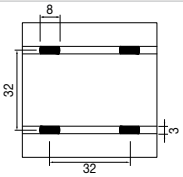

Plain



Rg 3003 (3%)

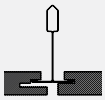


Rg 8013 (13%)



Lg 8002 Grooves (2%)
Groove size: 3 x 3 mm

RANGE

Perforations	Dimensions	Suspension System: Prelude 24 XL²  Vector
Plain	600 x 600 x 13 mm	CS 4994 M
Plain	600 x 1200 x 13 mm	CS 4996 M
Plain	300 x 1200 x 13 mm	CS 4995 M
Rg 3003	600 x 600 x 13 mm	CS 4997 M
Rg 3003	600 x 1200 x 13 mm	CS 4999 M
Rg 3003	300 x 1200 x 13 mm	CS 4998 M
Rg 8013	600 x 600 x 13 mm	CS 5000 M
Rg 8013	600 x 1200 x 13 mm	CS 5002 M
Rg 8013	300 x 1200 x 13 mm	CS 5001 M
Lg 8002 Grooves	600 x 600 x 13 mm	CS 5003 M
Lg 8002 Grooves	600 x 1200 x 13 mm	CS 5005 M
Lg 8002 Grooves	300 x 1200 x 13 mm	CS 5004 M

EN ISO 354 &
EN ISO 11654

α_w / NRC: see page 115

EN ISO 10848-2
& EN ISO 717-1

D_{nfw}: see page 115

EN 13501-1

EEA Euroclass B-s2, d0

EN 12667
& ISO 8301

λ = 0.12 W/m K

≤70 % RH

≃ 10.5 kg/m²

Note: Product availability may vary. Please contact us or visit our website for updated information or other sizes. Please see detailed acoustical data on page 115.

MICROLOOK SYSTEM

Benefits

- Easy to install and access for service
- Flexible designs: mix and match panel sizes
- Range of prestige real wood veneer or durable and economical laminated finishes

Application areas

Used in a variety of ceiling areas: from reception areas to retail stores and designer boutiques.

WOOD Veneer Oak, Plain, MicroLook, 300 x 1200 mm

STANDARD VENEERS

Ash (ASH)

Oak (OAK)

Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)

All veneers have a matt finish. Variation between wood veneer panels may occur due to the natural characteristics of the wood and grain.
Custom veneers available on request.

LAMINATES

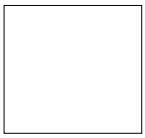
Curly Maple (CM)

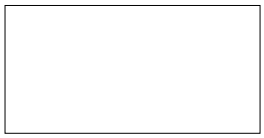
Pear (PH)

Canadian Maple (MD)

Curly Maple and Pear Laminates have a semi-matt finish and the Canadian Maple Laminate has an extra-matt finish.

MODULES

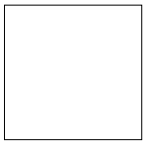

600 x 600 mm

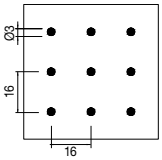

600 x 1200 mm

300 x 1200 mm

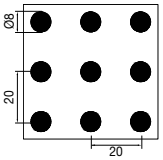
Custom sizes available on request.

PERFORATIONS

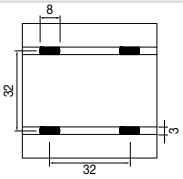

Plain



Rg 3003 (3%)

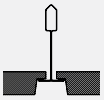


Rg 8013 (13%)



Lg 8002 Grooves (2%)
Groove size: 3 x 3 mm

RANGE

Perforations	Dimensions	Suspension System: Prelude 15TL - Prelude 15 XL² - Interlude - Silhouette* - Microline  MicroLook 8
Laminates		
Plain	600 x 600 x 12 mm	9774 M
Veneers		
Plain	600 x 600 x 13 mm	CS 5006 M
Plain	600 x 1200 x 13 mm	CS 5008 M
Plain	300 x 1200 x 13 mm	CS 5007 M
Rg 3003	600 x 600 x 13 mm	CS 5009 M
Rg 3003	600 x 1200 x 13 mm	CS 5011 M
Rg 3003	300 x 1200 x 13 mm	CS 5010 M
Rg 8013	600 x 600 x 13 mm	CS 5012 M
Rg 8013	600 x 1200 x 13 mm	CS 5014 M
Rg 8013	300 x 1200 x 13 mm	CS 5013 M
Lg 8002 Grooves	600 x 600 x 13 mm	CS 5015 M
Lg 8002 Grooves	600 x 1200 x 13 mm	CS 5017 M
Lg 8002 Grooves	300 x 1200 x 13 mm	CS 5016 M

* For 600 x 600 mm module

EN ISO 354 & EN ISO 11654

α_w / NRC: see page 115

EN ISO 10848-2 & EN ISO 717-1

D_{nfw}: see page 115

EN 13501-1

EEA Euroclass B-s2, d0

EN 12667 & ISO 8301

Laminates
λ = 0.18 W/m K
Veneers
λ = 0.12 W/m K

≤70 % RH

Laminates
≃ 10 kg/m²
Veneers
≃ 10.5 kg/m²

Note: Product availability may vary. Please contact us or visit our website for updated information or other sizes. Please see detailed acoustical data on page 115.

BOARD SYSTEM

Benefits

- Wide range of prestige real wood veneer
- Easy to install and access for service
- Flexible designs: mix and match panel size

Application areas

Used in a variety of ceiling areas: from reception areas to halls in leisure centres.

WOOD Veneer Red Oak, Perforation Rg 8013, Board, 600 x 1200 mm

STANDARD VENEERS

Ash (ASH)

Oak (OAK)

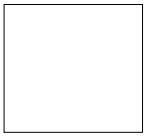
Red Oak (ROA)

US Cherry (CHE)

US Walnut (WAL)

All veneers have a matt finish.
Variation between wood veneer panels may occur due to the natural characteristics of the wood and grain.
Custom veneers available on request.

MODULES

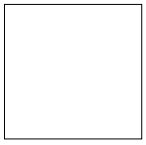

600 x 600 mm

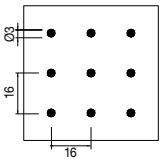
600 x 1200 mm

300 x 1200 mm

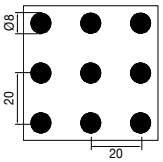
Custom sizes available on request.

PERFORATIONS

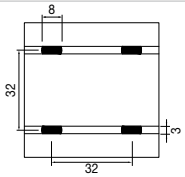

Plain



Rg 3003 (3%)

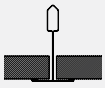


Rg 8013 (13%)



Lg 8002 Grooves (2%)
Groove size: 3 x 3 mm

RANGE

Perforations	Dimensions	Suspension System: Prelude 24TLX  Board
Plain	600 x 600 x 13 mm	CS 4982 M
Plain	600 x 1200 x 13 mm	CS 4984 M
Plain	300 x 1200 x 13 mm	CS 4983 M
Rg 3003	600 x 600 x 13 mm	CS 4985 M
Rg 3003	600 x 1200 x 13 mm	CS 4987 M
Rg 3003	300 x 1200 x 13 mm	CS 4986 M
Rg 8013	600 x 600 x 13 mm	CS 4988 M
Rg 8013	600 x 1200 x 13 mm	CS 4990 M
Rg 8013	300 x 1200 x 13 mm	CS 4989 M
Lg 8002 Grooves	600 x 600 x 13 mm	CS 4991 M
Lg 8002 Grooves	600 x 1200 x 13 mm	CS 4993 M
Lg 8002 Grooves	300 x 1200 x 13 mm	CS 4992 M

EN ISO 354 &
EN ISO 11654

α_w / NRC: see page 115

EN ISO 10848-2
& EN ISO 717-1

D_{nfw}: see page 115

EN 13501-1

EEA Euroclass B-s2, d0

EN 12667
& ISO 8301

λ = 0.12 W/m K

≤70 % RH

≃ 10.5 kg/m²

Note: Product availability may vary. Please contact us or visit our website for updated information or other sizes. Please see detailed acoustical data on page 115.

SUSPENSION SYSTEMS

- Designer grid > AXIOM Profiles & Transitions, INTERLUDE, SILHOUETTE, MICROLINE
- Exposed grid > PRELUDE 15, 24, 35, SIXTY², BANDRASTER
- Concealed grid > System Z
- Specific application > Clean Room Grid, Corrosive Resistant

Armstrong philosophy & service

TOTAL CEILING SOLUTIONS
The suspension system product range forms an integral part of Armstrong's total ceiling solutions policy. Armstrong now offers its customers and specifiers a complete range of ceiling panels including mineral, soft fibre, wood and metal and a wider choice than ever of suspension systems. Armstrong can provide solutions for all elements in today's challenging construction environments.

QUALITY
Suspension systems are manufactured for Armstrong both by its joint venture company WAVE (Worthington Armstrong Venture) and through various alliances with other companies who are regarded as specialists in their fields of engineering. WAVE operates on a global basis, and brings to its various European operations world class practice on the most technologically advanced equipment.

SERVICE
Armstrong suspension systems are manufactured in three European plants, strategically located to serve all our European customers. Additionally, both Armstrong and WAVE can draw upon their global manufacturing capabilities for both speciality products and manufacturing support.
In addition to WAVE's manufacturing sites, Armstrong stocks suspension systems in distribution centres throughout Europe.
This allows our customers the convenience of mixed product shipments, combining suspension systems with other Armstrong ceiling products, optimising bulk shipments direct from their manufacturing locations.

The Suspension Systems range

The Suspension Systems range includes a full range of solutions for all ceiling suspension requirements:
. **General applications,** a range of standard Prelude 35 mm, 24 mm and 15 mm grid systems, Bandraster and Prelude Sixty² for longer spans.
. **Designer options** including the minimalist grid Silhouette, Interlude HRC (High Recycled Content), Microline and the Axiom range.
. **Specific applications,** for clean room and higher humidity environments (Corrosive Resistant Grid or Clean Room Grid).
. **Perimeter trims and accessories,** for most applications.
. **Seismic accessory range, for seismic areas**
We also include our comprehensive programme of special size options that is available in most ranges. A range of either stab or hook systems are available to meet the mechanical preferences of the installer. To complete the portfolio we also offer a technical test programme that provides fire and loading performance and environmental accreditation. Suspension systems are designed for use with a wide variety of Armstrong ceiling products, mineral, soft, metal, wood and our special solutions.
The Armstrong suspension systems range is covered by fire reaction and fire resistance testing to meet all the European standards (like EN 13964).

You can find further information in the suspension systems mainline brochure on our website.

Product innovation

PRELUDE UNIVERSAL MAIN RUNNER

The Prelude Universal Main Runner **supports the installation of either hook/butt cut or stab/joggled Cross Tees** from one simple inventory of Main Runners. The universal system is **available in Peakform design** in 35 mm, 24 mm and 15 mm widths. The Peakform Universal Main Runners with Superlock clip provide a quick and easy assembled Main Runner to Main Runner/ bulb-to-bulb connection. Metric sized Main Runners are **slotted at 100 mm centres for more flexibility.** Slots are machined to receive positive and accurate assembly of either Prelude TL, Prelude TLX (hook installation) or Prelude XL^2 (stab installation) Cross Tees. The staked-on **Superlock clip** allows for Main Runners to be **disconnected and reconnected laterally in low-clearance areas** or in the middle of a room.

Prelude XL^2 "stab" installation

Prelude XL^2 Cross Tees in **35 mm, 24 mm and 15 mm** widths feature an advance stab system that locates with an **audible "click"**, ensuring a solid installation at all times.
The stab end is precision stamped from a separate piece of high grade steel permitting an increased accuracy and economy of production over the more conventional integral forming of the Cross Tee ends. The Cross Tees are inserted to the right of each other through the Main Runner slots and easily pushed home.

Prelude TL "hook" installation

Prelude TL Cross Tees in **15 mm widths** feature an integrally formed hook nose. This popular installation system has been a feature of Armstrong suspension systems for over 20 years and its proven ease of assembly and **precise butt cut joint** has been a favourite of installers. **Cross Tee alignment is ensured** by locating the Cross Tee to the right hand side of the adjoining section.

Prelude TLX "hook" installation

The patented TLX clip is a new highly engineered staked-on hook detail designed for 24 mm cross tees.
Its unique steel-based composite material and shape provide a stronger and level connection, an improved fire performance and an increased overall stability.
TLX Cross Tees are quicker and easier to cut due to the **Peakform** section. When the TLX Cross Tees are inserted to the right of each other through the Main Runner slots, the TLX clip provides a more secure installation.

Environment

Armstrong's suspension systems contain up to **25% post-consumer recycled content.** Up to 100% of the packaging is made from recycled material. Moreover, Armstrong pays attention to the quality of all its products to enhance their durability, maintenance and longevity.

Colour

Armstrong suspension system components are manufactured in a range of colours and metal finishes including Global White to complement Armstrong ceiling tiles. A further 180 RAL colours are available upon request as a special order. For complete information call Armstrong Technical Sales.

Peakform

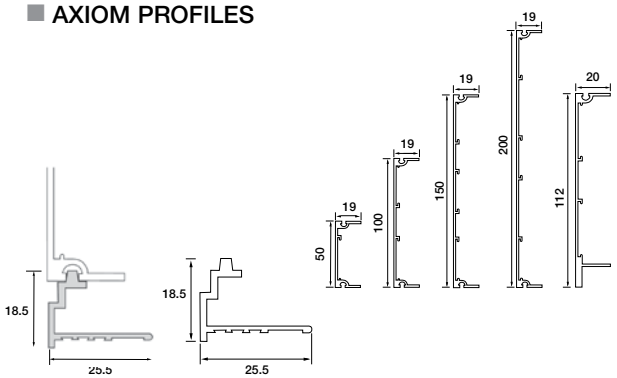
Peakform profiles are engineered to create a **stronger, more stable suspension system** making **installation both faster and easier.**

All the grid shown next to the Peakform icon is provided with such an improved bulb shape.

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

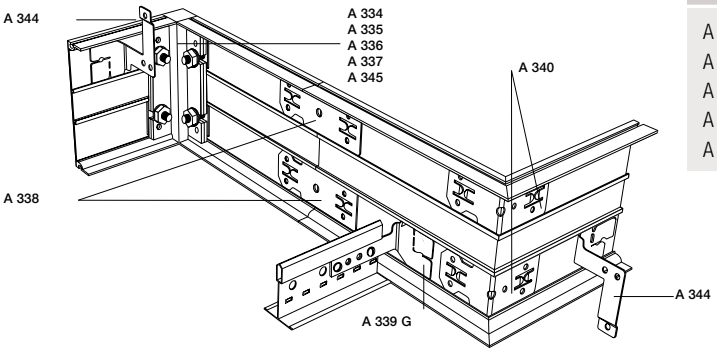
Available in 5 heights with a plasterboard trim section, Axiom Profiles are compatible with Prelude 24 mm and 15 mm grid systems including designer grid. Curved Axiom Profiles are also available on request.

AXIOM PROFILES

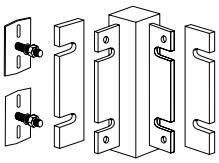


Item Nr.	Description	Dimensions length (mm)	Dimensions height (mm)
52 42 06 (1)	Axiom Profile 50 mm	3000	50
54 42 06 (1)	Axiom Profile 100 mm	3000	100
56 42 06 (1)	Axiom Profile 150 mm	3000	150
58 42 06 (1)	Axiom Profile 200 mm	3000	200
55 14 11 (1)	Axiom Vector Profile 112 mm	3000	112
T 3213 (1)	AXIOM Profile plasterboard trim	3000	18,5 x 25,5

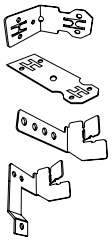
ACCESSORIES FOR AXIOM PROFILES



Item Nr.	Description	Dimensions height (mm)
A 334 (1)	Axiom Profile corner post 50 mm	50
A 335 (1)	Axiom Profile corner post 100 mm	100
A 336 (1)	Axiom Profile corner post 150 mm	150
A 337 (1)	Axiom Profile corner post 200 mm	200
A 345 (1)	Axiom Vector corner post 112 mm	112



ACCESSORIES FOR AXIOM PROFILES AND TRANSITIONS

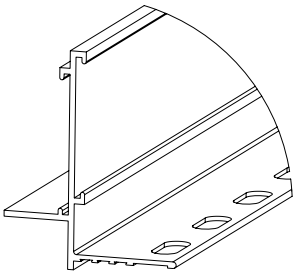


A 340	Axiom universal corner clip
A 338	Axiom universal splice plate
A 339 G	Axiom universal T-bar connector clip
A 344	Axiom universal hanging clip

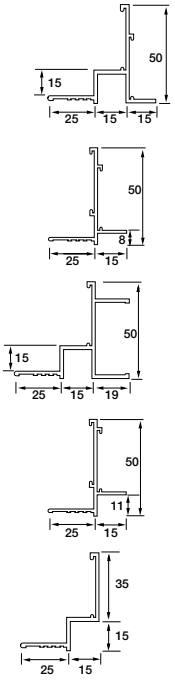
(1) Also available in White RAL 9010.

The 5 sections are designed to provide a flush transition between plaster margin and mineral, metal or wood suspended ceilings, and a shadow gap detail between the plasterboard margin and the wall. Curved Axiom Transitions are also available on request.

