

metal ceilings defined

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lay-in ceiling systems
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types of metal ceilings

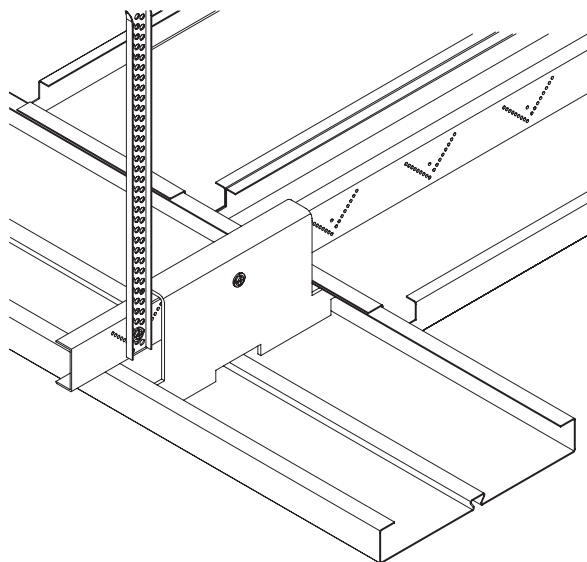
When selecting a suspended ceiling it is not necessary to take a 'best fit solution'. We believe that each ceiling is different and requires a tailored approach, projects and buildings are not always square, demands from users vary and environmental concerns have to be taken into account.

SAS International work to supply a metal ceiling system that is tailored to the user's requirements, fulfilling various specification and sector demands.

This specification criteria can include acoustic demands, design, durability, installation, paint finish, integration, prefabrication, product standards, accessibility and maintenance.

Information on the requirements of suspended ceilings for each specification demand can be found in Specification Criteria on page 25.

To meet your design and performance requirements a different number of ceiling systems are available. Ceilings tiles can be suspended in a number of ways with visible and concealed grid options.



There are four principle types of metal ceiling systems and each of these are explained in depth on the following pages:

Clip-in tiles – have a concealed suspension grid. System 120 (page 59), System 150 (page 69).

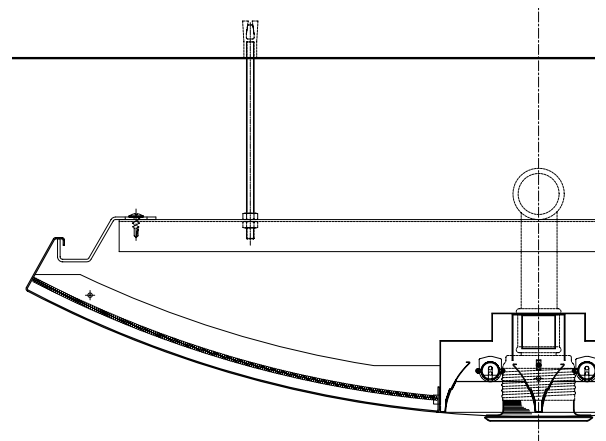
Hook-on tiles – have a concealed suspension grid. System 200 (page 73), System 205 (page 76).

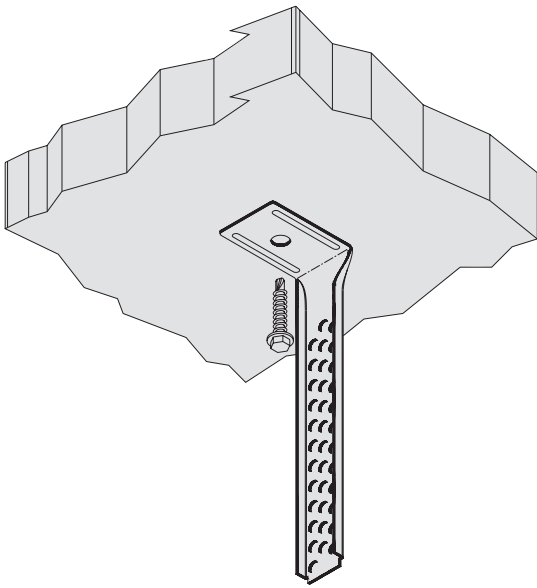
Lay-in tiles – have an exposed suspension grid.* System 130 (page 63), System 330 (page 77).

