Rockfon

INSTALLATION GUIDE

Rockfon® System T24 A, E – ECR

A-edge

E-edge

Enhanced corrosion resistant ceiling systems for humid environments

- Versatile and simple ceiling system suitable for humid and harsh indoor environments such as swimming pools, kitchens and sanitary areas
- Corrosion resistance Class D (EN 13964)
- Visible and semi-concealed grid ceiling system
- Every single tile is demountable for quick and easy access to installations

Sounds Beautiful

Description

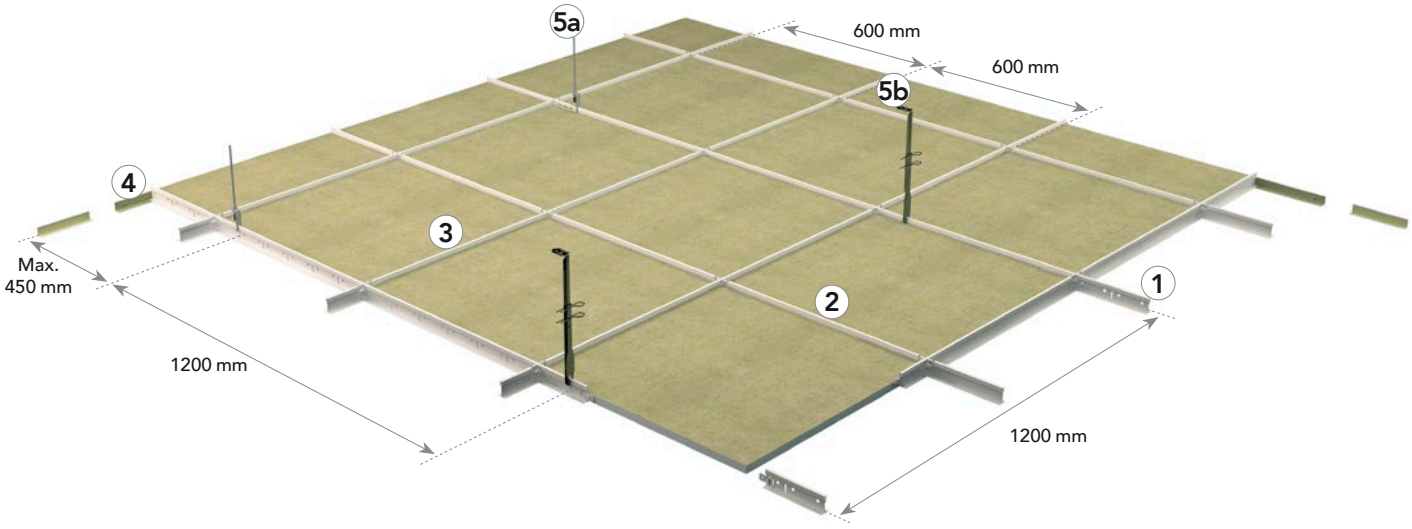
Rockfon System T24 A, E - ECR is a ceiling system suitable for humid and harsh environments such as swimming pools, kitchens and sanitary areas where corrosion resistance, longevity and safety are key factors.

The system can be used to create semi-concealed and visible grid ceiling solutions by combining the corrosion resistant **Chicago Metallic T24 Click D2890 ECR Class D** grid with Rockfon A and E edge tiles. Rockfon ceiling tiles are dimensionally stable at high humidity levels and temperature ranging from 0°C to 40°C. Specific tiles are designed for a variety of applications.

In Rockfon System T24 A, E - ECR the Chicago Metallic T24 Click D2890 ECR Class D grid components are made of prepainted galvanised steel Z 275 meeting the highest Class D corrosion resistance requirements of EN13964 (see below). The system accessories are produced with the same level of corrosion resistance protection.