AXIOM TRANSITIONS

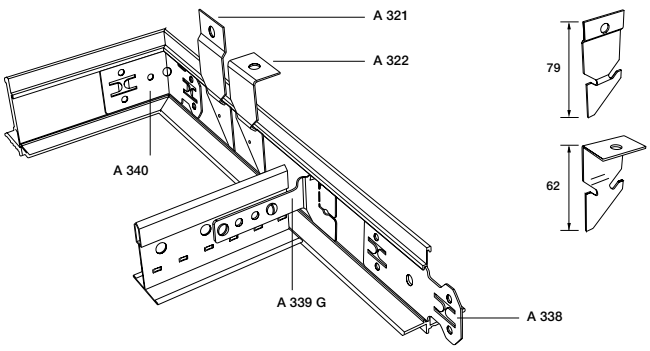


Slots for plasterboard screws ø 6mm, length 15mm distance 15mm



Item Nr.	Description	Dimensions length (mm)	Dimensions height (mm)
T 3215 (1)	Axiom Transition angle	3000	50
T 3208 (1)	Axiom Transition for Tegular/MicroLook	3000	50
T 3219 (1)	Axiom Transition channel	3000	50
T 3210 (1)	Axiom Transition for Vector	3000	50
T 3225 (1)	Axiom Transition plasterboard perimeter trim	3000	50

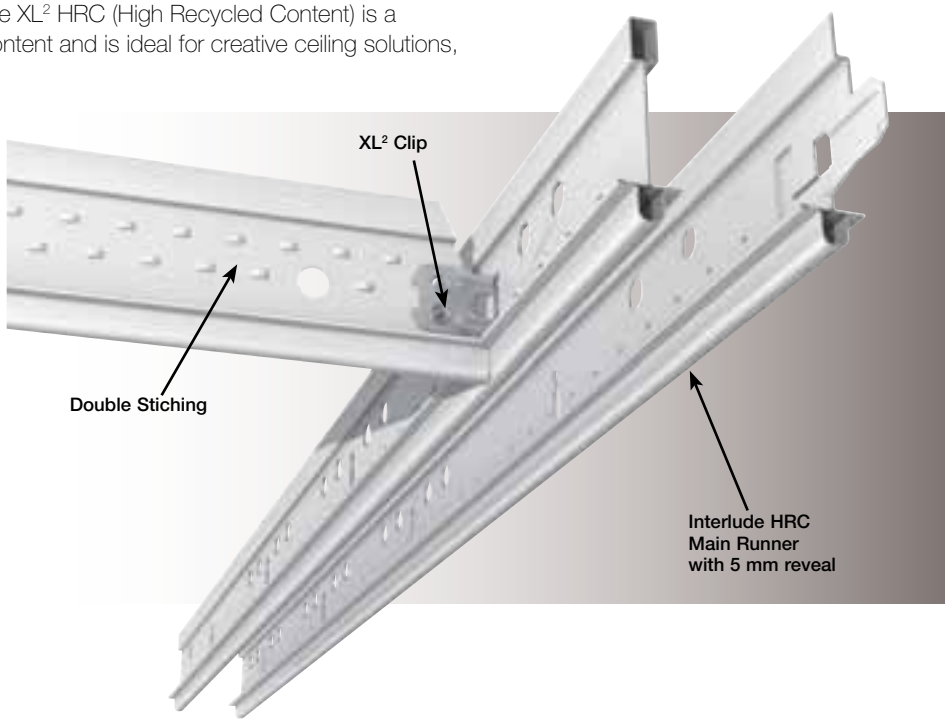
ACCESSORIES FOR AXIOM TRANSITIONS



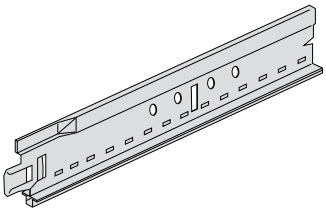
Item Nr.	Description	Dimensions height (mm)
A 321	Axiom Transition suspension clip – straight	79
A 322	Axiom Transition suspension clip – angled	62

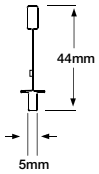
(1) Also available in White RAL 9010.
Note: As Axiom is an aluminium extrusion it should not be used in ceiling assemblies where structural fire protection is required. All measurements in millimetres. All sizes are nominal.

Exposed 15 mm grid system (nominal). Interlude XL² HRC (High Recycled Content) is a suspension system with up to 63% recycled content and is ideal for creative ceiling solutions, and quick and easy installation.



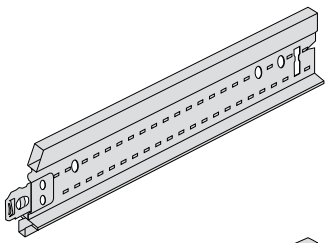
MAIN RUNNER INTERLUDE 15 HRC (by-pass connection)

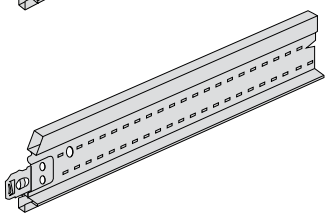


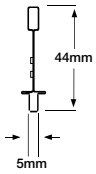


Item Nr.	Dimensions		Slot distance
	length (mm)	height (mm)	(all X mm)
TZ 61 40 42	3600	44	300

CROSS TEES INTERLUDE 15 XL² HRC (stab system)



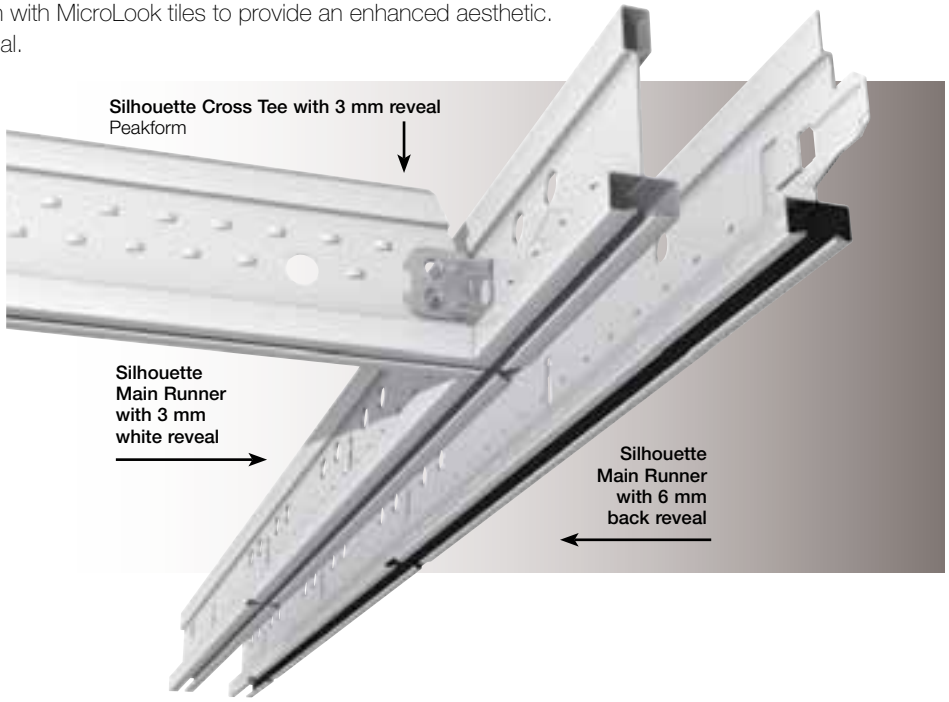




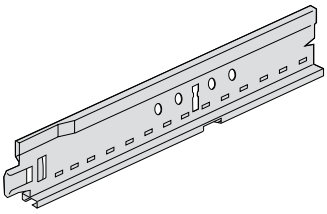
Cross Tee slotted			
61 30 42	1200	44	600

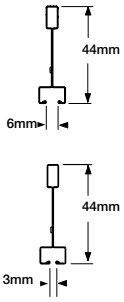
Cross Tees unslotted			
61 20 42	600	44	-
TZ 61 24 42	300	44	-

Exposed 15 mm grid system (nominal). Silhouette XL² is a suspension system designed to create a crisp, clean look in conjunction with MicroLook tiles to provide an enhanced aesthetic. Available with either a 6 mm or 3 mm reveal.



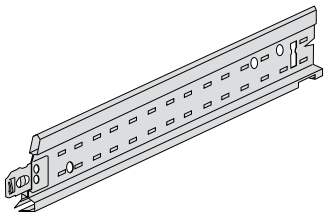
■ MAIN RUNNER SILHOUETTE 15 (by-pass connection)

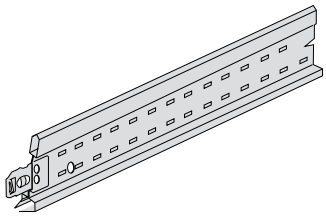


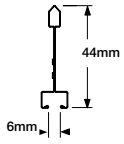


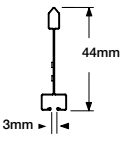
Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
with 6mm reveal(1)			
80 40 42	3600	44	600
80 48 42	3500	44	500
80 39 43	3125	44	625
80 44 42	2700	44	675
with 3mm reveal(2)			
81 40 42 WR	3600	44	600

■ PEAKFORM CROSS TEES SILHOUETTE 15 XL² (stab system)







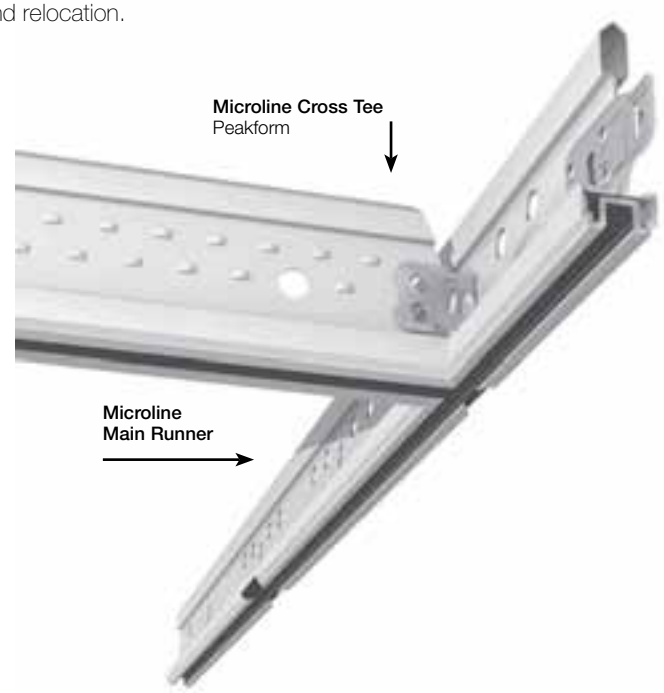


with 6mm reveal(1)			
Cross Tees slotted			
80 30 42	1200	44	600
80 31 43	1250	44	625
80 33 42	1350	44	675
80 32 42	1000	44	500
Cross Tees unslotted			
80 20 42	600	44	-
80 21 43	625	44	-
80 23 42	675	44	-
80 22 42	500	44	-
80 24 42	300	44	-
with 3mm reveal(2)			
81 30 42 WR	1200	44	600
81 20 42 WR	600	44	-

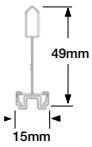
(1) Available in white, black (BK) or white with black reveal (BI). (2) WR = White RAL 9010

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Steel based grid with aluminium extrusion. The exposed sleeve provides a clean and crisp visual plus a practical fluted reveal for flexibility in partition fixing and relocation.

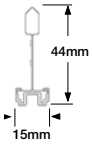


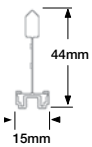
MAIN RUNNER MICROLINE 15 (by-pass connection)



Item Nr.	Dimensions length (mm)	Dimensions height (mm)	Slot distance (all X mm)
CS 25 42 92 WR 600	3000	49	600
CS 25 42 92 WR 750	3000	49	750

PEAKFORM CROSS TEES MICROLINE 15 XL² (stab system)





Cross Tee slotted			
CS 25 30 42 WR	1200	44	600
Cross Tees unslotted			
CS 25 20 42 WR	600	44	-
CS 25 16 42 WR	750	44	-

Microline grid is optimised for use with Armstrong metal ceilings, should you wish you use a mineral ceiling please contact Armstrong Technical Sales.

Bizon Metal (PL)

AXIOM Profiles

Weena Plaza (NL)

INTERLUDE HRC

Pasaz Grunwaldzki in Wroclaw (PL)

AXIOM Transitions

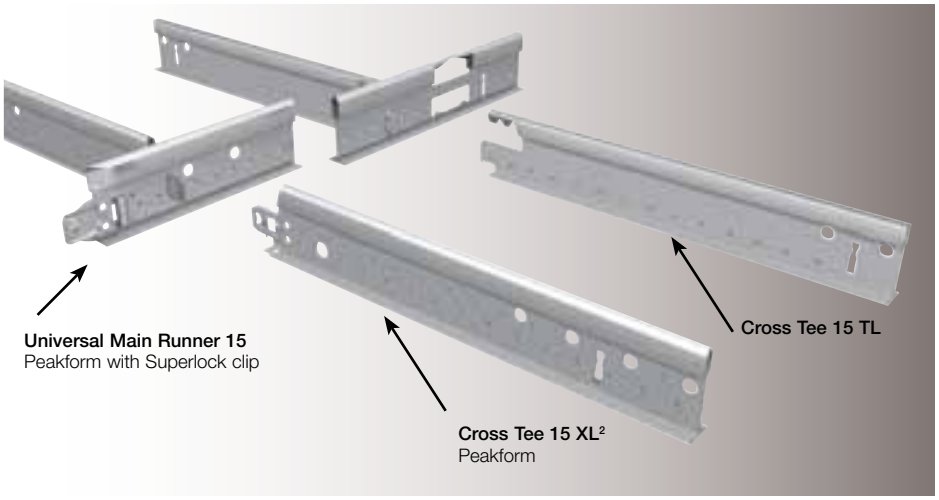
Delhaize Berlgrade (RS)

SILHOUETTE

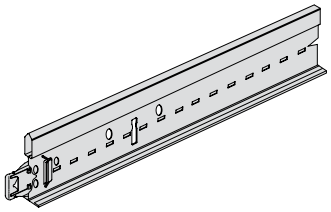
Bracton House, London (UK)

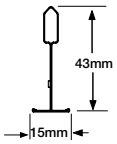
MICROLINE

Exposed suspension system 15 mm (nominal).



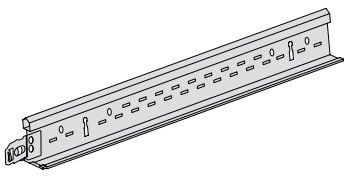
UNIVERSAL MAIN RUNNER 15 PEAKFORM AND SUPERLOCK CLIP (bulb-to-bulb connection)

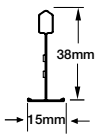




Item Nr.	Dimensions length (mm)	Dimensions height (mm)	Slot distance (all X mm)
30 40 33(1)	3600	43	100
30 41 33(1)	3750	43	156.25
30 43 33	3375	43	675

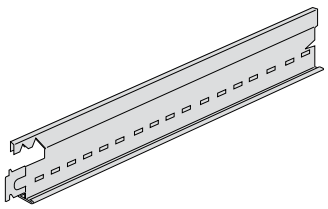
PEAKFORM CROSS TEES PRELUDE 15 XL² (stab system, override)

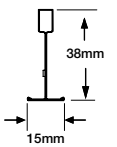




Cross Tees slotted			
30 30 33(1)	1200	38	300
30 31 33	1250	38	312.5
30 32 33(2)	1000	38	250
Cross Tees unslotted			
30 20 33(1)	600	38	-
30 21 33	625	38	-
30 22 33(2)	500	38	-

CROSS TEES PRELUDE 15 TL (hook system, butt cut)

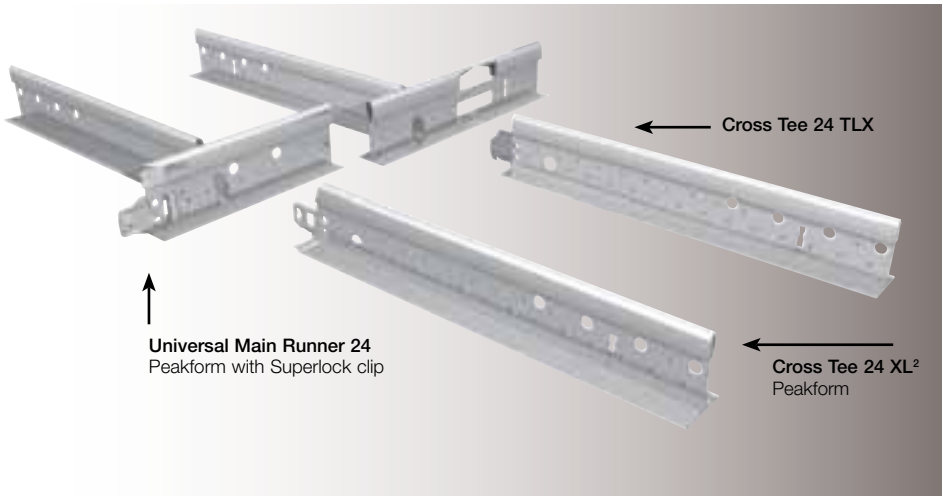




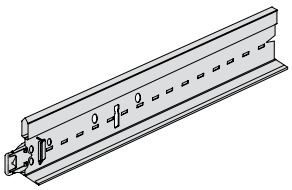
Cross Tees slotted			
10 34 33	1800	38	300
10 36 33	1500	38	300
10 33 33	1350	38	337.5
10 31 33(1)	1250	38	312.5
10 30 33(1)	1200	38	300
Cross Tees unslotted			
10 23 33	675	38	-
10 21 33(1)	625	38	-
10 20 33(1)	600	38	-
10 25 33	312,50	38	-
10 24 33	300	38	-

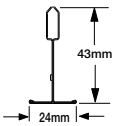
Please contact us for more information. All sizes are nominal.
(1) Colours available : Carrara (CA), Platinum (PN), Black (BK), RAL 9006 (SG), Brass (BS), Chrome (CE) and White RAL 9010 (WR). (2) Also available in RAL 9010 (WR).

Exposed suspension system 24 mm (nominal).



