



# FLOATING CEILINGS

Canopies and Baffles, A Modern Approach

Inspiring Great Spaces™

**Armstrong®**

CEILING SYSTEMS



PROJECT: San Juan de Dios Santurce Hospital (ES) : ARCHITECT: Paloma Baranguan de L.K.S  
SOLUTION: OPTIMA Curved Canopy

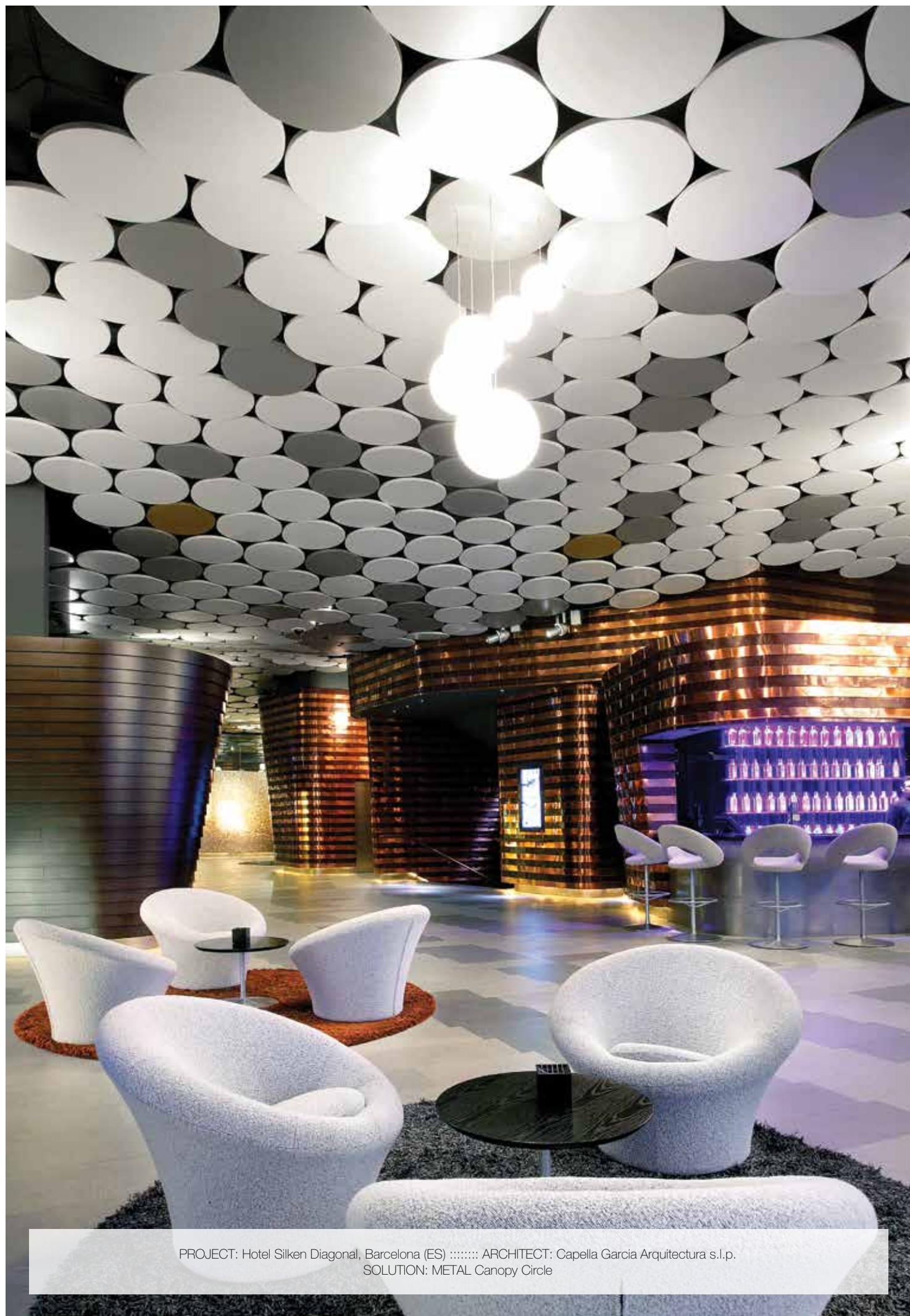
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PROJECT: Hotel Silken Diagonal, Barcelona (ES) : ARCHITECT: Capella Garcia Arquitectura s.l.p.  
SOLUTION: METAL Canopy Circle

# Armstrong's Unique Service

Whatever your ceiling requirement, Armstrong's unique service will support you from design to installation – and beyond:

1

## **Consulting and planning**

Each Armstrong project begins with an in-depth, one-on-one consultation with the specifier or main contractor. Technical support and product recommendations are made once we understand the design, functionality and performance requirements of the space.

2

## **Engineering and production**

Working to this design brief, CAD drawings bespoke to the project are created which detail aspects such as ceiling layout, views and perspectives. These details are then used to engineer a production schedule along with any specific installation instructions that may be required at this early stage. Some are best sorted sooner rather than later!

3

## **Logistics and installation**

It doesn't matter if one project uses the same products in the same way as another. It's still unique to us and it's still unique to the specialist contractor installing our systems. That's why we provide them with a tailored logistics plan devised to maximise the benefits of JIT (Just-In-Time) implementation. Then, if they need us on site for additional guidance, we will deliver there too.

4

## **Maintenance and support**

Our customer service doesn't end when a project is complete. Because if that project then needs adapting to some new requirements in any way or expanding, we can continue to provide fitting solutions. We partner with specialist contractors throughout the world who we rely on to help you take your project to the next stage, whether it is adaptation, expansion, repair or basic maintenance.





PROJECT: Cofunds Ltd (UK) : ARCHITECT: Swanke Hayden Connell  
SOLUTIONS: OPTIMA Canopy Circle & AXIOM KE Canopy



# Why Floating Ceilings

## Flexible

Open up an almost endless range of dramatic design possibilities with baffles, canopies and accessories that can be suspended from any soffit. Get quick and simple 'Go where you need, do what you want' ceilings that can be easily relocated when needs change.

## Great acoustics

Because all faces and edges are exposed, baffles and canopies can provide a greater sound absorption surface than continuous ceilings.

## Light and bright

Specially engineered surfaces reflect up to 87% of light is back to improve illumination, making spaces more bright and comfortable and cutting energy bills.

## Modern

Floating ceilings introduce new shapes, add depth, scale and rhythm to internal spaces, creating a new, trendy aesthetic for modern building designers.

## Green

Our canopies and baffles help create a more sustainable interior, contributing to a better indoor air quality, acoustical comfort and supporting high mass low energy construction. By improving light reflection they can also cut lighting energy use.



# Solutions for 'Retrofit'

Acoustical retrofit solutions by Armstrong offer unique benefits:

- **Aesthetics:** create a striking design and more intimate spaces.
- **Flexibility:** solutions can be easily moved to suit future reconfigurations.
- **Functionality:** act as light reflectors to minimise energy consumption.
- **Ease of installation:** special direct ceiling attachment (plasterboard and grid).
- **Acoustic control:** help to control reverberation within a larger space or above a workstation.

## What is 'retrofit'?

An acoustical retrofit consists of fine tuning the acoustical performance of an existing space to meet the end users' desired levels of intelligibility, concentration and confidentiality. When relocating a business to new premises or an existing office to suit new organisational requirements, acoustics must be taken into account as early as possible in the design process. Integrating acoustics and space planning will help achieve a good balance between space optimisation and occupants' comfort levels for more productive working environments. The acoustical performance of a space is set by its size, the room surface materials, furniture and background noise. An acoustical retrofit will therefore consider:

- changing existing surface materials
- complementing the existing room configuration with floating ceiling solutions.


Office space planning is a balance between optimising the area available and producing a comfortable and productive working environment.

Armstrong recommends that acoustical fine tuning be considered as early as possible in the design scheme.

## Floating ceilings: the Armstrong solution

Plasterboard ceilings or exposed concrete soffits can create a very reverberant space which, in combination with today's office interior design trends with extensive use of glass partitions, impacts negatively on concentration levels. Existing suspended ceilings may not always meet the stringent acoustical requirements set by such applications as call centres. Treating sound directly above workstations, whilst also contributing to lowering the overall reverberation time, is then key to enhancing levels of concentration and confidentiality. Under challenging architectural and acoustical conditions retrofitting an existing ceiling with lightweight and designer acoustical absorbers or Canopies and Baffles, can trigger a 180° shift in the perceived quality of the space, provide higher comfort levels and an increase in occupant productivity.

Table showing improvement in acoustic conditions using Armstrong Canopy and Baffle solutions in a typical 100m<sup>2</sup> room.

Acoustic Solution						
	Exposed Structure	OPTIMA Baffles (rows at 600mm centres)	METAL Baffles (rows at 300mm centres)	OPTIMA Baffles (individually hung 1m apart)	METAL Baffles (individually hung 1m apart)	OPTIMA Curved Canopy (50% coverage)
	NONE	OPTIMA Baffles 400 x 1800 mm Total depth 750 mm (350 mm void)	METAL Baffles 300 x 1800 mm Total depth 600 mm (300 mm void)	33 Baffles: OPTIMA Baffles 400 x 1800 mm	33 Baffles: METAL Baffles 300 x 1800 mm	22 Canopies: OPTIMA Curved Canopy 1181 x 1870 mm
Reverberation Time 500Hz 2000Hz (sec)	2.72	0.73	0.74	0.91	1.38	0.78
RT reduction (%)	-	73%	73%	67%	49%	71%
SPL reduction (dB)	-	5.6	5.5	4.6	2.9	5.2

NB: Sound Pressure Level reduction is reverberant Sound Pressure Level



# Sabine Definition

A sabine is a measure of the sound absorption provided by a material when installed within an architectural space. Canopies can provide greater sound absorption than a traditional wall to wall ceiling of the same visible surface area because the sound is absorbed from both the front and back surfaces of the canopy. Canopies installed in a typical 'lively' space will help reduce the reverberation time.

Sabine per unit is preferred to characterise the absorption provided by an individual 'space absorber, such as canopies in:

- Open spaces, open plan offices, retail outlets
- Corridors / lobbies








Individual Baffles - vertically hung Canopies - can also be measured in sabines, however an array of Baffles will have an  $\alpha_w$ .

Factors that may affect the installed acoustical performance relative to the published results are:

- Size of Canopies
- Number of Canopies and their layout
- Suspension distance below a finished ceiling
- Location and horizontal overlap of Canopy
- Ceiling tile selection (for Axiom Canopies)



Canopies can provide greater sound absorption than a continuous ceiling of the same visible surface area because sound can be absorbed on both the front and the back surfaces.

