metal ceiling systems

system 120
clip-in tiles, concealed grid

system 130
lay-in tiles, exposed grid

system 150
clip-in tiles, concealed grid

system 200/205
hook-on tiles, concealed grid

system 330
lay-in tiles, profile suspension

system 600
acoustic lighting rafts

tubeline
tubular linear ceiling

trucell
aluminium open cell ceiling

bespoke ceilings
radial, triangular, vaulted, waveform

system 120
modular clip-in tiles (concealed grid)

system 120 information

System Description

SAS System 120 is a range of square and rectangular clip-in metal ceiling tiles supported from a concealed SAS Spring Tee suspension grid. SAS System 120 is particularly suitable for food preparation areas and hospitals where cleanliness is of importance.

System Features

- Closed butt joints with bevelled edges
- Concealed grid system
- Total downwards demountable
- Upward cleaning pressure can be applied to remove stubborn marks without disturbing tile
- Minimum 25-year product life expectancy

Access

Access within overall construction depth. Secure void, easy access tool required to demount tile.

Standard Module Sizes (mm)

300 x 300	500 x 500
300 x 600	600 x 600
300 x 900	600 x 1200
300 x 1200	610 x 610
300 x 1500	750 x 750

Special sizes are available on request. Please contact for our technical department for further details.

Finish

Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

Grid System

Clip-in SAS Spring Tee, see page 145 for components.

Shape

Tiles can be square, rectangular, triangular or trapezoidal with bevelled edges and vertical sides, incorporating a pip and stop locating detail.

System 120 tiles are available with a square edge to special order, however this is not recommended, please contact a member of our technical department for further details.

Perforation

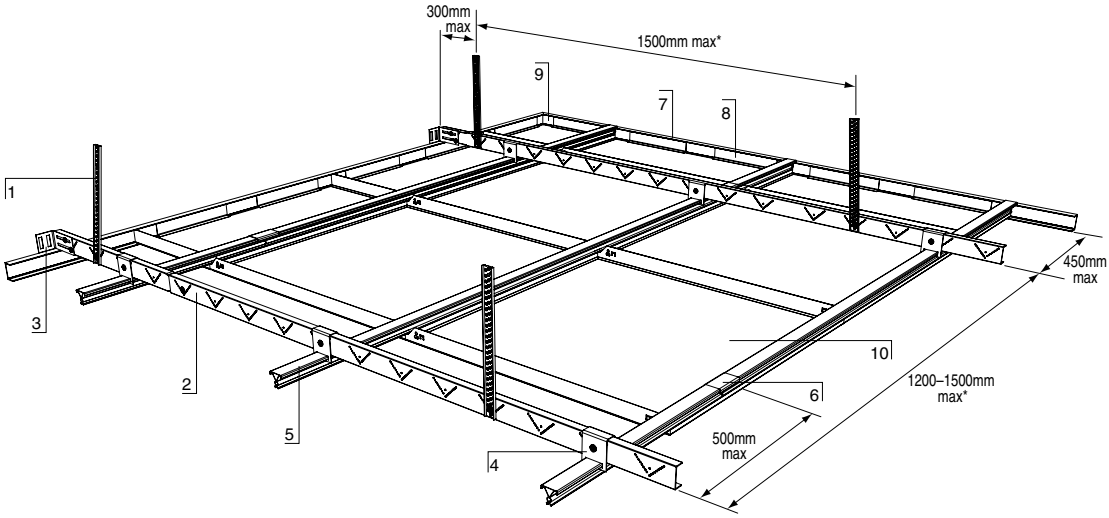
Typically supplied with 1522, 1820 or 2516 perforation. See page 103 for full details and perforation options.

Integration

Apertures can be formed during manufacturing for luminaires and other services, see pages 38–39 for further details.

Weight

Approximately 9kg/m² for steel tiles, acoustic pad and suspension, based on 600 x 600 module size.

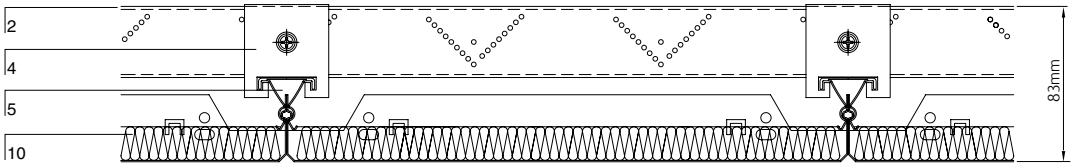


1] Emac Hanger 2] Emac Channel 3] Emac Wall Anchor 4] Emac Spring Tee to Channel Bracket 5] SAS Spring Tee
6] Emac Spring Tee Splice 7] Perimeter Trim 8] Perimeter Wedge 9] Corner splice 10] System 120 Tile

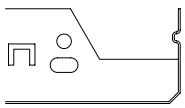
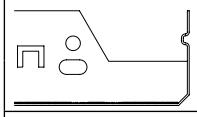
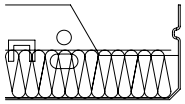
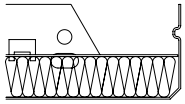
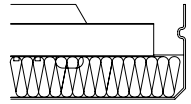
*Lightweight installations only, see page 160 for full details.

Emac suspension components can be found on page 144, System 120 / SAS Spring Tee component details can be found on page 145. Perimeter trims and accessories can be found on page 115.

Section Drawing



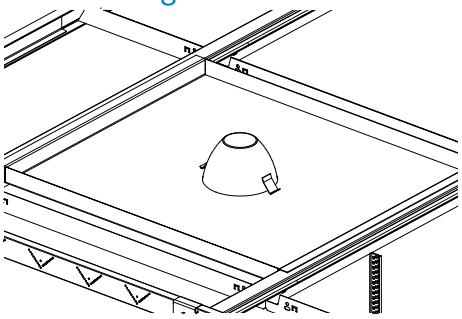
Acoustic Performance Data

		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	Plain tile.	38	N/A	
	Perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	Perforated tile with 18mm x 80kg/m³ acoustic pad.	30	Class A	
			0.85	0.90
	Perforated tile with 18mm x 80kg/m³ acoustic pad and steel backing plate. (**Note:** 600 x 600 & 750 x 750 only)	40	Class D	
			0.65	0.55
	Perforated tile with 18mm x 80kg/m³ acoustic pad and 12mm plasterboard. (**Note:** 600 x 600 & 750 x 750 only)	42	Class C	
			0.75	0.65

Results above extracted from tests undertaken using perforation reference S1820.

system 120 features

Product Integration



Luminaires and other building services can be integrated with System 120. Modular luminaires can be supported directly from the soffit. Where maximum point loads are exceeded (see installation advice, page 160) the load must be supported independently or from the grid.

The SAS pattress system allows the integration of heavier items into the system by distributing the load directly back to the Emac channel eliminating the need for complicated support arms. Further details are available from the SAS technical department.

Security Considerations

In areas where it is necessary to restrict access to the ceiling void, System 120 offers a downward demountable tile that clips securely into the supporting grid.

Tiles can be removed from the ceiling plane by means of an easy access tool. This is ideal for airports and other security driven environments, including schools and lavatories.

Cleanability

As the ceiling tiles are clipped into the supporting grid and with closed butt joints; System 120 is particularly suited to areas where cleanliness and hygiene are important.

Upward pressure can be applied to the ceiling as part of a cleaning schedule or to remove stubborn marks. In high humidity environments, such as food preparation, tiles can be painted both sides to ensure tile performance is unaffected.

system 130
modular lay-in tiles (exposed grid)

system 130 information

System Description
SAS System 130 is a range of lay-in tiles supported from SAS Alugrid or SAS Tee Grid. Alugrid-Q features a continuous linear recess with an M6 thread and negative quirk relief detail abutting the ceiling tiles, giving a completely flush ceiling. Alugrid-P is a plain version without the threaded recess and gives a completely flush ceiling. Tee Grid is a butt cut exposed grid that provides a tegular effect.

System Features
- Easy access to the ceiling void
- Minimum 25-year product life expectancy

System Features with SAS Alugrid
- Shadow line feature between grid and tile
- Precise mitred joints
- Continuous linear thread form
- Clean flush ceiling plane

System Features with SAS Tee Grid
- Strong modular appearance
- Butt cut junctions eliminating corner shadows

Access
Tiles can be lifted out of the ceiling system to gain access to the ceiling void.

Standard Module Sizes (mm)
500 x 500 600 x 600 750 x 750

Special sizes are available on request. Please contact our technical department for further details. 300 x 300mm tiles can be supplied for use with SAS Tee Grid or tartan grid configurations.

Finish
Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

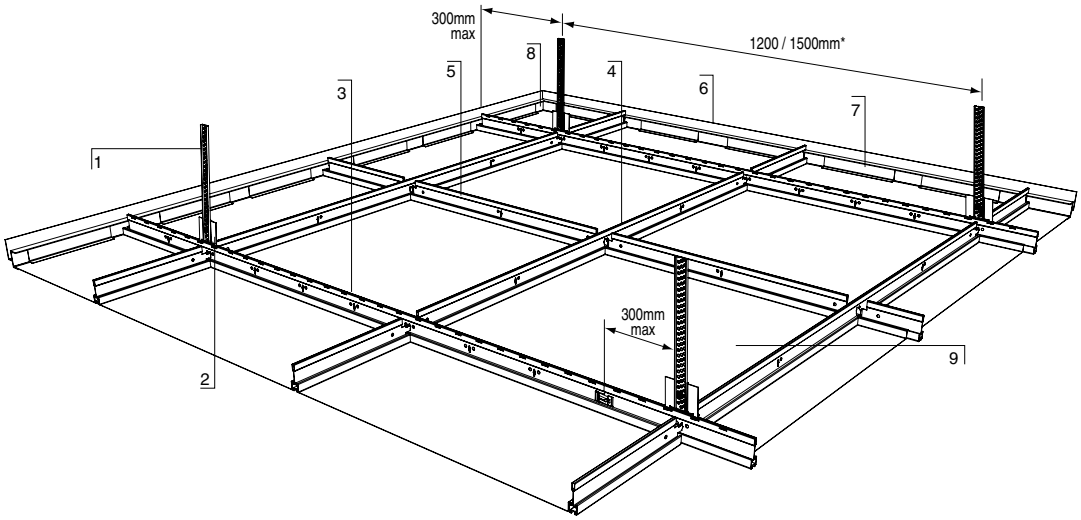
Grid System
Lay-in SAS Alugrid-Q, SAS Alugrid-P, SAS Alugrid Cleanseal, SAS Tee Grid, see page 146 for components.

Shape
Tiles are square with out-turned flanges laid onto the exposed grid system.

Perforation
Typically supplied with 1522, 1820 or 2516 perforation. See page 103 for full details and perforation options.

Integration
Apertures can be formed during manufacturing for luminaires and other services, see pages 38–39 for further details.

Weight
Approximately 5kg/m² for 8mm steel tiles, acoustic/insulation pad and SAS Tee Grid. Approximately 7.5kg/m² for 16mm steel tiles, acoustic pad and SAS Alugrid suspension.