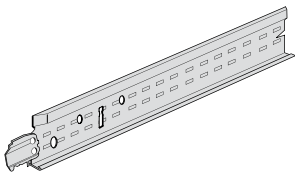
UNIVERSAL MAIN RUNNER 24 PEAKFORM AND SUPERLOCK CLIP (bulb-to-bulb connection)

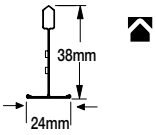


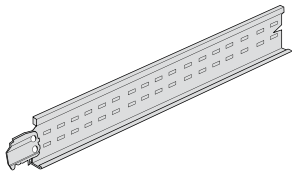


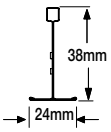
Item Nr.	Dimensions length (mm)	Dimensions height (mm)	Slot distance (all X mm)
31 40 32[1]	3600	43	100
31 41 33[1]	3750	43	156.25
31 43 33	3375	43	675
31 42 32	3000	43	100

CROSS TEES PRELUDE 24 TLX
(hook system, butt cut)



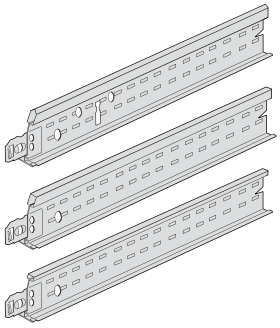


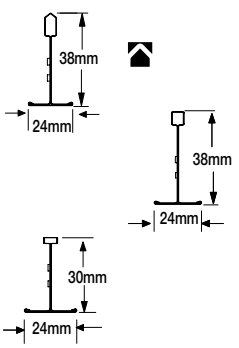




Cross Tees slotted			
13 33 31[2]	1350	38	150
13 31 31[1]	1250	38	312.5
13 30 31[1]	1200	38	300
13 10 32	1875	38	625
13 34 32	1800	38	300
13 50 32	1724	38	300
13 36 32	1500	38	350
13 32 32	1000	38	250
Cross Tees unslotted			
13 18 31	900	38	-
13 16 31	750	38	-
13 21 31[1]	625	38	-
13 20 31[1] [2]	600	38	-
13 23 31	675	38	-
13 22 32	500	38	-

CROSS TEES PRELUDE 24 XL² (stab system, override)



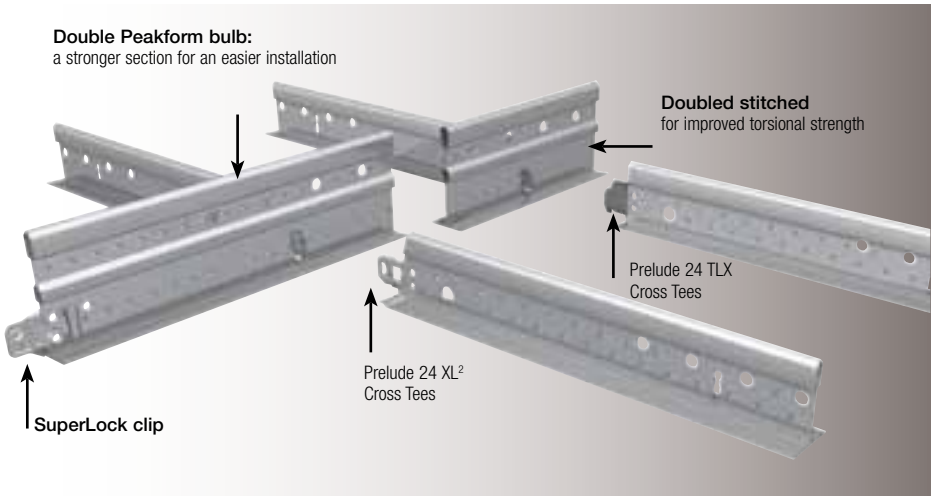


Cross Tees slotted			
31 33 31	1350	38	337.5
31 31 51[1]	1250	38	312.5
31 30 51[1]	1200	38	300
31 32 31[2]	1000	38	250
31 34 31	1800	38	300
Cross Tees unslotted			
31 16 32	750	38	-
31 25 32	312.5	38	-
31 24 32	300	38	-
31 23 21	675	30	-
31 21 23[1]	625	30	-
31 20 21[1]	600	30	-
31 22 21[2]	500	30	-

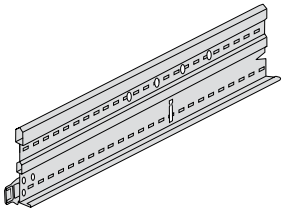
Please contact your Armstrong office for more information. All sizes are nominal. (1) Colours available : Carrara (CA), Platinum (PN), Black (BK), RAL 9006 (SG), Brass (BS), Chrome (CE) and White RAL 9010 (WR). (2) Also available in RAL 9010 (WR).

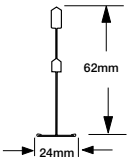
Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Exposed 24 mm grid system.
Double Peakform Main Runner section requiring less suspension points and compatible with Prelude 24 XL² and TLX Cross Tees.



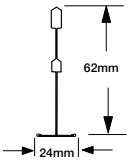
UNIVERSAL MAIN RUNNER PRELUDE SIXTY² DOUBLE PEAKFORM WITH SUPERLOCK CLIP (bulb to bulb connection)





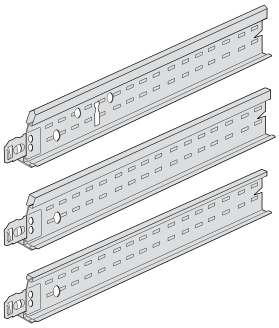
Item Nr.	Dimensions length (mm)	Dimensions height (mm)	Slot distance (all X mm)
40 40 93 (1)	3600	62	300
40 41 93 (1)	3750	62	312.5
40 43 93 (1)	3375	62	337.5

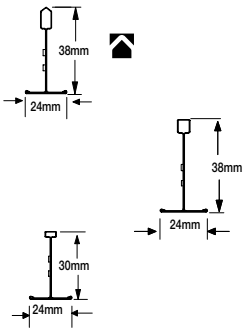
CROSS TEES PRELUDE SIXTY²
(stab system, override)



40 09 93 (1)	2400	62	300
40 34 93 (1)	1800	62	300

CROSS TEES PRELUDE 24 XL² (stab system, override)

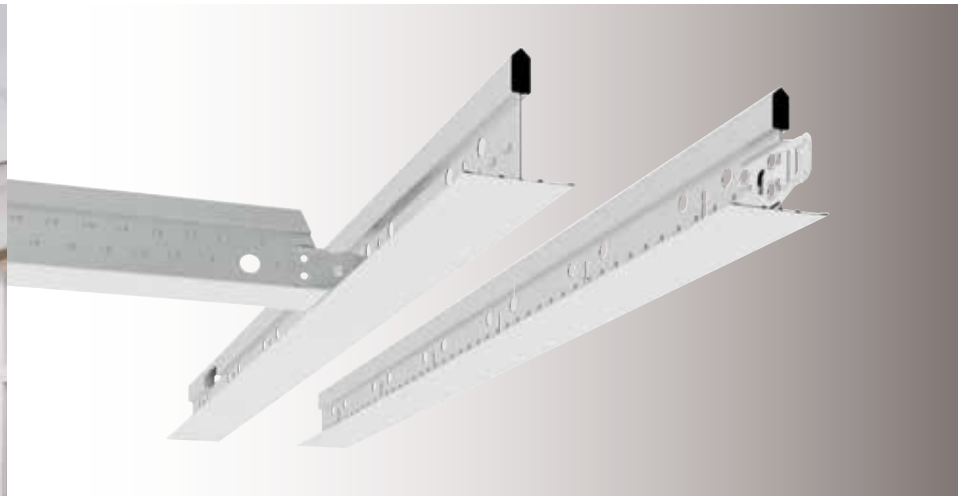




Cross Tees slotted			
31 33 31	1350	38	337.5
31 31 51 (2)	1250	38	312.5
31 30 51 (2)	1200	38	300
31 32 31 (3)	1000	38	250
31 34 31	1800	38	300
Cross Tees unslotted			
31 16 32	750	38	-
31 25 32	312.5	38	-
31 24 32	300	38	-
31 23 21	675	30	-
31 21 23 (2)	625	30	-
31 20 21 (2)	600	30	-
31 22 21 (3)	500	30	-

(1) Also available in RAL 9010 (WR), RAL 9006 (SG) and Black (BK). (2) Colours available : Carrara (CA), Platinum (PN), Black (BK), RAL 9006 (SG), Brass (BS), Chrome (CE), White RAL 9010 (WR).
(3) Also available in RAL 9010 (WR). All measurements in millimetres. All sizes are nominal.

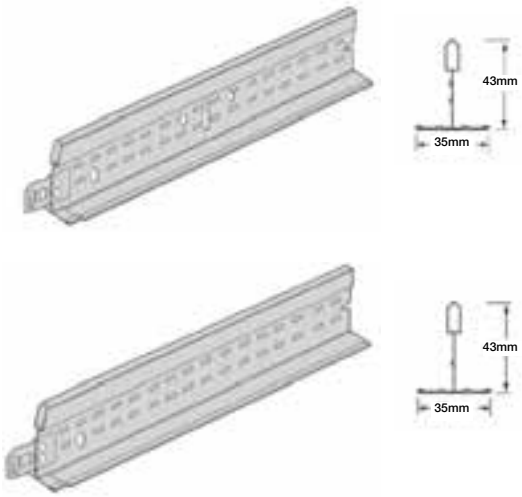
Exposed Suspension System 35 mm (nominal).
Prelude 35 grid is available with white, black and galvanised capping.



MAIN RUNNER PEAKFORM PRELUDE 35 (bulb-to-bulb connection)

Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
White capping			
24 40 42	3600	43	100
Galvanised capping			
24 40 42 UP	3600	43	100
Black capping			
24 40 42 BK	3600	43	100

PRELUDE 35 XL² CROSS TEES (stab system, override)

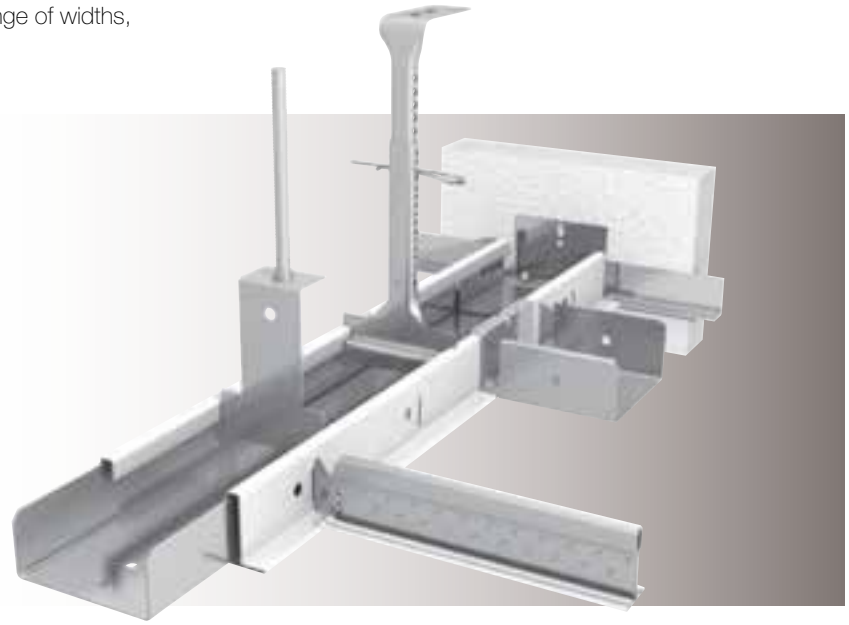


White capping			
24 06 42	1990	43	-
24 34 42	1800	43	-
24 36 42	1500	43	-
24 30 42	1200	43	600
24 20 42	600	43	-
Galvanised capping			
24 06 42 UP	990	43	-
24 34 42 UP	1800	43	-
24 36 42 UP	1500	43	-
24 30 42 UP	1200	43	600
24 20 42 UP	600	43	-
Black capping			
24 06 42 BK	1990	43	-
24 36 42 BK	1500	43	-
24 30 42 BK	1200	43	600
24 20 42 BK	600	43	-

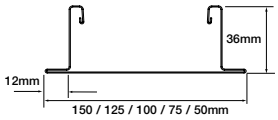
Please contact us for more information. All sizes are nominal.

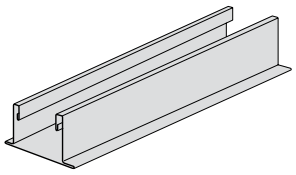
Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

Bandraster is a suspension system available in a wide range of widths, compatible with Prelude 24 TLX/XL² Cross Tees.



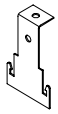
BANDRASTER SECTIONS

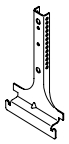


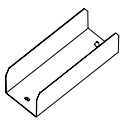


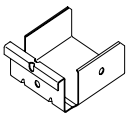
Item Nr.	Dimensions length (mm)	width (mm)
Slotted at 312.50 mm		
36 21 00	3750	100
Slotted at 100 mm		
36 30 50	3600	50
36 30 75	3600	75
36 31 00(1)	3600	100
36 31 25	3600	125
36 31 50	3600	150
Unslotted		
36 00 50	3600	50
36 00 75 (1)	3600	75
36 01 00	3600	100
36 01 25	3600	125
36 01 50	3600	150

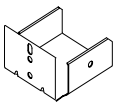
BANDRASTER ACCESSORIES

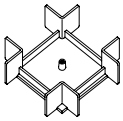










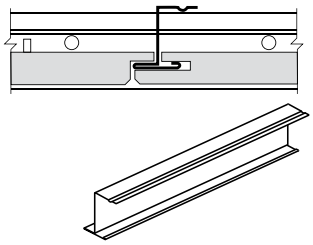


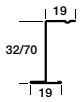
Item Nr.	Description	Dimension width (mm)
A 36 05 01	Strip / rod connector	50
A 36 07 51		75
A 36 10 01		100
A 36 05 02	Nonius hanger	50
A 36 07 52		75
A 36 10 02		100
A 36 12 52		125
A 36 15 02		150
A 36 05 03	Splice	50
A 36 07 53		75
A 36 10 03		100
A 36 12 53		125
A 36 15 03		150
A 36 05 04	Cross connector	50
A 36 07 54		75
A 36 10 04		100
A 36 12 54		125
A 36 15 04		150
A 36 05 05	Wall connector	50
A 36 07 55		75
A 36 10 05		100
A 36 12 55		125
A 36 15 05		150
A 36 05 06	Crossing element	50
A 36 07 56		75
A 36 10 06		100

(1) Also available in RAL 9010 (WR)

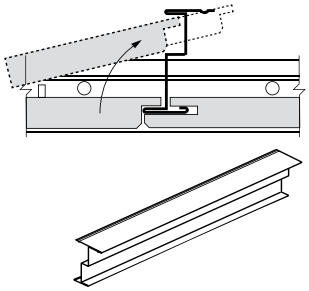
Semi-concealed and concealed systems.
Provides a dedicated solution for corridors giving a monolithic visual. Can also be used for room situations in conjunction with Prelude 24 and Bandraster grid.

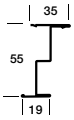
SEMI-CONCEALED - COMPATIBLE WITH SL2



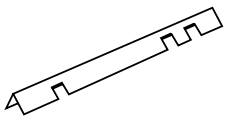


Item Nr.	Description	Dimensions height (mm)
CZ 41494 H	Deep Z 32 mm	1500
CZ 41794 H	Deep Z 32 mm	1800
CZ 41795 H	Deep Z 70 mm	2500





CA 5740	Double height Z	4000



CA 5733	Spacer bar	600/625
CA 5734	Spacer bar	1200/1250

Other lengths can be produced as special between 300 and 2500 mm

Please contact us for more information. All sizes are nominal.

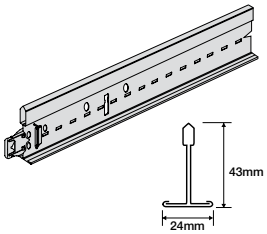
Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

SPECIFIC APPLICATION

CORROSIVE RESISTANT GRID

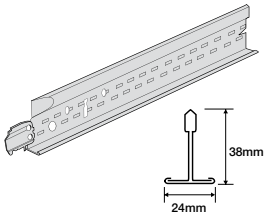
Exposed 24 mm grid system (nominal). Special paint finish and TLX steel-based composite clip for enhanced corrosion resistance. Corrosion resistance performance of 700 hours salt spray testing according to EN ISO 9227 standards and class of exposure C to EN 13964:2004 + A1(2006).

UNIVERSAL MAIN RUNNERS 24 CORROSIVE RESISTANT PEAKFORM AND SUPERLOCK CLIP (bulb to bulb connection)



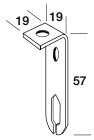
Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
28 40 42	3600	43	100
28 41 42	3750	43	156.25

PEAKFORM CROSS TEES TLX 24 CORROSIVE RESISTANT (hook system, butt cut)



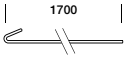
Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
14 30 32	1200	38	300
14 31 32	1250	38	312.5
14 20 32	600	38	-
14 21 32	625	38	-

ACCESSORIES - CORROSION RESISTANCE 700 HOURS SALT SPRAY TEST

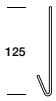


A WDNCR 20 H
Bent tee bar hanger for threaded rod

A CR1829
Threaded rod dia. 6 mm

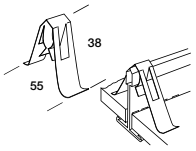


A CR827
1700 mm hanger with hook

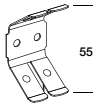


A CR11
Small hook

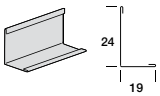
A CR1827
Nut for threaded rod



A CR7890
Universal retaining clip



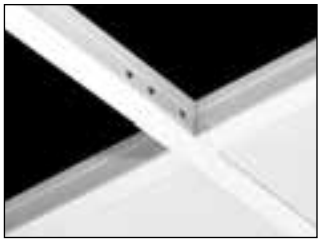
A CR12
Butterfly clip



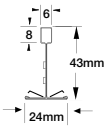
T 1924 LB
Corrosive resistant suspension angle

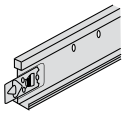
CLEAN ROOM GRID

Exposed 24 mm grid system (nominal). A complete system solution: Aluminium construction for maximum corrosion resistance and non-magnetic environments. Co-extruded with a unique factory applied gasket for a better seal between tile and grid. System suitable for use in applications up to CLEAN ROOM Class 4 performance as per Class ISO standard 14644-1.



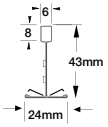
MAIN RUNNER CLEAN ROOM GRID SYSTEM 24

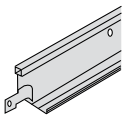




Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
EA794044	3600	43	300

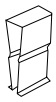
CROSS TEES CLEAN ROOM GRID SYSTEM 24

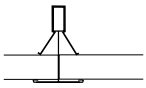




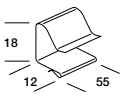
Item Nr.	Dimensions length (mm)	height (mm)	Slot distance (all X mm)
EA793044	1200	43	300
EA792044	600	43	300

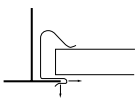
ACCESSORIES





CHDC
Hold down clip suitable for non-magnetic areas





A 426
Board access clip

PERIMETER TRIM

Item Nr.	Dimensions length (mm)	height (mm)
EA 7801	3660	24

Please contact your Armstrong Technical Sales for more information. All sizes are nominal.

SUSPENSION INTEGRATION

VARIOUS SUSPENSION HANGERS

A LARGE CHOICE OF ACCESSORIES

A LARGE RANGE OF PERIMETER TRIMS

SYSTEM INTEGRATION

The chart below presents the Armstrong suspension grid systems with their related ceiling product families.

	AXIOM (Transitions/Profiles)	SILHOUETTE 3 & 6 mm	MICROLINE	INTERLUDE 15	PRELUDE 15	PRELUDE 24 XL²	PRELUDE 24 TLX	PRELUDE SIXTY²	PRELUDE 35 XL²	BANDRASTER	SYSTEM Z
Mineral											
Vector	✔					✔	✔	✔			
MicroLook	✔			✔	✔						
MicroLook BE	✔	✔		✔	✔						
Tegular	✔					✔	✔	✔		✔	
Board	✔					✔	✔	✔	✔	✔	
SL2	✔					✔	✔	✔		✔	✔
Metal											
METAL Axal Vector	✔					✔		✔			
METAL MicroLook 8	✔	✔	✔	✔	✔						
METAL MicroLook 16	✔				✔						
METAL Tegular 2	✔						✔	✔			
METAL Tegular 8, 11F or 16	✔					✔	✔	✔			
METAL Board	✔						✔	✔			

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other sizes.