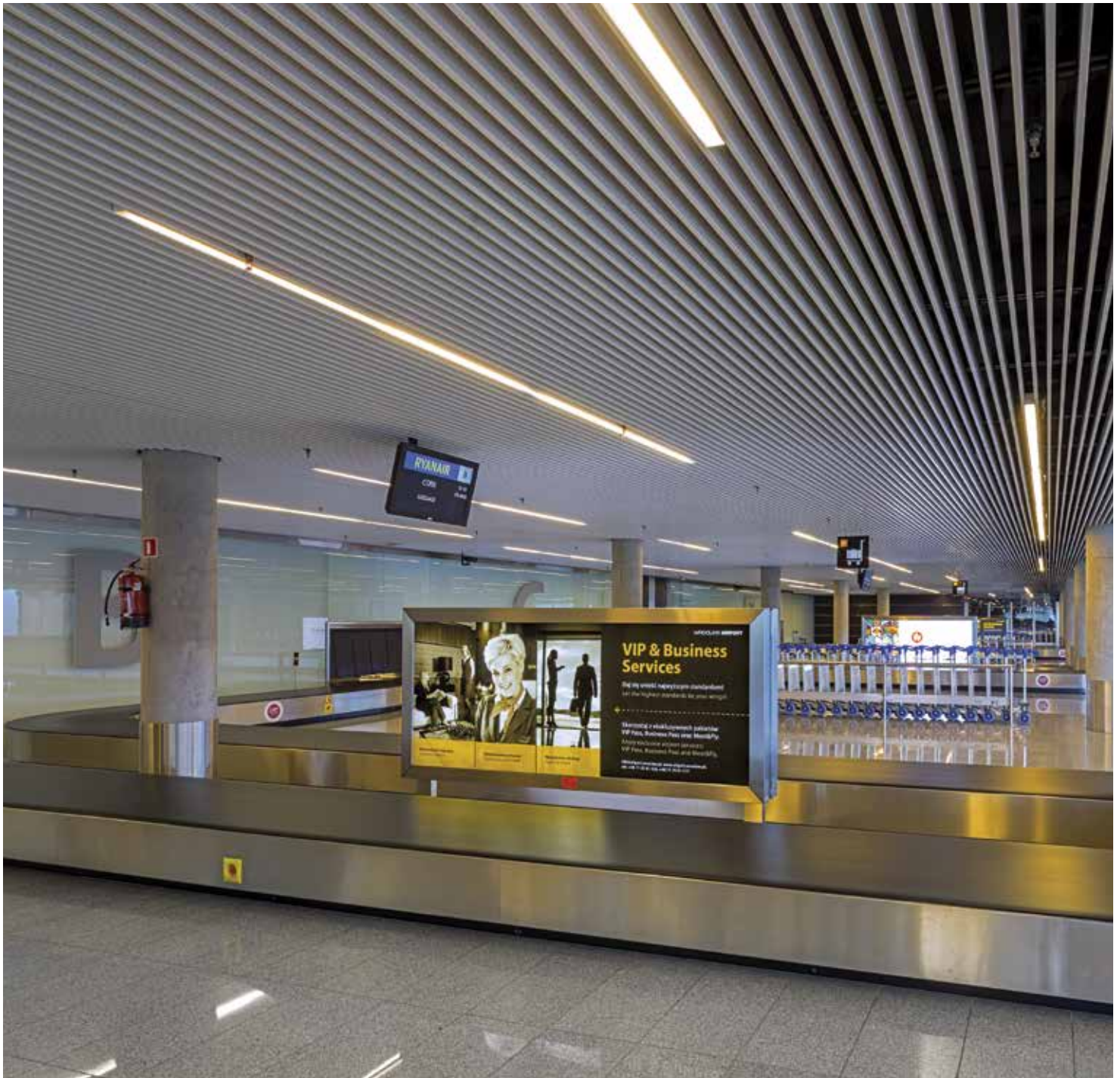
						
<b>OPTIMA L Canopy</b> (50% coverage)	<b>OPTIMA Canopy</b> (50% coverage)	<b>METAL Canopy</b> (50% coverage)	<b>EASY Canopy</b> (50% coverage)	<b>AXIOM Canopy with ULTIMA+</b> (50% coverage)	<b>AXIOM Canopy with ULTIMA+ OP</b> (50% coverage)	<b>ULTIMA+ Ceiling</b> (100% coverage)
16 Canopies: OPTIMA L Canopy Large Rectangle 1200 x 2400 mm	16 Canopies: OPTIMA Canopy Large Rectangle 1200 x 2400 mm	22 Canopies: METAL Canopy 1181 x 1890 mm	16 Canopies: EASY Canopy Rectangle 1200 x 1800 mm	16 Canopies: AXIOM Canopy 1200 x 1800 mm	16 Canopies: AXIOM Canopy 1200 x 1800 mm	96 m <sup>2</sup> ULTIMA+ MicroLook
0.62	0.82	0.76	0.88	1.09	0.91	0.64
77%	70%	72%	68%	60%	67%	76%
6.2	5.1	5.3	4.7	3.8	4.6	6.2

For more details on calculation and methodology, please contact Armstrong.

# Segments

## Transport

Airports and rail stations are inherently noisy, with ever increasing passenger numbers and large spaces only adding to the stress of travellers. Armstrong's Baffles and Canopies go where traditional monolithic ceilings can't – bringing a new aesthetic to open platforms and expansive curved roofs, allowing the often impressive architecture to shine through, whilst providing exceptional levels of acoustic absorption to soak up the noise and give passengers a much more relaxed travel experience.





# Education

Today's schools and colleges strive to create an optimum learning environment that supports modern teaching methods and promotes communication. Creating the right acoustic environment, however, is often frustrated by modern high mass open-plan school design that prevents the use of traditional monolithic ceilings. Armstrong Baffles and Canopies are the perfect high performance solutions, providing exceptional levels of acoustic absorption, while creating a visually exciting backdrop to stimulate the learning process.



PROJECT: AFG Kids Arena St. Gallen :: ARCHITECT: Bayer & Partner AG Architekten, St. Gallen  
SOLUTION: D-H 700 in Sky Blue colour



# Commercial

Lighting, design and acoustics are three of the most crucial challenges facing modern office designers. Armstrong Baffles and Canopies provide a cost-effective way to engineer the sound performance of different zones to get the right balance of acoustic privacy and good communication. Suspended direct from the soffit or below and existing ceiling, their highly light reflecting, acoustically absorbing surfaces and ergonomic design will enhance the working environment and, should space requirements change, relocation is quick and easy.



# Retail

As consumers become increasingly discerning, retail spaces must constantly update and react to external challenges and rapidly changing consumer trends. With their modern appearance and versatile design, Armstrong Baffles and Canopies help create the right acoustic ambience and exciting sales environment for a memorable customer experience – and when change is needed they can be quickly and easily replaced or re-located to meet new visual challenges.



PROJECT: USCE Shopping Center - Food Court (RS) ::::: ARCHITECT: JC1 Studio  
SOLUTION: OPTIMA L Canopy Circle & Small Circle



# Armstrong and the Environment

## Bright green solutions

**We make sustainable ceilings that improve occupant wellbeing and productivity by making spaces healthier, more comfortable and more energy and resource efficient.**

We recognise the importance of protecting the environment and using resources responsibly, and are committed to good environmental stewardship in our dealings with customers, employees, the government and our communities.

Whilst systematically reducing our own environmental footprint, we are providing products and services that help our customers to do the same by reducing the environmental impact of their buildings – and provide greater user comfort.

### Save ENERGY

Lighting is the number one source of energy consumption in buildings and, in poorly designed buildings, much of this can be wasted. A well designed ceiling or ceiling canopy with at least 90% light reflectance will reflect most of the light that strikes it, achieving:

- 20% lighting energy savings
- 7% decrease in air conditioning [cooling] energy consumption.

Up to  
**90%**  
of light back  
=  
**20%**  
Cost savings with  
indirect lighting\*

A high light reflectance ceiling, which can be an essential part of a low energy strategy for new build or refurbishment projects, will allow for:

- Fewer light fixtures
- Reduced electrical light input
- Lower maintenance costs
- Reduced cooling load\*\*

Floating ceilings, such as OPTIMA Curved Canopies, installed over a working place improve the reflection of indirect lighting for better comfort for the end user, helping to:

- Improve illumination and lighting uniformity
- Reduce glare on computer screens
- Increase employee productivity

### ENHANCE INDOOR ENVIRONMENT

In terms of sustainability, the inside environment in a building is just as important as the outside.

We spend on average 90% of our time in buildings. The right balance of **acoustic** and **visual comfort** together with **good air quality** improves workplace productivity and learning outcomes.

## DID YOU KNOW?

#### • Air quality

Increasing attention is being given to the quality of the indoor environment and the presence of Volatile Organic Compounds (VOCs). Armstrong's low emitting canopies meet the criteria for indoor air quality as set out in a range of green building rating tools, for example LEED, BREEAM and Ska.

\* in association with Brinjac Engineering study 2006.

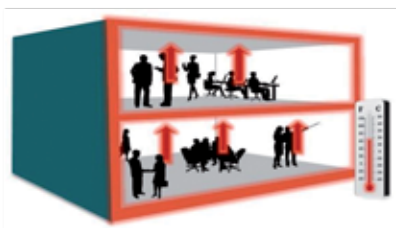


### • Acoustic comfort

Getting the acoustics right is key to the success of any building project. Attention must be paid to surface finishes to ensure they enhance the indoor environmental quality relative to the functionality of the space.

Armstrong acoustic canopies reduce noise levels, due to high performance sound absorption.

### • Thermal comfort



In the drive to achieve low and zero energy buildings, designers are increasingly turning to high thermal mass construction techniques which enable the building to absorb thermal energy during the day and release it back at night, thus reducing overall heating and air-conditioning energy demands.

For thermal transfer to take place, however, high mass surface, such as concrete soffits, must remain exposed, compromising both the acoustic performance and aesthetics of the space.

Armstrong's Canopies or Baffles are the ideal solution, as they are visually exciting and provide the required high levels of acoustic absorption whilst maintaining essential contact between the indoor air and the building mass.

Offering a wide range of material, size and shape options, Canopies and Baffles are easy to install and dismantle, and can be simply relocated to accommodate changes in internal layout and function.

In 1999, Armstrong Ceilings introduced the industry's first ceiling-recycling programme. To date, we have recycled over 15 million m<sup>2</sup> of old ceiling material. That's more than 60 000 tonnes of construction waste that's been diverted from landfills.

# DID YOU KNOW?

## REDUCE ENVIRONMENTAL IMPACT

We're committed to helping reduce the environmental impact of buildings. From product design and raw material selection, to how we make and deliver products, our supply chain partnerships ensure we can meet customers' demands for environmental transparency.

### • Green Building Rating Tools

Whether you're designing using LEED, BREEAM, Ska or other rating tools we can advise how to maximize credits using our Canopies and Baffles. Credit Summaries are available to download on Armstrong website covering the following credits:

- Recycled content
- Waste management
- Indoor Air Quality
- Light reflectance
- Acoustical comfort, and
- Low emitting materials

# BAFFLES RANGE

OPTIMA BAFFLES - Individual or Grouped Panels

METAL BAFFLES - Individual or Grouped Panels

## CASE STUDY

### Project: Paddington Station London

- Architect: Weston Williamson & Partners
- Main Contractor: Carillion
- Ceiling Contractor: Carlton Ceiling & Partitioning Ltd
- Armstrong Solutions: B-H 300 & V-P 500 Baffles

Engineered soft fibre or metal baffles offer go-anywhere solutions that combine exceptional acoustic absorption with a new linear aesthetic. Baffles allow air circulation and thermal exchange with the soffit above, whilst concealing the services above and providing sound absorption. Whether individually suspended from the soffit or in a linear array from a grid system pre-located fixings that ensure perfect alignment and a clean ceiling line, they're simple and quick to fit for projects large and small.

- **Choice** - off-the-shelf sizes or project options
- **Simplicity** - pre-fixed anchors and no on-site assembly
- **Range** - entry level soft-fibre or premium metal solutions
- **Precision** - accurate alignment every time
- **Economy** - reduced fixing time for lower cost
- **Reliability** - tried and tested systems
- **Peace of mind** - backed by Armstrong, the leader in ceiling systems.



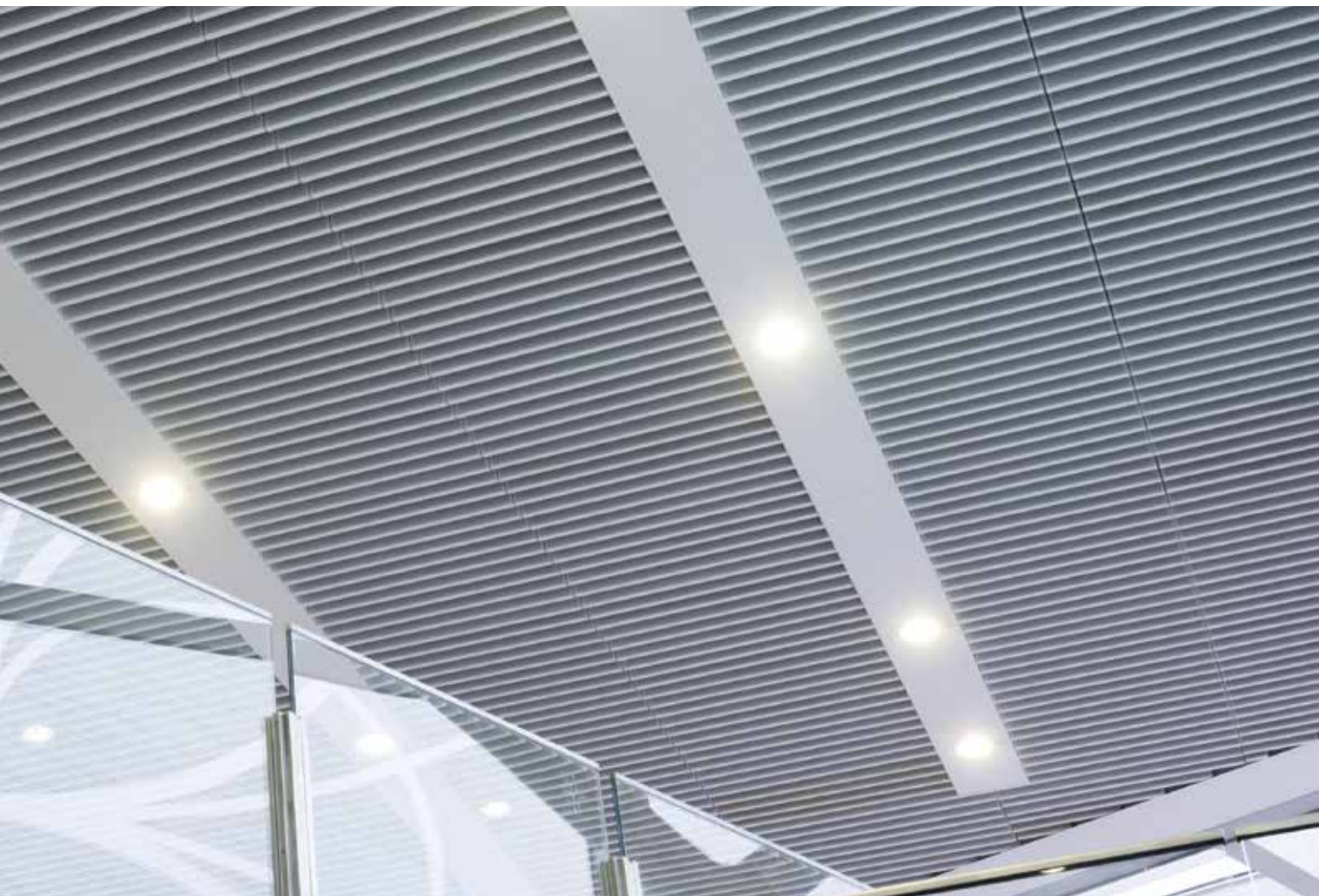
Paddington Station, also known as London Paddington, is a central London railway terminus and London Underground station complex. The Paddington Integrated Project (PIP) represents a close collaboration between Crossrail, London Underground, Network Rail and Transport for London to create a truly integrated station that offers a superior passenger experience with easy interchanges.