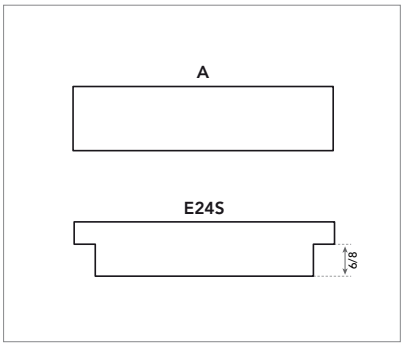
The grid comprises click, joggle end connections between main runner and cross tees which provide quick and easy installation together with demountability and stability.
The main runners and cross tees are 24 mm wide with a uniform depth of 38mm ensuring good strength and easy service integration.

The system enables complete tile demountability.



38 mm deep enhanced corrosion resistant main runners and cross tees in pre-painted, hot dipped galvanised steel - Z 275 which is additionally protected to provide Enhanced Corrosion Resistance, with a two-sided layer of 275 grams of zinc/sqm and a 20µ polyester coating per side.

Examples of enhanced corrosion resistant hangers.



Visible grid and semi-concealed grid ceiling system with A and E edge tiles.

System components and consumption guide

Tile		Chicago Metallic T24 Click D2890 ECR Class D			Wall angles	Accessories
		1	2	3	4	5
-		Main runner T24 Click ECR Class D 3600	Cross tee T24 Click ECR Class D 600	Cross tee T24 Click ECR Class D 1200	Perimeter wall angle trim ECR Class D	ECR Hanger
Dimensions (mm)	**Consumption/m²**					
600 x 600	2.78 pcs/m²	0.83 lm/m²	0.83 lm/m²	1.67 lm/m²	1)	0.70 pcs/m²
1200 x 600	1.39 pcs/m²	0.83 lm/m²	-	1.67 lm/m²	1)	0.70 pcs/m²

1) Consumption depends on room size.
2) To be used with E edge tiles.

Tile - A and E edge

A edge

E edge

Chicago Metallic T24 Click D2890 ECR Class D

1. Main runner T24 Click ECR Class D 3600

2. Cross tee T24 Click ECR Class D 600

3. Cross tee T24 Click ECR Class D 1200

Wall angles

4. Perimeter wall angle trim ECR Class D

This can also be used, with appropriate fixings, as an ECR suspension hanger.

Accessories

5a. Suspension hanger

5b. ECR hanger

Performance

System load bearing capacity

-	-	Max. Load (kg/m²)	
Hanger distance (mm)	Dimensions (mm)	Max. 2.5 mm deflection	Max. 4.0 mm deflection
1200	600 x 600	9.9	16.5
1200	1200 x 600	10.9	17.9

The system´s load capacity is determined from a max. deflection of the individual components corresponding to 1/500 of the span or the cumulative deflection of all structural components which does not exceed 2.5 or 4.0 mm. The loading capacity is given as regularly distributed load in kg / m², the weight of the tile is not included.

Corrosion resistance

Class D (EN13964)

Class	Relative humidity	Examples of Class D environments
D	> 90% relative humidity + risk for condensation + agressive atmosphere	- Swimming pools - Aquatic centres - Centres for balneotherapy - Laundries - Industrial buildings with harsh environment - Diverse washing areas

Demountability

Tiles installed in Rockfon System T24 A, E - ECR are fully demountable.

Fire resistance

Some Rockfon ceiling systems have been tested and classified in accordance with European norm EN 13501-2 and/or national norms. Please contact Rockfon.

Compatible tiles

Many Rockfon tiles (including coloured products) are suitable for use in varying humidity and humid environments provided neither splashing water nor water droplets reach the surface. Please consult our product application guides on our website. In swimming pools, Rockfon System T24 A, E - ECR should be installed at a safe distance from the water surface, in order to reduce the risk of contact with splashing water.

Rockfon Blanka, Rockfon MediCare Plus and Rockfon Hygienic products are able to endure limited or occasional splashing.