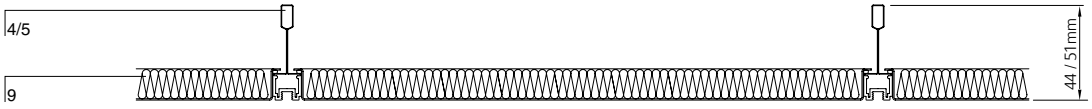


1] Emac Hanger 2] Emac Hanger Bracket 3] Main Runner 4] Double Module Cross Tee 5] Single Module Cross Tee
6] Perimeter Trim 7] Perimeter Wedge 8] Corner Splice 9] System 130 Tile

*Lightweight installations only, see page 161 for full details.

Emac suspension components can be found on page 144, System 130 / SAS Tee Grid / Alugrid component details can be found on page 146. Perimeter trims and accessories can be found on page 115.

Section Drawing



Acoustic Performance Data

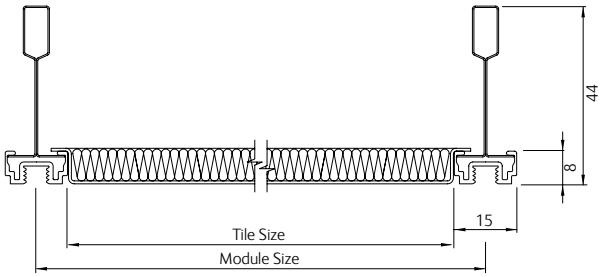
		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	8mm, 16mm, 19mm plain tile.	43	N/A	
	8mm, 16mm, 19mm perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	8mm perforated tile with 8mm x 80kg/m³ acoustic pad, factory sealed.	21	Class C	
			0.80	0.75
	16mm perforated tile with 16mm x 80kg/m³ acoustic pad, factory sealed.	27	Class B	
			0.85	0.85
	16mm perforated tile with 16mm x 80kg/m³ acoustic pad and steel backing plate.	41	Class D	
			0.65	0.50
	19mm perforated tile with 19mm x 80kg/m³ acoustic pad, factory sealed.	30	Class A	
			0.85	0.90
	19mm perforated tile with 6mm x 80kg/m³ acoustic pad and 12.5mm plasterboard.	45	Class D	
			0.65	0.55

Results above extracted from tests undertaken using perforation reference S1820.

system 130 grid options

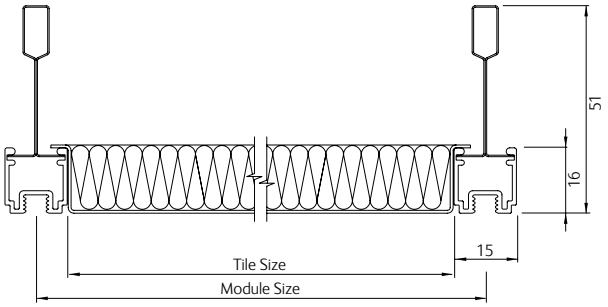
SAS Alugrid-Q 15/08

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



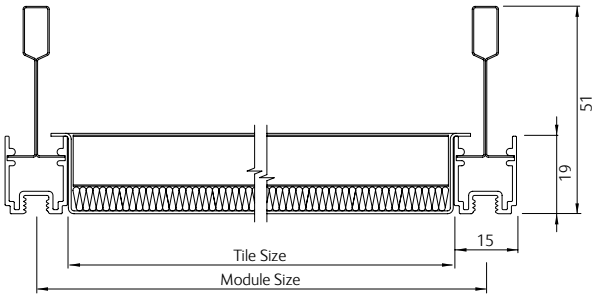
SAS Alugrid-Q 15/16

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



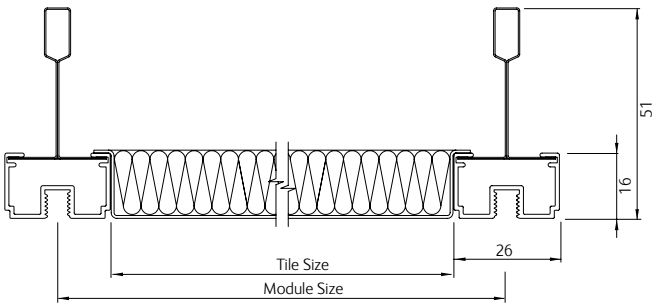
SAS Alugrid-Q 15/19

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



SAS Alugrid-Q 25/16

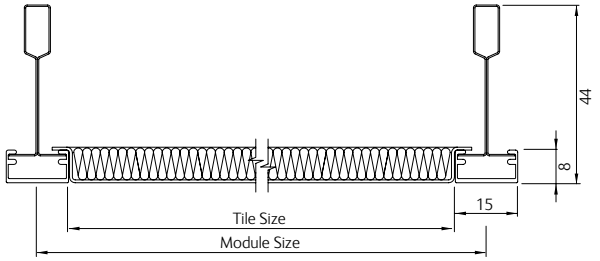
Module Size (mm)	Tile Size (mm)
500 x 500	474 x 474
600 x 600	574 x 574
750 x 750	724 x 724



system 130 grid options

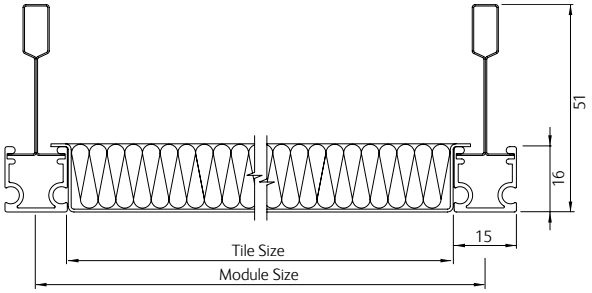
SAS Alugrid-P 15/08

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



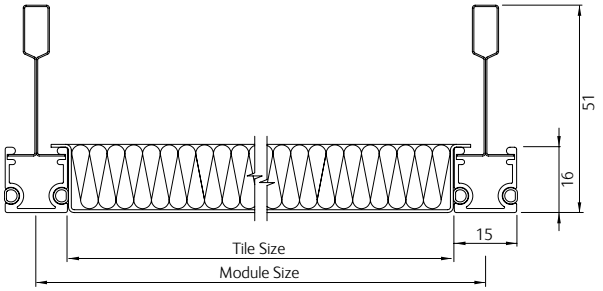
SAS Alugrid-P 15/16

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



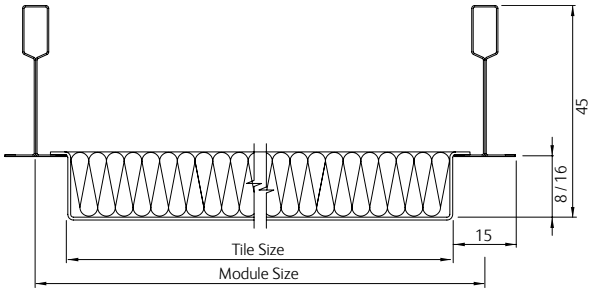
SAS Alugrid-P Cleanseal

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



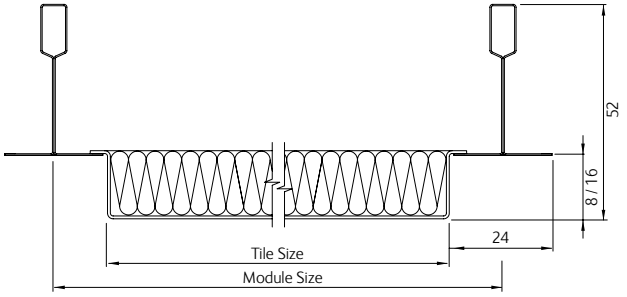
SAS Tee Grid T15

Module Size (mm)	Tile Size (mm)
500 x 500	484 x 484
600 x 600	584 x 584
750 x 750	734 x 734



SAS Tee Grid T24

Module Size (mm)	Tile Size (mm)
500 x 500	474 x 474
600 x 600	575 x 575
750 x 750	724 x 724



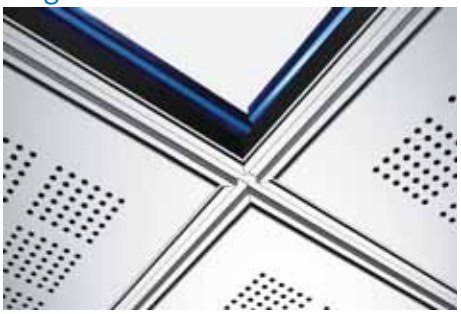
system 130 features

Alugrid-Q Composition and Integration

The Alugrid-Q cross tee comprises of a steel carrier for retention of structural integrity in fire conditions.

The aluminium thread form profile features a continuous lineal recess with an M6 thread form and a negative quirk rebate. This facilitates the hanging of signs and other lightweight fixtures by means of an M6 bolt.

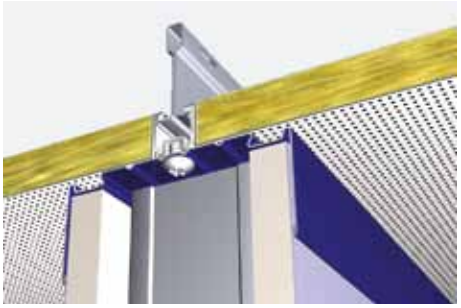
Alugrid-Q Junction Detail



The aluminium cross tee extrusions are machined to create precise mitred “bird’s mouth” intersections on the grid face.

Alugrid-Q sections can be supplied with “bird’s mouth” mitres on one side only to fit a flush abutment to luminaires, air grilles and other services which rest directly on the grid but are of a larger modular size than the ceiling tiles.

Partition Head Fixing Detail



The continuous linear thread form allows the easy location and relocation of partition heads by means of an M6 bolt, without causing damage to the ceiling.

system 150

modular hinge-down clip-in tiles (concealed grid)

system 150 information

System Description

SAS System 150 is a range of highly versatile square and rectangular clip-in metal ceiling tiles which offer hinge down access throughout as standard. Supported from the SAS Deep Omega Bar tiles can pivot and slide along the suspension system providing access to large areas of the ceiling void.

System Features

- Hinge down access throughout
- Precise tile levelling with twin pip arrangement
- Closed butt joints with bevelled edges
- Secure void, easy access tool required to demount tile
- Upward cleaning pressure can be applied to remove stubborn marks without disturbing tile
- Concealed grid system
- Minimum 25-year product life expectancy

Access

Access within overall construction depth. Secure void, easy access tool required to demount tile

Standard Module Sizes (mm)

300 x 300	500 x 500	750 x 750
300 x 600	500 x 1500	
300 x 900	600 x 600	
300 x 1200	600 x 1200	
300 x 1500	610 x 610	

Special sizes are available on request. Please contact for our technical department further details.

Finish

Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

Grid System

Clip-in SAS Deep Omega Bar, see page 149 for components.

Shape

Tiles can be square, rectangular, triangular or trapezoidal with bevelled edges and vertical sides, incorporating a hinging tab and pip locating detail.