## CHALLENGE

How to integrate bespoke interior ceiling solutions from an internal to a more demanding external environment that are Section 12 compliant, are fully accessible to the services and meet the necessary health and safety standards for a busy London train station?







## SOLUTIONS

Some 300m<sup>2</sup> of Armstrong's B-H 300 linear perforated metal plank system were installed with a low-smoke acoustic fleece on Paddington's low-level concourse. This was complemented on the high-level concourse with 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. These baffles were perforated for the high-level concourse and north entrance but specified unperforated in the taxi deck area due to its semi-exposed location. In addition, the grid was polyester powder coated to increase its corrosion resistance and the number of hangers was increased by 20% to help counter the more extreme environment.

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 500m<sup>2</sup> 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.

Custom Baffles



B-H 300







# OPTIMA BAFFLES

## **Frameless mineral baffles for economy and performance**

Our engineered mineral baffles which comprises 80% recycled content, is available off-the-shelf in standard white (with up to 87% light reflectance) or in bespoke colours and sizes.

Available in both rectangular and curve shapes, they are typically used to provide acoustic absorption in schools, offices, leisure centres, transport hubs, etc.

Ideal for use in low energy buildings utilising high thermal mass construction techniques, naturally lit areas with skylights, locations where normal suspended grid fixing is not possible, and in lower profile applications requiring a more economical solution. They are ready to fit and come complete with pre-screwed spiral anchors, making them not only a cost-effective option but also one of the easiest and quickest baffle solutions around.

PROJECT: Groupama Arena (HU) ::::: ARCHITECT: MCXVI ARCHITECTS + S.A.M.O., arch. GÁBOR SZOKOLYAI  
SOLUTION: OPTIMA Baffles Rectangular

# OPTIMA BAFFLES - Mineral

## KEY SELECTION ATTRIBUTES

- Great acoustic performance
- Integrated spiral anchors factory fitted for easy alignment and installation
- Modern linear appearance
- High light reflectance – save energy
- Quick and easy to fix – save cost
- Install individually or in groups

## TYPICAL APPLICATIONS

- Exposed soffits for thermal mass
- Offices
- Retail
- Halls
- Leisure centres
- Schools
- Multi purpose rooms

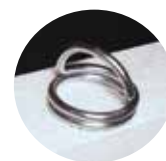


## PHYSICAL DATA

**Colour:** White (WH). Other RAL colours available on request.

**Edge:** Painted on edges

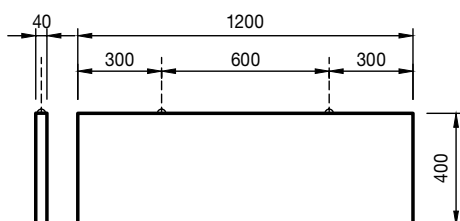
Factory fitted for easy alignment and installation



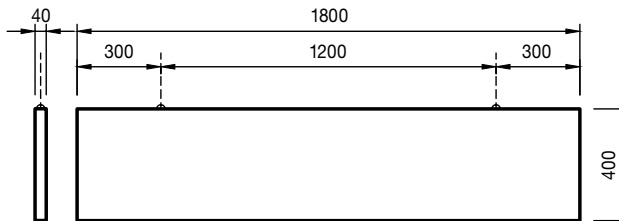
## AVAILABLE SHAPES

### OPTIMA BAFFLES Rectangular

Module 400 x 1200 x 40 mm

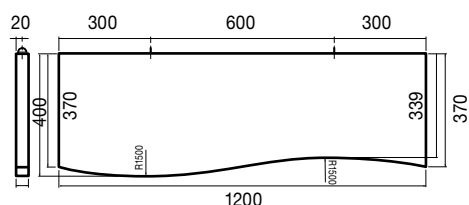


Module 400 x 1800 x 40 mm

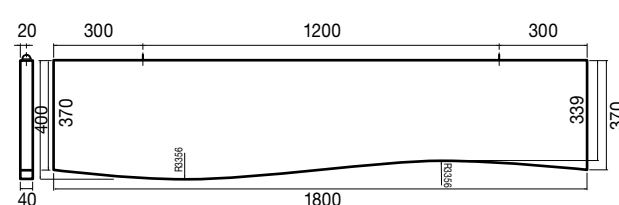


### OPTIMA BAFFLES Curves - Custom sizes and shapes available on request

Module 400 x 1200 x 40 mm



Module 400 x 1800 x 40 mm

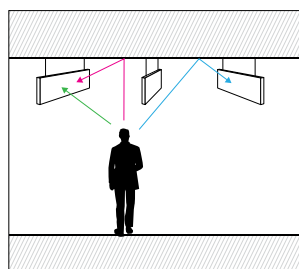


## ACOUSTICAL PERFORMANCE

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 ( $\alpha_w$ ), when installed as a linear array; or as a 'discrete' absorber (EAA) when installed as separate decorative elements. Additional test values for alternative installation configurations are available upon request.

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
OPTIMA BAFFLES - 400 x 1200 mm	1.00
OPTIMA BAFFLES - 400 x 1800 mm	1.45

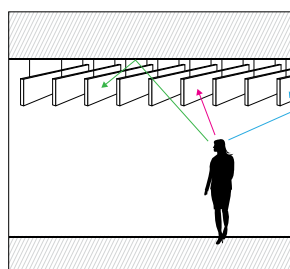


Discrete absorption

\* 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.

### Acoustical Data - 1000 mm total depth (600mm void)

Dimensions	$\alpha_w$
OPTIMA BAFFLES 400mm (450mm centres)	0.60(MH)



Planar absorption

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EEA Euroclass B-s1, d0

EN 13501-1



400 x 1200 x 40mm: 2.1 kg/pc  
400 x 1800 x 40mm: 3.3 kg/pc



Light Reflectance



Recycled Content





## METAL BAFFLES

### **Precision-engineered metal baffles for outstanding acoustics and aesthetics.**

Armstrong Metal Baffles are precision engineered metal elements with a regular perforation pattern and high performance glass wool insert for outstanding acoustic performance.

Used as a plenum mask where access to services is required; in semi-exposed station platforms environments, or simply as an aesthetic ceiling solution for open space areas, their robust design and precise lines creates impact in any ceiling environment.

Armstrong Metal Baffles can be easily customised in dimensions, perforations and colours, to achieve the best design for any architectural project.

PROJECT: Airport in Wrocław (PL) ::::: ARCHITECT: JSK Architekt  
SOLUTION: Custom METAL Baffles



# METAL BAFFLES - Metal

## KEY SELECTION ATTRIBUTES

- Robust, engineered solution
- Excellent acoustic performance
- High light reflectance – save energy
- Modern linear appearance
- Highly customisable system

## TYPICAL APPLICATIONS

- Transport hubs
- Schools
- Libraries
- Exhibition areas
- Retail
- Large halls
- Leisure centres



## PHYSICAL DATA

**Material:** Galvanised steel.

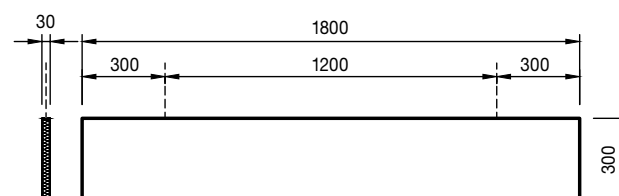
**Colour:** RAL 9010. Other colours available on request.

**Acoustic infill:** 25mm acoustic pad.

**Perforation:** Rd 1522. Other perforations available on request.

## AVAILABLE SHAPES

**Standard Module:** 300 x 1800 x 30 mm



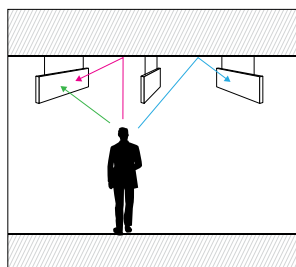
Custom sizes available on request

## ACOUSTICAL PERFORMANCE

Armstrong METAL Baffles can significantly reduce background noise levels and reverberation times within spaces and enhance speech intelligibility. They provide absorption either as a 'planar' absorber ( $\alpha_w$ ), when installed as a linear array; or as a 'discrete' absorber (EAA) when installed as separate decorative elements. Additional test values for alternative installation configurations are available upon request.

### Acoustical data - 1000 mm airspace

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

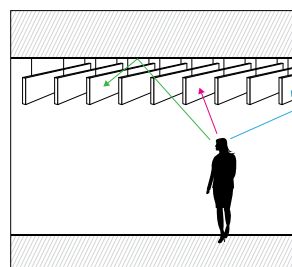


Discrete absorption

\* 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.

### Acoustical Data - 600 mm total depth (300mm void)

Dimensions	Spacing centre (mm)	$\alpha_w$
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

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EN 13501-1  
EEA Euroclass A2-s1, d0



300 x 1800 x 30mm: 5.7 kg/pc



65%  
EN ISO 7724-2 & 3  
Light Reflectance



≤30%  
ISO 14021  
Recycled Content

# OPTIMA CANOPY RANGE

OPTIMA CURVED CANOPY - Individual Panels

OPTIMA CANOPY - Individual or Grouped Panels

OPTIMA L CANOPY - Individual Panels

## CASE STUDY

### Project: MARTELA Headquarters

- Architect: Martela sp. z o.o.
- Armstrong Solutions: OPTIMA Curved Canopy, OPTIMA Canopy Concave & Convex, CELLIO

When developing a ceiling solution in areas where soffit height is limited, or when the design intent is simply to leave the structure exposed, Armstrong's choice of canopies is unbeatable. Listening to Architects and Designers over the years, Armstrong has developed solutions to help create inspiring, wonderful spaces.

- **Choice** - flat, shapes, curved, and much more
- **Flexibility** - individual or grouped installation
- **Range** - from entry level to custom-made products
- **Quality** - developed by Armstrong, the leader in ceiling systems
- **Support** - a team of experts to support you



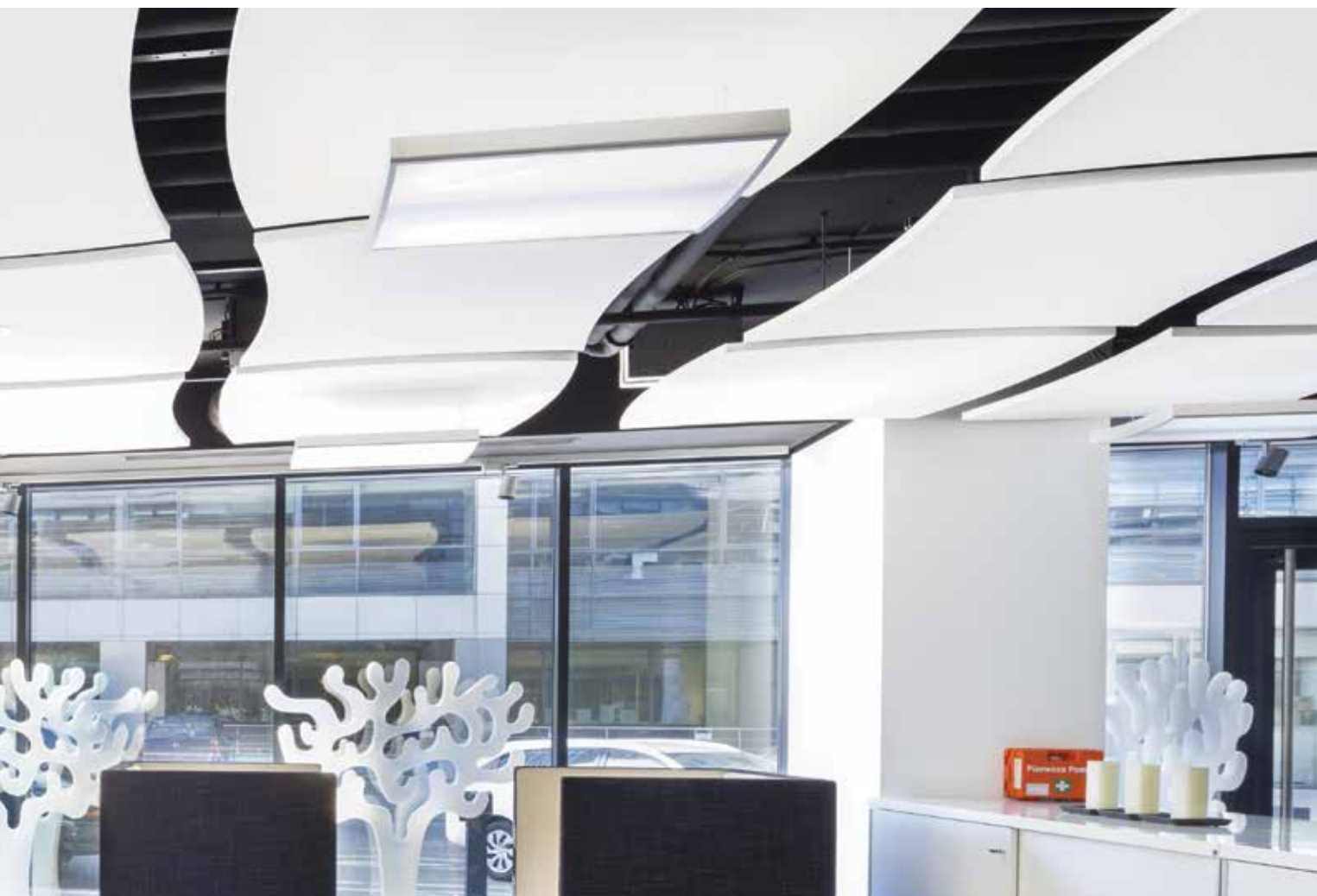
## DESCRIPTION

Martela is one of the Nordic leaders in the office interiors industry. In addition to innovative and ergonomic furniture solutions, Martela designs and implements various workplace related services. Martela helps improving the employee wellbeing while at the same time increasing the space use efficiency in workplaces, schools and welfare environments. When designing the new Warsaw Headquarters, Martela's architect specified a range of Armstrong ceiling solutions, creating a trendy modern interior design that also provided acoustic comfort in a large, open office.