Acoustic rafts or modules – are suspended directly from the soffit, enabling natural thermal mass cooling. System 600 (page 83).

In corridors where it is not possible to support a grid from the soffit suspension brackets can be used on the side walls, providing support to tiles to maximum widths of 3000mm.

*Lay-in tiles can be tiles and grid manufactured in modular sizes, for example 600 x 600mm, or larger profile suspension systems where tiles are manufactured to meet building module size up to 1500 x 1500mm mega panels.





Suspended ceiling systems are supported from a primary suspension grid that is fixed directly to the structural soffit. From this primary suspension grid a suspension channel or profile is fitted, depending on the system type.

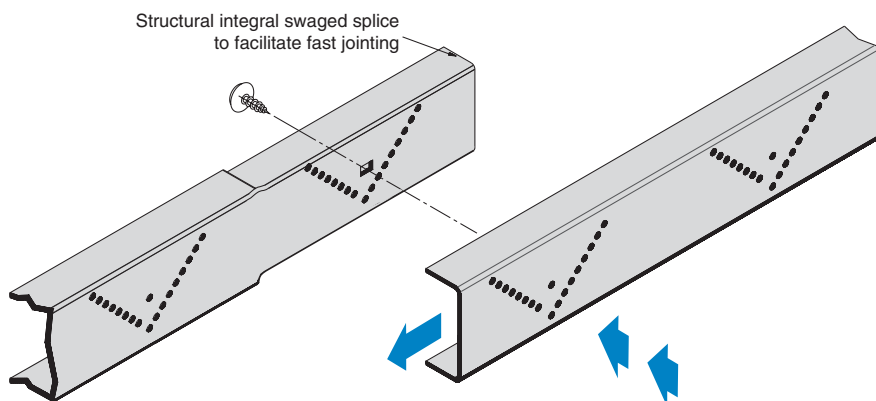
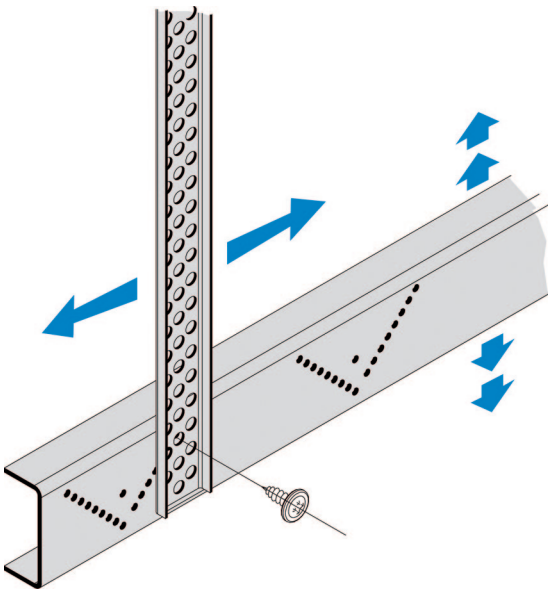
In lieu of using threaded rods that require adjustment time and brackets, an Emac primary grid system can be installed with speed and accuracy providing a rigid grid to suspend the ceiling system from.

Emac

Emac primary grid suspension components are designed by SAS International to reduce installation time and provide a superior finish to the installed ceiling.

All SAS International grid systems can be suspended from a structural soffit using a pre-punched Emac Hanger. Each Emac suspension hanger has a pre-punched fixing flat that is suitable for most mechanical fixing to soffits. This avoids the need to snip, fold and punch angle or apply angle cleats.

Emac hangers used in conjunction with Emac channel or Emac hanger brackets provide infinite levelling, in steps of 0.50mm, without the need for drilling. Using self-tapping screws the primary grid system can be assembled using a hand screwdriver or cordless battery driver. Available in eight lengths from 400mm to 1600mm, suitable hanger lengths are readily available minimising wastage, see page 144 for full range of sizes.



The Emac primary channel, used with the majority of SAS ceiling grids, is uniquely pre-punched with an array of holes in a 'V' formation at 100mm centres.