Perforation

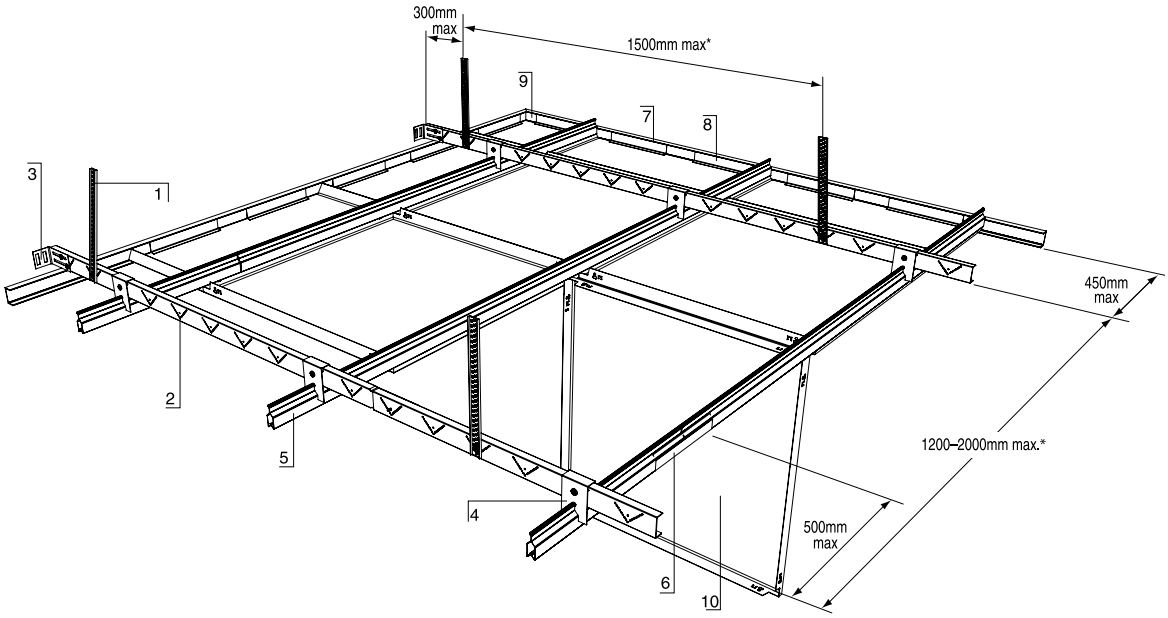
Typically supplied with 1522, 1820 or 2516 perforation. See page 103 for full details and perforation options.

Integration

Apertures can be formed during manufacturing for luminaires and other services, see pages 38–39 for further details

Weight

Approximately 9kg/m² for 600 x 600mm steel tiles, acoustic pad and SAS Deep Omega Bar suspension system.

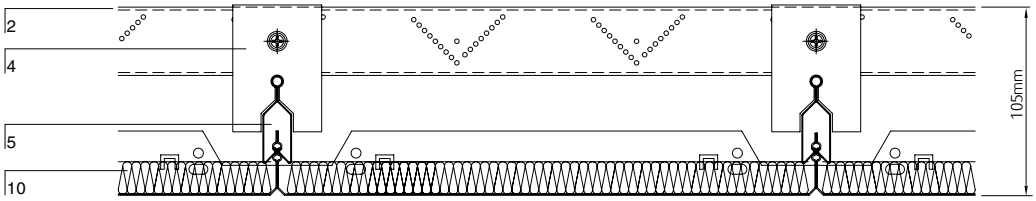


1] Emac Hanger 2] Emac Channel 3] Emac Wall Anchor 4] Omega Bar to Channel Bracket 5] SAS Omega Bar
6] Omega Bar Splice 7] Perimeter Trim 8] Perimeter Wedge 9] Corner Splice 10] System 150 Tile

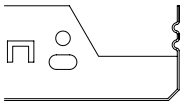
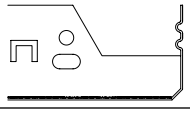
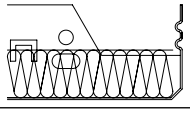
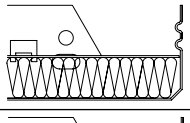
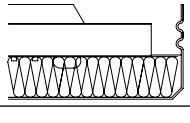
*Lightweight installations only, see page 163 for full details.

Emac suspension components can be found on page 144, System 150 / SAS Deep Omega Bar component details can be found on page 149. Perimeter trims and accessories can be found on page 115.

Section Drawing



Acoustic Performance Data

		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	Plain tile.	38	N/A	
	Perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	Perforated tile with 18mm x 80kg/m³ acoustic pad.	30	Class A	
			0.85	0.90
	Perforated tile with 18mm x 80kg/m³ acoustic pad and steel backing plate. (**Note:** 600x600mm & 750x750mm only)	40	Class D	
			0.65	0.55
	Perforated tile with 18mm x 80kg/m³ acoustic pad and 12.5mm plasterboard. (**Note:** 600x600mm & 750x750mm only)	42	Class C	
			0.75	0.65

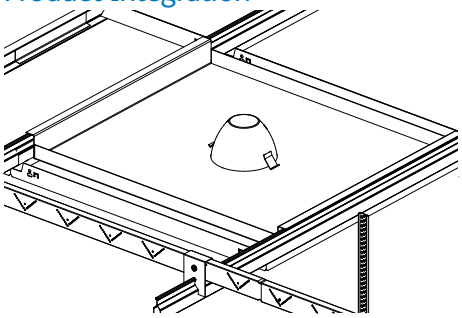
Results above extracted from tests undertaken using perforation reference S1820.

system 150 features

Hinge and Slide Facility

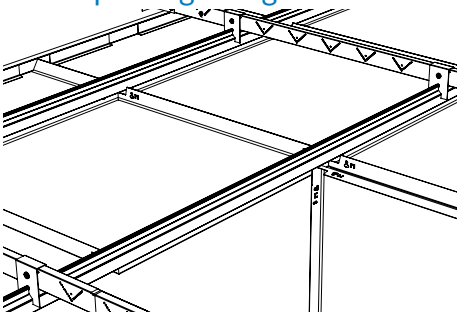
The unique design of SAS System 150 allows every full tile to pivot and slide along the grid system. The hinge and slide feature facilitates easy access to large areas of the ceiling void for maintenance; tiles are retained within the ceiling grid avoiding damage and eliminating the need for storage.

Product Integration



Luminaires and other services can be integrated with System 150. Modular luminaires can be supported directly from the soffit. Where maximum point loads are exceeded (see installation advice page 163) the load must be supported independently or from the grid. The SAS pattress system allows the integration of heavier items into the system by distributing the load directly back to the Omega Bar, eliminating the need for complicated support arms. Further details are available from the technical department.

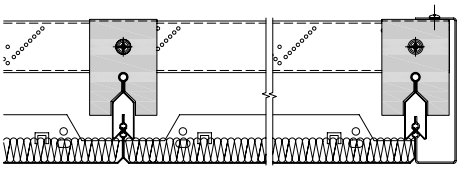
Wide-Spanning Omega Bar



The deep Omega Bar has a maximum spanning ability of 2000mm. The wide spanning bar requires 25% less primary channels, top fixings and brackets, saving installation time and materials.

Suspension centres should be reduced when using high performing dB panels due to the additional weight or where loads are applied to the system, see page 163 for installation advice.

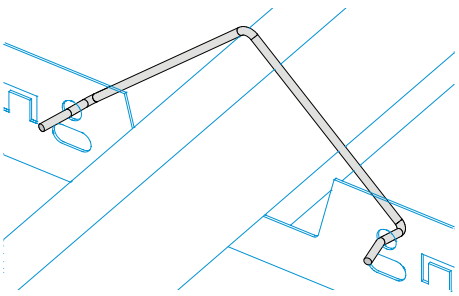
Bulkhead Closure Panels



Bulkhead closure panels enable floating rafts and ceilings to be created using a standard clip in ceiling tile, see image on pages 24 and 70.

The height of the closure panels can be manufactured to suit the project requirements. Further details are available from the technical department.

Security Considerations



In areas where it is necessary to restrict access to the ceiling void, System 150 offers a security clips that holds the tiles into the supporting grid. This is ideal for airports and other security driven environments, including schools and lavatories.

Tiles without security clips can be removed from the ceiling plane by means of an easy access tool.

system 200/205

modular hook-on tiles (concealed grid)

system 200 information

System Description
SAS System 200 is a range of square, rectangular, trapezoidal and triangular hook-on metal ceiling tiles. Designed to be supported from a concealed J-bar suspension rail.

System Features
- Concealed Grid System
- Closed recessed joints with square edges, using a closed cell compressible gasket
- Fully demountable without the use of special tools

Access
Tiles can be lifted out of the ceiling system to gain access to the ceiling void.

Tile Sizes
A full range of tile size are available, please contact our technical department for further details.

Finish
Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

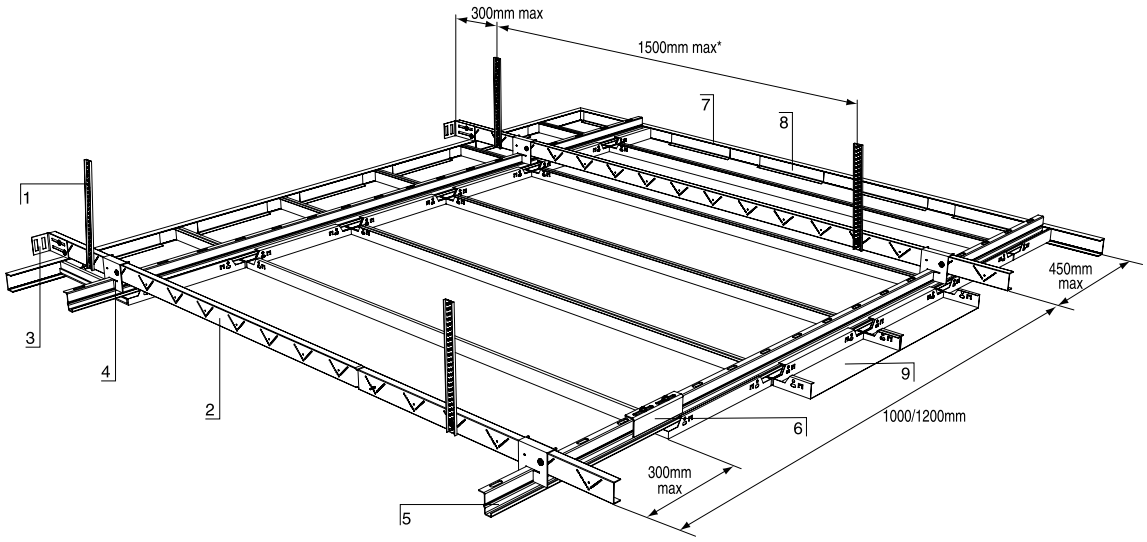
Grid System
Hook-on J-Bar, see page 150 for components.

Shape
Hook and Lay tiles are normally square, rectangular, trapezoidal and triangular with square edges with other shapes possible.