## CONSTRAINTS

The biggest constraint was the ceiling height which was relatively low.





## SOLUTIONS

Because of the low ceiling height, the architect preferred to specify floating island ceilings under the exposed black soffit.

In the lobby a series of OPTIMA Curved Canopies were installed in concave and convex arrays, creating a large, dynamic white wave.

OPTIMA Canopies in various shapes and forms helped reduce background noise and reverberation in the open office space.

A classic CELLIO metal ceiling solution was installed in the conference room, providing a more focused interior atmosphere.

Armstrong Ceilings have truly complemented the interiors of Martela Warsaw HQ.

OPTIMA Curved Canopy & OPTIMA Canopy CELLIO







## OPTIMA CURVED CANOPY

### **High performance mineral panel with a curved profile.**

The high performance mineral panel has an attractive curved profile and can be installed as either a concave or convex element, allowing many different design options from a single canopy system.

The exclusive all-over durable white finish, high light reflectance and great acoustics make OPTIMA Curved Canopy ideal for a new or refurbished office, atrium and other large open space. Use them alone, or in combination with OPTIMA L flat Canopies, to provide distinctive designs or creative highlights.

Quick and easy to install under plasterboard ceilings, existing grid systems or exposed concrete soffits, OPTIMA Curved Canopies are perfect for areas where aesthetics and acoustics are important.

PROJECT: Headquarters of MARTELA (PL) : ARCHITECT: Martela sp.z o.o.  
SOLUTION: OPTIMA Curved Canopy

# OPTIMA CURVED CANOPY - Mineral

## KEY SELECTION ATTRIBUTES

- Install as concave or convex
- Exclusive high white finish
- Excellent acoustic performance
- High light reflectance – save energy
- Accentuate prestige areas
- Quick and easy to fix

## TYPICAL APPLICATIONS

- Showrooms
- Entrance halls
- Offices and meeting rooms
- Retail
- Cafeterias
- Schools
- Multi-purpose rooms



## PHYSICAL DATA

**Dimensions:** 1181 x 1870 x 30 mm

**Colour:** White (WH)

**Edge:** Painted on edges

## AVAILABLE SHAPES

Can be installed either Concave or Convex.

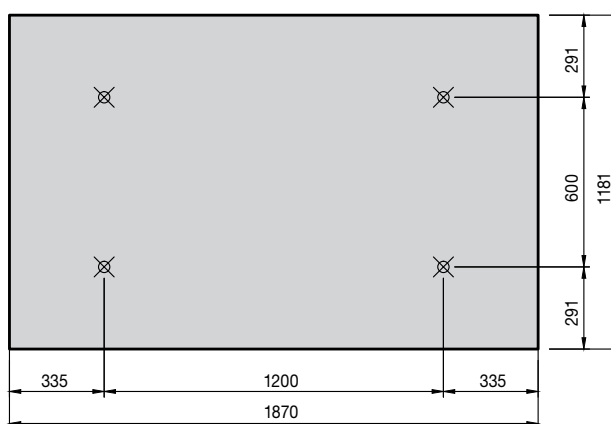
### Concave installation



### Convex installation



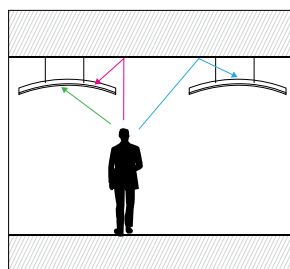
### Plan view



## ACOUSTICAL PERFORMANCE

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
OPTIMA Curved Canopy – 1181 x 1970 mm	2.93



Discrete absorption

\* 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.

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EN 13501-1  
EEA Euroclass B-s1, d0



12 kg/pc



87%  
EN ISO 7724-2 & 3  
Light Reflectance



80%  
ISO 14021  
Recycled Content



## OPTIMA CANOPY

Armstrong OPTIMA Canopies are designer acoustic panels, pre-formed into different shapes such as convex, concave, circle, hexagon, trapezoid, square and parallelogram shapes.

The canopies improve the overall comfort of a working environment, offering excellent sound absorption and light reflectance.

OPTIMA Canopy can be used to provide a striking design for a new space or be used to refresh or renovate an existing area. It can retrofit to most ceiling systems in minutes and are the ideal solution for an area that suffers from background noise and reverberation.

It features a back frame that allows easy height and angle adjustment, as well as facilitate grouping installation.

PROJECT: Jarosova Office Centre : : : : : ARCHITECT: MOROCZ\_TACOVSKY s.r.o.  
SOLUTION: OPTIMA Canopy Circle



# OPTIMA CANOPY - Mineral

## KEY SELECTION ATTRIBUTES

- Can be installed flat, on a slope or hanging on a wall
- Wide selection of shapes
- Enhance acoustics in open spaces
- Install individual or in groups
- Embedded engineered aluminium frame for
  - ease of installation
  - easy and precise alignment
- Customisable shape options

## TYPICAL APPLICATIONS

- Showrooms
- Office
- Schools
- Large halls
- Multi-purpose rooms
- Lounges



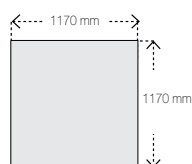
## PHYSICAL DATA

**Colour:** White (WH). Other colours available on request.

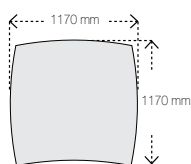
**Edge:** Painted on edges

## STANDARD SHAPES

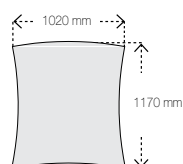
View shown as seen from below - Nominal 1200 x 1200 mm / 1200 x 1800 mm / 1200 x 2400 mm



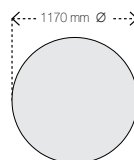
**SQUARE**



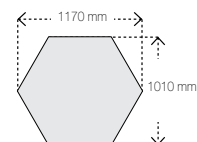
**CONVEX**



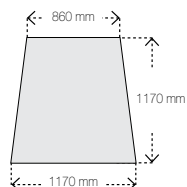
**CONCAVE**



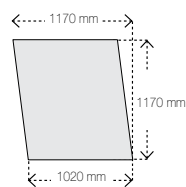
**CIRCLE**



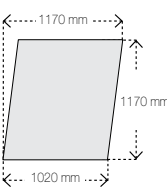
**HEXAGON**



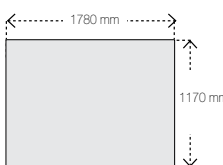
**TRAPEZOID**



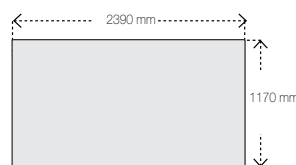
**LEFT PARALLELOGRAM**



**RIGHT PARALLELOGRAM**



**SMALL RECTANGLE**

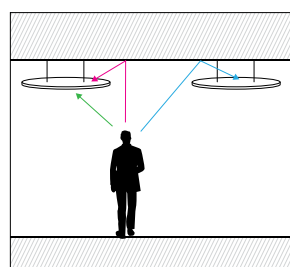


**LARGE RECTANGLE**

## ACOUSTICAL PERFORMANCE

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
Square - 1170 x 1170 mm	1.83
Convex - 1170 x 1170 mm	1.47
Concave - 1040 x 1170 mm	1.73
Circle - Ø 1170 mm	1.61
Hexagon - 1170 x 1010 mm	1.23
Trapezoid - 1170 x 1170 mm	1.64
Left Parallelogram - 1170 x 1170 mm	1.64
Right Parallelogram - 1170 x 1170 mm	1.64
Small Rectangle - 1780 x 1170 mm	2.77
Large Rectangle - 2390 x 1170 mm	3.57



Discrete absorption

\* 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.



90 % RH



EN 13501-1  
EEA Euroclass B-s1, d0



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



Light Reflectance



Recycled Content



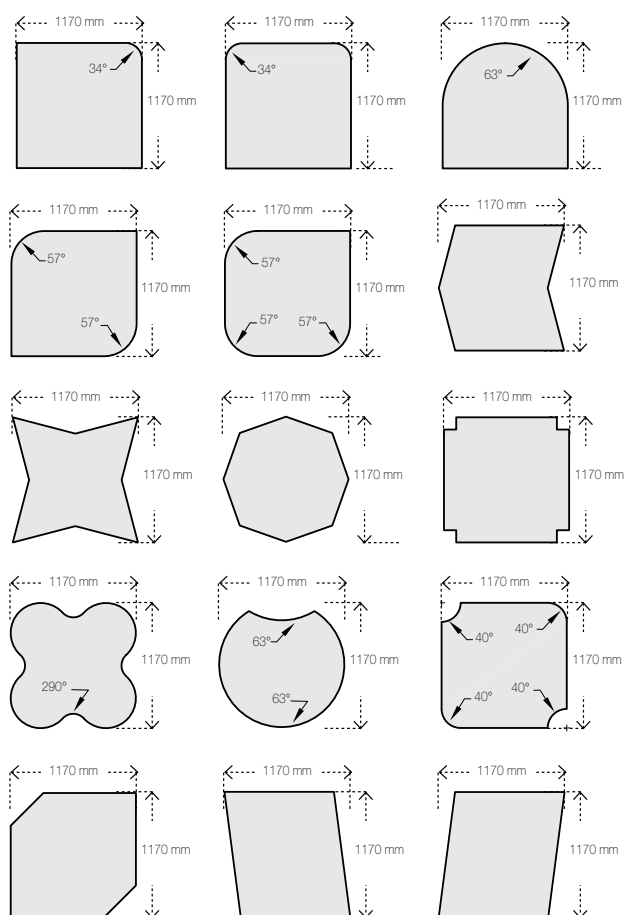
## OPTIMA CANOPY

PROJET: Zionsville High School (US) : ARCHITECT: Balfour Beatty  
SOLUTION: OPTIMA Canopy Circle, Concave and Convex

# OPTIMA CANOPY - Mineral

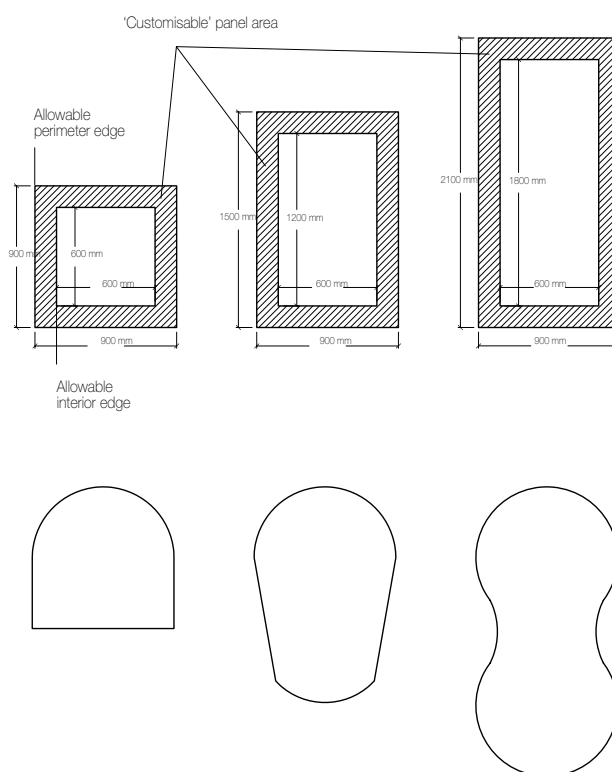
## SEMI STANDARD SHAPES

View shown as seen from below



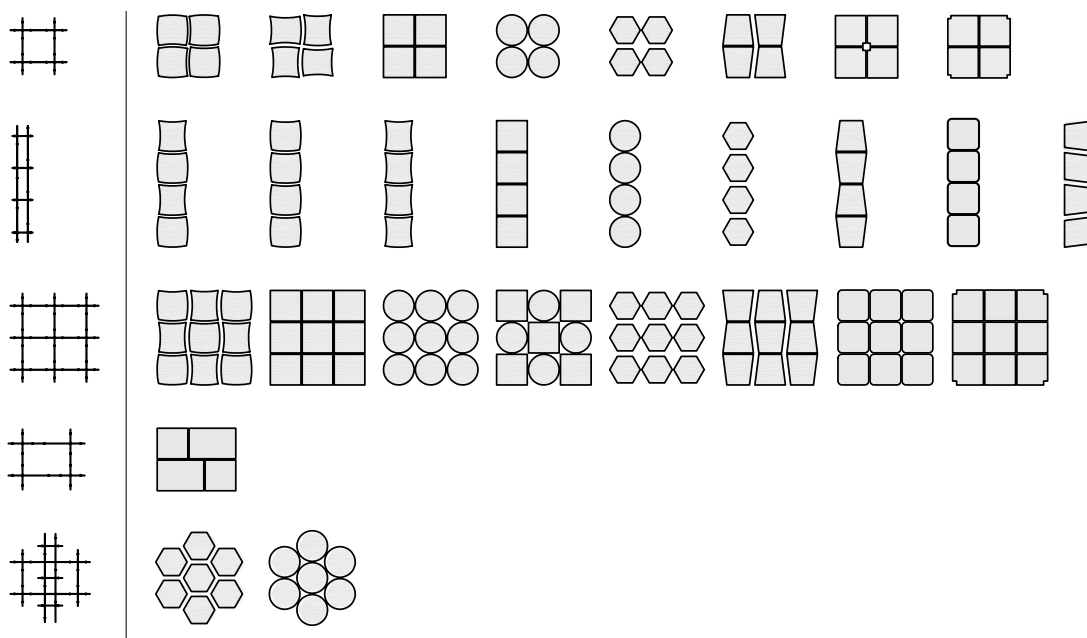
## CUSTOM SHAPES

Now you can create your own shapes!