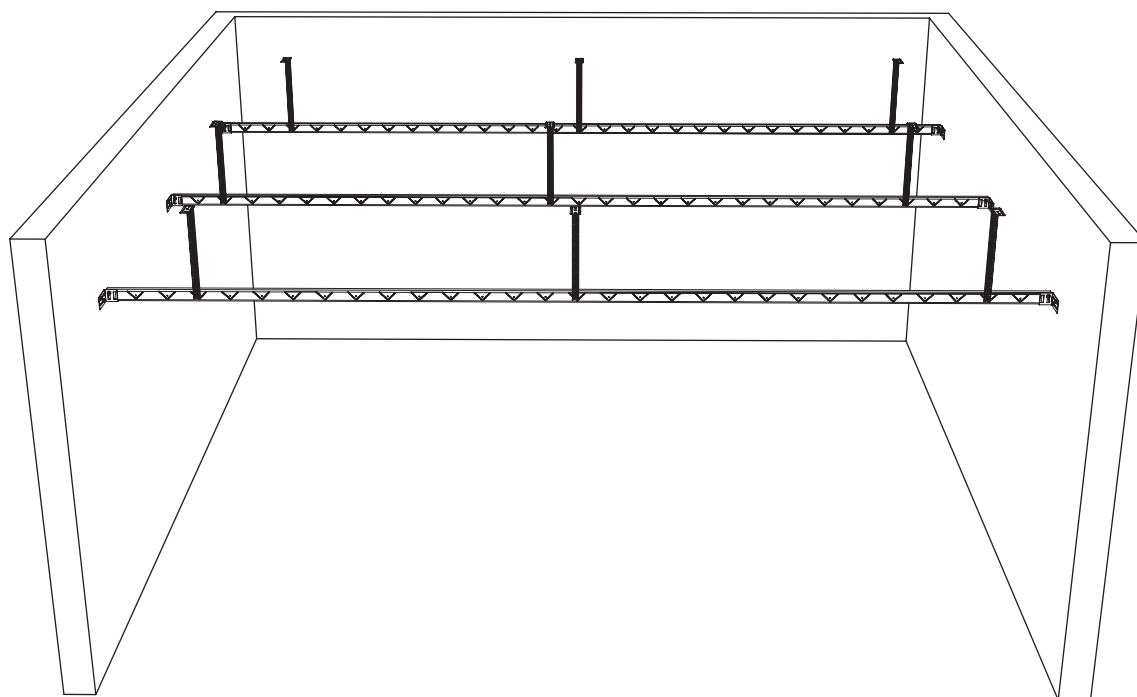
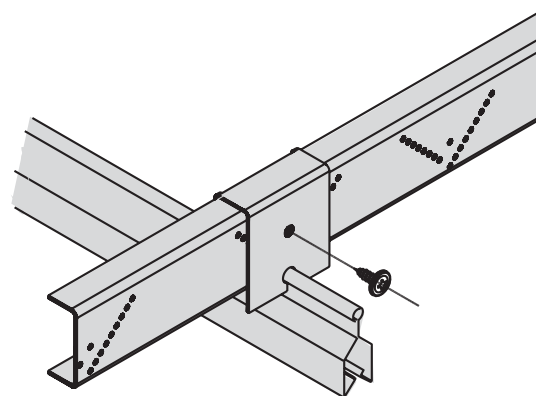
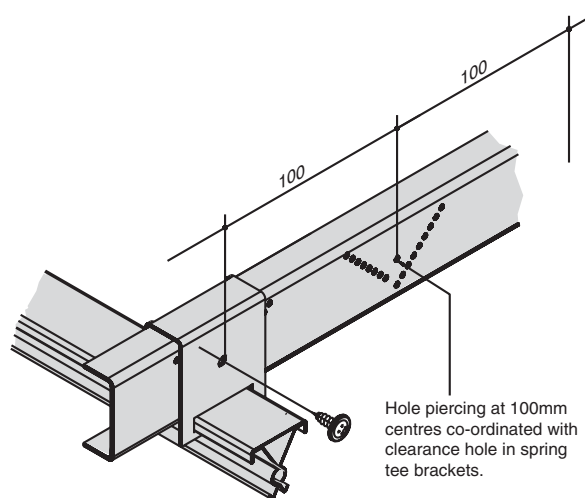
The Emac channel includes a central fixing hole to suit a system suspension bracket. By setting out a primary grid and utilising the 'V' formation punching, runs of suspension channels can be fixed into the grid at building module intervals without the need for measurement.