Perforation
Typically supplied with 1522, 1820 or 2516 perforation, see page 103 for full details and perforation options.

Integration
Apertures can be formed during manufacturing for luminaires and other services, see pages 38–39 for further details

Weight
Approximately 10kg/m² for steel tiles, acoustic pad and suspension system.

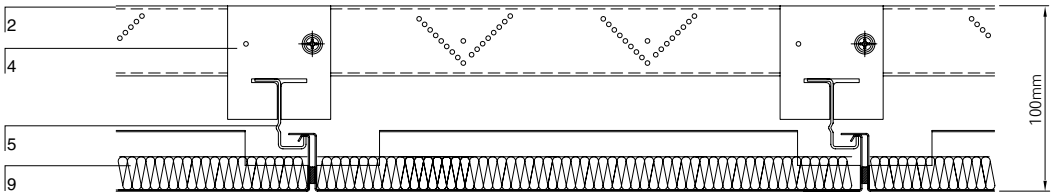


1] Emac Hanger 2] Emac Channel 3] Emac Wall Anchor 4] J-Bar to Channel Bracket 5] J-Bar
6] J-Bar Splice 7] Perimeter Trim 8] Perimeter Wedge 9] System 200 Tile

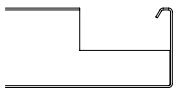
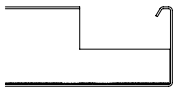
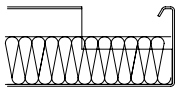
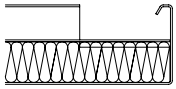
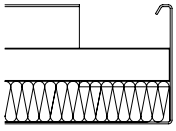
*Lightweight installations only, see page 164 for full details.

Emac suspension components can be found on page 144, System 200 / SAS J Bar component details can be found on page 150. Perimeter trims and accessories can be found on page 115.

Section Drawing

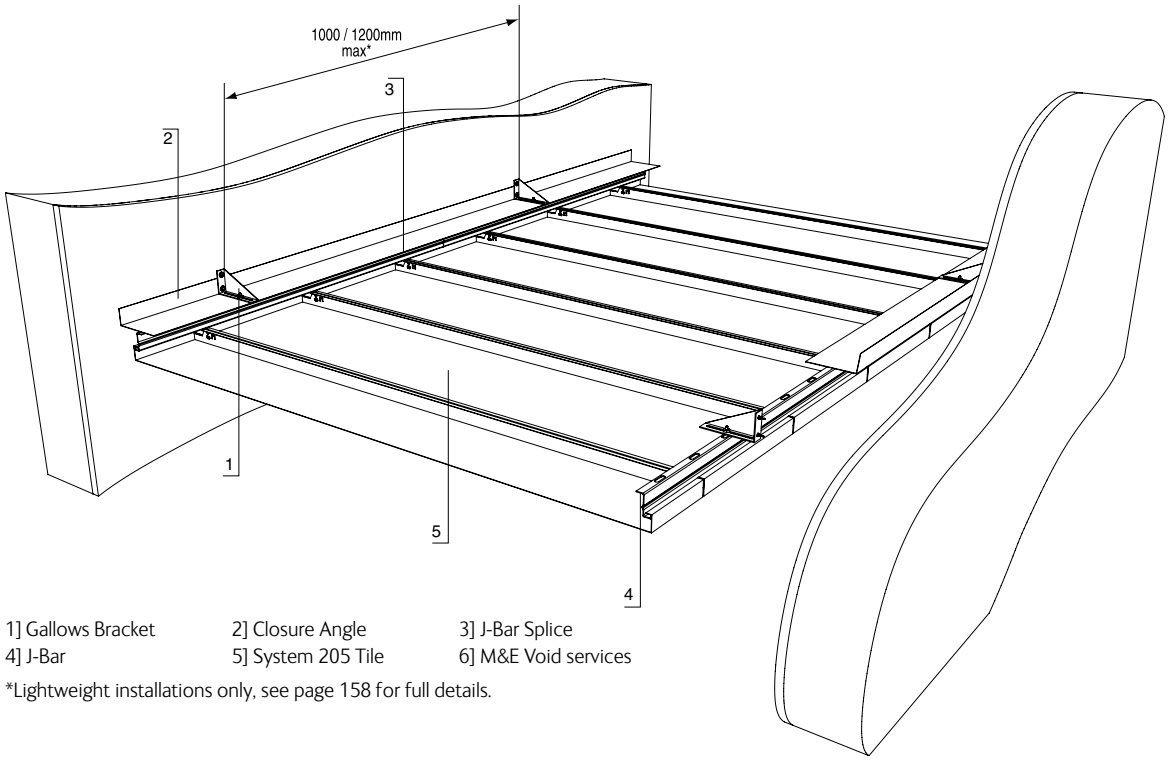


Acoustic Performance Data

		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	Plain tile.	43	N/A	
	Perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	Perforated tile with 18mm x 80kg/m³ acoustic pad.	30	Class A	
			0.85	0.90
	Perforated tile with 18mm x 80kg/m³ acoustic pad and steel backing plate.	41	Class D	
			0.65	0.55
	Perforated tile with 18mm x 80kg/m³ acoustic pad and 12.5mm plasterboard. (45mm deep tiles only, over-all construction increases by 15mm)	49	Class C	
			0.75	0.65

Results above extracted from tests undertaken using perforation reference S1820.

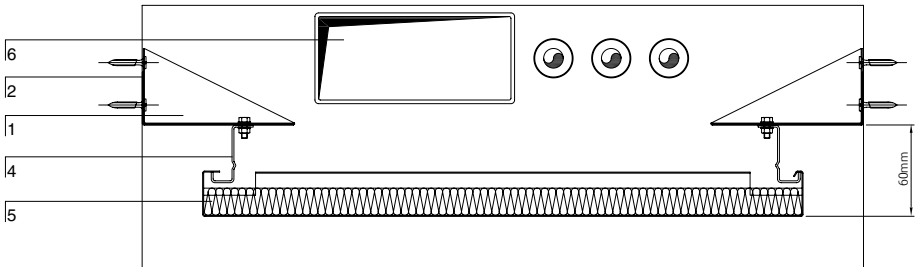
system 205



1] Gallows Bracket
2] Closure Angle
3] J-Bar Splice
4] J-Bar
5] System 205 Tile
6] M&E Void services

*Lightweight installations only, see page 158 for full details.

Section Drawing



System Description

SAS System 205 is a development of System 200 and is specifically for use in corridors. In some areas it is not possible to use a standard hanging bracket due to the number of building services in the ceiling void. System 205 is supported at the perimeters, up to a maximum width of 3000mm.

Total access to the ceiling void and services is provided; ceiling tiles can be pivoted down and hung in place to provide free access (subject to the corridor height and width).

The practicality of the system makes is suitable for environments where regular access is required for maintenance, such as hospitals and hotels.

system 330
lay-in tiles (c-profile suspension)

system 330 information

System Description

SAS System 330, linear or tartan grid, is a lay-in tile system that provides functionality and outstanding performance with a range of cost effective design options.

System 330 offers the facility to design the ceiling to any building grid size. Tiles are available in a range of shapes and sizes to meet individual project requirements.

System 330 'CoolCeil' incorporates a Radiant Chilled Ceiling element in the rear of the tile, further details are available on page 173.

Supported from either an Omega C-Profile with a M6 thread form or a plain C-Profile. Both profiles can be fitted with a gasket that provides a tight seal between profile and tile.

System features:

- Infinite range of modules for any building module
- Flexible layouts for relocation of partitions
- Optional Radiant Chilled Ceiling solution
- Optional hinge down mechanisms
- Minimum 25-year product life expectancy

Tile Sizes

System 330 panels can be made in mm increments to meet building module size; a range of rectangular and square tiles can be manufactured.

Large square mega panels can be manufactured in sizes up to 1500 x 1500mm. For further details please contact our technical department.

Finish

Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

Grid System

Profile suspension, C-Profile and Omega C-Profile, see pages 151–155 for components.

Shape

Tiles are available in square, rectangular, mega panels, coffered, curved and trapezoidal forms to meet individual project requirements.

Perforation

Typically supplied with 1522, 1820 or 2516 perforation. See page 103 for full details and perforation options

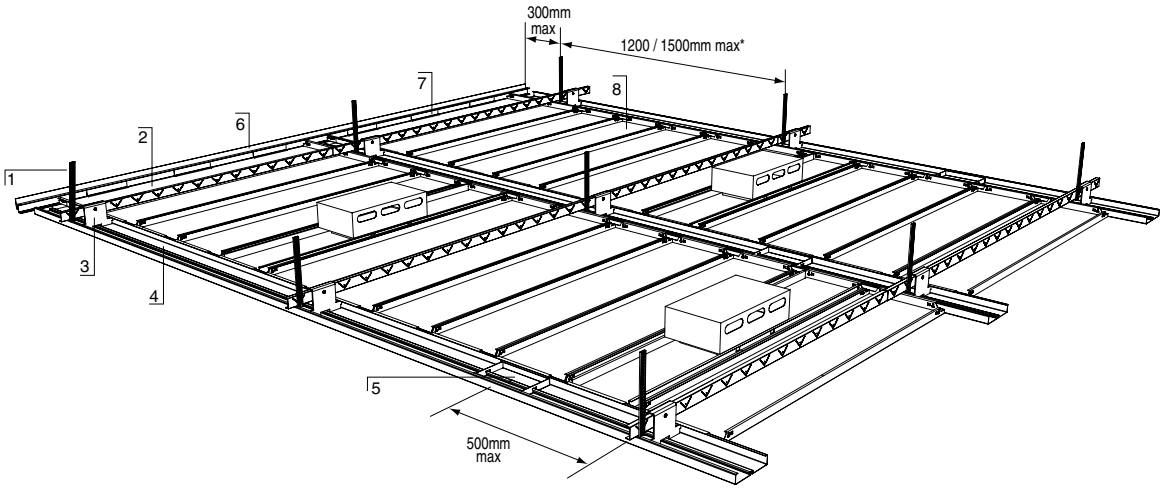
Integration

Apertures can be formed during manufacturing for luminaires and other services, see pages 38–39 for further details

Weight

Approximately 14kg/m² for linear grid steel tiles, acoustic/insulation pad and suspension system.

Approximately 15kg/m² for tartan grid steel tiles, acoustic/insulation pad and suspension system.

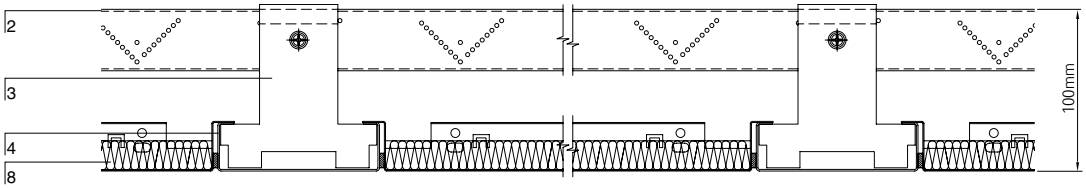


1] Emac Hanger 2] Emac Channel 3] C-Profile Hook-over Suspension Bracket 4] C-Profile / Omega C-Profile 5] C-Profile Splice
6] Perimeter Trim 7] Perimeter Wedge 8] System 330 Tile

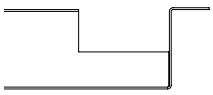
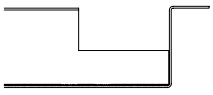
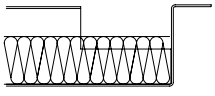
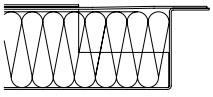
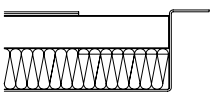
*Lightweight installations only, see page 166 for full details.