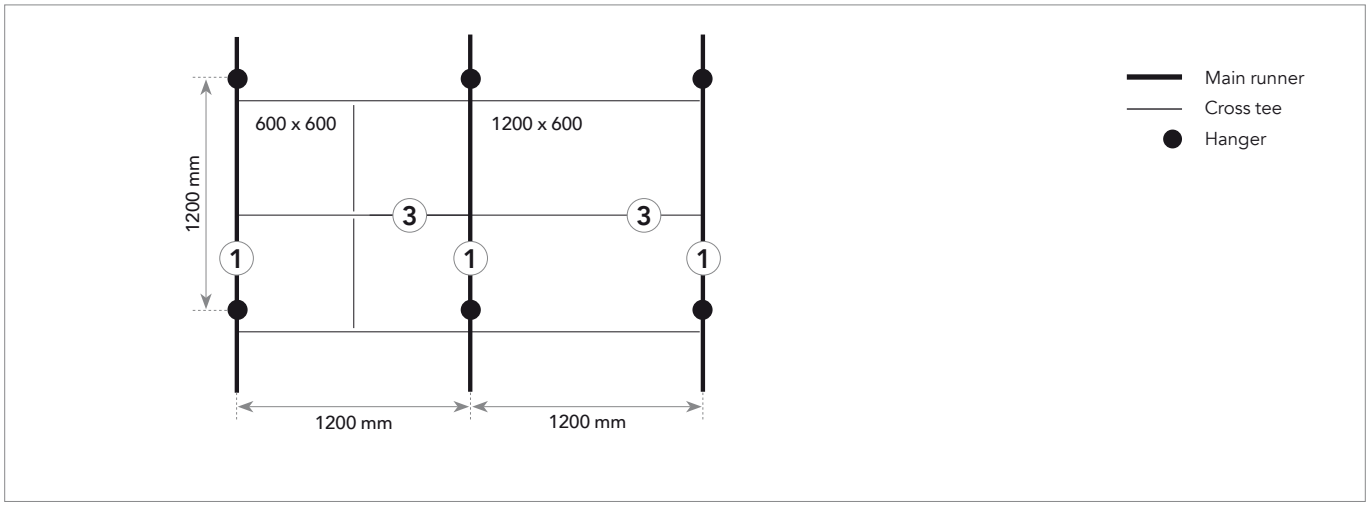
Rockfon MediCare Block can endure splashing water. Contact Rockfon for more information.

Condensation must not take place on the back or front side of any Rockfon products. Building physics analysis is recommended. Specifically in the case of harsh environment applications, condensation risk analysis is considered to be essential and best practice.

Grid Installation

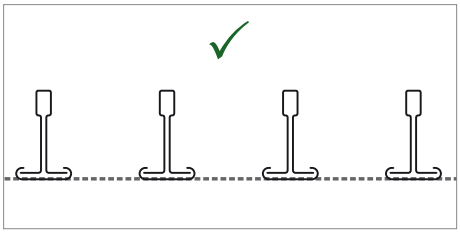
Grid layout and hanger location

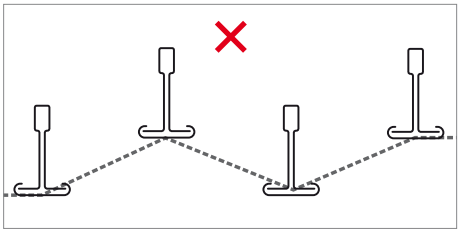
Rockfon A and E24 edge tiles can be installed in Rockfon System T24 A, E - ECR.
Some layout options are shown below depending on the size of the tile.



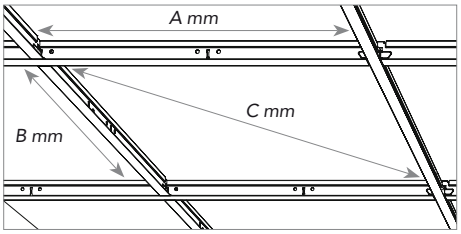
Installation requirements

During and after grid installation, it is important to check that T profiles are perfectly aligned horizontally. A maximum level difference of +/- 1 mm is recommended between profiles and should not be accumulated. This tolerance is valid for all directions.