INSTALLATION & MAINTENANCE

The following pages provide a general overview and outline information relating to the installation and maintenance of Armstrong Ceiling Systems. For more detailed guidance and product specific information please consult our website or contact Armstrong Technical Sales on 0800 371 849 (UK) / 1800 409002 (ROI) or at sales-support@armstrong.com

Site Conditions, Storage & Handling

It is the responsibility of the ceiling contractor to ensure that materials delivered to the installation site are safeguarded from the time of purchase until the finished ceiling is handed over. However, it is usually the main contractor who is responsible for the conditions on site and so both parties must be aware of the requirements of suspended ceilings for flat, dry, clean and safe storage conditions.
Armstrong packaging of ceiling tile and grid varies from material to material, but all is designed to withstand careful site handling. However, poor or rough handling, rolling or dropping of cartons on their corners or edges may cause damage to the product or the product to deteriorate, irrespective of the material.
All cartons may be stacked on wooden pallets and secured with shrink-wrapping for transportation but when on the installation site they should never be stacked higher than when originally delivered to the site.

Consideration should be given to the advice of the Health & Safety Executive (HSE) regarding the manual handling of heavy cartons. An assessment should be made of any associated risks and if necessary mechanical lifting equipment should be used.

Installation Conditions

Armstrong suspended ceilings are interior finishes and the site conditions during installation should reflect this.

Ceiling system components should be stored for 24 hours before they are installed, in the area in which they are to be fixed, within a temperature range of 11°-35ºC.

The stability of the temperature range is important as this can have a great affect on the relative humidity within a space and for products with lower humidity resistance in particular, the stability of the temperature is critical as an appreciable drop in the temperature may create humidity conditions which could be detrimental to the ceiling materials both installed and uninstalled.

During winter months, heating of the jobsite may be necessary and the use of 'dry' heating should be considered because the burning of fossil fuels produces additional water vapour. Increased ventilation to eliminate the risk of condensation may be appropriate and also in summer months to control the temperature fluctuation due to solar gain.

The use of thermal insulation on the back of a ceiling tile will alter the temperature gradient within a construction and its effect on the position of the dew point must be considered. If there is a risk of condensation, ventilation of the ceiling void and the use a vapour control layer between the suspended ceiling and the insulation may be necessary.
Advice on these matters can be obtained from a specialist thermal engineer.

Installation

Installation of Armstrong ceiling tiles should be conducted in the appropriate site and environmental conditions as described above and as per Armstrong's manufacturer's recommendations. Due consideration should be given to the relevant British and European Standards, COSHH and health & safety regulations and the use of the correct personal protective equipment (PPE).

Care is necessary when handling and installing tiles, especially metal and soft fibre tiles, to prevent finger marking of the surface from soiled or greasy hands, and where appropriate, clean cotton gloves should be worn.

Ceilings that are required to provide structural fire protection must be installed in accordance with the relevant fire test report (see fire resistance page for further information).

After Completion

Once a building is handed over to the client, it is not always occupied at once.
In this situation heating and ventilation may sometimes be decreased or switched off to save energy costs. In these circumstances conditions above and below the ceiling should be equalised and it may be necessary to temporarily remove tiles to facilitate this. This may not be possible if the ceiling is being used to provide passive fire protection to the building.

Attention must also be paid to ensuring that the internal conditions are not allowed to exceed those that the ceiling tiles are designed to withstand. Heat build up due to solar gain may need dispersing by ventilation to reduce the risk of condensation occurring as the temperature falls. The effect of insulation on the back of the tile or in a roof construction also needs consideration and sufficient ventilation may be required to prevent surface condensation and a vapour control barrier to control the effects of surface or interstitial condensation.

Maintenance, Replacement, Redecoration & Cleaning

Armstrong mineral fibre tiles are marked on the back for ease of identification and maintenance. Maintenance on suspended ceilings should only take place after the effect of the work on the technical characteristics of the installation has been fully considered.
Ceiling tiles should require no more maintenance than a painted plasterboard ceiling, however, when maintenance is necessary, certain procedures should be followed to ensure that the performance and appearance of the ceiling is maintained.
Minor damage to mineral fibre tiles can be repaired using commercially available fillers and Armstrong touch-up paint, although due to natural aging of the installation an exact colour match may not be possible.
Similarly when replacing tiles, new material is likely to introduce colour variation. This effect can be substantially reduced by redecoration of the entire ceiling, or by replacing all tiles in a particular area and using the re-usable existing tiles for refurbishment elsewhere.
Most ceiling tiles and grids can be redecorated, however, consideration should be given to the appropriate type of paint to be used and to the effect on the reaction to fire and acoustic performance. Redecoration by spraying is the preferred method, using the minimum amount of paint applied in an even manner. Ceiling tiles should be removed from the grid and laid on a flat surface prior to painting, whilst grid can be repainted in situ, but with the tiles removed. Tiles should only be moved or replaced once dry and the grid must dry before replacing the ceiling tiles. If a professional firm of decorators is used, assurances should be sought that the necessary performances will be maintained. It should be noted that any repainting would invalidate Armstrong's warranty for the product.
Different ceiling tile materials have different requirements for cleaning.

Health & Safety

Armstrong ceiling products are CE marked with the essential safety performance criteria as required by BSEN 13964:2004 + A1:2006 (Suspended ceilings - Requirements and test methods) in order to comply with the Construction Products Regulations (305/2011/EU) which came into full force on 1st July 2013. For ceiling tiles (membrane components) these include reaction to fire, release of formaldehyde, sound absorption and thermal conductivity. For grid (substructure components) they are reaction to fire, load bearing capacity and durability.

Products should be installed in accordance with Armstrong's manufacturer's recommendations, the relevant British and/or European Standards and The Control of Substances Hazardous to Health (COSHH) Regulations 2002. When ceilings are installed in accordance with these instructions, no excessive dust or hazards should be created. However, if excessive dust is created, approved respiratory protection complying with EN 449 FFP1 or FFP2 should be worn. Such protection is deemed to be required if the total weight of inhalable dust exceeds 5mg/m3, or 2 fibres/ml, when averaged over an 8 hour TWA reference period.

Reference may also be made to the following…

- Health & Safety at Work Act 1974
- Manual Handling Operations Regulations 1992 (as amended)
- Personal Protective Equipment at Work Regulations 1992 (as amended)
- The REACH Enforcement Regulations 2008
- Chemicals (Hazard Information and Packaging for Supply) Regulations 2009
- HSE Guidance Note EH 40/2005 – Workplace Exposure Levels
- HSE Guidance Note EH 46/1990 – Man-Made Mineral Fibres

CLEANING MATRIX

		DRY METHODS			WET METHODS (tiles must be cleaned using dry methods before wet cleaning)									
		A1: Soft brush **A2:** Clean, dry, soft white cloth **A3:** Vacuum system (with brush)		**H:** Pencil erasers to remove fingerprints or pencil marks	**B1:** Moist cloth with no detergent **C1:** A moist cloth with mild detergent diluted in warm water		**B2:** Damp sponge with no detergent **C2:** Damp sponge with mild detergent diluted in warm water		**D:** Damp rough texture sponge (using medium pressure)		**F:** High pressure water cleaning		**G:** Resistant to popular disinfectants (due to large number of types of disinfectants, always test a small area first)	
MINERAL Laminated	ULTIMA+ ULTIMA+ dB ULTIMA+ OP	✔	Daily	✔	✔	Weekly	✔	Weekly						
	OPTIMA	A1 & A3 Only	Daily	✔			B2 Only	Weekly						
	PERLA PERLA dB PERLA OP 0.95 / PERLA OP 1.00	✔	Daily		✔	Monthly	✔	Weekly						
	NEVADA Colortone NEVADA	✔	Daily	✔										
	SIERRA OP	✔	Daily	✔	✔	Monthly	✔	Weekly						
MINERAL non laminated	DUNE SUPREME / DUNE PLANKS / DUNE MAX / DUNE dB	✔	Daily				✔	Weekly						
	CIRRUS CIRRUS IMAGE / CIRRUS CONTRAST	✔	Daily											
	PLAIN / GRAPHIS	✔	Daily	✔										
	FINE FISSURED	✔	Daily	✔										
SPECIFIC	BIOGUARD ACOUSTIC	✔	Daily	✔	✔	Daily	✔	Daily	✔	Weekly			✔	Daily
	BIOGUARD PLAIN	✔	Daily	✔	✔	Monthly	✔	Weekly					✔	Weekly
	CLEANROOM FL	✔	Daily	✔	✔	Weekly	✔	Weekly					✔	Weekly
	PARAFON HYGIEN	✔	Daily	✔	✔	Weekly	✔	Weekly			✔*	Twice Yearly		
	HYDROBOARD	✔	Daily	✔										
	CERAMAGUARD	✔	Daily	✔	✔	Weekly	✔	Daily						
	NEWTONE	✔	Daily	✔			✔	Weekly						
WOOD	Plain surface for all veneers / laminates Wood	✔	Daily		B1 Only	Weekly								
	Perforated surfaces for all veneers / laminates Wood	✔	Daily		B1 Only	Weekly								
METAL	Plain surface for all edge details	✔	Daily	✔	✔	Daily	✔	Daily			✔**	Twice Yearly	✔	Daily
	Perforated surfaces Rg 0501 / Rg 0701 for all edge details	✔	Daily	✔	✔	Daily	✔	Daily					✔	Daily
	Perforated surfaces Rg 2516 / Rd 1522 for all edge details	✔	Daily	✔	✔	Weekly	✔	Weekly					✔	Weekly

* Special instructions are available - Please consult us.

** Only Q-Clip and R-Clip when sealed with silicone mastic - Special instructions are available - Please consult us.

MANUFACTURER'S RECOMMENDATIONS

Many specifications call for the ceiling to be installed in accordance with the "manufacturer's recommendations" and this approach is now adopted in BS EN 13964:2004 + A1:2006 "Suspended ceilings – Requirements and test methods" which, within Annex A, refers to "Supplier's instructions". The following comments are given as a guide to such requirements which should be consulted prior to installation. Where a specific point is not mentioned or for further information on those that are, please contact Armstrong Technical Sales on 0800 371849 for UK / 1800 409002 for ROI or sales-support@armstrong.com.

NB BS 8290: Part 3 (1991) has now been withdrawn and superseded by BS EN 13964:2004 + A1:2006 but the advice it contained may still be found useful.

1) Armstrong recommends that the ceiling should be set out so that the layout is as symmetrical as possible and that perimeter tiles are in excess of ½ a module. In the event of irregular shaped rooms or a dimensional conflict the specifier shall indicate their preference prior to installation.

2) Some Armstrong tiles exhibit directionality in their face texture or pattern. It is recommended practice that square module tiles, with directional fissured face patterns, are installed with the direction of the pattern alternating from tile to tile, creating a 'chequerboard' effect. For other directional products, the specifier should indicate if the pattern is to be linear, alternate (chequerboard) or random in layout, or to follow a specific design.

3) Installations required to give structural fire protection must be installed in accordance with the details shown in the relevant fire test report, and supersede any conflicting information contained with these manufacturer's recommendations.

4) Exposed grid systems should be installed in the 'ladder' formation with main runners at 1200mm centres (1200mm or 600mm modules) and 1200mm cross tees spanning between main runners at 600mm centres. 600mm cross tees then span between the 1200mm cross tees and run parallel to main runners. The 'H' formation grid layout (1200mm cross tees at 1200mm centres and 600mm cross tees perpendicular to main runners) should not be used, as this will result in a greater grid deflection from a given tile load, unless intentionally specified and the consequences understood. All Armstrong loading information is based upon grid installed in the 'ladder' formation.

5) The minimum cavity depth necessary to install a modular suspended ceiling will normally be determined by considerations such as any service fittings, ducts and pipes which are present or which will have to be accommodated. For exposed grid lay-in tile, which have to be lifted diagonally upwards through the grid before being laid down onto the grid flanges, a minimum clear height of about 150mm is required. For Vector edged tiles which are only engaged from below the grid, or where there are no cavity services present, then practical considerations of handling and fixing short hangers will prevail.

6) Suspended ceiling grid systems are primarily intended to support the distributed load from the ceiling tiles, which is typically between 1.2kg/m^2 and 8.5kg/m^2. This will ensure a deflection of the grid, between points of support, which is visually acceptable.

7) The maximum distributed load that Armstrong grid systems can support can be found in the Armstrong Suspension Systems brochure and is calculated based on the Class 1 deflection criteria (table 6) of BS EN 13964:2004 + A1:2006 (span/500, but not greater than 4mm).

8) In certain instances it may be possible to extend the centres of the hangers supporting the main runners. This will be dependent upon the type and the layout of the grid, the weight of the ceiling tile and whether additional loads are being supported by the grid. See the Armstrong Suspension Systems brochure.

9) The maximum weight of flange or bulb supported service fittings, or the maximum point loads that can be supported by the ceiling grid will depend upon the type and layout of the grid, and the weight of the ceiling tile. Calculations for specific circumstances can be obtained from Armstrong Technical Sales.

10) Dynamic fittings, such as air diffusers or grilles, should be independently supported to ensure that vibration is not transferred to the suspended ceiling system.

11) Other than very light weight halogen fittings, spotlights, luminaires and other service fittings should not be supported directly onto the back of ceiling tiles, otherwise damage or excessive deflection could occur. A pattress or other suitable method must be used to ensure that the load is transferred back to the grid system. The overall load of the tile, fitting and pattress must not exceed the maximum load for the grid system. Alternatively direct independent suspension should be employed.

12) Where perimeter trims are to be fixed to surfaces or substrates which may be liable to shrinkage, such as timber or wood based battens, allowance should be made to prevent deformation or distortion of the trim occurring.

13) Perimeter trims should be neatly jointed at all external and internal angles. Overlapped sections or 'dummy' mitres (the overlapped lower section only mitred) are considered acceptable methods. Butt mitred joints should be specified prior to installation if required.

14) Suspension wire must always be mechanically pre-straightened prior to use and should not be less than 2mm diameter. Wire hangers should be straight and free from kinks.

15) The maximum length of any wire hanger is governed only by the ability to pre-straighten it.

16) When 'tying off' wire hangers, there should be at least 3 complete turns of the wire forming a tight coil.

17) Suspension hangers should be vertical or nearly vertical wherever possible. However, a hanger can be used at up to 45º from the vertical provided that there is a second adjacent hanger up to 45º from the vertical that opposes the lateral force of the first hanger. Any rigid braces used to provide lateral restraint should be less than 45º from the horizontal.

18) Main runners should have a hanger within 150mm of joints between abutting main sections.

19) It is generally considered good practice to stagger main runner joints for aesthetic reasons.

20) Any grid section (main runner or cross tee) that bears onto the perimeter trim requires support within 600mm, so that excessive loads are not transferred onto the trim. This dimension should be reduced to 450mm or less if heavy overlay materials are used or service fittings supported by the tile and grid system are located near the perimeter.

21) Armstrong Corrosion Resistant Grid System should be specified where atmospheric conditions regularly exceed 90% relative humidity. Corrosion Resistant grid is not recommended for environments where condensation has the potential to form on the grid itself i.e. where there is inadequate thermal insulation and/or vapour control layer in the ceiling void. Corrosive liquids and cleaning materials should not be exposed or applied directly to any grid system. For specialist Armstrong ceiling products which can be high pressure cleaned, Corrosion Resistant grid would also be appropriate.

22) Ceramaguard is hygroscopic, and as such may absorb moisture from the atmosphere (but without detriment to the mechanical stability of the tile) in a high humidity environment. The possible increased weight of the tiles should be considered in relation to the layout of the grid and the possible need for 600mm main runner centres and/or additional hangers.

23) At perimeters, two alternative details may be considered for cut mineral fibre Tegular and MicroLook tiles. If the face of the grid and the perimeter trim are at the same level, the tiles should be site reformed to the basic rebated detail using appropriate sharp craft tools. However, if the face of the tile and the perimeter trim are at the same level (i.e. the grid face is higher), then the tiles do not need to be reformed, but the ends of the tees must be supported. This can be achieved by the use of the appropriate 'shadowline' perimeter trim. Alternatively if a 'flat' trim is used the end of the cut tees can be supported by the use of Armstrong border clips or Armstrong perimeter fill-in blocks which are also designed to fill the gap between the perimeter trim and the grid that is left between the tiles. See the Armstrong Suspension Systems brochure for details.

24) Reformed cut edges of Tegular and MicroLook mineral and soft fibre tiles should be hand decorated where the cut edge is clearly visible. This is generally not necessary at perimeters, where the cut tile edge cannot easily be seen, unless specified prior to installation.

25) For metal tiles, cut perimeter tiles must secured to ensure the face of the metal tiles sits evenly upon the perimeter trim. This is normally achieved by the use of a perimeter channel with border wedges or extruded aluminium trims with cut tile spring wedges. Cut tiles with a Premium B15 or OP19 acoustic infill do not normally require securing, providing they are correctly and carefully cut with an appropriate high speed jig or bandsaw.

26) Unless specifically accepted by the specifier, pop rivets and screw heads should not be visible.

27) Except for ceilings required to provide structural fire protection or fire resistance, hold-down or retaining clips are not normally required unless specified prior to installation.

28) Armstrong will be pleased to provide a list of specialist ceiling contractors that have achieved **OMEGA** or **GREEN OMEGA** status.

Reaction to fire

The harmonisation of technical standards within Europe, and the integration of EN13964 (Suspended ceilings – requirements and test methods) into national legislation, means that there is now one series of harmonised European test methods and classifications for the reaction to fire of suspended ceilings.

These new reaction to fire classifications, or 'Euroclasses', are made in accordance with EN13501-1:2007.
The 'Euroclasses' replace the old national fire reaction ratings for showing the performance of ceilings in order to meet the Construction Products Regulations and national building regulation requirements for internal linings.

As reaction to fire is one of the essential safety requirements identified for suspended ceilings, the Euroclass classification is one of the mandatory elements on the CE mark for suspended ceiling tiles and grids.

The 'Euroclasses' rate from A1 through to F, with A1 being the best reaction to fire performance and F the worst.

Each member state then sets the performance level required for different areas and building types within their own building regulations.

Depending upon the reaction to fire test(s) conducted, the rating may include an additional classifications for smoke production and flaming droplets.
Smoke and flaming droplets are regulated in some European countries.

Smoke production is rated from s1 (the least smoke produced) to s3 (no limit to amount of smoke produced).

Flaming droplets is rated from d0 (no flaming droplets) to d2 (no limit to flaming droplets).

Structural fire protection

Throughout Europe, there is a requirement for a building's structure to be protected from fire. This is primarily for the structure to remain stable during a fire to allow the occupants to escape and also to enable fire fighters to work without threat of the building's collapse. The duration of the required protection will usually depend upon the height of, and location within, the building (i.e. typical floor, basement, roof construction etc), whether there is any active methods of fire protection (sprinklers etc) and the type of construction to be protected (steel beams, timber or mezzanine floors etc).