Emac suspension components can be found on page 144, System 330 / SAS C-Profile component details can be found on page 151. Perimeter trims and accessories can be found on page 115.

Section Drawing



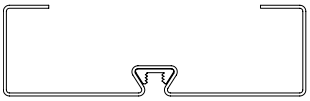
Acoustic Performance Data

		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	Plain tile.	43	N/A	
	Perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	Perforated tile with 18mm x 80kg/m³ acoustic pad.	30	Class A	
			0.85	0.90
	Perforated tile with 30mm x 80kg/m³ acoustic pad and steel backing plate.	48	Class C	
			0.80	0.70
	Perforated tile with 18mm x 80kg/m³ acoustic pad and 12.5mm plasterboard.	49	Class C	
			0.75	0.65

Results above extracted from tests undertaken using perforation reference S1820.

C-Profile Options

C-Profile



Omega C-Profile

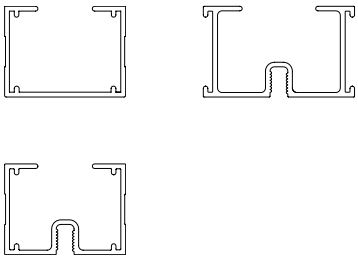
The C-Profile suspension grid is available in a range of widths.

An optional foam gasket features a brush seal strip that provides a tight seal between profile and tile, (supplied loose for on-site installation).

By introducing C-Profile cross noggins at modular centres a two-dimensional tartan grid can be achieved.

The Omega C-Profile features a continuous thread-form that allows the easy location and relocation of partition heads by means of an M6 bolt, without causing damage to the ceiling.

Extruded Aluminium Profiles



A range of narrower aluminium extruded C-Profile and Omega C-Profiles are available to meet design requirements.

The profiles can be suspended from either an Emac channel or direct from the soffit.

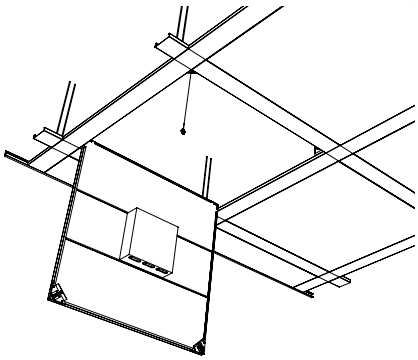
See page 129 for further details.

Service Integration

SAS metal ceilings tiles can be supplied with factory formed apertures, see pages 38–40 for further details.

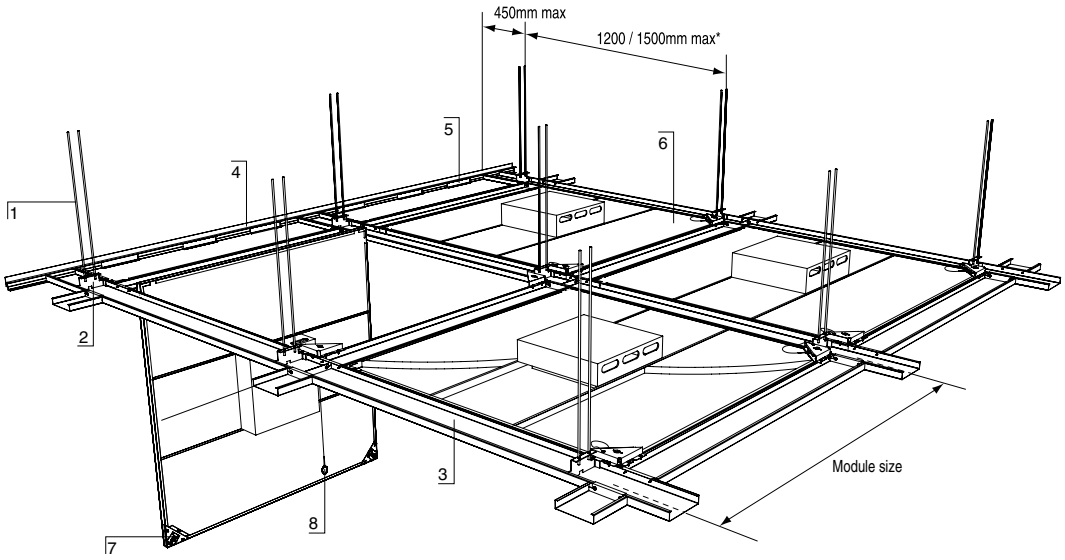
C-Profiles can also be supplied with factory formed apertures for service integration. System 330 panels can be supplied with stiffeners to support centrally mounted luminaires. The flexible nature of System 330 means that solutions can be engineered to meet individual project requirements.

Mock Crossing Boxes



Our traditional tartan grid system, SAS System 335, utilised Trim strips (C-Profiles) and Crossing Boxes suspended from threaded rods and hanger brackets.

System 330 can replicate these crossing boxes by pressing mock crossing boxes into the C-Profile. The use of C-Profiles provides a more rigid ceiling structure than traditional crossing boxes.

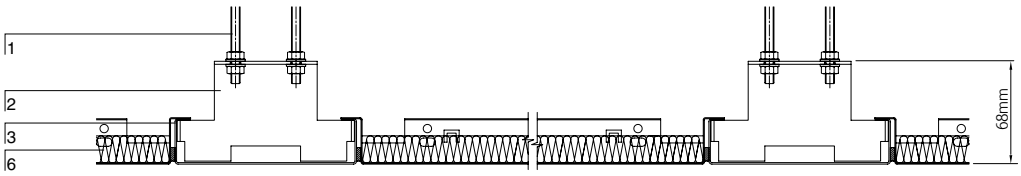


1] Threaded Rod 2] C-Profile Suspension Bracket for threaded Rod 3] C-Profile / Omega C-Profile 4] Perimeter Trim
5] Perimeter Wedge 6] System 330 Tile 7] Touch Latch 8] Safety Cable

*Lightweight installations only, see page 166 for full details.

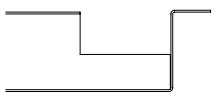
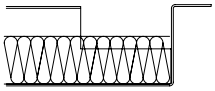
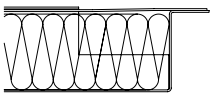
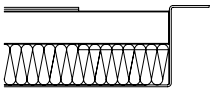
Emac suspension components can be found on page 144, System 330 / SAS C-Profile component details can be found on page 151. Perimeter trims and accessories can be found on page 115.

Section Drawing



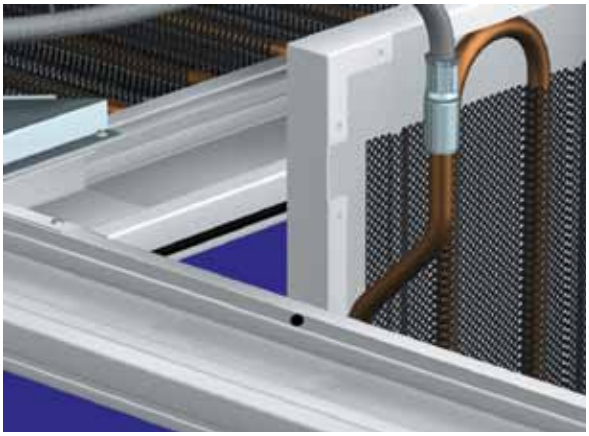
System 330 tartan grid can also be suspended using Emac hanger brackets and Emac primary channel, see page 79 for section drawing.

Acoustic Performance Data

		Attenuation	Absorption	
		dB	Class	
			NRC	αω
	Plain tile.	43	N/A	
	Perforated tile with acoustic fleece.	13	Class C	
			0.70	0.65
	Perforated tile with 18mm x 80kg/m³ acoustic pad.	30	Class A	
			0.85	0.90
	Perforated tile with 30mm x 80kg/m³ acoustic pad and steel backing plate.	48	Class C	
			0.80	0.70
	Perforated tile with 18mm x 80kg/m³ acoustic pad and 12.5mm plasterboard.	49	Class C	
			0.75	0.65

Results above extracted from tests undertaken using perforation reference S1820.

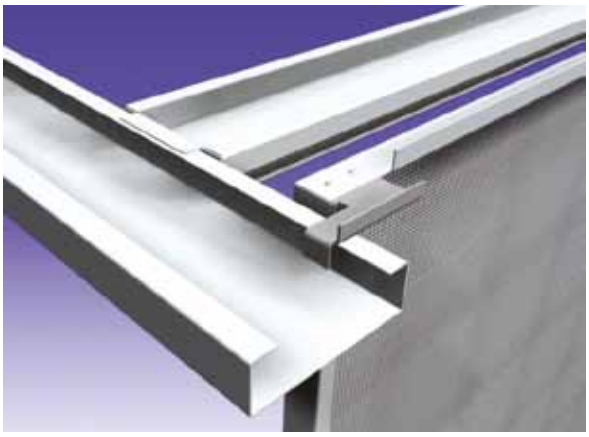
system 330 accessibility



SAS can provide a range of hinge solutions that allow simple and safe access to the ceiling void for service maintenance. This is particularly important when larger panel sizes are used with the additional weight of luminaires or other integrated services.

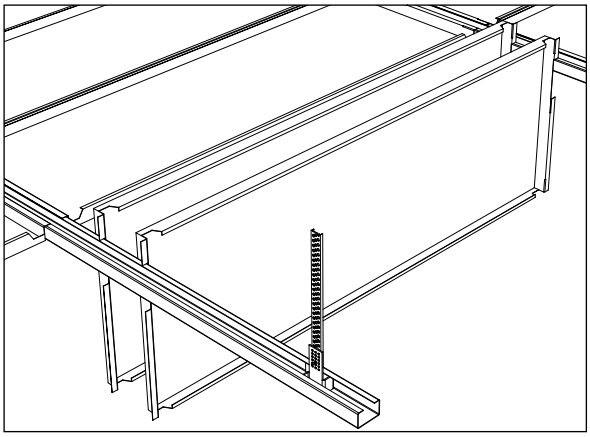
Touch Latch and Pivot Pin

The touch-latch release mechanism allows access by simply pushing the panel up to release the end of the panel. A fixed bolt can be unscrewed to facilitate the release of the panel, in instances where complete tile removal is necessary.



Flying Arm

The flying arm is a hook-over bracket supplied fixed to the upstand of the panel. Access is obtained by pushing up the opposite end of the panel sliding back to reveal the flange and lowering to a vertical position (lift & tilt).