The Emac channel is available in 4 metre lengths and in two gauges, 1.2mm and 1.5mm, both with an integral swaged coupler for in-line splicing. A full Emac component list is available on page 144.

Suspension Channels and Profiles

The suspension channel or profile is suspended from a primary grid using suspension brackets. Depending on the system type ceiling tiles are clipped, hooked or laid into the suspension channel. Each system type utilises a unique suspension channel or profile.

Full details of each grid system are listed in the components section on page 143.



A choice of two different clip-in tile systems, one downward demountable and the other with a hinge and slide access are available from SAS International.

Clip-in tiles have a concealed suspension grid using an Emac primary grid system and either a Spring Tee (System 120, page 59) or Omega Bar (System 150, page 69).

Clip-in systems should be considered for use in areas of security and cleanliness. They are generally double coated for commercial kitchens, laboratories or humid environments.

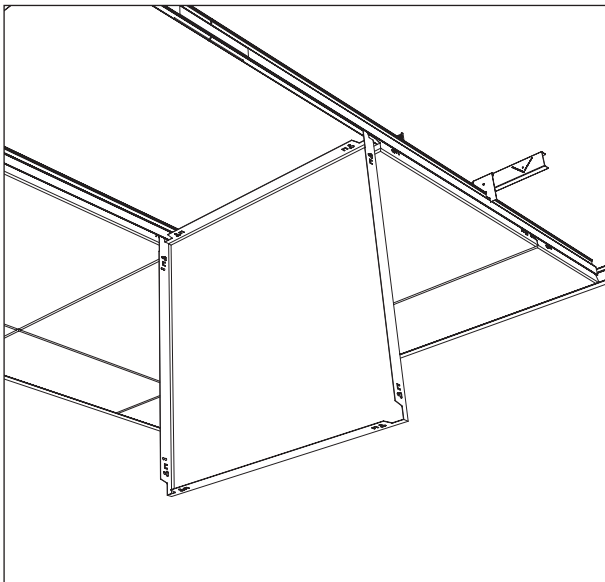
Retail environments benefit with suspension spans of up to 2000mm* which minimises installation time.

*Lightweight installations only, see installation advice on page 159.

A plain tile used in a clip in system can create a tight butt joint, providing a washable ceiling plane which is ideal for areas where hygiene and cleanliness are essential. A range of square or rectangular tile modules with bevelled edges and vertical sides are available.

Luminaires can be integrated into the system, dependent on weight, or supported directly from the grid system.

System 150 tiles can be pivoted and slid within the suspension system to provide access to large areas of the ceiling void for maintenance, up to 1500mm wide along the length of the ceiling system. Tiles are retained within the suspension grid to avoid any potential damage caused by removing tiles from the grid system and temporary storage on the floor.



lay-in ceiling systems

SAS International offers a range of modular lay-in metal ceiling systems that can be aesthetically customised by utilising differing exposed grid and profile suspension options.

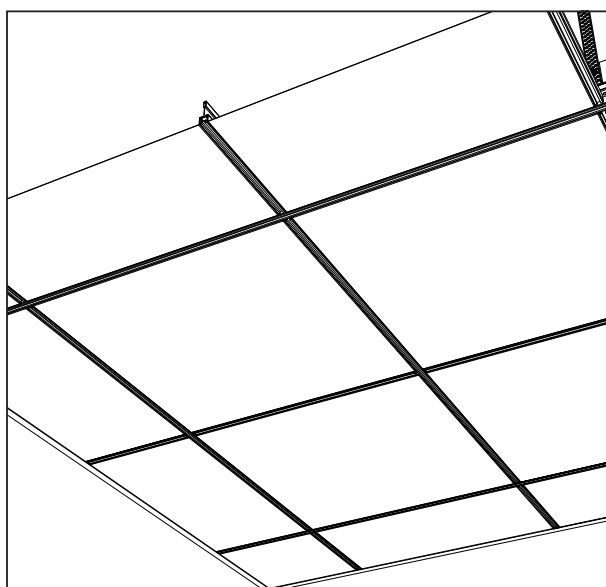
Alugrid-Q offers a flush finish to the exposed face of the tile. A smooth aluminium extrusion that features a continuous M6 linear thread form, allows the easy location and flexible relocation of partitioning heads without causing damage to the ceiling plane, see page 63 for System 130.