## WAYS YOU CAN SUSPEND OPTIMA CANOPIES IN GROUPS

You can group shapes in unlimited combinations. Here a few ideas:







# OPTIMA CANOPY

PROJECT: PizzaExpress (UK) : : : : : ARCHITECT: Ab Rogers Design : : : : : CONTRACTOR: Atlas Refurbishment (Northern) Ltd  
SOLUTION: Printed OPTIMA Canopy Circle

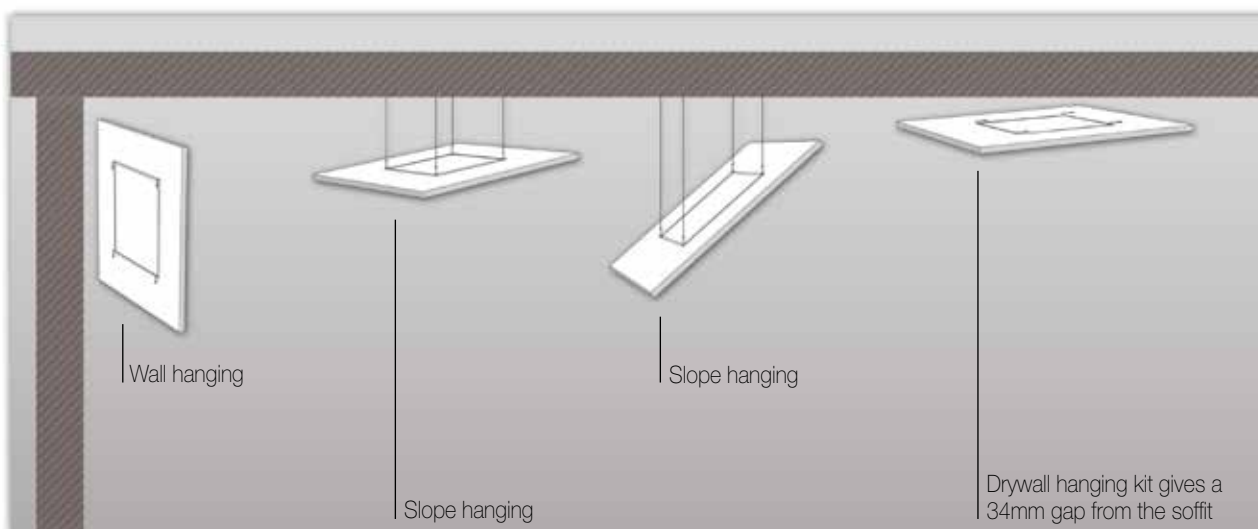
# OPTIMA CANOPY - Mineral

## CHOOSE YOUR COLOURS



NOTE: Special care in installation and handling must be taken with colour shapes to avoid surface damage to the paint finish. Custom colours are available. If you are working on a project that may require colours on canopies, do not hesitate to contact us.

## CHOOSE YOUR ANGLE



## EXAMPLE OF WALL INSTALLATIONS



Bolsover College (UK)



Bishopsgate Institute (UK)



## OPTIMA L CANOPY

### **Flat mineral panel system for economy and performance.**

With an all overall durable white finish, the OPTIMA L Canopy provides a high quality appearance that's perfect for open areas in new buildings or for rejuvenating or renovating existing spaces.

Combining excellent sound absorption with high light reflectance, it comes in a range of sizes and shapes, giving ceiling designers the flexibility to create a unique solution for any space.

Quick and easy to install under plasterboard ceilings, existing grid systems or exposed concrete soffits, it's great for areas where aesthetics and acoustics are important.

PROJECT: Akademia Obrony Narodowej (PL) : ARCHITECT: Kontrapunkt V-projekt  
SOLUTION: OPTIMA L Canopy Large Rectangle



# OPTIMA L CANOPY - Mineral

## KEY SELECTION ATTRIBUTES

- Cost-effective design solution
- Attractive high white finish
- Great acoustic performance
- High light reflectance – save energy
- Finished on all sides for an high quality visual appearance
- Easy and quick to install under plasterboard ceilings, existing grid systems or exposed concrete soffits

## TYPICAL APPLICATIONS

- Offices
- Retail
- Entrance halls
- Schools
- Leisure centres
- Multi-purpose rooms

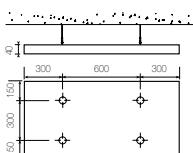


## PHYSICAL DATA

**Colour:** White (WH). Other colours available on request.

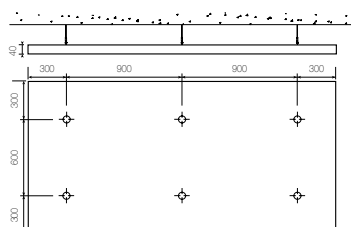
**Edge:** Painted on edges (Circles) / Painted scrim on edges

## AVAILABLE SHAPES



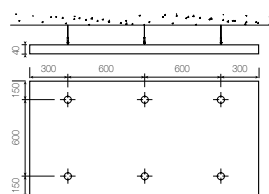
**Small Rectangle**

600 x 1200 x 40 mm



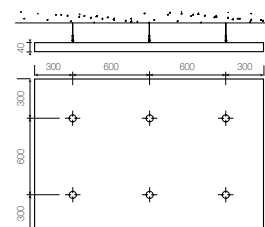
**Large Rectangle**

1200 x 2400 x 40 mm



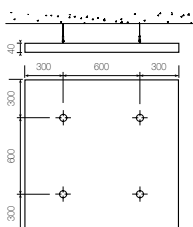
**Medium Rectangle A**

900 x 1800 x 40 mm



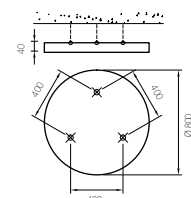
**Medium Rectangle B**

1200 x 1800 x 40 mm



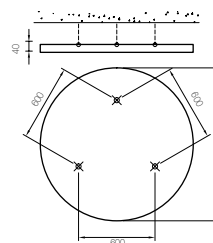
**Square**

1200 x 1200 x 40 mm



**Small Circle**

Ø 800 x 40 mm



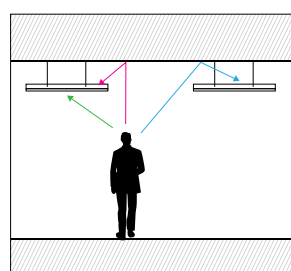
**Circle**

Ø 1200 x 40 mm

## ACOUSTICAL PERFORMANCE

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
Small rectangle - 600 x 1200 mm	1.38
Large rectangle - 1200 x 2400 mm	2.76
Medium Rectangle A - 900 x 1800 mm	3.05
Medium Rectangle B - 1200 x 1800 mm	4.07
Square - 1200 x 1200 mm	5.22
Small Circle - Ø 800 mm	0.96
Circle - Ø 1200 mm	2.17



Discrete absorption

\* 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.

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EEA Euroclass B-s1, d0

EN 13501-1



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



Light Reflectance



Recycled Content

# METAL CANOPY RANGE

METAL CANOPY - Individual Panels

EASY CANOPY - Individual Panels

D-CLIP / D-H 700 - Modular Systems or Individual Panels

## ■ CASE STUDY

### Project: Nice Airport, France

- Architect: Bernard Espla, cabinet Hexagone
- Contractor: SANCHEZ SA
- Armstrong Solution: METAL Canopy

When seeking a design feature that can wow customers and clients, Metal Curved Canopy is the answer. Manufactured with the highest precision with durable metal, our canopies provide both style and acoustics to any indoor environment.

Due to Armstrong's exceptional design flexibility, our standard products can be customised to achieve your design intent.

- **Quality** - engineered and tested by Armstrong
- **Durability** - metal, suitable to majority of indoor environments
- **Acoustics** - perforated options available to meet acoustical requirements
- **Custom** - colours and perforations available on demand
- **Simplicity** - delivered ready to install from the box



## DESCRIPTION

Nice Côte d'Azur is currently France's third busiest hub, after Paris Charles de Gaulle and Paris Orly, and offers direct flights to 105 varied destinations, served by 53 airlines and handling approximately 11m passengers a year (2014).

When the Nice authorities decided to redesign Hall 1, both the waiting and boarding area's, their primary motivation was to create a better customer experience, developing an open area that was modern and welcoming for its passengers.

## CONSTRAINTS

The new ceiling had to be visually exciting and at the same time provide excellent acoustic comfort for passengers travelling through this busy transport hub. A flexible and quick to install solution was also part of the project brief.





## SOLUTION

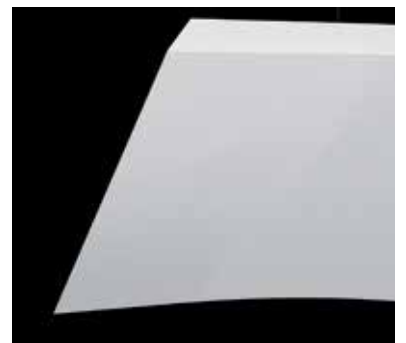
The architects brief was to create a flying visual similar to a 'white bird'.

The METAL Curved Canopies were the perfect solution to create the desired visual.

When Armstrong's METAL Curved Canopies were installed with linear lighting - the wings of a white flying bird were created!

The canopies also significantly reduced the reverberation time in the space.

METAL Canopy







## METAL CANOPY

**Armstrong METAL Canopies are designer metal panels, available in concave, convex and flat shapes.**

Whether suspended below an existing ceiling or within an exposed structure, these pre-curved acoustical canopies provide extraordinary drama and visual excitement. They can be individually suspended or arranged together to make an almost rhythmical statement.

PROJECT: Hôtel de ville de Châteaugiron (FR) ::::: ARCHITECT: Monts et Merveilles & Phénomène Architecture  
SOLUTION: METAL Canopy Concave & Convex

# METAL CANOPY - Metal

## KEY SELECTION ATTRIBUTES

- Metal: easy to clean and maintain
- Sleek design, no visible frame
- Install individually, in line or in groups – create your own layout
- Improve sound absorption and reduces reverberation time to enhance acoustics
- Three panel types - flat, concave and convex
- Custom size, perforations and colours available

## TYPICAL APPLICATIONS

- Showrooms
- Entrance halls
- Transport Hubs
- Meeting rooms
- Retail
- Waiting Areas



## PHYSICAL DATA

**Dimensions:** 1890 x 1181 x 40 mm

**Colour:** RAL 9010. Other colours available on request.

### Edge detail:

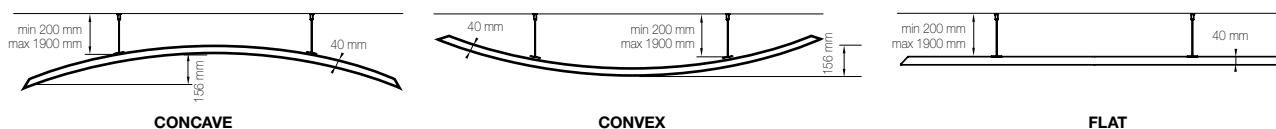
- Concave/Convex: width 47°, long edge 90°
- Flat: all edges 47°.

**Perforation:** Rg 0701 (visible surface).

Other perforations available on request.

## AVAILABLE SHAPES

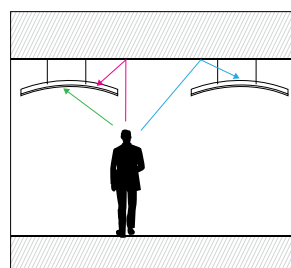
Section view



## ACOUSTICAL PERFORMANCE

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
METAL Canopy – 1890 x 1181 mm	2.50



Discrete absorption

\* 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.

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EN 13501-1

EEA Euroclass B-s2, d0



Flat: 27 kg/pc  
Concave/Convex: 33 kg/pc



up to 80%  
EN ISO 7724-2 & 3

Light Reflectance



30%  
ISO 14021

Recycled Content



## EASY CANOPY

The EASY Canopy is a flat metal canopy, available in both square and rectangular shapes. Built in durable metal, it can be installed in most building areas, always providing a high value appearance.