It is also important to check the squareness of the angles between the main runners and cross tees. This can be easily done by comparing the measurements of the two diagonals. See recommended tolerances on the drawings below.

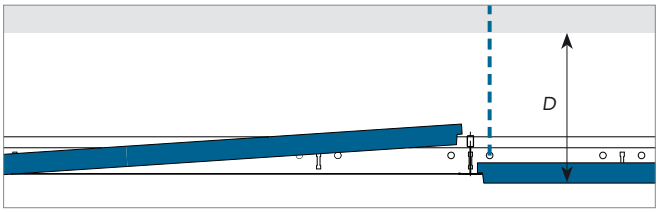


Module size (A x B)	Diagonal (C)	Tolerance
mm		
600 x 600	814.6	+/- 1.0
1200 x 600	1309.5	

Minimum installation depth (mm)

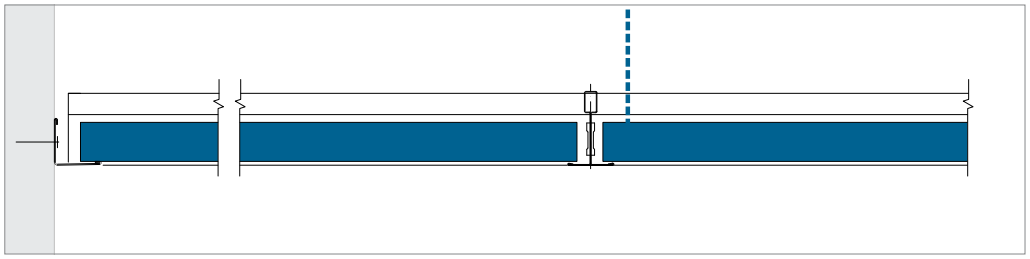
Tiles installed in Rockfon System T24 A, E - ECR are fully demountable. The installation depth is defined as the distance from the underside of the tile to the underside of the substrate, where the hangers are fixed. D is the minimum installation depth for easy tile installation and demountability.

Tile thickness	Dimensions	D
	mm	
15 - 20	600 x 600 1200 x 600	100
40 - 100	600 x 600 1200 x 600	200

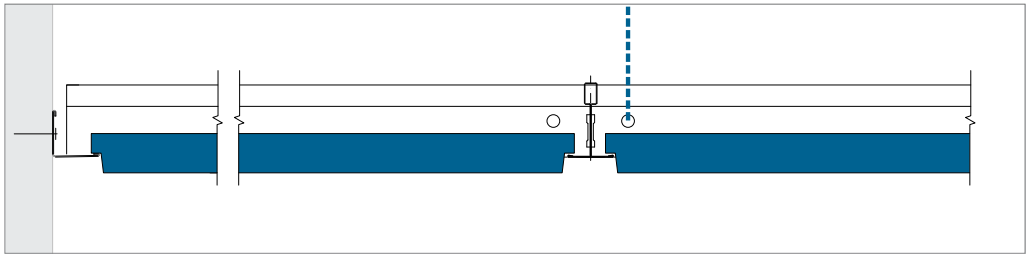


Perimeter Finish Options

Below are examples of perimeter finishing. Further details can be found on **www.rockfon.co.uk**.



A-edge - Perimeter finish with wall angle trim.



E-edge – Perimeter finish with wall angle trim.

Service integration

Rockfon ceiling tiles are easy to cut and therefore it is very easy to integrate services in Rockfon tiles. The cut-outs can be made with a simple utility knife

When the ceiling system is load bearing, Rockfon recommends using support arms or a yoke that transfers the weight of the service to the grid. The size of the yoke should not be bigger than module 600 x 600 mm and the use of additional hangers to overcome deflection in the ceiling system is strongly recommended. When using support arms to spread the weight of the installation, Rockfon recommends spanning a maximum of 600 mm. For more information on the load bearing capacities of this Rockfon System T24 A, E - ECR, please refer to the table below.