A fire protecting suspended ceiling system is one of several important methods of providing the fire protection which fire degradable elements of the structure require. Ceilings can be used to enable a floor construction to meet the duration of protection required by the building regulations that it could not necessarily provide on its own.

There are many national test methods for establishing the structural fire protection performance of a suspended ceiling system, as well as several European norms which are acceptable in most European countries. The performance achieved during testing will be classified in terms of the duration of protection given, typically this in accordance with EN13501-2:2007 for European tests. However, there is not yet one single European test method which is acceptable to all member states.

Untested products may be assessed by reference to the product attributes and comparison to similar tested products, provided this is supported by an assessment report from a recognised fire expert and should be provided with the base test report that details how the product should be installed to achieve the assessed performance.

The location and type of various service elements such as lighting fittings, smoke detectors etc, are infinite and the designer and installer must satisfy themselves that they can be integrated without reducing the tested performance of the ceiling system. This will usually require a test report from the fitting manufacturer or an assessment issued by the fire authorities. Without these documents the designer or installer may assume an everlasting responsibility for the fire safety of the building and occupants.

The complete construction and assembly of the test installation is important to the success of the test, and Armstrong test many ceiling tiles for their structural fire performance, but always on Armstrong grid. There are many other details of the test construction that must be understood and adhered to. These include:

- main runner and hanger centres
- the type of top fixings and how the hangers are attached to them
- the minimum depth of the ceiling void
- what % of the floor design load is tested
- whether ceiling tile hold-down clips were used.

These details must be included in the installation if the tested performance is to be realised and they should be taken into account when writing specifications for ceilings intended to provide structural fire protection.

The fire performance of floor structures protected by Armstrong ceiling tile and grid systems is given in the fire assessment document 173816.

This document is based on a large number of fire tests conducted on various Armstrong ceiling tile and grid types. It provides an assessment of the performances attainable when various Armstrong tile and grid systems are installed in accordance with the appropriate base fire test and the permitted installation variations from that base test.

The tables opposite give a summary of the performances achievable as stated in the assessment document and are correct at the time of going to print.

As products may be modified or retested it is essential that their validity is always checked prior to installation. Therefore, the current version of the assessment document 173816 and the relevant base test report should always be consulted prior to the installation of a floor construction to be protected by an Armstrong ceiling system.

A full document is always required and must be read and any limitations understood. Abridged versions must be regarded as undesirable as they will not show the full test details and construction.

All Armstrong classification documents are freely available on request from our Armstrong Technical Sales team.

Building Regulation performance table – internal linings

Building Regulations area (non-residential)	Euroclass	Old classification
Circulation areas	A1	Non-combustible
	A2-s3, d2	Limited Combustibility
	B-s3, d2	Class 0
Other Rooms (> 30 m²)	C-s3, d2	Class 1
Small Rooms (≤ 30 m²)		Class 2
	D-s3, d2	Class 3
(Product cannot be used)	E-d2, F	Class 4

Assessed Performance for Ceiling Under Structural Steel Beams

Edge detail	Duration	Tile	Test Standard*
Board	90 minutes	Ultima/Ultima+	EN
	60 minutes	Ultima dB/Ultima+ dB	EN
		Perla	EN
		Bioguard Acoustic	EN
		Bioguard Plain	BS
		Mezzanine DL 100	BS
		Dune Supreme	EN
		Dune Max	EN
		Dune dB	EN
		Dune (incl. Colortone)	EN
		Fine Fissured	EN
		Metal Plain (with pad, B15 or OP19)	BS
		Metal Standard Perforation (with pad, B15 or OP19)	BS
		Metal Microperforation (with pad, B15 or OP19)	BS
		Metal Extra Microperforation (with pad, B15 or OP19)	BS
		Tatra	EN
		Cortega	EN
	30 minutes	Perla OP 1.00	EN
		Ultima OP/Ultima+ OP	EN
Tegular	60 minutes	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Perla	EN
		Bioguard Acoustic	EN
		Bioguard Plain	BS
		Dune Supreme	EN
		Dune Max	EN
		Dune dB	BS
		Dune (incl. Colortone)	EN
		Fine Fissured	EN

Edge detail	Duration	Tile	Test Standard*
Tegular	60 minutes	Metal Plain (with pad, B15 or OP19)	BS
		Metal Standard Perforation (with pad, B15 or OP19)	BS
		Metal Microperforation (with pad, B15 or OP19)	BS
		Metal Extra Microperforation (with pad, B15 or OP19)	BS
		Tatra	EN
		Cortega	EN
Tegular 2	60 minutes	Metal Plain (with pad, B15 or OP19)	BS
		Metal Standard Perforation (with pad, B15 or OP19)	BS
		Metal Microperforation (with pad, B15 or OP19)	BS
		Metal Extra Microperforation (with pad, B15 or OP19)	BS
MicroLook	60 minutes	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS
		Perla	EN
		Bioguard Acoustic	EN
		Bioguard Plain	EN
		Metal Plain (with pad, B15 or OP19)	BS
		Metal Standard Perforation (with pad, B15 or OP19)	BS
		Metal Microperforation (with pad, B15 or OP19)	BS
		Metal Extra Microperforation (with pad, B15 or OP19)	BS
	30 minutes	Dune Supreme	EN
		Dune Max	EN
		Dune (incl. Colortone)	EN
		Fine Fissured	EN
S-Clip F	30 minutes	Metal Plain (with pad, B15 or OP19)	BS
		Metal Standard Perforation (with pad, B15 or OP19)	BS
		Metal Microperforation (with pad, B15 or OP19)	BS
		Metal Extra Microperforation (with pad, B15 or OP19)	BS

Assessed Performance for Ceiling Under Timber Floors

Edge detail	Duration	Tile	Test Standard*
Board	60 minutes (Main Runners at 600mm centres)	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS
		Mezzanine DL 100	BS
	30 minutes (Main Runners at 1200mm centres)	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Mezzanine DL 100	BS
		Perla	EN
		Bioguard Acoustic	EN
		Bioguard Plain	EN
		Dune Supreme	EN
		Dune Max	EN
		Dune dB	BS
		Dune (incl. Colortone)	EN
		Fine Fissured	EN
		Tatra	EN
		Cortega	EN
Tegular	60 minutes (Main Runners at 600mm centres)	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS

Edge detail	Duration	Tile	Test Standard*
Tegular	30 minutes (Main Runners at 1200mm centres)	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Mezzanine DL 100	BS
		Perla	EN
		Bioguard Acoustic	EN
		Bioguard Plain	EN
		Dune Supreme	EN
		Dune Max	EN
		Dune dB	BS
		Dune (incl. Colortone)	EN
		Fine Fissured	EN
		Tatra	EN
		Cortega	EN
MicroLook	30 minutes (Main Runners at 1200mm centres)	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS

Assessed Performance for Ceiling Under Mezzanine Floors

Edge detail	Duration	Tile	Test Standard*
Board	60 minutes	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS
		Mezzanine DL 100	BS
	30 minutes	Perla	BS
		Bioguard Acoustic	BS
		Bioguard Plain	BS
		Dune Supreme	BS
		Dune Max	BS
		Dune dB	BS
		Dune (incl. Colortone)	BS
		Fine Fissured	BS
		Tatra	BS
		Cortega	BS

Edge detail	Duration	Tile	Test Standard*
Tegular	60 minutes	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS
	30 minutes	Perla	BS
		Bioguard Acoustic	BS
		Bioguard Plain	BS
		Dune Supreme	BS
		Dune Max	BS
		Dune (incl. Colortone)	BS
		Fine Fissured	BS
		Tatra	BS
		Cortega	BS
MicroLook	30 minutes	Ultima/Ultima+	BS
		Ultima dB/Ultima+ dB	BS
		Dune dB	BS

***Key to Test Standards**

EN = BS EN 1365-2: 2000 - Loadbearing Capacity (R), Integrity (E), Insulation (I)

BS = BS 476: Part 23: 1987, Clause 5 - Effective Protection

Note: Product availability may vary. Please contact us or visit www.armstrong-ceilings.co.uk or www.armstrong-ceilings.ie for updated information or other information.

From performance to acoustical comfort

DID YOU KNOW...

Acoustical treatment is not always sound absorption.
The right acoustical environment is essential and the way to achieve this is to focus on:

Intelligibility
I want to be understood

Confidentiality
I do not want to be overheard

Concentration
I do not want to be disturbed

Intelligibility, Confidentiality and Concentration

To meet acoustical regulations, it is generally sufficient to provide the performance measures in unoccupied spaces, without office equipment switched on. Acoustical regulations usually recommend values to be achieved for reverberation times (within a space) and sound insulation (between spaces or from outside the building).

This approach isn't satisfactory any more to **meet the expectations of occupants**, in particular with the development of open spaces in offices and the increasing hearing problems of students in the education sector.
On a day-to-day basis, any activity disturbs the initial acoustical balance, as for example group discussions, ringing phones, copier machines, music, open windows or road traffic noise.
Occupants of an office, a classroom, a shop, a hospital or any other space, need a **comfortable and healthy environment to carry out their activity under the best conditions.**

The acoustic quality of a room in a building is governed by major design criteria which require close monitoring:

- **Intelligibility**
  (I want to be understood),
- **Confidentiality**
  (I do not want to be overheard),
- **Concentration**
  (I do not want to be disturbed).

What influences performance?

The acoustical properties of mineral ceiling tiles vary depending upon the material, surface and the combination of density, porosity and thickness.
For metal and wood tiles it depends on the perforation and the density, porosity and thickness of the acoustic infill that influences the acoustic performance. The following table shows the impact on acoustical performance when increasing each of those parameters.

	Sound absorption	Sound attenuation and reduction
Density ↗	↘	↗
Porosity ↗	↗	↘
Thickness ↗	↗	↗

Armstrong offers a wide range of materials, product densities and acoustic infills combining the necessary acoustical performances with an extensive range of visuals to meet customer aesthetic and acoustical demands.
The effect of acoustical control from ceilings on the occupants of spaces can be summarised as follows:

	Sound absorption	Sound attenuation and reduction
Controls	Reflections within rooms	Transmission between rooms
Effect upon	Intelligibility	Confidentiality & Concentration
Benefits	Room occupants	Room neighbours

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A WIDE RANGE OF SOLUTIONS

The Armstrong product portfolio has the ability to answer a wide range of acoustical performance requirements.
For the Armstrong mineral range in particular, density is used as the key indicator of acoustic performance, and the product range can be split into 'Standard', 'dB' and 'OP' categories.

The 'Standard' range:
- Provides a mix of absorption and attenuation
- Would be typically used in Meeting rooms; Classrooms; Conference rooms
- Is a solution providing…

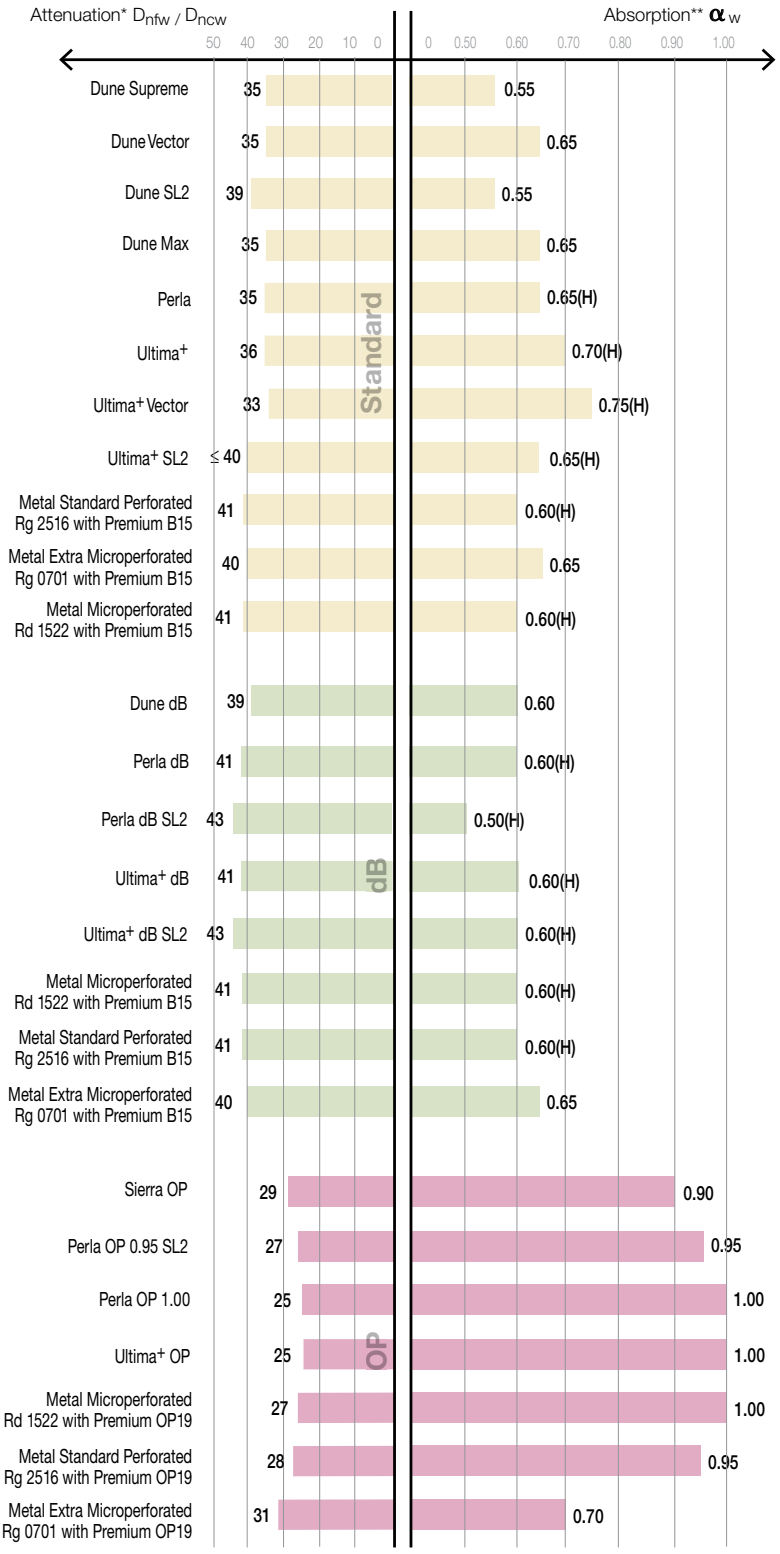
Intelligibility
I want to be understood

The 'dB' range:
- Provides attenuation
- Would be typically used in Closed office; Hospital bedrooms
- Is a solution providing…

Confidentiality
I do not want to be overheard

The 'OP' range:
- Provides absorption
- Would be typically used in Open spaces; Call centres; Libraries
- Is a solution providing…

Concentration
I do not want to be disturbed



See pages 150 & 151 for information on the full acoustic performance of the complete range of Armstrong products.

* Some products attenuation values may be D_{ncw} values.
** For NRC equivalent, please refer to p. 150.

ACOUSTICAL TECHNICAL GLOSSARY

Weighted sound absorption coefficient, α_w

A single-number rating for random incidence sound absorption coefficients calculated by reference to EN ISO 11654. With this method measured values obtained in accordance with EN ISO 354, are converted into octave bands at 250, 500, 1000, 2000 and 4000Hz and are plotted onto a graph. A standard reference curve is then shifted towards the measured values in steps of 0.05 until a "best fit" is obtained. The derived value of α_w will vary between 0.00 and 1.00 but is only expressed in multiples of 0.05, eg $\alpha_w = 0.65$.

Shape indicator

With reference to EN ISO 11654, the calculated value of α_w may be qualified by one or more letters (in brackets) to indicate if the product has excess sound absorption at low (**L**), medium (**M**) or high (**H**) frequencies.

Sound absorption class

With reference to EN ISO 11654, the calculated value of α_w may additionally be allocated into one of six descriptive classes in accordance with the following table:

Sound absorption Class	α_w
A	0.90; 0.95; 1.00
B	0.80; 0.85
C	0.60; 0.65; 0.70; 0.75
D	0.30; 0.35; 0.40; 0.45; 0.50; 0.55
E	0.15; 0.20; 0.25
Not Classified	0.00; 0.05; 0.10

Weighted suspended ceiling normalised level difference, D_{ncw}

A single-number rating of the laboratory measurement of room-to-room (horizontal) airborne sound insulation of a suspended ceiling above adjacent rooms sharing a common ceiling plenum. It is determined in accordance with EN ISO 717-1 from measurements made in accordance with EN 20140-9. Note: EN 20149-9 has now been withdrawn and superseded by EN ISO 10848-2. (see D_{nfw}), although D_{ncw} test results still continue to be valid.

Weighted suspended ceiling normalised flanking level difference, D_{nfw}

A single-number rating of the laboratory measurement of room-to-room (horizontal) airborne flanking sound transmission of a suspended ceiling above adjacent rooms sharing a common ceiling plenum. It is determined in accordance with EN ISO 717-1 from measurements made in accordance with EN ISO 10848-2. This has now superseded EN 20149-9. (see D_{ncw}).

Weighted sound reduction index, R_w

A single-number rating of the laboratory measurement of (vertical) airborne sound reduction of a suspended ceiling. It is determined by reference to EN ISO 717-1 from measurements of sound reduction index made in accordance with EN ISO 140-3.

Rain noise sound Intensity Level, L_I

The laboratory measurement of the sound intensity in a room below a roof construction when subjected to rainfall. It is determined by reference to EN ISO 140-18:2006 – Laboratory measurement of sound generated by rainfall on building elements. The roof's performance can be tested with or without a suspended ceiling beneath. The intensity of the rainfall tested can be selected from the options given in the standard. A combined A-weighted single-number (L_{IA}) can also be determined. Unlike D_{nfw} and R_w data, where the higher the value the better the insulation provided, the lower the intensity value (weighted L_{IA}) the better the insulation performance of the ceiling and roof combination.

Sound attenuation

A term used in relation to the horizontal transmission of sound through a suspended ceiling above adjacent rooms sharing a common ceiling plenum.

Sound Reduction

A term used in relation to the vertical transmission of sound through a suspended ceiling.

Noise Reduction Coefficient, NRC

A single-number descriptor of random incidence sound absorption coefficients. Defined in ASTM C423 as the arithmetical average, to the nearest multiple of 0,05, of the measured sound absorption coefficients for the four one-third octave band centre frequencies of 250, 500, 1,000 and 2,000 Hz.

Sabine / Equivalent Absorption Area (EAA)

A Sabine is a measure of the total sound absorption provided by discrete objects (canopies, screens, furniture, etc) when installed in an architectural space. Because these types of absorbers have more than one surface and may be irregular in form, it is not meaningful to assign sound absorption coefficients to them. Hence the Equivalent Absorption Area per unit (measured in Sabines) is preferred to characterise the absorption provided by an individual 'space absorber'.