Hinge Notch

The hinge notch allows tiles to be hung vertically from C-Profiles providing clear unobstructed access to the ceiling void. This enables runs of tiles to be hung together during maintenance without causing damage to the tile.

System 330 tiles can be supplied with a SAS French Hook detail, the tiles feature a continental downturn flange that hook over the C-Profile.

Safety Cables

Safety cables are recommended for all hinged options to avoid the panel swinging down uncontrollably. When the tile integrates luminaires or a Chilled Ceiling, safety cables should be used to avoid any potential damage to the service.

system 600
acoustic lighting raft

system 600 features

System 600 is an acoustic lighting raft or module that is directly suspended from a flat structural soffit or in coffers allowing free air movement to the structural slab for natural thermal mass cooling, see page 43. Manufactured from metal the durable finish provides a cost effective solution while reducing life cycle costs.

The rafts or modules are available in a range of curved, flat or angled profiles, or bespoke to suit project requirements. Within the range of budget designs System 600 can be supplied additionally with intelligent lighting. They can also be designed to carry normal M&E services, such as cabling, fire detection and control.

A range of acoustic treatments is available to absorb sound both through the perforations in the face panel and reflected sound from the structural soffit onto the rear of the panel.

The range of design options is endless with System 600. SAS have an enhanced range of modules and rafts that can be tailored to any environment.

The experience we have gained working with architects and M&E consultants has enabled us to develop cost effective solutions. By employing standard components, capital costs are reduced while still allowing project customisation.

Luminaires and up-lighters are some of the different intelligent lighting options available to create natural lighting effects. Factory formed apertures integrating lighting and acoustic comfort in one unit further reduces capital and installation cost.

Flat Designs

Flat System 600 rafts and modules provide the ideal solution to many environments. Luminaires can be integrated within the raft or mounted independently between rafts.

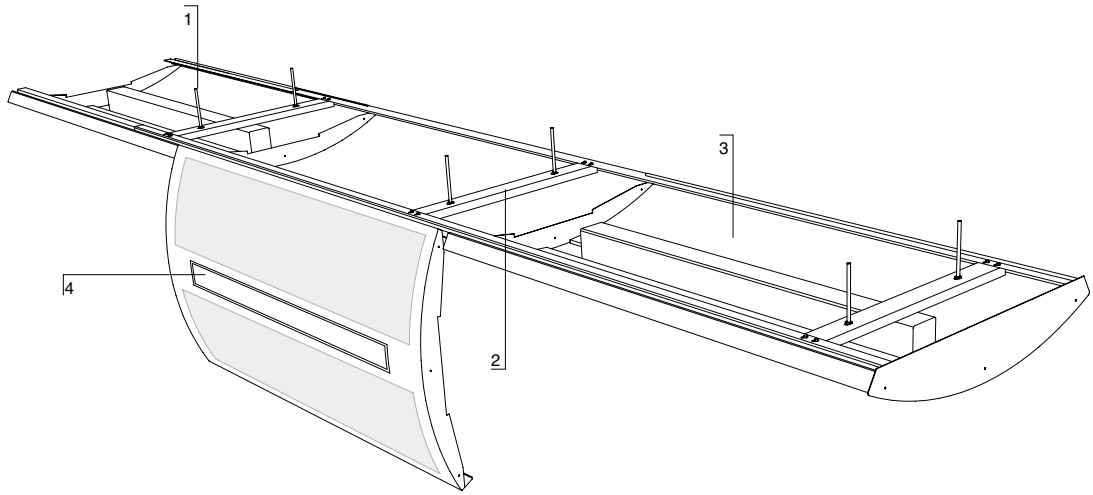
Curved Designs

Curved System 600 rafts and modules allow a larger acoustic area to be incorporated into the design. The raft/module has an integrated central luminaire with acoustic pads to the larger outer surface area.

Bespoke Designs

System 600 rafts and modules can be designed and tailored to any project or environment. They can incorporate service ducts, removable panels for partitioning or any other specified services including fire detection and control systems.

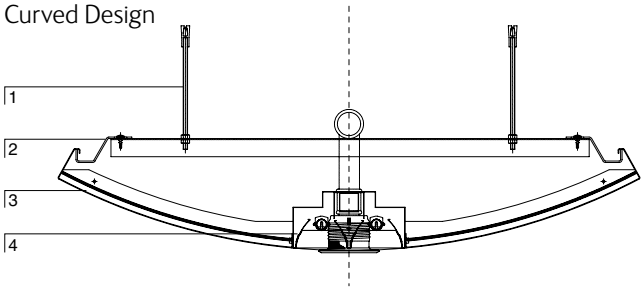
The rafts and modules are not limited to the flat or curved design. Bespoke designs can be angular, radial or waveform.



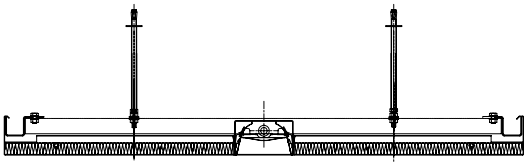
1) Threaded Road 2) Supporting Bar 3) Acoustic Pad 4) Aperture for luminaire

Section Drawings

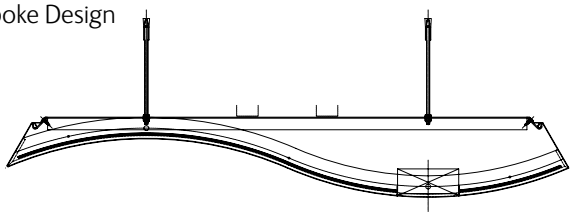
Curved Design



Flat Design

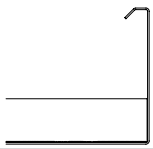
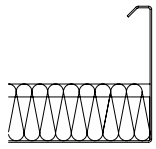
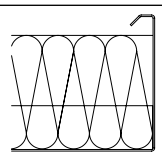


Bespoke Design



Acoustic Performance Data

600mm wide raft with a total area of 3.12m², including the front and rear of panels

		Absorption Class	
		NRC	αω
	Perforated raft with acoustic fleece	Class C	
		0.60	0.60
	Perforated raft with 25mm x 80kg/m³ acoustic pad	Class B	
		0.80	0.80
	Perforated raft with 50mm x 80kg/m³ acoustic pad	Class A	
		0.95	0.90

Results above extracted from tests undertaken using perforation reference S1820.

School Requirements

Within schools it is necessary to meet the requirements of BB93 (Acoustic Design of Schools) while balancing the requirements of BB101 (Ventilation of School Buildings).

System 600 provides acoustic absorption under BB93 while allowing sustainable thermal mass cooling to take place.

See pages 26–31 for Acoustic Comfort specification and page 43 for the benefits of thermal mass cooling.

Integrating Partitioning

Environments require a degree of flexibility for partitioning. System 600 can be designed with removable panels in between modules to allow full height partitioning to be installed where required.

By installing full height partitioning to the buildings soffit, acoustic attenuation between the two spaces is reduced.

M&E Integration

As with traditional suspended ceilings there is a need to integrate M&E services within the ceiling.

Luminaires and up-lighters are some of the different intelligent lighting option available to create natural lighting effects.

System 600 allows services to be integrated into the design while still allowing natural mass cooling. Air handling, cabling, PA, fire detection and control systems are some of the services that can be designed and installed within System 600.

tubeline

tubular linear ceiling

tubeline information

System Description

Tubeline is a visually striking linear ceiling system constructed from extruded tubular sections clipped to a simple suspension system.

The design allows air to pass through the ceiling plane. This can be to allow the transfer of air from a Chilled Beam or for smoke extraction.

Tubeline is clipped into carriers, that are suspended from the soffit at 1500mm maximum centres.

System Features

- Available in 25mm and 50mm Profiles
- Carriers can be rolled to produce waveform and bulkhead level changes
- Available in lengths of 3000mm, splices can be used for longer runs
- Minimum 25-year product life expectancy

Standard Sizes (mm)

Tubular sections are available in either 25mm diameter with a 20mm leg or 50mm diameter with a 25mm leg, see page 156 for components.

Finish

Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

Grid System

TCA 0219 Aluminium Tee section, see page 156 for components.

Shape

Circular extruded aluminium tubes. The sections can be installed at 50, 75, 100 or 150mm centres. U, H and T shapes are also available, see page 90 for further details.

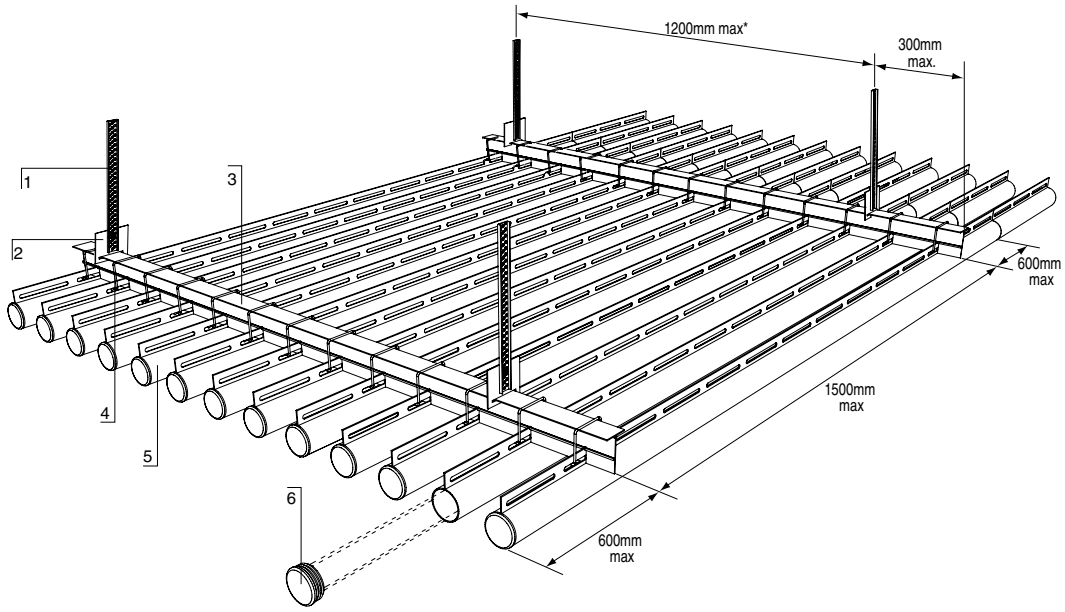
Perforation

n/a

Weight

Approximately 4.2kg/m² for 25mm diameter installed at 100mm centres.

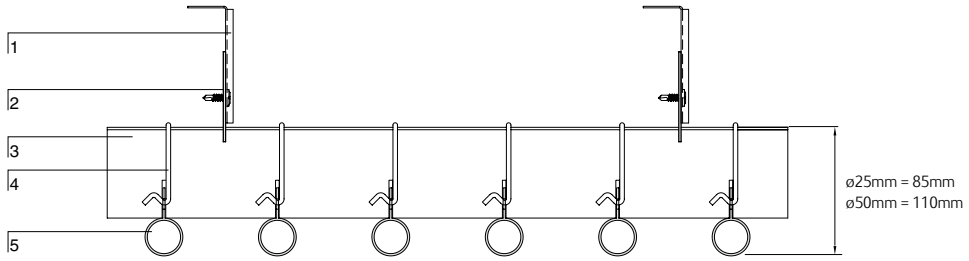
Approximately 6kg/m² for 50mm diameter installed at 100mm centres.