Alugrid-P offers the same flush finish to the ceiling plane without the threaded M6 linear recess. This combination of tile and grid can offer a completely smooth monolithic look to the ceiling plane, see page 63 for System 130.

SAS Tee Grid offers a traditional ceiling grid finish, the butt cut exposed tee grid provides a strong modular and tegular effect ceiling.

The lay-in ceiling tiles are provided in a cassette form, perforated tiles are supplied with a decorative acoustic fleece and can be supplied additionally with an acoustic pad and or steel backing plate. The cassette tiles are factory sealed with a reinforced aluminium foil.

Metal modular lay-in tile systems are specified in a number of sectors and offer demountable tiles while retaining layout flexibility and durability.



Linear grid systems offer design flexibility and are generally designed and manufactured to the building planning grid.

Linear systems are constructed using SAS System 330 and supported with either C-Profiles or Omega C-Profiles. The profiles support the tiles at 90° creating a linear appearance.

Profiles are available in standard widths of 50mm to 300mm, with alternative sizes and tapering profiles available to order.

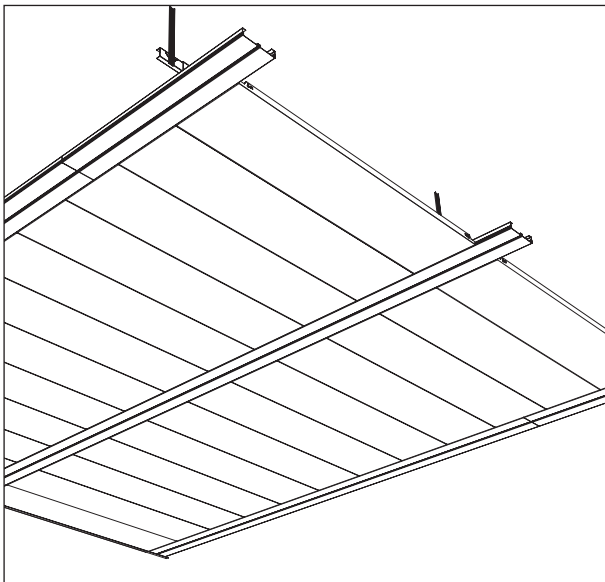
Tiles can be removed from the profile grid to allow large unobstructed runs to the ceiling void to be created. During installation, profiles and aperture tiles can be installed earlier in the programme leaving the soffit and ceiling void open for mechanical and electrical service installation.

The balance of field tiles can be delivered and installed towards the completion of the project, and services are connected.

Linear tiles are supplied with end arm brackets, these support the tile vertically from the linear profile when accessing the ceiling void. This avoids the requirement for temporary storage and any potential damage.

C-Profiles offer a plain flush finish while Omega C-Profiles offer a continuous M6 thread form for the easy location and relocation of partitioning heads, see page 77 for full details on System 330.

Linear grid systems are installed within plasterboard ceilings to provide service access points.



tartan grid ceiling systems

Tartan grid systems offer the same design flexibility as linear grid systems, manufactured to the building planning grid.