ACOUSTICAL PERFORMANCES

Sound reduction

			R - One-Third Octave Band Centre Frequency Hz																	
			Mineral range																	
Product Name	Cert #	Weighted value R_w	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
Perla dB	5932	**21**	14.8	11.1	11.0	11.5	11.8	13.4	13.7	16.5	18.3	20.0	21.5	22.4	23.5	25.6	26.9	28.5	29.9	28.8
Ultima+ dB	5935	**21**	13.6	10.4	11.1	11.4	11.6	13.3	13.9	16.1	18.2	20.3	21.8	22.2	23.5	26.0	27.4	26.1	25.7	28.9
Sahara dB	5934	**20**	13.8	9.8	9.5	9.6	11.3	12.7	12.9	15.7	17.5	19.8	20.9	21.2	22.3	24.2	25.9	27.5	29.1	28.7
Bioguard Plain	5926	**19**	12.3	9.3	8.0	8.5	9.7	11.5	11.5	13.7	16.0	17.9	19.4	20.4	21.7	23.1	23.6	23.6	22.4	21.0
Bioguard Acoustic	5927	**18**	11.4	9.3	8.8	8.9	9.7	10.6	11.2	13.5	15.9	17.5	19.1	20.5	21.9	23.8	24.7	24.8	24.2	23.3
Perla	5928	**18**	11.6	9.8	9.1	9.3	9.2	11.0	11.4	14.3	16.5	17.7	18.6	19.8	21.0	23.2	23.5	19.2	21.1	26.8
Ultima+	5931	**18**	12.0	9.8	9.7	9.3	9.1	10.9	11.0	13.9	16.1	17.9	19.2	20.0	21.1	22.9	24.3	21.1	21.6	26.9
Sahara	5925	**17**	12.2	8.4	8.0	6.6	7.9	10.3	10.5	12.7	15.3	16.9	18.2	19.4	20.7	22.5	22.9	22.8	23.0	21.9
Sahara Max	5923	**17**	12.1	8.5	7.1	7.5	7.9	9.8	10.1	12.4	15.0	17.2	18.5	19.8	21.6	23.1	23.5	23.5	24.3	23.1
Sierra OP 15 mm	6569	**12**	10.7	11.4	10.4	10.7	9.1	9.7	9.7	10.4	10.7	11.5	11.9	11.3	12.3	13.8	14.6	16.0	16.8	18.3
Perla OP 0.95 15mm	6532b	**12**	10.7	11.4	10.4	10.7	9.1	9.7	9.7	10.4	10.7	11.5	11.9	11.3	12.3	13.8	14.6	16.0	16.8	18.3
Perla OP 1.00	6530a	**12**	10.4	10.6	10.1	10.6	10.3	8.7	10.0	10.2	10.3	10.9	11.3	11.1	12.0	12.9	13.9	14.7	14.7	16.1
Sierra OP 17 mm	5920	**11**	11.3	7.8	7.5	5.8	6.4	6.9	7.1	8.8	9.2	9.5	10.3	11.3	12.4	13.6	14.8	15.9	17.3	17.0
Perla OP 0.95 18mm tiles	5919	**10**	10.2	7.2	7.4	5.7	5.9	6.2	6.8	7.9	8.0	9.0	10.0	9.6	10.8	12.3	13.5	14.3	15.2	14.2
Ultima+ OP	5921	**10**	10.5	7.7	7.3	6.4	5.6	5.8	6.5	7.8	8.7	9.0	9.7	10.0	11.1	12.2	13.8	14.2	15.6	15.5
Neeva 15 mm	5915	**7**	8.5	6.2	5.3	4.5	5.0	3.5	4.3	6.1	6.3	6.5	6.9	6.7	7.4	8.4	8.7	9.5	9.8	9.8
Optima 15 mm	5916	**7**	7.2	6.1	6.3	5.1	4.2	3.1	4.8	5.9	6.0	6.3	6.8	6.7	7.2	8.0	8.5	8.9	9.6	9.3

			Metal range																	
Product Name	Cert #	Weighted value R_w	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
Plain with Premium B15	5937a	**21**	13.5	10.6	10.1	10.1	11.2	13.1	13.6	16.5	19.0	21.0	22.2	22.9	23.5	25.6	26.4	26.6	24.4	23.1
Extra Microperforated Rg 0701 with Premium B15	7027	**20**	13.2	15.0	12.3	12.9	12.4	13.4	15.0	16.5	17.1	18.9	20.2	20.4	22.1	22.5	22.4	23.1	24.0	24.5
Plain (no infill)	5936a	**19**	12.4	9.5	8.9	9.3	10.5	12.7	11.9	14.1	16.6	18.4	19.3	20.8	22.2	23.8	24.9	25.4	22.4	20.8
Microperforated Rd 1522 with Premium B15	5941a	**18**	11.7	9.1	7.9	9.5	10.1	11.8	11.7	13.8	16.3	18.0	18.5	19.6	20.7	21.9	22.5	23.2	24.3	25.1
Standard Perforated Rg 2516 with Premium B15	7028	**18**	11.6	13.7	11.2	11.1	10.8	12.1	13.2	14.5	16.1	17.7	18.9	19.6	20.5	21.5	21.4	21.4	22.8	23.4
Extra Microperforated Rg 0701 with Premium OP19	6725b	**15**	10.4	12.3	11.6	10.9	9.9	10.5	11.1	12.0	11.4	12.7	13.8	14.1	15.9	17.7	18.5	19.4	21.0	20.3
Standard Perforated Rg 2516 with Premium OP19	6726b	**13**	9.2	11.4	11.1	10.2	9.9	9.7	10.5	10.5	10.3	11.4	12.3	12.4	13.5	14.9	15.9	17.4	18.6	18.1
Microperforated Rd 1522 with Premium OP19	6724b	**12**	10.2	10.0	10.3	9.0	9.0	8.6	9.1	9.6	9.9	10.9	12.0	11.5	13.3	14.4	15.4	16.5	17.5	17.2
Extra Microperforated Rg 0701 with fleece	7024a	**10**	10.1	12.2	10.8	10.0	9.3	9.7	9.0	9.1	9.5	9.9	10.2	9.1	9.4	9.8	10.3	11.4	12.1	12.5
Standard Perforated Rg 2516 with fleece	7026a	**8**	9.3	10.7	8.3	7.8	7.2	3.15	8.2	7.6	7.3	7.8	7.8	6.8	7.0	7.1	7.3	7.7	7.4	7.3
Ultra Microperforated Rg 0501 (no infill)	7022	**8**	8.5	10.9	9.0	9.5	7.4	5.4	6.8	7.0	6.6	7.4	7.9	6.6	7.4	8.5	9.4	10.4	11.3	12.1
Microperforated Rd 1522 with fleece	5939a	**6**	9.0	6.9	5.6	5.2	5.3	4.0	4.6	5.9	6.1	6.4	6.3	6.0	5.8	6.4	6.7	7.0	6.7	6.2

1) All SRI tests have been conducted in an independent third party quality assured laboratory in accordance with EN ISO 140-3 with the ceiling suspended horizontally between two vertical transmission suites. Mineral tiles were 600x600 Board (square) edge in a Prelude T24 grid.
2) R_w values are determined in accordance with EN ISO 717-1.
3) Armstrong conducts extensive and regular acoustic tests on its ceiling tiles and planks. Inevitably slight variations occur over a range of results for the same product.
The results above do not necessarily represent the highest achieved but indicate values that can be consistently and confidently offered.

Rain Noise - The acoustic performance of Armstrong ceilings with a lightweight roof construction

EN ISO 140-18:2006 is a test method for determining the sound intensity level of a radiating surface due to rainfall. Armstrong tested a lightweight roof construction, with 'heavy' intensity rain as defined in the standard, and then re-tested with a suspended ceiling below. Different ceiling tiles were tested and the results are shown in the table below. The performance values given below show the intensity of sound radiating into the room below the roof (and ceiling) constructions. Therefore, unlike D_{nfw} and R_w data, where the higher the value the better insulation provided, the best performing ceiling tiles are those which have the lowest intensity levels, as less sound energy has penetrated into the room below. The results shown give the combined performance of the roof and ceiling constructions. Any change in the roof construction performance will affect the combined roof and ceiling performance. We have therefore shown the improvement in dB that each of the ceiling tiles provided compared to the roof construction on it's own.

				L_I - One-Third Octave Band Centre Frequency Hz																	
Product Name	Cert #	Weighted value L_{iA}	Improve-ment L_{iA}	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
Roof Construction + Perla dB	C/21102/R01 - 2	**41.8**	11.8	42.7	42.2	43.6	41.2	39.5	37.2	36.9	35.6	34.7	33.6	29.5	27.4	24.9	20.8	20.1	18.8	17.7	17.4
Roof Construction + Metal Plain with Premium B15	C/21102/R01 - 4	**42.4**	11.2	43.7	41.9	43.0	40.7	39.4	37.6	38.0	36.4	35.4	33.9	30.2	27.6	26.0	23.8	24.3	23.3	23.5	22.6
Roof Construction + Dune Max	C/21102/R01 - 8	**42.8**	10.8	43.4	44.0	45.4	42.5	39.8	38.4	38.2	36.7	35.4	34.4	30.6	27.6	25.2	21.3	21.3	21.1	19.9	19.0
Roof Construction + Perla	C/21102/R01 - 6	**42.9**	10.7	43.5	43.7	44.8	41.7	40.5	38.2	38.6	36.3	35.7	34.4	30.5	27.7	26.0	22.6	23.3	23.7	22.4	19.6
Roof Construction + Metal Microperforated Rg 1522 with Premium B15	C/21102/R01 - 5	**43.3**	10.3	44.3	43.8	44.8	42.4	40.2	39.1	38.7	36.5	36.1	35.6	31.6	28.6	26.8	23.3	23.4	22.7	22.5	21.1
Roof Construction + Perla OP	C/21102/R01 - 10	**47.7**	5.9	45.0	46.8	47.5	44.3	43.0	42.6	42.9	42.5	41.4	40.8	36.5	33.7	31.3	27.1	26.8	26.2	25.8	21.1
Roof Construction only	C/21102/R01 - 1	**53.6**	n/a	52.0	51.8	53.3	49.8	46.9	46.1	46.3	47.1	47.4	46.8	43.2	40.9	39.9	36.4	36.6	36.4	36.5	33.9

1) All tests have been conducted in an independent third party quality assured laboratory in accordance with EN ISO 140-18(2006).
2) The one-third octave band intensity values given are unweighted measurements in dB.
3) The roof construction was a 158mm deep profiled steel liner tray with 200mm insulation and an aluminium standing seam waterproof membrane.
4) The ceiling void depth between the top of the liner tray and the reverse of the ceiling tiles varied between 400mm and 700mm due to the pitch of the roof.
5) Armstrong conducts extensive and regular acoustic tests on its ceiling tiles and planks. Inevitably slight variations occur over a range of results for the same product.
The results above do not necessarily represent the highest achieved but indicate values that can be consistently and confidently offered.

ACOUSTICAL PERFORMANCES

Sound absorption

Mineral range					α_p - Octave Band Centre Frequency Hz					
Product Name	Cert #	α_w	Absorption Class	NRC	125	250	500	1000	2000	4000
Nevada (Board 15mm)	4527	**1.00**	A	0.95	0.40	0.90	1.00	0.90	1.00	1.00
Nevada (Board 18mm)	3003a	**1.00**	A	0.95	0.40	0.85	1.00	0.90	1.00	0.95
Nevada (Board 20mm)	2917	**1.00**	A	0.95	0.45	0.90	1.00	0.95	1.00	1.00
Optima (25mm)	2914	**1.00**	A	1.00	0.50	0.85	1.00	0.95	1.00	1.00
Optima Vector (22mm)	2923a	**1.00**	A	0.95	0.35	0.80	1.00	0.90	1.00	1.00
Ultima+ OP	8176	**1.00**	A	0.95	0.40	0.80	1.00	0.95	1.00	1.00
Perla OP 1.00 (20mm)	6614a	**1.00**	A	0.95	0.50	0.85	0.95	0.95	1.00	1.00
Hydroboard	6666	**0.95**	A	0.90	0.35	0.80	1.00	0.85	1.00	1.00
Optima (20mm)	2913	**0.95**	A	0.95	0.40	0.80	1.00	0.85	1.00	1.00
Parafon Hygien (18mm)	2998	**0.95**	A	0.95	0.40	0.85	0.90	0.90	0.95	0.90
Perla OP 0.95 (15mm)	6579a	**0.95**	A	0.90	0.45	0.80	0.95	0.90	1.00	1.00
Perla OP 0.95 (18mm)	4763b	**0.95**	A	0.90	0.50	0.85	0.95	0.90	1.00	1.00
Perla OP 0.95 Concealed Planks (18mm)	5157a	**0.95**	A	0.90	0.45	0.85	0.95	0.90	0.95	1.00
Visual V49 + Fleece + 25mm x 20kg/m^3 glass fibre overlay	4360	**0.95**	A	0.90	0.35	0.80	0.95	0.90	1.00	1.00
Nevada (Tegular & MicroLook 18mm)	3005a	**0.90**	A	0.85	0.40	0.75	0.85	0.85	0.95	0.95
Optima (15mm)	2912	**0.90**	A	0.90	0.35	0.75	1.00	0.80	0.90	0.95
Sierra OP (15mm)	7260a	**0.90**	A	0.85	0.45	0.75	0.85	0.85	1.00	1.00
Sierra OP (17mm)	5973	**0.90**	A	0.85	0.50	0.75	0.85	0.85	1.00	1.00
Ultima+ Vector	8399	**0.75(H)**	C	0.75	0.35	0.55	0.65	0.80	0.95	0.90
Ultima+ (Tiles & MicroLook Planks)	8177	**0.70(H)**	C	0.75	0.40	0.50	0.65	0.85	0.95	1.00
Ultima+ (Concealed Planks)	8412	**0.65(H)**	C	0.65	0.35	0.45	0.55	0.70	0.85	0.95
Perla	4995	**0.65(H)**	C	0.70	0.35	0.40	0.60	0.85	0.95	1.00
Dune Max	4478	**0.65**	C	0.60	0.40	0.45	0.65	0.70	0.65	0.60
Dune Vector	5763	**0.65**	C	0.65	0.50	0.55	0.55	0.70	0.70	0.60
Ultima+ dB	8283	**0.60(H)**	C	0.65	0.25	0.35	0.55	0.80	0.90	0.95
Bioguard Acoustic	4949a	**0.60(H)**	C	0.60	0.35	0.40	0.50	0.70	0.85	0.90
Fine Fissured / Fine Fissured Black	4441	**0.60(H)**	C	0.60	0.40	0.40	0.55	0.75	0.75	0.75
Perla dB	5478a	**0.60(H)**	C	0.65	0.30	0.40	0.55	0.70	0.85	0.95
Dune dB	5608	**0.60**	C	0.55	0.35	0.40	0.55	0.65	0.65	0.65
Ceramaguard	2921a	**0.55(MH)**	D	0.60	0.25	0.30	0.50	0.80	0.85	0.75
Cirrus Image	2929a	**0.55(H)**	D	0.55	0.35	0.40	0.45	0.60	0.75	0.85
Cirrus	3023	**0.55(H)**	D	0.50	0.35	0.40	0.45	0.55	0.60	0.70
Colortone Dune	3948	**0.55**	D	0.55	0.40	0.40	0.50	0.60	0.55	0.45
Cirrus Contrast Circles. Square	3255	**0.55**	D	0.50	0.40	0.40	0.45	0.55	0.60	0.65
Dune (Tiles & Planks 15mm)	2600	**0.55**	D	0.55	0.40	0.40	0.55	0.55	0.50	0.45
Perla dB (Concealed Planks)	5968	**0.50(H)**	D	0.50	0.30	0.35	0.40	0.60	0.70	0.80
Visual V49 + Fleece	4347	**0.50(H)**	D	0.50	0.10	0.30	0.40	0.50	0.75	0.90
Bioguard Plain	7738a	**0.20(L)**	E	0.20	0.40	0.25	0.15	0.15	0.20	0.30
Graphis (all face patterns)	3253	**0.15(L)**	E	0.15	0.35	0.20	0.10	0.10	0.15	0.25
Plain	5293	**0.20(L)**	E	0.20	0.30	0.25	0.15	0.15	0.25	0.30
Dune Supreme (Unperforated)	4058	**0.15(L)**	-	0.20	0.40	0.30	0.15	0.15	0.15	0.25
Clean Room FL	6667	**0.15**	E	0.10	0.25	0.15	0.10	0.10	0.15	0.25
Newtone	3349	**0.10(L)**	-	0.10	0.25	0.15	0.10	0.10	0.10	0.05

Metal range					α_p - Octave Band Centre Frequency Hz					
Product Name	Cert #	α_w	Class	NRC	125	250	500	1000	2000	4000
Microperforated Rd 1522 with Premium OP19	6713b	**1.00**	A	0.90	0.50	0.80	0.95	0.95	1.00	1.00
Standard Perforated Rg 2516 with Premium OP19	6715b	**0.95**	A	0.90	0.50	0.80	0.95	0.90	1.00	0.95
Standard Perforated Rg 2516 with fleece	7333a	**0.75(L)**	C	0.80	0.35	0.80	0.95	0.70	0.75	0.75
Microperforated Rd 1522 with fleece	7332a	**0.70**	C	0.70	0.30	0.65	0.90	0.65	0.70	0.75
Extra Microperforated Rg 0701 with Premium OP19	6714b	**0.70**	C	0.75	0.50	0.70	0.80	0.75	0.70	0.50
Extra Microperforated Rg 0701 with B15	2334	**0.65**	C	0.60	0.30	0.45	0.50	0.70	0.75	0.75
Standard Perforated Rg 2516 with B15	2340	**0.60(H)**	C	0.60	0.40	0.40	0.50	0.65	0.75	0.90
Microperforated Rd 1522 with B15	2337	**0.60(H)**	C	0.60	0.40	0.40	0.50	0.65	0.75	0.90
Extra Microperforated Rg 0701 with fleece	7331a	**0.55(L)**	D	0.65	0.45	0.70	0.70	0.55	0.55	0.45
Ultra Microperforated Rg 0501 (no infill)	6919	**0.45(L)**	D	0.55	0.25	0.65	0.65	0.40	0.40	0.35
Plain with B15	6934	**0.15(L)**	E	0.15	0.40	0.20	0.15	0.15	0.15	0.15
Plain (no infill)	6935	**0.10(L)**	-	0.10	0.25	0.15	0.05	0.05	0.10	0.10

Wood range							α_p - Octave Band Centre Frequency Hz					
Product Name	Systems	Cert #	Dnfw	α_w	Class	NRC	125	250	500	1000	2000	4000
Plain	Standard & Concealed	7140	41 dB	**0.10 (L)**	-	0.10	0.30	0.15	0.10	0.05	0.10	0.15
Rg 3003	Standard	7142	35 dB	**0.30 (L)**	D	0.35	0.45	0.40	0.35	0.30	0.25	0.25
	Concealed	7411	35 dB	**0.35 (L)**	D	0.35	0.45	0.45	0.40	0.30	0.30	0.25
Rg 8013	Standard	7143	22 dB	**0.65 (L)**	C	0.70	0.45	0.80	0.85	0.65	0.60	0.55
	Concealed	7412	22 dB	**0.70 (L)**	C	0.75	0.55	0.80	0.85	0.70	0.65	0.60
Lg 8002	Standard	7141	29 dB	**0.40 (L)**	D	0.50	0.50	0.65	0.55	0.40	0.35	0.30
	Concealed	7413	29 dB	**0.45 (L)**	D	0.50	0.45	0.60	0.60	0.45	0.40	0.35

1) All tests have been conducted in an independent third party quality assured laboratory in accordance with EN ISO 354 and with the ceiling installed over a 200mm cavity.
2) α_w & NRC values are determined in accordance with EN ISO 11654 & ASTM C423 respectively.
3) Armstrong conducts extensive and regular acoustic tests on its ceiling tiles and planks. Inevitably slight variations occur over a range of results for the same product.
The results above do not necessarily represent the highest achieved but indicate values that can be consistently and confidently offered.