PROJECT: Community Room City of Penzlin (DE) : ARCHITECT: Amt für Ordnung Bau und Wirtschaft Stadt Penzlin  
SOLUTION: EASY Canopy



# EASY CANOPY - Metal

## KEY SELECTION ATTRIBUTES

- High value appearance
- Metal: resistant and durable
- Two standard shapes, makes it easy to choose
- Great sound absorption performance

## TYPICAL APPLICATIONS

- Offices
- Meeting rooms
- Retail
- Auditoriums
- Multi-purpose halls
- Cafeterias



## PHYSICAL DATA

**Colour:** White RAL 9010

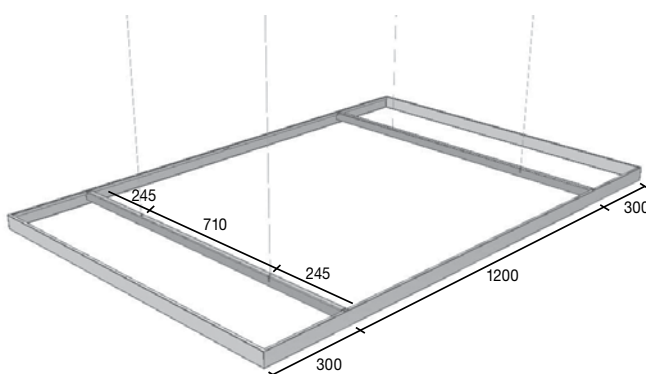
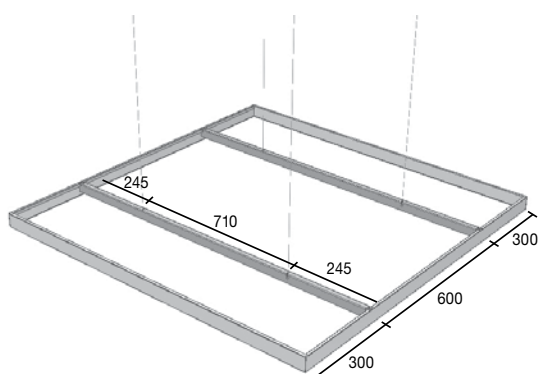
**Edge detail:** Square edge

**Perforation:** Rd 1522

## AVAILABLE SHAPES

■ Module 1200 x 1200 mm

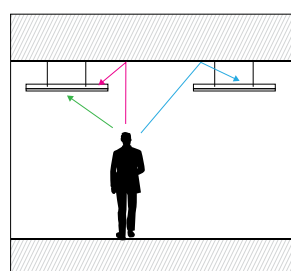
■ Module 1200 x 1800 mm



## ACOUSTICAL PERFORMANCE

### Acoustical data - 1000 mm airspace

Dimensions	EAA - Sabines*
EASY Canopy - 1200 x 1200 mm	2.18
EASY Canopy - 1200 x 1800 mm	3.15



Discrete absorption

\* 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.

For more details on calculation and methodology, please contact Armstrong.



90 % RH



EN 13501-1  
EEA Euroclass A1



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



up to 65%  
EN ISO 7724-2 & 3  
Light Reflectance



30%  
ISO 14021  
Recycled Content



## D-CLIP / D-H 700

**Armstrong's D-CLIP and D-H 700 systems are floating modular solutions for optimum flexibility.**

The product range features Clip-In and Hook-On rectangular panels that can be arranged to create distinctive design elements. The system modularity enables supporting functional service integration, such as cooling and heating elements. In combination with Armstrong's suspension system it allows a minimal-height installation without any extra engineering required.

PROJECT: Siemens, Roma (IT) : ARCHITECT: Gruppo SPA  
SOLUTION: D-H 700

# D-CLIP / D-H 700 - Metal

## KEY SELECTION ATTRIBUTES

- Modular concept for optimum flexibility
- Low system height
- Modern absorber solution for exposed concrete soffits
- Enables integration of services, such as cooling and heating elements
- Customisation in size, colours and perforations available on request
- Metal: easy to clean and maintain

## TYPICAL APPLICATIONS

- Offices
- Meeting rooms
- Retail
- Auditoriums
- Multi-purpose halls
- Cafeterias

## AVAILABLE SYSTEMS

### D-CLIP

Clip-In solution with rectangular panels  
Square edged

Dimensions Length 600 – 2500 mm  
Width 247 – 600 mm

### D-H 700

Hook-On solution with rectangular panels  
Square edged

Dimensions Length 600 – 2750 mm (in steps of 25 mm)  
Width 250 – 600 mm (in steps of 25 mm)

For complete information please refer to the product datasheet or contact Armstrong.

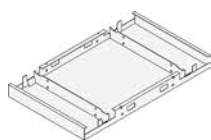
## CONFIGURATIONS



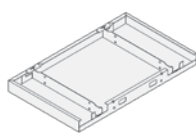
Modular Option

Single Panel

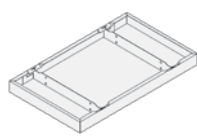
### D-CLIP



Standard Panel

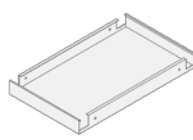


End Panel

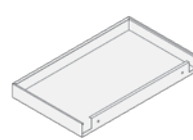


Single Panel

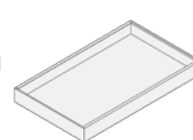
### D-H 700



Standard Panel



End Panel



Single Panel



90 % RH



A2-s2,d0 (with standard fleece)  
or A1 (on request)



Light Reflectance



30YEAR  
system  
guarantee



Recycled Content



# AXIOM CANOPY RANGE

AXIOM C & KE CANOPY - Modular Systems

AXIOM CIRCLE & CURVED CANOPY - Modular Systems

AXIOM L CANOPY - Modular Systems

## CASE STUDY

### Project: Harton Technology College

- Architect: Ryder Architecture
- Main Contractor: Carillion
- Ceiling Contractor: Farpod
- Area: 6 000m<sup>2</sup>
- Armstrong Solutions: DUNE Max Tegular, PARAFON HYGIEN, OPTIMA Board, AXIOM 100mm Profile

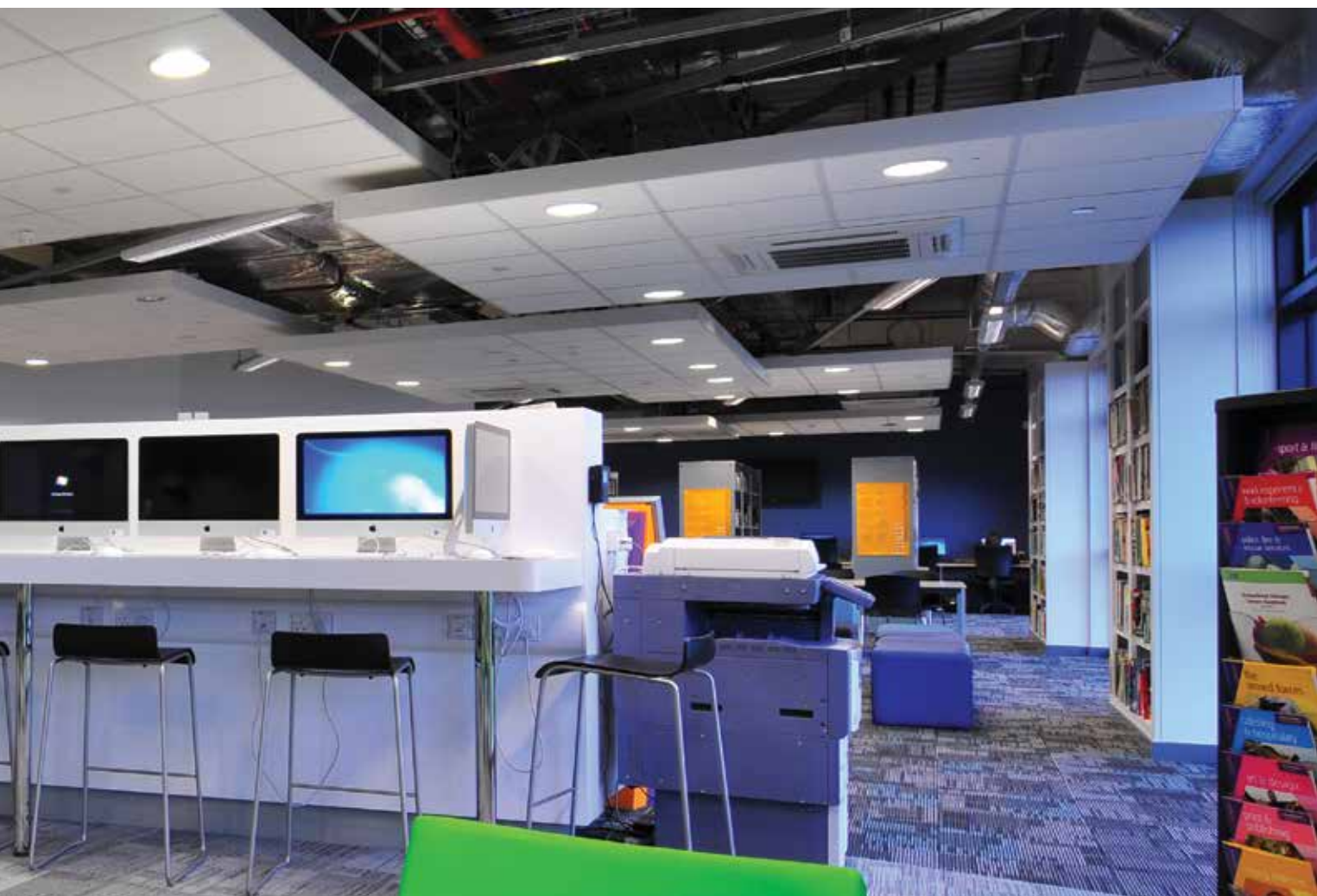
AXIOM Canopies are modular ceiling systems supplied as a kit, in a variety of size, shapes and designer options to create 'Ceiling Clouds' utilising standard panels resulting in stunning individual spaces.

Create an almost limitless range of exciting floating ceilings.

Using highly engineered and pre-cut sections and accessories in either off-the-shelf modular kit form or as individual bespoke solutions. They are available in a full range of profile colours to suit 15 and 24 mm suspension systems including designer grid and plank solutions as specials, and will accept any tile from our mineral, metal or wood ranges.

- **Highly configurable**
- **Provides great aesthetics**
- **Any shape with four or more sides**
- **Used in conjunction with the right tiles, can provide great acoustic qualities.**
- **Can be created in any RAL colour.**
- **Fast to install, reducing labour costs**
- **Engineered and supplied in kits which gives the customer the assurance of a perfect finish, every time.**





## TESTIMONIAL

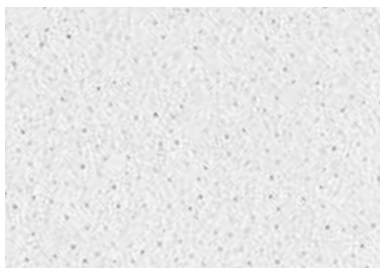
“ Key areas such as the Learning Resource Centre have major acoustic considerations, so the ceiling design in these areas had to be carefully considered to achieve appropriate acoustic levels whilst maintaining the design vision of ‘open’ ceilings and exposed services. The AXIOM C Canopy ‘rafts’ with OPTIMA tiles allowed us to achieve this successfully and create a series of vibrant and informative spaces throughout the new development. ”

Mark Spraggon, Ryder Architecture

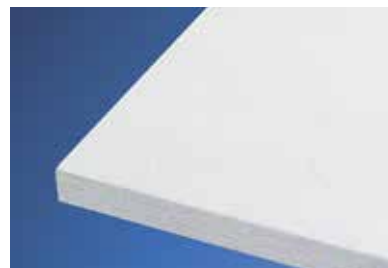
AXIOM C Canopy



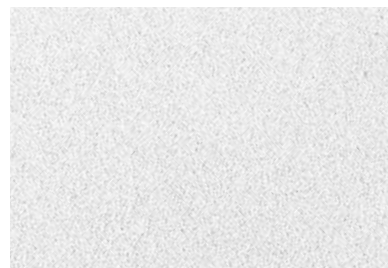
DUNE MAX



PARAFON HYGIEN



OPTIMA







## AXIOM CANOPY

AXIOM Canopies are modular ceiling systems supplied as a kit, in a variety of sizes, shapes and designer options to create 'Ceiling Clouds' utilising standard panels resulting in stunning individual spaces.

PROJECT: Auburn Univ Student Dining Facility, Auburn, AL ::::: ARCHITECT: Williams Blackstock Architects, Birmingham, AL  
SOLUTION: AXIOM Circle Canopy with ULTIMA+ Vector



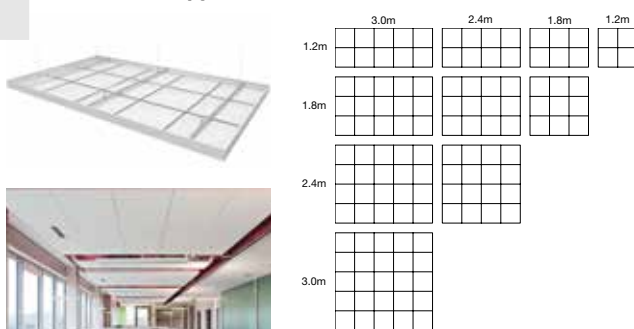
# AXIOM CANOPY - Modular Systems

## KEY SELECTION ATTRIBUTES

- Improve indoor acoustical comfort:
  - reduce reverberation time in the space
  - reduce noise levels in the space
  - increase speech intelligibility
- 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

## STEP 1: SELECT YOUR AXIOM CANOPY SIZE AND SHAPE

### ■ AXIOM C Canopy

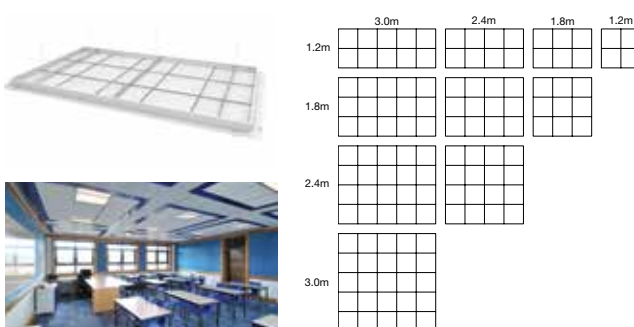


AXIOM C Canopy with SL2 planks.