1] Emac Hanger 2] Carrier Suspension Hanger Bracket 3] Tubeline Carrier (TCA0219) 4] Wire Clip 5] Tube 6] End Cap

*Lightweight installations only, see page 167 for full details.

Section Drawing



tubeline options

Tubeline Options

In addition to the circular tubular sections a range of other design options can be supplied.

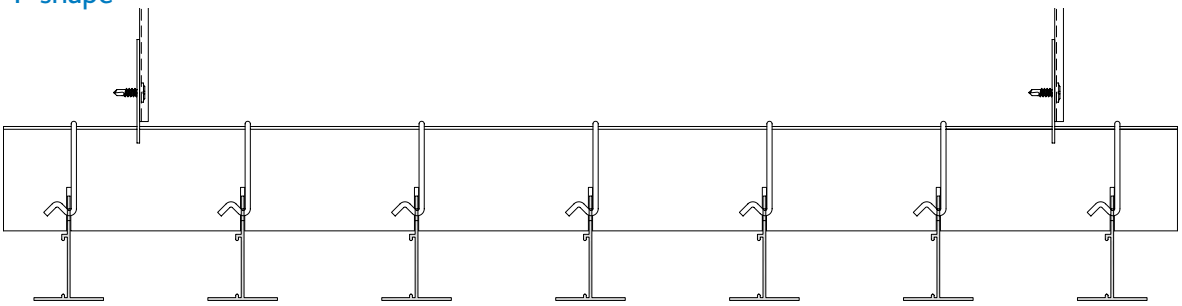
Linear 'T' section can be supported directly form the Tubeline carrier (TCA0219). They provide a flat finish to the ceiling plane while still allowing a large open area for smoke extraction or Chilled Beam performance.

'U' shaped tubes offer a visual impact similar to the circular tubes, with the option to increase the vertical height of the tubes.

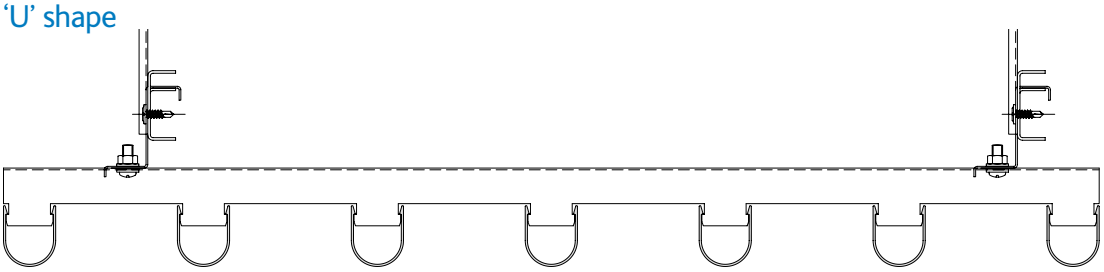
Linear aluminium 'H' sections can be manufactured to provide a striking open and closed design.

'U' and 'H' designs are supported from a carrier that the tubes are securely fitted to. As with Tubeline the carrier can be rolled to produce waveform ceilings and to allow bulkhead level changes.

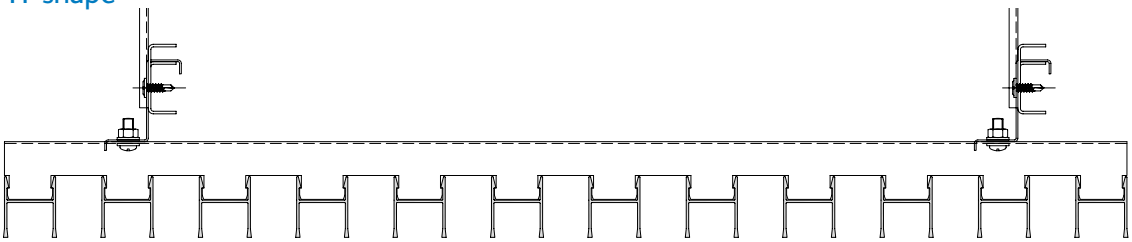
'T' shape



'U' shape



'H' shape



trucell
aluminium open cell ceiling

trucell information

System Description

Trucell is a range of aluminium open cell ceiling panels that are designed to lay onto 15mm Tee Grid. Access is gained by simply lifting the panels out of the grid.

Trucell blends in with the Tee Grid to give a monolithic appearance.

System Features

- Strong modular appearance
- Easy access to the ceiling void
- Minimum 25-year product life expectancy

Access

Modules can be lifted out of the ceiling system to gain access to the ceiling void.

Standard Module Sizes (mm)

Trucell Panels are available in 600 x 600mm modules with a nominal depth of 40mm. Modules are available in six different cell sizes of:

50 x 50	100 x 100	200 x 200
75 x 75	120 x 120	
86 x 86	150 x 150	

(Measured at centres of 'U' shape profiles)

Custom size modules and tiles are available, subject to the size being divisible by the available cell sizes.

Finish

Standard colours are white and silver grey. Other colours available, with a minimum cell size of 75 x 75mm. See page 36 for a full range of paint finish options.

Grid System

Lay-in Tee Grid, see page 146 for components. For suspension using other grids please contact SAS Technical department.

Shape

Modules are square with out-turned edges to lay onto the flanges of the exposed grid system.

Weight

Approximately 4.5kg/m² for Trucell panels and suspension system.

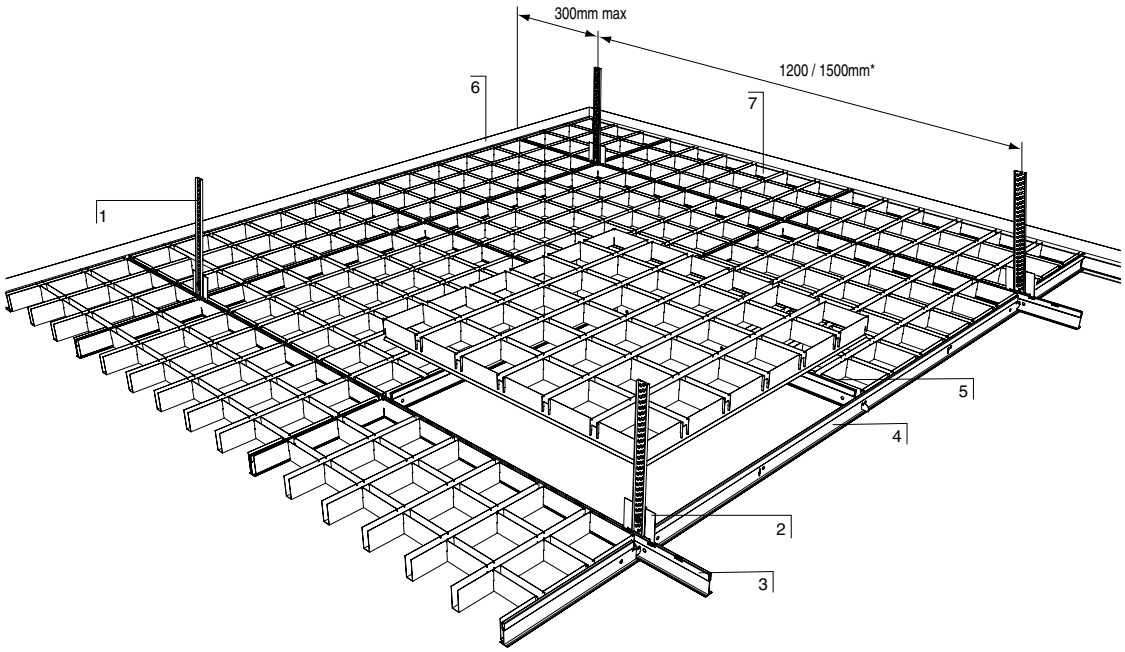
Trucell Construction

The panels are manufactured from lightweight pre-coated aluminium folded into U shape profiles with a nominal cell wall thickness of 15mm to give a precise engineered ceiling appearance.

Integration and Lighting

Trucell allows fire detection and control systems, air conditioning and other services to be located within the ceiling void.

Decorative luminaires can be installed within single or multiple adjacent cells depending on luminaire and cell size being used.

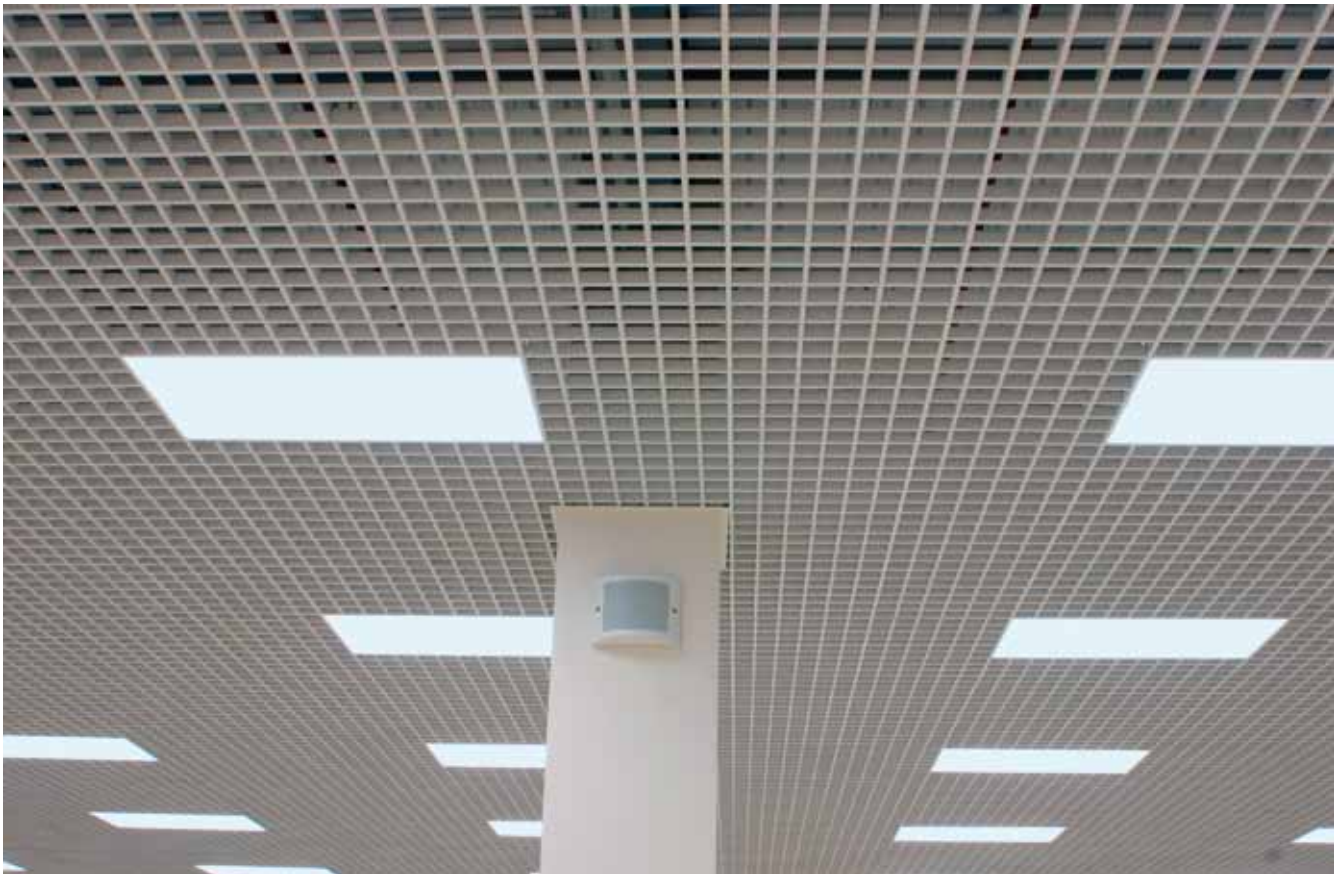


1] Emac Hanger
2] Emac Hanger Bracket
3] Main Runner
4] Double Module Cross Tee
5] Single Module Cross Tee
6] Perimeter Trim
7] Trucell Tile

*Lightweight installations only, see page 168 for full details.