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

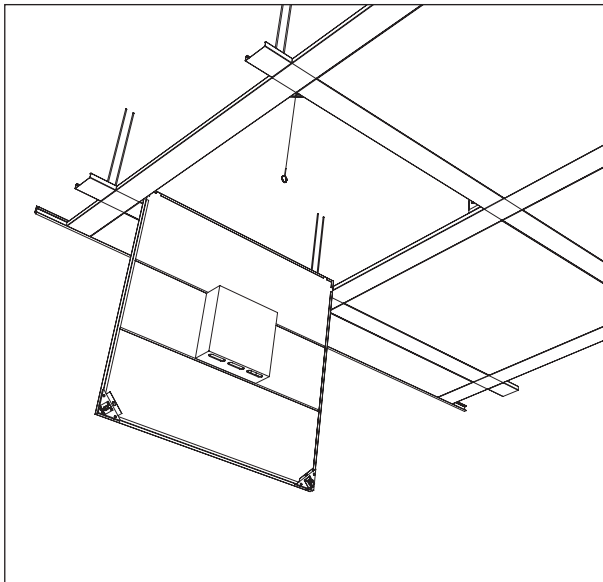
Tartan grid systems are now constructed using SAS System 330 with C-Profiles and cross noggins. The profiles can be notched with 'V' grooves to mimic the traditional square crossing box. Large square mega panels can be manufactured in widths up to 1500mm.

Profiles are available in standard widths of 50mm to 300mm, alternative sizes and tapering profiles are available to order.

Tartan grid ceilings accommodate large singular mega panels or multiple rectangular tiles. A range of hinge down access options are available for mega panels including touch latches, pivot pins, flying arms and safety wires.

Chilled Ceilings can be incorporated efficiently into mega panels with flexible connection pipes joining multiple panels in series, see page 173 for further details.

C-Profiles offer a plain flush finish while Omega C-Profiles offer a continuous M6 thread form for the easy location and relocation of partitioning heads.



Rafts and modules provide a balance between acoustic and lighting performance, maintaining an energy efficient open soffit. These rafts and modules offer architects and clients the option to create more interesting spaces, which are acoustically functional.

SAS International offer two different ranges of rafts and modules that can be suspended directly from an open soffit or below a suspended ceiling.

SAS System 600, acoustic lighting rafts or modules provide a prefabricated lighting and acoustic solution for environments such as schools, offices and hospitals. The rafts are designed to meet specific acoustic demands in accordance with specifications. System 600, acoustic lighting rafts, are ideal for naturally ventilated buildings, see pages 43 and 83 for further details.

As a suspended module, these rafts leave the concrete soffit open, allowing sustainable natural mass cooling to take place. This is increasingly being used within schools as a way of significantly reducing internal ambient temperatures without the need for air

conditioning, whilst meeting the requirements of BB93.

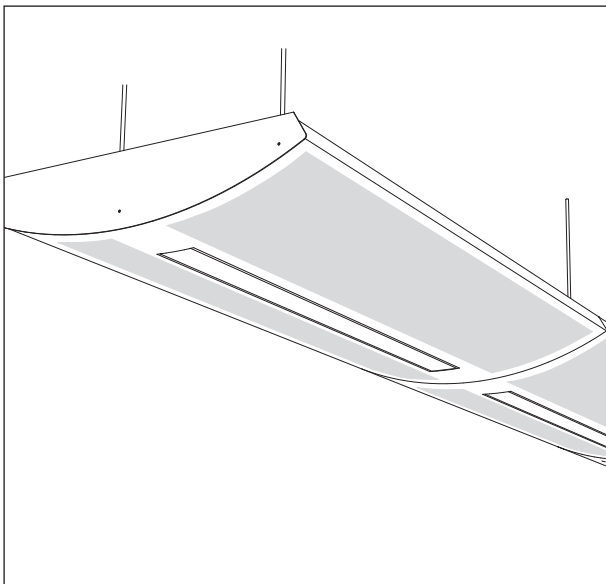
ISMs (Integrated Service Modules) incorporate an active or passive Chilled Beam for energy efficient mechanical cooling, see page 181 for further details.

System 600 and ISMs are available in a range of standardised designs with a bespoke design service available. Modules and rafts can be designed to integrate a number of building services including luminaires, voice and data cabling, fire detection and control systems, infra-red sensors and CCTV.

The location of partitioning are integrated by means of removable panels in the run of rafts at building module intervals. This can accommodate future occupant requirements.

These rafts and modules can be prefabricated, manufactured off site, delivered and installed on-site in a complete unit.

SAS ISMs specified with active Chilled Beams are tested under stringent laboratory conditions in accordance with product specification and module design.





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