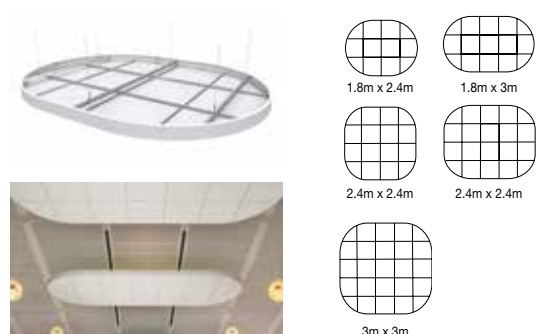
### ■ AXIOM Circle Canopy



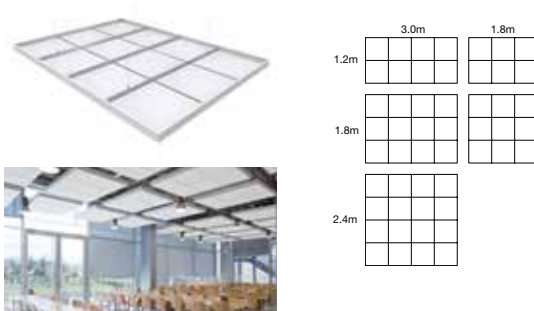
### ■ AXIOM KE Canopy



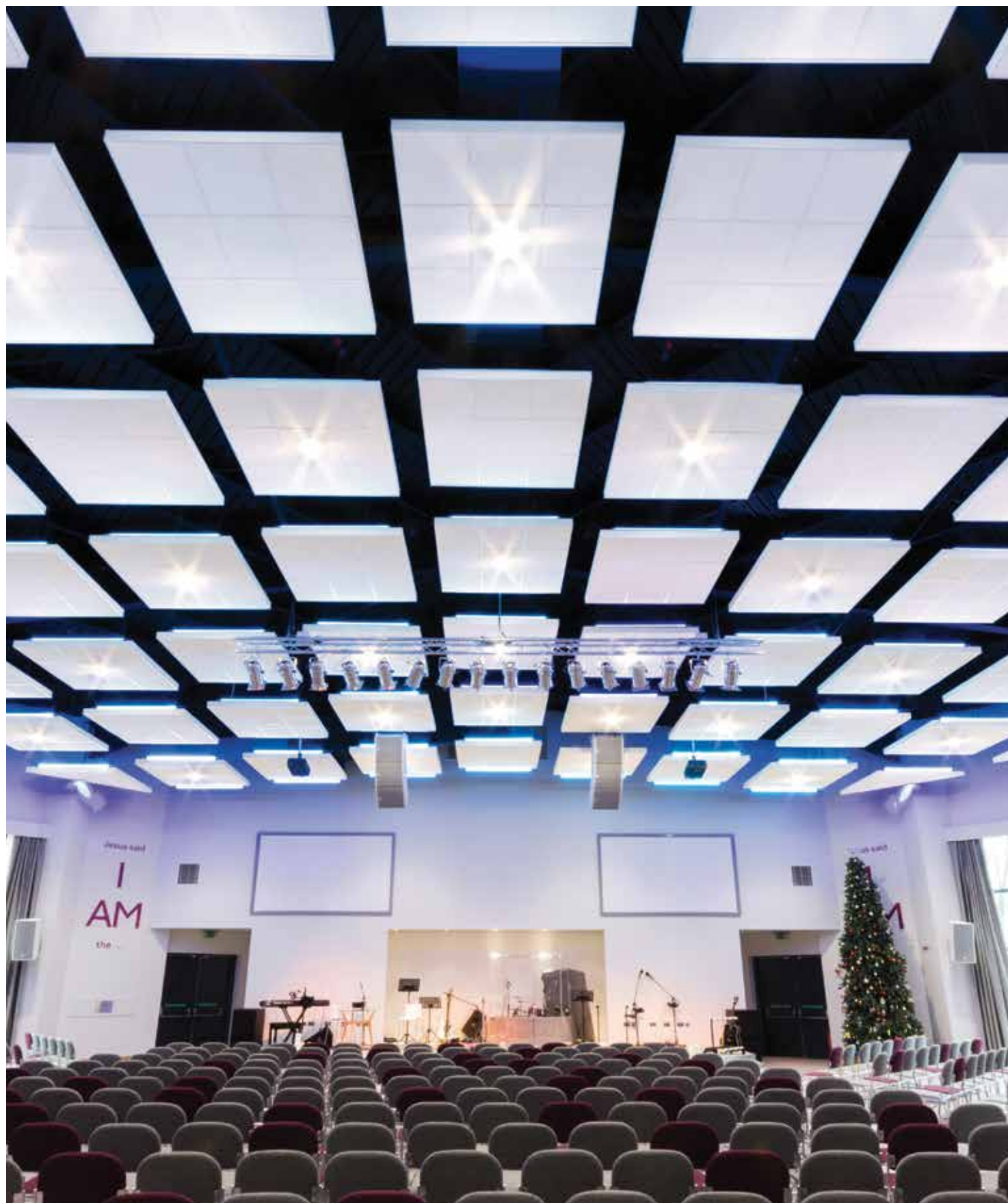
### ■ AXIOM Curved Canopy



### ■ AXIOM L Canopy



**For customised kits, ceiling tile options, dimensions and technical performances please contact Armstrong Technical Sales service.**



## AXIOM CANOPY

PROJECT: Kings Church Amersham (UK) : ARCHITECT: Byrom Clark Roberts  
SOLUTIONS: AXIOM C Canopy Rectangular & Special AXIOM C Canopy Triangular with DUNE Supreme

# AXIOM CANOPY - Modular Systems

## STEP 2: SELECT YOUR CEILING PANEL MATERIAL AND COLOUR



Mineral



Metal



Effects on Metal (Wood)

## STEP 3: SELECT YOUR AXIOM CANOPY TYPE AND HEIGHT

### AXIOM Profile option for Square and Rectangular Canopy



Board/Tegular Panel with AXIOM C Canopy Board Profile



Tegular Panel with AXIOM KE Canopy for Vector Profile

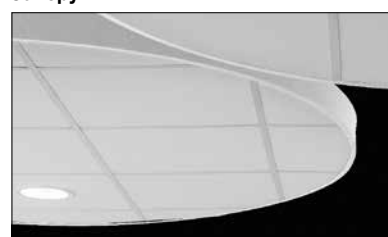


Vector Panel with inverted AXIOM C Canopy Vector Profile



Vector Panel with AXIOM KE Canopy for Vector Profile

### AXIOM Profile option for Circle & Curved Canopy



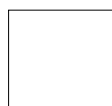
AXIOM Board/Tegular Profile



AXIOM L Canopy Board/Tegular Profile

## STEP 4: SELECT COLOUR OF AXIOM PROFILE

Standard grid colours - Due to printing limitations, colour may vary from actual product.

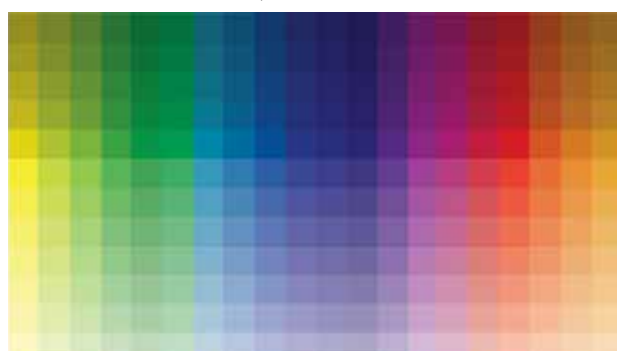


Global White



RAL 9010

RAL colours available on request.



## STEP 5: SPECIFY KITS AND PANELS

- For standard Canopy modules please refer to the specific AXIOM Canopy item number (listed in Axiom dedicated brochures). Item numbers relate to the suspension system included (i.e. 24 mm or 15 mm).
- Panels (tiles) are sold separately to the kits. Please refer to the Armstrong mainline brochure or web site for complete details.

Special designs

Possibility of lighting integration  
Custom shapes on request





## AXIOM CANOPY

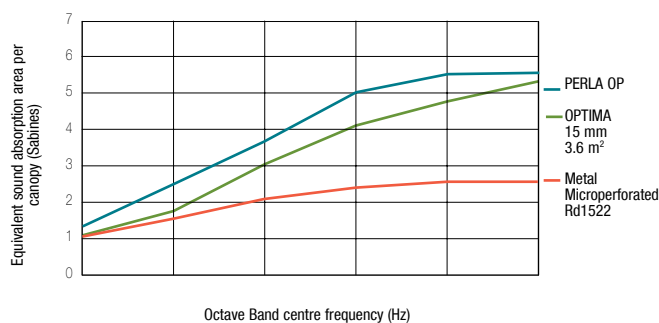
PROJECT: Lawrence University – Richard and Margot Warch Campus Center, Appleton, WI  
ARCHITECT: Uihlein-Wilson Architects, Inc., Milwaukee, WI - KSS Architects, Princeton, NJ  
SOLUTION: AXIOM C Canopy with Effects on Metal (Wood)

# AXIOM CANOPY - Modular Systems

## ACOUSTICAL PERFORMANCE - AXIOM CANOPY - ABSORPTION DATA

Sabines (average 500, 1k, 2k, 4k, Hz)

### Acoustical data - 1000 mm airspace



For more details on calculation and methodology, please contact Armstrong.

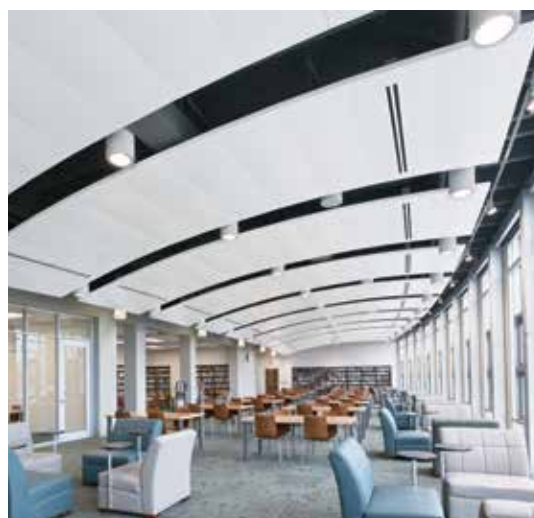
## GUARANTEE

**30 YEAR**  
system  
guarantee

## CUSTOM SOLUTIONS

With many shapes and sizes to choose from, AXIOM Profiles can emphasise a space with unique visuals or allow additional creativity in the ceiling space for thematic designs.

Please contact Armstrong for further information.





# Service Integration

**Armstrong's offer of Baffles, Canopies and floating modular ceilings, coordinate with building services to provide indoor environments where acoustic comfort, visual comfort, thermal comfort and safety contribute to the occupants well-being.**



## **MINERAL / OPTIMA CANOPY RANGE**

OPTIMA Canopies offer great design opportunities with a wide selection of shapes. When fitting small lightweight services, please consider how the load is supported to ensure product performance is maintained. Contact Armstrong's Technical Sales team for further information.







..... Kings Church Amersham (UK)

### AXIOM CANOPY RANGE

Floating ceilings using AXIOM C or AXIOM KE Canopies utilise Armstrong ceiling tile and grid systems, thus standard service elements designed for traditional wall-to-wall ceiling installations can typically be used. AXIOM Canopies allow service integration and careful consideration is needed in regards to how the service elements are supported, especially the larger and heavier ones. Please contact Armstrong's Technical Sales team for further information.



..... Swareflex Company (CH)

### METAL CANOPY RANGE

The nature of metal allows greater opportunities for service integration into Armstrong METAL Canopies. Lighting fixtures can be integrated into Flat METAL Canopies, whilst Convex and Concave METAL Canopies require project management support. Contact your Armstrong's Technical Sales team for further information.



..... St Bede'S School (UK)

# Technical information



## 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.



## 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.



## 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

Canopies and Baffles contribute to a better acoustical environment providing a good level of sound absorption.



## Recycled Content

Armstrong products are produced using a variety of recycled raw materials. The recycled content of individual products is indicated in our literature in accordance with ISO 14021:2004.



## 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 floating ceilings suitable for installation in conditions of up to 90% relative humidity.



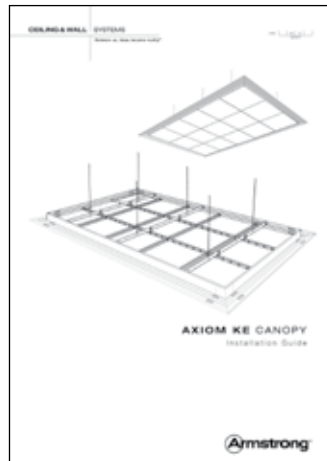
## Cleaning

Cleanability depends on product type and material. Please see our mainline catalogue or contact Armstrong for more detailed information.