Sound attenuation

Mineral range				D_{nf} / D_{nc} - One-Third Octave Band Centre Frequency Hz																
Product Name	Cert #	Weighted value		100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
Ultima+ Tiles + 100mm x 20kg/m³ glass fibre overlay to both rooms	4175a	**44**	D_{ncw}	20.8	27.6	28.9	33.4	37.0	34.1	32.3	37.8	48.0	50.6	49.7	53.1	53.0	51.5	51.4	48.8	48.9	48.8
Ultima+ dB (Concealed Planks)	4522f	**43**	D_{nfw}	18.8	29.9	31.4	33.8	35.4	34.3	34.7	37.1	40.4	44.1	47.0	49.8	53.4	58.3	61.5	60.9	61.8	63.0
Perla dB (Concealed Planks)	5974	**43**	D_{nfw}	15.2	28.3	32.5	33.3	34.7	35.4	35.9	37.7	42.3	44.9	47.8	50.8	53.6	55.9	54.5	56.4	58.9	59.4
Perla dB (Tiles)	5492a	**41**	D_{nfw}	15.5	25.2	29.5	30.8	31.7	31.6	34.0	35.3	39.4	41.2	44.2	45.7	47.8	49.9	49.4	47.4	47.7	53.8
Ultima+ Tiles + 25mm x 20kg/m³ glass fibre overlay to both rooms	4177a	**41**	D_{ncw}	15.1	25.2	26.9	29.8	31.6	31.7	31.3	35.5	41.6	47.0	48.7	51.2	52.5	52.3	51.5	49.3	49.4	49.1
Ultima+ Tiles + 100mm x 20kg/m³ glass fibre overlay to one room	4174a	**41**	D_{ncw}	17.0	25.6	29.7	29.3	32.9	32.6	31.2	35.5	42.2	44.9	46.3	49.4	51.0	50.5	50.1	47.8	48.0	48.3
Ultima+ dB (Tiles)	8293	**41**	D_{nfw}	17.4	25.7	28.9	30.4	31.2	32.4	33.5	36.8	38.5	41.9	45.9	48.6	51.7	53.6	56.0	58.8	60.5	55.3
Ceramaguard	2954a	**39**	D_{ncw}	16.1	24.6	27.2	29.5	30.4	29.9	30.4	32.5	38.8	43.2	44.8	46.9	48.6	48.7	48.1	46.3	44.0	46.1
Dune dB	5609	**39**	D_{nfw}	15.1	24.1	27.5	28.5	28.9	30.2	31.8	35.0	37.7	39.1	41.6	44.5	45.5	47.1	48.0	49.4	51.4	50.6
Ultima+ Tiles + 25mm x 20kg/m³ glass fibre overlay to one room	4176a	**39**	D_{ncw}	15.0	24.9	26.7	29.2	29.6	30.4	29.2	33.4	39.3	43.2	45.8	48.8	50.9	51.0	51.3	49.1	49.4	48.7
Dune (Concealed Planks)	3418	**38**	D_{ncw}	16.3	25.8	30.3	31.3	32.2	32.2	32.9	36.5	39.5	43.0	45.3	48.1	51.6	54.3	53.5	54.6	57.9	57.0
Newtone	3373	**37**	D_{ncw}	17.3	26.4	27.9	28.7	31.0	29.5	29.2	32.2	35.0	36.4	37.0	40.3	41.9	42.6	42.5	41.6	41.0	40.7
Bioguard Acoustic	4955f	**36**	D_{nfw}	11.4	19.8	23.2	27.6	29.0	28.1	27.4	31.4	34.5	36.5	40.0	41.9	44.4	45.4	46.1	47.3	48.6	46.2
Cirrus Image	3278	**36**	D_{ncw}	16.3	21.2	24.0	27.7	28.7	29.2	27.9	29.1	32.1	34.6	37.2	39.8	41.3	41.9	42.8	40.8	40.9	42.7
Cirrus	2671	**36**	D_{ncw}	17.6	20.9	24.9	25.9	26.9	28.4	27.8	29.3	32.3	35.2	37.8	40.2	43.5	47.3	49.4	51.4	54.3	56.4
Cirrus Contrast Circles. Square	3279	**36**	D_{ncw}	17.4	23.1	23.2	25.9	27.2	28.0	28.0	29.3	32.5	35.7	38.5	40.8	42.1	42.6	43.0	41.3	41.5	42.4
Graphis (all face patterns)	3276	**36**	D_{ncw}	15.4	23.5	25.1	28.8	29.9	30.3	29.8	30.9	34.0	35.8	37.6	39.4	39.8	39.9	40.1	39.2	39.0	40.4
Clean Room FL	3367a	**36**	D_{ncw}	13.6	24.4	26.4	28.2	29.9	28.7	29.3	31.3	34.4	36.1	37.3	39.3	40.2	40.1	39.5	37.4	35.8	36.7
Fine Fissured Black	6292	**36**	D_{nfw}	12.4	20.1	26.8	26.7	26.6	26.6	27.8	30.5	33.7	36.1	39.8	42.2	45.5	48.7	50.6	51.8	50.2	51.7
Ultima+ (Tiles & MicroLook Planks)	8206	**36**	D_{nfw}	13.5	21.5	28.0	26.2	25.8	27.9	28.0	30.9	34.7	37.2	39.8	42.8	45.8	48.5	51.1	55.4	53.3	51.1
Bioguard Plain	7753a	**35**	D_{nfw}	10.1	20.7	24.1	26.7	27.1	28.2	28.2	30.4	32.8	34.3	36.9	39.1	40.9	42.5	43.4	44.0	44.3	40.2
Plain	7753a	**35**	D_{nfw}	17.1	25.6	27.7	27.0	28.6	28.9	29.2	32.0	34.9	37.0	38.3	40.6	42.3	42.6	42.8	42.4	42.5	41.5
Perla	5003f	**35**	D_{nfw}	17.2	23.7	22.2	24.3	28.5	27.8	27.7	28.4	32.8	36.7	38.4	41.9	43.9	45.7	48.6	50.6	46.0	46.7
Colortone Dune	4070	**35**	D_{ncw}	12.2	22.0	25.1	24.2	24.2	26.1	26.3	29.3	32.2	37.7	38.8	40.7	43.1	44.8	45.3	45.2	44.4	42.3
Dune Max	6293	**35**	D_{nfw}	10.9	20.6	25.2	25.1	26.1	26.8	28.4	29.0	33.8	36.3	39.5	41.3	43.3	45.3	46.5	48.4	47.4	46.7
Dune Vector	5766	**35**	D_{nfw}	13.1	22.7	26.3	27.1	28.3	27.9	28.0	29.0	32.1	34.5	38.0	41.5	44.8	47.2	48.8	50.2	51.4	49.4
Dune (Tiles & Planks)	2888	**35**	D_{ncw}	14.6	20.0	21.9	24.1	26.1	26.4	26.3	27.9	31.4	34.8	37.3	38.9	41.1	42.9	42.0	42.8	44.3	44.1
Dune Supreme (Unperforated)	4070	**35**	D_{ncw}	12.2	22.0	25.1	24.2	24.2	26.1	26.3	29.3	32.2	35.7	38.8	40.7	43.1	44.8	45.3	45.2	44.4	42.3
Fine Fissured	2613	**34**	D_{ncw}	13.9	21.4	23.5	24.8	25.8	25.5	25.6	27.6	30.7	35.3	38.8	42.9	46.6	49.6	48.6	48.6	48.0	46.0
Ultima+ Vector	8414	**33**	D_{nfw}	11.1	19.5	22.8	24.2	26.1	25.3	25.7	27.3	29.5	33.0	36.8	39.9	42.5	46.4	49.8	53.8	55.4	54.4
Sierra OP (Concealed Planks 17mm)	5979	**29**	D_{nfw}	14.8	19.5	21.9	22.7	22.8	23.3	23.5	23.7	24.4	26.1	27.4	30.5	33.2	35.2	37.5	40.8	44.0	47.9
Nevada (Tegular/MicroLook 20mm)	3031	**28**	D_{ncw}	14.0	20.2	21.4	20.6	21.6	20.9	20.4	21.4	23.4	26.9	28.9	31.1	32.5	35.1	38.5	41.8	45.3	49.3
Sierra OP (Tiles 17mm)	5856	**27**	D_{nfw}	9.2	18.5	20.3	21.8	21.6	19.7	20.5	21.1	23.7	25.2	26.4	28.9	31.1	33.2	34.7	37.7	41.5	45.7
Nevada (Tegular/MicroLook 18mm)	3034a	**27**	D_{ncw}	12.7	19.7	21.2	20.5	21.1	20.3	20.1	20.8	22.5	25.0	27.1	29.1	31.2	32.6	36.1	39.4	42.7	46.6
Perla OP 0.95 (Concealed Planks)	5168g	**27**	D_{nfw}	14.4	19.9	20.2	21.4	23.0	21.2	20.7	21.2	22.7	24.5	26.6	28.3	30.6	32.4	34.0	35.9	36.3	40.4
Nevada (Board 20mm)	3033	**26**	D_{ncw}	12.3	17.9	18.9	18.8	20.5	19.4	19.4	19.8	21.4	24.4	25.8	28.2	31.1	32.7	34.9	37.7	40.6	44.3
Sierra OP (15mm)	8531	**25**	D_{nfw}	12.1	16.6	17.9	18.2	20.0	18.5	17.8	21.3	21.7	23.2	24.6	26.2	27.9	29.5	30.8	33.7	36.9	38.0
Ultima+ OP	8205	**25**	D_{nfw}	11.4	16.2	20.2	18.1	18.8	18.4	17.5	20.5	21.8	23.7	25.7	27.4	30.5	32.4	33.6	36.1	37.4	41.3
Perla OP 0.95 (Board Planks 18mm)	4705g	**25**	D_{nfw}	12.5	20.9	20.7	20.1	20.7	18.9	19.0	19.1	21.4	23.3	25.0	26.0	28.6	29.4	31.5	33.0	34.0	38.0
Perla OP 0.95 (Tiles 15mm)	6551b	**25**	D_{nfw}	12.7	17.0	18.7	20.2	19.8	20.3	18.5	19.6	21.3	22.5	24.0	27.0	29.1	31.3	32.7	35.3	38.0	41.5
Perla OP 1.00 (Tiles)	6549a	**25**	D_{nfw}	11.8	17.0	17.6	18.9	20.0	17.9	18.2	19.0	20.7	23.4	24.4	26.8	29.6	31.0	31.6	33.7	34.4	38.3
Nevada (Board 18mm)	3036a	**24**	D_{ncw}	12.2	17.4	17.4	17.2	18.9	18.3	18.1	17.9	19.8	22.5	24.0	26.2	27.1	29.6	31.0	33.4	35.7	38.0
Optima (Tiles)	7399	**24**	D_{nfw}	10.6	15.8	17.1	16.2	15.9	16.8	17.8	18	20.9	22.7	23.1	24.8	26.6	28.3	29.1	31.3	33.1	35.0
Hydroboard	6672	**22**	D_{nfw}	13.9	21.4	23.5	24.8	25.8	25.5	25.6	27.6	30.7	35.3	38.8	42.9	46.6	49.6	48.6	48.6	48.0	46.0

Metal range				D_{nc} - One-Third Octave Band Centre Frequency Hz																
Product Name	Cert #	Weighted value		100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
Plain with Premium B15	2439	**47**	D_{ncw}	25.2	29.3	34.6	34.5	36.5	38.6	39.9	41.7	46.7	50.2	53.4	55.3	56.0	59.4	59.2	55.5	59.2	63.4
Plain (no infill)	2438	**44**	D_{ncw}	22.1	27.6	32.2	32.7	34.3	35.9	37.5	38.8	41.9	45.0	46.6	49.1	51.5	55.3	57.7	55.4	58.9	63.0
Microperforated Rd 1522 with B15	2443	**41**	D_{ncw}	20.7	24.1	29.9	29.1	30.9	32.3	32.8	36.8	39.2	43.1	46.5	49.1	51.8	55.5	57.7	55.2	58.8	62.0
Standard Perforated Rg 2516 with B15*	2443	**41**	D_{ncw}	20.7	24.1	29.9	29.1	30.9	32.3	32.8	36.8	39.2	43.1	46.5	49.1	51.8	55.5	57.7	55.2	58.8	62.0
Extra Microperforated Rg 0701 with B15	2427	**40**	D_{ncw}	23.0	25.8	30.6	29.6	32.7	32.3	33.2	34.8	36.8	39.4	40.5	42.0	44.7	47.9	51.1	52.7	55.2	57.1
Extra Microperforated Rg 0701 with Premium OP19	6720b	**31**	D_{nfw}	15.6	20.7	23.8	25.3	25.6	25.5	23.0	24.3	27.1	29.5	30.8	34.4	38.5	41.9	44.6	48.3	51.3	52.2
Standard Perforated Rg 2516 with Premium OP19	6721b	**28**	D_{nfw}	14.3	19.9	21.1	22.2	22.1	21.1	20.8	21.8	23.8	26.2	28.3	31.8	34.5	36.5	38.6	41.9	44.8	46.8
Microperforated Rd 1522 with Premium OP19	6719b	**27**	D_{nfw}	13.3	20.3	22.8	23.3	22.8	20.8	19.6	20.1	22.3	24.5	26.4	28.9	32.0	34.1	36.4	39.2	41.7	43.5
Extra Microperforated Rg 0701 with fleece	6990a	**21**	D_{nfw}	12.5	20.1	21.2	21.3	21.5	21.8	19.4	19.8	20.2	20.8	20.2	19.3	19.8	20.9	21.6	22.8	24.4	26.2
Ultra Microperforated Rg 0501 (no infill)	3844-98-1	**18**	D_{nfw}	13.4	10.4	10.7	10.4	8.1	13.4	13.8	14.4	17.0	17.6	18.4	20.9	20.9	20.5	19.4	23.6	25.8	-
Standard Perforated Rg 2516 with fleece	6993a	**18**	D_{nfw}	11.4	17.3	17.2	18.3	19.7	19.4	17.8	18.5	19.3	18.9	17.7	16.8	17.9	18.0	18.3	18.5	19.0	18.8
Microperforated Rd 1522 with fleece	6992a	**16**	D_{nfw}	11.3	15.6	16.8	14.7	17.2	17.8	15.9	15.3	16.7	16.5	15.0	14.3	15.3	15.4	15.3	16.0	16.5	16.7

* Estimated

1) All tests have been conducted in an independent third party quality assured laboratory in accordance with either EN 20140-9/ISO 140-9 or EN/ISO 10848-2 and with the ceiling suspended beneath a continuous cavity.
2) D_{ncw} and D_{nfw} values are determined in accordance with EN ISO 717-1.
3) Values for Standard Perforated Rg 2516 (16% open area) are estimated as being not less than Microperforated Rd 1522 (22% open area).
4) Armstrong conducts extensive and regular acoustic tests on its ceiling tiles and planks. Inevitably slight variations occur over a range of results for the same product.

The results above do not necessarily represent the highest achieved but indicate values that can be consistently and confidently offered.

Ceiling tile edge detail can have an influence on the acoustical performance of ceiling systems, please contact Armstrong for more detailed information.

ARMSTRONG RIBA AND RIAI CPD'S

Armstrong has drawn on its extensive experience to develop a range of training materials, which are independently certified by the RIBA and the RIAI as CPD approved. CPD's can be taken online or presented over lunch or in the early evening. You can choose from the following technical and design orientated presentations...

To book a CPD please call 0800 371 849 (UK), 1800 409 002 (RoI) or e mail us at sales-support@armstrong.com.

Suspended Ceilings and the Environment

Seminar / Online CPD

To provide you with an improved understanding of how the impact of suspended ceilings on the environment can be reduced.
You need to vist the CPD area of the Armstrong website to take this 45 minute online CPD.

***Core Curriculum - 2 & 7**

Using Phase Change Materials in Construction for a more sustainable environment

Seminar

This CPD will help you understand where and how Phase Change Materials can be used to create a more energy efficient and comfortable environment.

***Core Curriculum - 2 & 7**

Acoustics and Suspended Ceilings

Seminar

To provide you with an improved understanding of the role of suspended ceilings in providing the optimum acoustic environment.

***Core Curriculum - 7**

A Better Learning Environment

Seminar

To provide you with a better understanding of how suspended ceilings can generate optimum acoustic environments for learning.

***Core Curriculum - 5 & 7**

Ceilings and Healthcare Environments

Seminar

To provide you with an improved understanding of healthcare ceiling requirements, associated guidelines & applications.

***Core Curriculum - 7**

Fire and Suspended Ceilings

Seminar

To provide you with a better understanding of the role that suspended ceilings can perform in reacting and resisting the effects of fire.

***Core Curriculum - 1, 5 & 7**

Metal Ceilings

Seminar

This CPD introduces the manufacturing process and identifies how metal ceilings can provide a variety of technical, design and acoustic solutions.

***Core Curriculum - 7**

Armstrong Guide to Building Acoustics

Literature

An aid to better understanding for non acoustic specialists within the building design and construction teams

***Core Curriculum - 7**

*Core Curriculum
1 - Being safe: health and safety - General Awareness
2 - Climate: sustainable architecture - General Awareness
5 - Compliance: legal, regulatory and statutory frameworks and processes - General Awareness
7 - Designing and building it: design, construction, technology and engineering - General Awarenes

ATELIER BY ARMSTRONG

A service designed to take the relationship between architect/designer and building interior solutions provider to unprecedented levels.
A peerless portfolio of materials (mineral, metal, wood, resin and fabric) and systems (including TECH ZONE which guarantees the integration of services such as lighting, air handling, loudspeakers and chilled beams) has enabled the Atelier team to prove its creative flair and deliver some stunning and technically challenging projects.