Section drawing

trucell



bespoke ceilings

radial, trapezoidal, vaulted, waveform

bespoke ceilings

System Description

SAS bespoke ceilings encompass a wide range of design options and include radial, vaulted and waveform ceilings.

Ceilings can be designed to fit any building design or shape. The tiles can be manufactured to meet the building module size with curved or trapezoidal tiles and profiles available.

For external environments, subject to wind loading, differing options can be manufactured.

Semi-external ceilings can be produced, where sub-terrain and undercroft car parks must meet U-Value requirements, an insulated suspended metal ceiling can ensure that U-Values are maintained while providing a clean durable finish.

Finish

Polyester Powder coated supplied as standard with a RAL 9010 smooth finish; a fine textured finish (**SAS FT**), anti-bacterial coating (**SAS AB**) and other colours are available. See page 36 for a full range of paint finish options.

Shape

Tiles are available in square, rectangular mega panels, coffered, curved and trapezoidal forms to meet individual requirements.

Perforation

Typically supplied with 1522, 1820 or perforation. See page 103 for full details and other options.

Weight

Approximately 15kg/m² for waveform steel tiles, acoustic/insulation pad and suspension system.

Further details on the range and applications of bespoke ceilings can be found in the SAS Architectural Metalwork brochure.

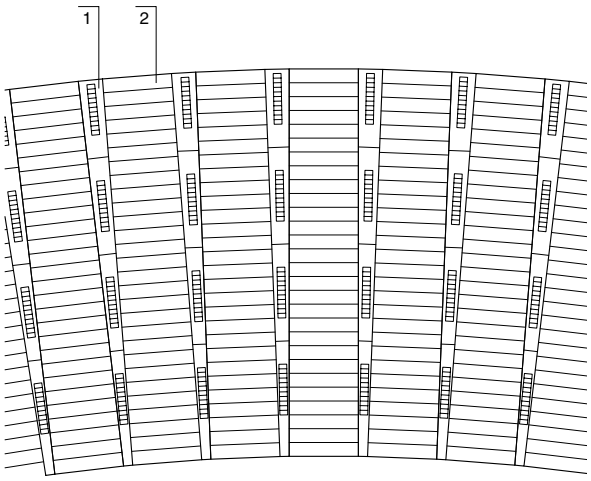
In addition to bespoke ceilings, the SAS Architectural Metalwork range includes Bulkheads, Column Casings, Acoustic Wall Panelling, Acoustic Baffles, Binnacles, Solar Management, Service Gantries and Walkways and other associated metal products, further details are available on pages 189–192.

radial and trapezoidal ceilings

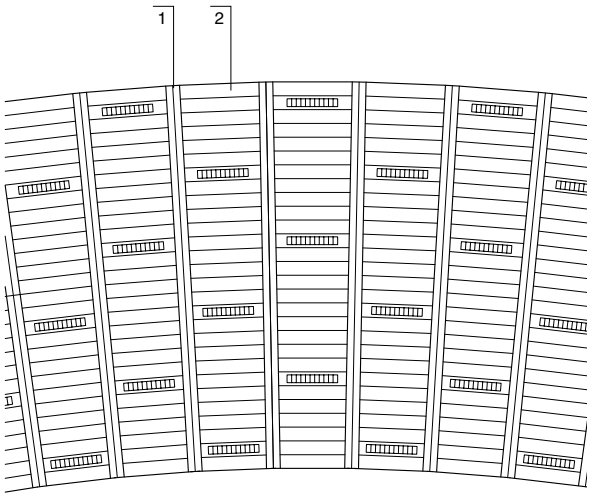
Radial ceilings can be designed and manufactured to suit the curvature of a building. The design can avoid the need to cut tiles on site reducing site wastage.

A range of segmented, curved or trapezoidal tiles can ensure that the ceiling follows the exterior details.

Alternatively, trapezoidal profiles for SAS System 330 allow standard rectangular filed tiles to be installed.



1] Trapezoidal C-Profile 2] Ceiling Tiles



1] C-Profile 2] Trapezoidal Ceiling Tiles

vaulted ceilings

A vaulted ceiling can maximise floor to ceiling height and with the use of lighting effects can give the perception of a higher ceiling level. They can be straight, angled, barrel vault or waveform design.

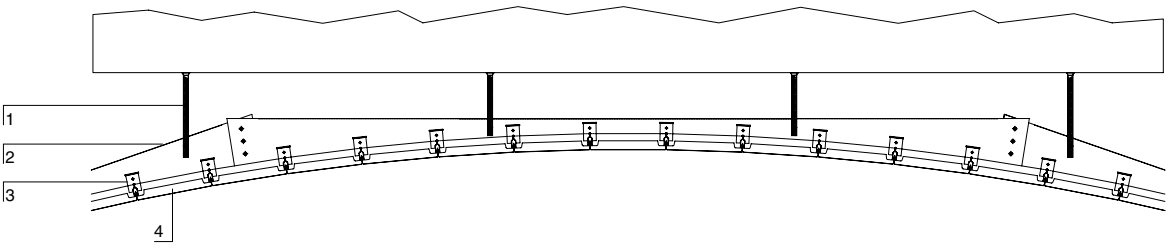
Vaulted ceilings can be designed using a number of different ceiling systems. For smaller vaults individual curved mega panels can be produced.

For larger vaults clip in or lay in tiles can be specified to give a gentle curve to the ceiling plane using flat or even curved tiles and profiles.

An example of a clip in system is highlighted below, the SAS Omega Channel is suspended from a curved faceted former that is supported from the soffit.

Lay-in systems are supported from a curved profile suspension grid. A series of linear tiles are used to create the effect of a curved ceiling plane.

Isolated islands of vaulted ceiling areas can be integrated into any ceiling plane.



1] Emac hanger 2] Faceted channel 3] Suspension channel 4] Clip-in ceiling tiles

vaulted triangular panels

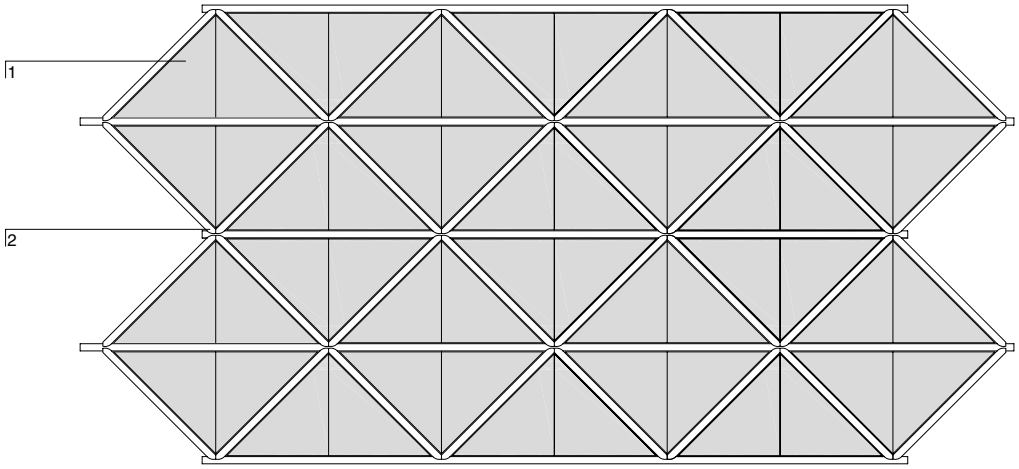
With large spaces, triangular mega-panels can be manufactured to provide a visually effective ceiling design.

This functional practical ceiling design can enable panels to be simply fixed to the structural metalwork. Where the beams are joined together at node points they form a series of vaulted coffers.

Tiles can be constructed using a concealed fixing system that allows panels to hinge down individually for void access.

Manufactured from lightweight aluminium these perforated and plain tiles can be installed internally and externally.

Externally the panels can be designed, manufactured and installed to withstand extreme weather conditions including tropical typhoons.



1] Triangular Ceiling Tile 2] Structural Beam

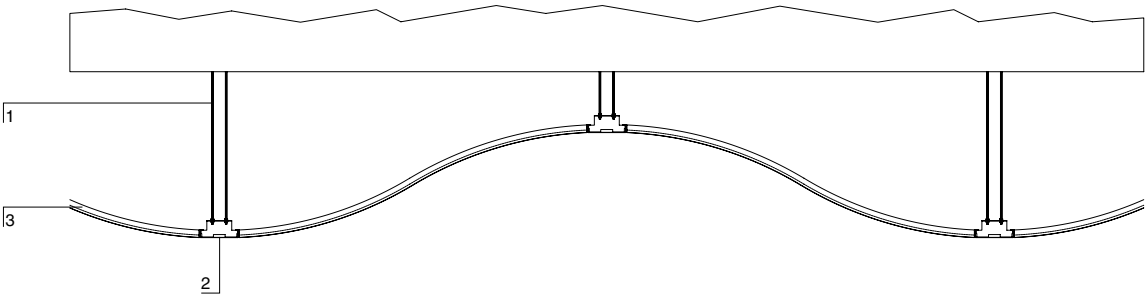
waveform ceilings

A vaulted waveform ceiling can provide a visually stunning and practical ceiling which combines acoustic and integration requirements.

In a commercial office environment, the floor to ceiling height can be maximised whilst allowing room for structural metalwork and mechanical services to be integrated into the ceiling void.

Curved suspension profiles combined with curved linear tiles can enable tight curved ceilings to reflect a flowing design.

Manufactured from aluminium, the acoustics within swimming pools and other leisure environments can be managed with reverberation times reduced, see image below.



1] Threaded Rod 2] C-Profile 3] Curved tile