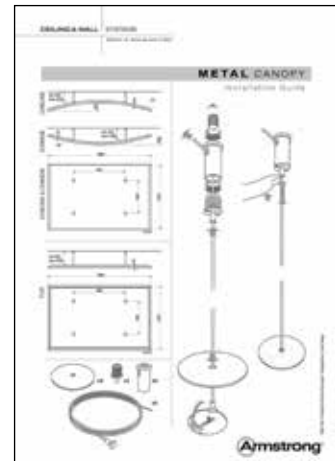
# Installation guides



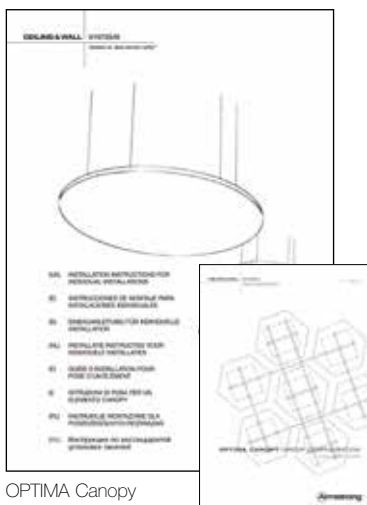
AXIOM C Canopy



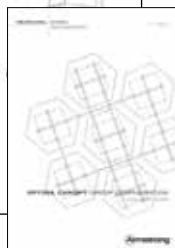
AXIOM KE Canopy



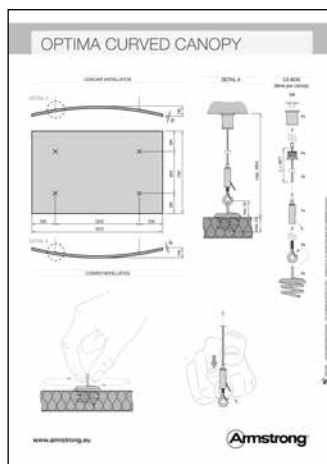
METAL Canopy



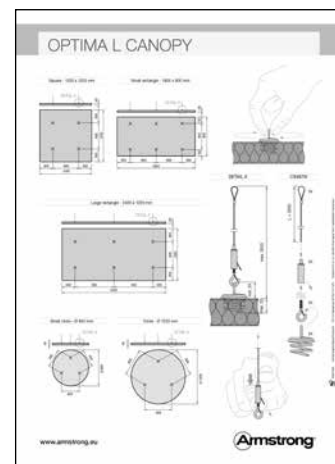
OPTIMA Canopy



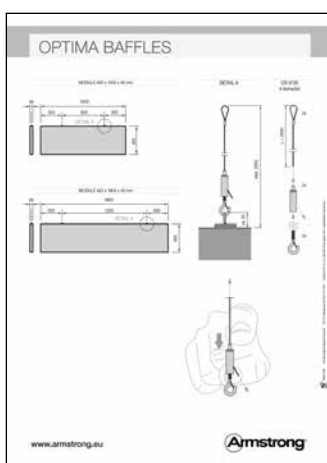
OPTIMA Grouping



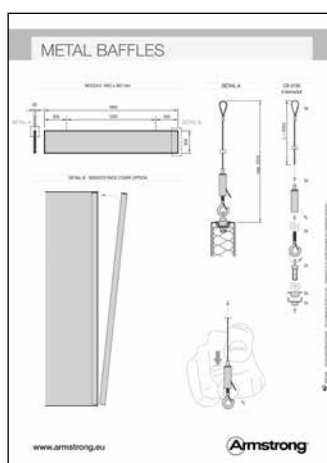
OPTIMA Curved Canopy



OPTIMA L Canopy



OPTIMA Baffles



METAL Baffles



...installation video's are also available on our website.



**Belgium & Luxembourg**

Armstrong Building Products B.V.  
Postbus 3803  
4800 DV Breda  
Netherlands  
Tel.: +32 02 223 00 72  
Fax: +31 (0) 76 521 04 07  
e-mail: [benelux-info@armstrong.com](mailto:benelux-info@armstrong.com)  
[www.armstrongplafonds.be](http://www.armstrongplafonds.be)

**Germany & Switzerland**

Armstrong Building Products  
Kundenservice  
Office Building Quadrium  
Claudius Prinsenlaan 126  
4818 CP Breda  
Netherlands  
Tel.: +49 (0) 251 7603 210  
Fax: +49 (0) 251 7603 593  
e-mail: [deutsche-info@armstrong.com](mailto:deutsche-info@armstrong.com)  
[www.armstrongdecken.de](http://www.armstrongdecken.de)  
[www.armstrong-decken.at](http://www.armstrong-decken.at)  
[www.armstrong.ch](http://www.armstrong.ch)

Firmensitz  
Armstrong Building Products GmbH  
Robert-Bosch-Str. 10  
48153 Münster  
Germany

Armstrong Metalldecken AG  
Breitfeldstrasse 8  
9015 St. Gallen  
Switzerland  
Tel.: +41 (0) 71 313 63 63  
Fax: +41 (0) 71 313 64 00  
e-mail: [gema@armstrong.com](mailto:gema@armstrong.com)  
[www.armstrong.ch](http://www.armstrong.ch)  
[www.gema.biz](http://www.gema.biz)

Zentralschweiz  
Armstrong Metalldecken AG  
Büro / Lager Zentralschweiz  
Grossweid 9  
6026 Rain  
Switzerland  
Tel.: +41 (0) 41 921 63 63  
Fax: +41 (0) 41 921 63 80  
e-mail: [gema@armstrong.com](mailto:gema@armstrong.com)  
[www.armstrong.ch](http://www.armstrong.ch)  
[www.gema.biz](http://www.gema.biz)

Armstrong Plafonds Métalliques SA  
Bureau et Dépôt Suisse Romande  
Avenue de Châtelaine 87  
1219 Châtelaine  
Suisse  
Tel.: +41 (0) 22 731 60 70  
Fax: +41 (0) 22 731 60 74  
e-mail: [gema@armstrong.com](mailto:gema@armstrong.com)  
[www.armstrong.ch](http://www.armstrong.ch)  
[www.gema.biz](http://www.gema.biz)

**Austria**

Armstrong Metalldecken GmbH  
Bundesstrasse 70  
6830 Rankweil  
Austria  
Tel.: +43 (0) 55 22 34 44-0  
Fax: +43 (0) 55 22 34 44-8  
e-mail: [gema@armstrong-decken.at](mailto:gema@armstrong-decken.at)  
[www.armstrong-decken.at](http://www.armstrong-decken.at)  
[www.gema.biz](http://www.gema.biz)

Armstrong Metalldecken GmbH  
Messendorferstrasse 6  
8041 Graz  
Austria  
Tel.: +43 (0) 316 471 584  
Fax: +43 (0) 316 471 584-10  
e-mail: [gema@armstrong-decken.at](mailto:gema@armstrong-decken.at)  
[www.armstrong-decken.at](http://www.armstrong-decken.at)  
[www.gema.biz](http://www.gema.biz)

**Spain & Portugal**

Armstrong Building Products SAS  
Immeuble Paryseine  
3, allée de la Seine  
94854 Ivry-sur-Seine Cedex  
France  
Phone: + 34 91 642 04 99  
[info-espana@armstrong.com](mailto:info-espana@armstrong.com)  
[www.armstrongtechos.es](http://www.armstrongtechos.es)

**France**

Armstrong Building Products SAS  
Bureaux Commerciaux France  
Immeuble Paryseine  
3 Allée de la Seine  
94854 Ivry-sur-Seine  
France  
Tel.: 0800 41 36 43  
Fax: +33 1 45 21 04 11  
e-mail: [info-France@armstrong.com](mailto:info-France@armstrong.com)  
[www.armstrongplafonds.fr](http://www.armstrongplafonds.fr)

Siège social  
Armstrong Building Products SAS  
67 rue de Salins – CS 20089  
25302 Pontarlier Cedex  
France

**Italy & Greece**

Armstrong Building Products  
Ufficio Commerciale Italia  
Immeuble Paryseine  
3 Allée de la Seine  
94854 Ivry-sur-Seine  
France  
Tel.: +39 800 118 085  
e-mail: [info-italia@armstrong.com](mailto:info-italia@armstrong.com)  
[www.armstrongsoffitti.it](http://www.armstrongsoffitti.it)

**Netherlands**

Armstrong Building Products B.V.  
Postbus 3803  
4800 DV Breda  
Netherlands  
Tel.: (+31) 076 523 02 00  
Fax: (+31) 076 521 04 07  
e-mail: [benelux-info@armstrong.com](mailto:benelux-info@armstrong.com)  
[www.armstrongceilings.nl](http://www.armstrongceilings.nl)

**United Kingdom**

Armstrong World Industries Ltd  
Building Products Division  
Armstrong House  
38 Market Square  
Uxbridge UB8 1NG  
United Kingdom  
Tel.: 0800 371 849  
Fax: +44 1895 274287  
e-mail: [sales-support@armstrong.com](mailto:sales-support@armstrong.com)  
[www.armstrongceilings.co.uk](http://www.armstrongceilings.co.uk)

**Republic of Ireland**

Armstrong World Industries Ltd.  
108 Greenlea Road  
Terenure  
Co Dublin 6W  
Ireland  
Tel.: 1800 409002  
Tel.: (+353) 1 499 1701  
Fax: (+353) 1 490 7061  
e-mail: [sales-support@armstrong.com](mailto:sales-support@armstrong.com)  
[www.armstrongceilings.ie](http://www.armstrongceilings.ie)

**(DK/EE/FIN/IS/LT/LV/N/PL/S)**

Armstrong Building Products BV  
Sp. z o.o. Oddział w Polsce  
ul. Domaniewska 37  
02-672 Warszawa  
Poland  
Tel.: (+48) 22 337 86 10/ 86 11  
Fax: (+48) 22 337 86 12  
e-mail: [service-ce@armstrong.com](mailto:service-ce@armstrong.com)  
Latvia: [www.armstrong.lv](http://www.armstrong.lv)  
Lithuania: [www.armstrong.lt](http://www.armstrong.lt)  
Norway: [www.armstrong.no](http://www.armstrong.no)  
Poland: [www.armstrongsfity.pl](http://www.armstrongsfity.pl)  
Sweden: [www.armstrong.se](http://www.armstrong.se)

# CENTRAL EUROPE SOUTH

## **(AL/BA/BG/CZ/HR/HU/KO/ MD/ME/MK/RO/RS/SK/SI)**

Armstrong Building Products  
Lighthouse building,  
Jankovcova 1569/2c,  
170 00 Praha 7,  
Czech Republic  
Tel.: +420 725 477 588  
e-mail: [service-ce@armstrong.com](mailto:service-ce@armstrong.com)  
Czech Republic: [www.armstrong.cz](http://www.armstrong.cz)  
Hungary: [www.armstrong.co.hu](http://www.armstrong.co.hu)  
Romania: [www.armstrong.ro](http://www.armstrong.ro)  
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Slovakia: [www.armstrong.sk](http://www.armstrong.sk)  
Slovenia: [www.armstrong.si](http://www.armstrong.si)  
[www.armstrongceilings.eu](http://www.armstrongceilings.eu)

# EASTERN EUROPE

## **CIS**

Armstrong Moscow GmbH  
Mosfi Imovskaya Street 38A,  
Moscow 119285,  
Russian Federation  
Tel.: +7 (495) 258 5100  
Fax: +7 (495) 258 5103  
e-mail: [info-cis@armstrong.com](mailto:info-cis@armstrong.com)  
[www.armstrongceilings.ru](http://www.armstrongceilings.ru)

# AFRICA/MIDDLE EAST/TURKEY

## **Armstrong World Industries Ltd Africa Middle East Turkey Division**

Armstrong House  
38 Market Square  
Uxbridge UB8 1NG  
Tel.: +44 01895 202097  
Fax: +44 01895 272928  
e-mail: [sales-support@armstrong.com](mailto:sales-support@armstrong.com)  
[www.armstrongceilings.eu](http://www.armstrongceilings.eu)  
Israel: [www.armstrong.co.il](http://www.armstrong.co.il)  
South Africa:  
[www.armstrong-ceilings.co.za](http://www.armstrong-ceilings.co.za)

## **Middle East Regional Office, Dubai, UAE & French Speaking Africa**

Office No. 2003, 20th Floor  
Gold Crest Executive Tower  
Jumeirah Lakes Towers  
P.O. Box 73831  
Dubai, United Arab Emirates  
Tel.: +971 4 453 4545  
Fax: +971 4 453 4546  
[info-me@armstrong.com](mailto:info-me@armstrong.com)  
[www.armstrong.ae](http://www.armstrong.ae)

## **Turkey**

Armstrong Europa GmbH  
Mimar Sinan Mah. Mimar Sinan  
Cad. No: 35/2 Cekmekoy  
Istanbul  
Turkey  
Gsm: +90 542 772 49 22  
Gsm: +90 544 293 5931  
[www.armstrong.com.tr](http://www.armstrong.com.tr)  
[etulpar@armstrong.com](mailto:etulpar@armstrong.com)



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