Atelier

Armstrong®

Cofunds, Witham Essex

This stunning refurbishment includes twenty OPTIMA circle canopies as well as bespoke AXIOM Knife Edge canopies with ULTIMA SL2 tiles.

3000m² of ULTIMA MicroLook mineral ceilings on Silhouette grid were installed to meet the acoustic needs of the office space.

Ceiling Contractor: BPC Interiors Ltd
Fit Out Contractor: Como Group
Architect: Swanke Hayden Connell Architects

Paddington Station, London

Some 300m² of Armstrong's B-H 300 linear perforated metal plank system were installed with a low-smoke acoustlc fleece on Paddington's low-level concourse. This was complemented on the high-level concourse, north entrance and taxi deck by 1200m² of Armstrong's V-P 500 vertical linear metal baffles in bespoke demountable 15kg modules of 1200 x 600mm to ease installation and maintenance as well as accommodating an anti-vermin and bird mesh panel.
The same V-P 500 aesthetic was carried through to platforms 15 and 16 but here the system was a lighter aluminium extrusion rather than steel and the 500m² baffle modules using a bespoke grid with locked access panels were also angled at 45° over the tracks to help deflect noise away from the walkways.

Ceiling Contractor: Carlton Ceiling & Partitioning Ltd
Main Contractor: Carillion
Architect: Weston Williamson & Partners

Wokingham Leisure Centre, Wokingham

Sixteen 1800mm x 1200mm Optima rectangle canopies take pride of place in the free weights and weights machines area of the new gym and are complemented by 365m² of Perla OP 0.95 (the first mineral tile in the world to gain Silver Cradle to Cradle certification) in the gym. In addition, some 230m² of Ultima MicroLook tiles were installed by specialist sub-contractors Gypsum Plasterers for main contractor Morgan Sindall in the new café, together with 500m² of Dune Max Tegular tiles in the studios, stairwells and corridors.

Ceiling Contractor: Gypsum Plasterers Ltd
Main Contractor: Morgan Sindall
Architect: Arkon Associates

www.armstrong-atelier.eu

OUR COMMITMENT TO RECYCLING

End-Of-Life Recycling Programme - No minimum quantities

At the end of a ceilings useful life, the Armstrong End-Of-Life Recycling Programme provides an opportunity to divert the ceiling tiles from the UK's dwindling landfill capacity.
In addition to our own tiles, we will now recycle ALL mineral fibre ceiling tiles – making ceiling recycling easier than ever. Armstrong will provide pallets upon request and the ceiling tiles must be stacked neatly on the pallets and be made safe for transport.
Armstrong will arrange free collection from site using our existing transport network. A forklift and sufficient space on site is required to load the material onto the Armstrong transport.
Tiles are then taken back to the Armstrong manufacturing plant in Gateshead to be 100% recycled back into new ceiling tiles.
This End-of-Life programme has been used on many projects including 236 Grays Inn Road, Farnborough Airshow and the Olympic Media Centre.

Contact our Recycling helpline on 0800 371 849 (UK) / 1800 409 002 (RoI) or e mail us at recycleyourceilings@armstrong.com to check if your project meets the requirements.

Off-Cut Recycling Programme

The Armstrong Off-Cut Recycling Programme has been developed in response to customer demand and is designed to enable installation waste from ceiling off-cuts to be recycled.
This offers recycling opportunities to larger new-build projects, using acceptable Armstrong and non Armstrong tiles, in addition to refurbishment projects already serviced by the Armstrong End-Of-Life Recycling Programme. Like the End-Of-Life scheme, Armstrong offer a free collection service, however, the logistics are more complicated due to the installation timescale and storage requirements, so the site contractors is critical in the co-ordination of the process.
Armstrong will provide suitable bags for the sub contractor to fill with ceiling tile off-cuts. Once sufficient material is gathered to fill a truck, Armstrong will collect the bags from site as a 'back-haul' collection (minimising the environmental impact of transportation) to be 100% recycled back into new ceiling tiles. This Off-Cut programme has already been a success at University Hospital, Birmingham (see case study opposite) and is currently being used on several other major projects including Peterborough, Tameside, Salford & Hope Hospitals and and New South General Hospital, Glasgow.

Jim Duffy (Head of Environment and Quality), Balfour Beatty Construction Northern,

"This major project identified ceiling tile cut offs as an item that would be unacceptable to send to landfill. The project pushed the boundaries with Armstrong and Titan and all three parties agreed to trial the recycling scheme. Having overcome some initial challenges in the first year, the trials success and failures have been reviewed and actions put in place to improve the volume of recycled material in the second year of the trial. Having the commitment to trial the scheme on a non contractual basis was a great step forward. Committing to improve the recycling process is a great testimony to all three parties. The challenge for the future is making this the norm within the three businesses."

What happens to your recycled tiles?

Where do they go?
Armstrong's mineral fibre ceiling tile manufacturing plant in Gateshead.

What happens to them once they arrive there?
They are screened for contamination and then broken up into smaller pieces.

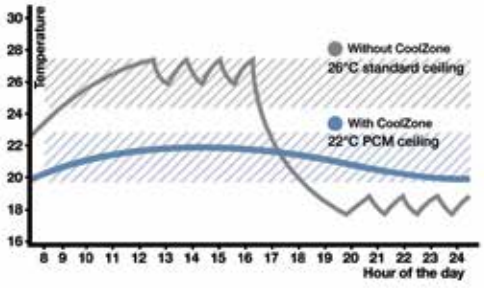
How are these then made into new ceiling tiles?
This 'dry-broke' is added to other raw materials and combined together to create the mixture used to manufacture new wet-felt mineral fibre ceiling tiles.

ARMSTRONG COOLZONE

Armstrong CoolZone is an eco-friendly ceiling system that helps to reduce a building's energy costs at the same time as they maximise occupier comfort.

	Item N°.	Nominal Size (mm)	Thickness (mm)	Weight (kg)
Coolzone Tegular 8/16	BPCZ4980M	600 x 600	25	9.0
Coolzone MicroLook 8/16	BPCZ4981M	600 x 600	25	9.0

Other systems and modules are also available on request.



CoolZone incorporates BASF Micronal phase change material into Armstrong's plain metal ceiling tiles. This material – microscopic polymer capsules containing a wax storage medium - is embedded in gypsum and then encased in the metal tile. On heating during the day and cooling at night, the wax melts and solidifies. In this way the internal temperature is regulated, ensuring a stable and comfortable environment in which to work, whether it is commercial, retail, healthcare or educational buildings.

Day

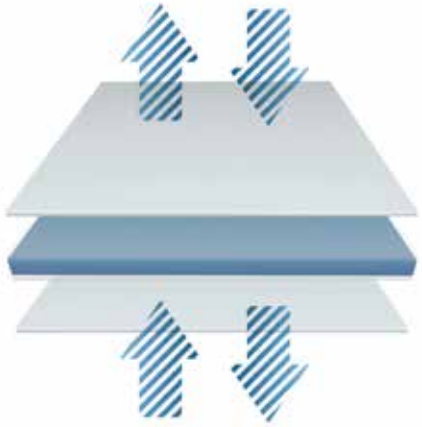
Night

Armstrong CoolZone improves thermal comfort and contributes to the intelligent energy management and commercial success of a building in a number of ways:

• It **reduces or eliminates the need for air conditioning** - in tests, the CoolZone tiles delayed the onset of air conditioning by approximately four to five hours in an average office. Not only can this save around 40% of the HVAC energy costs and reduce peaks in demand for air conditioning but it can also help to improve the thermal comfort for the occupants.

• It is a **passive solution requiring no energy** that is easy to incorporate into existing buildings and is therefore ideal for renovation and refurbishment.

• It is a **flexible solution** that can be moved within rooms to deal with areas of high heat load, from room to room, and can even be switched from building to building.



DEFINITION

of technical performance icons

Fire reaction
National Building Regulations (where applicable) require that buildings meet the appropriate Euroclass ***fire reaction*** performance depending upon the area of application. Armstrong products have been tested to the harmonised European fire reaction standards and meet the minimum performance criteria. Many Armstrong products have also been tested for their ***fire resistance*** performance under various floor constructions. See page 144 for more information on how ceilings can create a safer environment

Acoustic Performance
The occupant of a space, be it an office, a classroom, a shop, or any similar environmental needs:
- Intelligibility – to hear and to be understood
- Confidentiality – to not be overheard
- Concentration – to not be disturbed

The optimum acoustic climate will be obtained with the right combination of sound absorption and sound attenuation.
See page 146 for more information on how acoustics can create a better environment.

Sound Attenuation
Is the control of horizontal sound transmission through a suspended ceiling and common void located above adjacent spaces.

Sound Absorption
Is the control of reflected sound, provided by the suspended ceiling, within a space.

Sound Absorption Class
A single-number rating for random incidence sound absorption coefficients as calculated by reference to EN ISO 11654.

Sound Reduction
Is the control of vertical sound transmission through a suspended ceiling located above a space.

Rain Noise
Is the intensity of sound (L_{IA}) generated by rainfall on building elements, such as lightweight roof constructions, which radiates into the room below.

Humidity Resistance
Ceiling installations are facing more and more demanding humidity conditions such as fast track programmes, buildings with intermittent heating and cooling, areas with a high concentration of people, structures which are open to the exterior environment, etc. To meet these requirements Armstrong offer a wide range of standard products suitable for installation in conditions of up to 95% and 99% relative humidity, as well as specialist products which excel in extreme conditions of up to 100% relative humidity.

The following table demonstrates the relative humidity resistance in relation to classes of exposure according to table 7 EN13964:2004 + A1:2006

Class	Conditions
A	Building components generally exposed to varying relative humidity up to 70% and varying temperature up to 25°C but without corrosive pollutants
B	Building components frequently exposed to varying relative humidity up to 90% and varying temperature up to 30°C but without corrosive pollutants
C	Building components exposed to an atmosphere with a level of humidity higher than 90% and accompanied by a risk of condensation
D	More severe than the above

Light Reflectance
High levels of light reflectance from suspended ceilings can contribute significantly to maintaining the correct levels of illumination for all interior environments, as well as helping to reduce excessive electrical energy consumption. Armstrong conducts extensive tests of light reflectance on a wide range of its products, in accordance with EN ISO 7724-2 and 3 (as specified in EN 13964), by third party accredited laboratories. The light reflectance values indicated on each product data page are as determined by these tests.

Anti-Microbial Performance
The control of bio-contamination is essential in the healthcare sector, especially in hospitals and clinics. Armstrong ceilings do not favour the development of fungi/mould or yeast and the products can be used in any general area.

Air Quality
Armstrong offer a number of specific tile and grid solutions to limit the number of airborne particles in a clean room environment. These products are tested against ISO 14644-1.

Thermal Conductivity
The ever increasing commitment to energy conservation, dictates that buildings should be as energy efficient as is compatible with their function, use and as specified in national building regulations. Interior building products which can form part of the external structure, such as suspended ceilings beneath a roof construction, can contribute to minimising the loss of heat to the exterior by reference to their thermal conductivity values. Armstrong conducts extensive tests of thermal conductivity on a wide range of its products, in accordance with EN 12667 (as specified in EN 13964) and ISO 8301, by third party accredited laboratories. The thermal conductivity values indicated on each product data page are as determined by these tests.

Scratch Resistance
Superior level of surface scratch resistance, evaluated with the Hess rake test.

Product Handling & Durability
Frequent ceiling tile removal, typically in areas where building service equipment is located, means that a higher level of product durability and resistance to handling may be desired. Products in this category provide enhanced durability performance.

Recycled Content
Armstrong products are produced using a variety of recycled raw materials. The recycled content of individual products, as shown in our literature, is calculated in accordance with ISO 14021:2004.

15 year Guarantee
Armstrong World Industries guarantees a selection of products (ceiling tiles and suspended grid systems) shall be free from defects in design, material and workmanship for 15 years from the date of installation of the material. Please contact us for full details.

30 year system Guarantee
As a system manufacturer for many years, Armstrong World Industries offers a new system guarantee when specific Armstrong ceiling tiles and grid suspension system are installed together. Please contact us for full details.

LifeTime Guarantee
The result of continuous product line development and improvement allows us to offer a LifeTime guarantee on specific product ranges. Please contact us for full details.

Cleaning and disinfection
The frequency and cleaning method of a ceiling varies from one application to another.
All products can at least be cleaned with a dry cloth or vacuum cleaner.

Wipeable with a dry cloth / soft brush.
(A1 - A2 - A3)

Wipeable with a moist cloth.
(B1 - C1)

Washable with a sponge dampened in water containing mild soap or diluted detergent.
(B2 - C2)

Scrubbable with water containing mild soap or diluted detergent.
(D)

Can be cleaned using a high pressure water spray.
(F)

Can be cleaned with disinfectants commonly used in healthcare premises.
(G)

See more details on page 141.

Air Leakage
The cavity above a suspended ceiling may be used as part of the mechanical air distribution system, when it is used as a supply or extract plenum, and the air pressure in the plenum will be either positive or negative in comparison to the pressure in the room below. Similarly for 'Clean Room' applications, where it is most important to prevent the ingress of airborne dust contaminants, the room will be at positive pressure to the surrounding areas. Alternatively, to escape the egress of pathogens the room may be kept at a lower pressure relative to the surrounding areas. In these situations, it is necessary to know how much air leakage occurs through the ceiling system as a result of the pressure differential. Armstrong conducts extensive tests of air leakage on a wide range of its products, in accordance with EN 12114 and EN ISO 13829, by third party accredited laboratories. Please contact us for further details of these results.

Air Flow
When using Metal perforated suspended ceilings, the cavity above may be used as part of the mechanical air distribution system when it is used as a supply plenum. With this arrangement the air pressure in the plenum is always positive in comparison to the pressure in the room below. Specific tiles can be selected as open (active), and these will become air diffusers, while the remaining tiles will have their perforations blocked (inactive). In this way the air flow supply volume to the room can be controlled and balanced dependent upon the pressure differential and the air change requirements.
Armstrong conducts extensive tests of air flow on a range of its more common Metal products, in accordance with EN 12114 and EN ISO 13829, by third party accredited laboratories. Please contact us for further details of these results.

CE Marking

CE stands for Conformité Européenne, which translated literally, means "European Conformity". The CE mark is a products "passport" for entry into the EEA (European Economic Area) and indicates that the product complies with the requirements of the applicable European Directive.

For construction products the European Directive was the Construction Products Directive (89/106/EEC), however, this has been replaced by the Construction Products Regulations (305/2011/EU) which came into full force on 1st July 2013.

The CPR states that the construction works as a whole and in their separate parts must be fit for their intended use, and subject to normal maintenance, they must satisfy the basic requirements for construction works which are:
- Mechanical resistance and stability;
- Safety in case of fire;
- Hygiene, health and the environment;
- Safety and accessibility in use;
- Protection against noise;
- Energy economy and heat retention;
- Sustainable use of natural resources.

The essential characteristics for specific construction products are laid down in harmonised technical specifications and for **suspended ceilings** these are defined in **EN 13964 Suspended Ceilings – Requirements and Test Methods.**

This product standard identifies the essential characteristics for the different types of suspended ceiling components and determines how they must be tested and classified. It also indicates how the manufacturer must declare the products performance and ensure that their products maintain these levels of performance on an ongoing basis. This is achieved by the issuing of a Declaration of Performance, a key document allowing CE marking of the product.

Most Armstrong products are Assessment and Verification of Constancy of Performance system 1, which means that the declared performance is confirmed by an independent notified body and validated by a Certificate of Constancy of Performance.

PRODUCT NAMES

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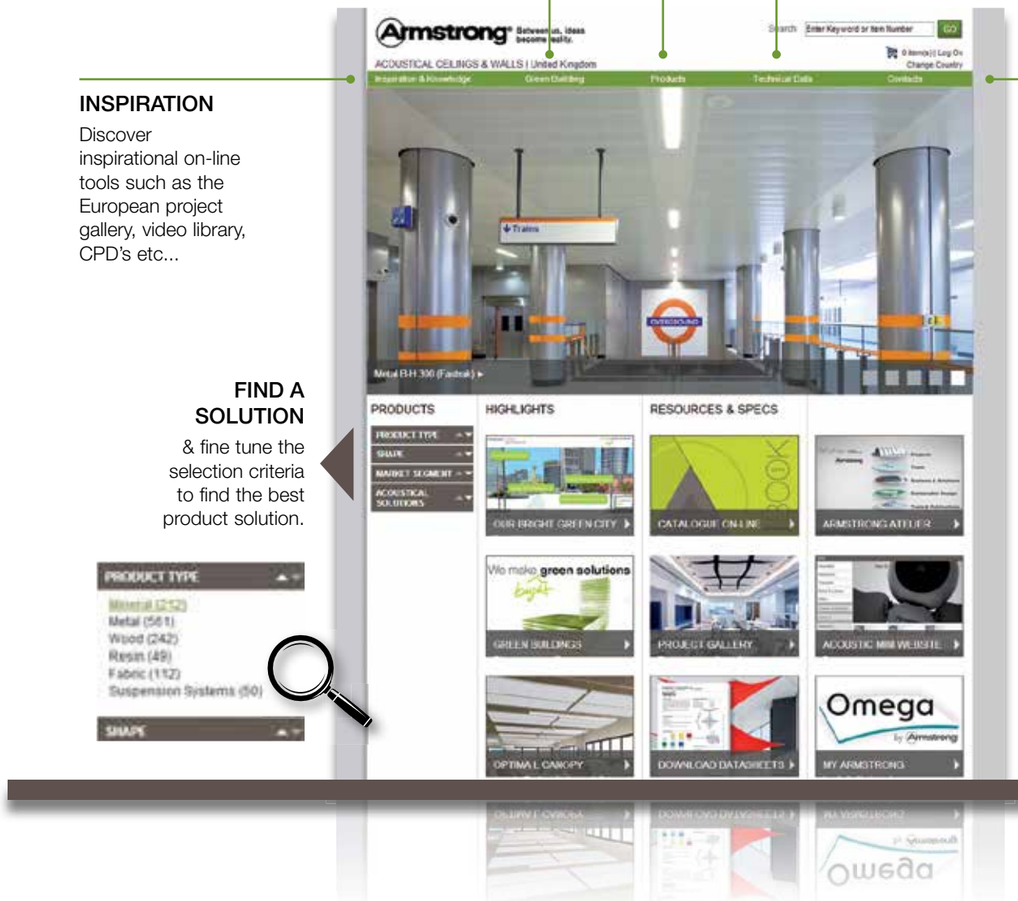

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