The services which will be integrated in Rockfon System T24 A, E - ECR need to be manufactured with enhanced corrosion resistant materials in order to ensure a complete ECR system.

Planning

A thorough planning and installation scheduling of the project/ site will result in less re-work and less ceiling tile damage. Rockfon recommends discussing the installation planning thoroughly and well in advance with other installers that have to work in or near the suspended ceiling. By doing so damaged ceiling tiles and dirty spots on the finished ceiling surface can be reduced, which reduces project costs.

Overview load bearing capacity

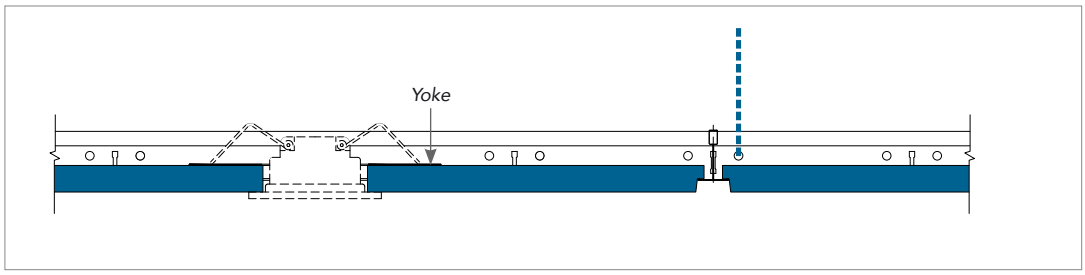
-	Weight of installations		
-	< 0.25 kg/pcs	0.25 ≥ 3.0 kg/pcs	> 3.0 kg/pcs
Small service integration; Spotlight or downlight, speaker, ventilation etc.	Drawing A	Drawing B	Independently suspend
Large service integration; Downlight, speaker, ventilation, etc.	Drawing A	Drawing B	Independently suspend
Modular lighting- or ventilation fixture	Drawing C; System load bearing capacity (if uniformly distributed over grid in kg/m²)		

When installing services in Rockfon System T24 A, E - ECR you should always follow local building regulations if more strict than the load bearing capacity guidelines Rockfon recommends in the above table.

Contact your local Rockfon technical service for more information on suitable lighting fixtures, accessories and the availability of CAD drawings of the different services integrated in Rockfon System T24 A, E - ECR. Special solutions with integrated services are, if available, shown on page 11 of this document in the Tools section.

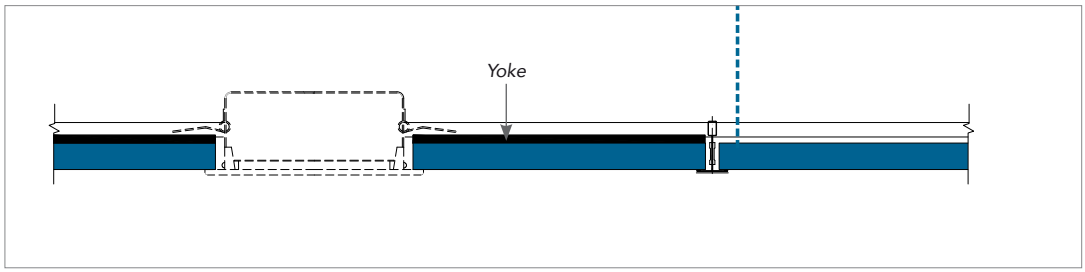
Drawing A

The integration of a spotlight, smoke detector, speaker, etc. (weighing < 0.25kg/pcs).
Rockfon recommends installing spotlights and downlights centralised in the tile.



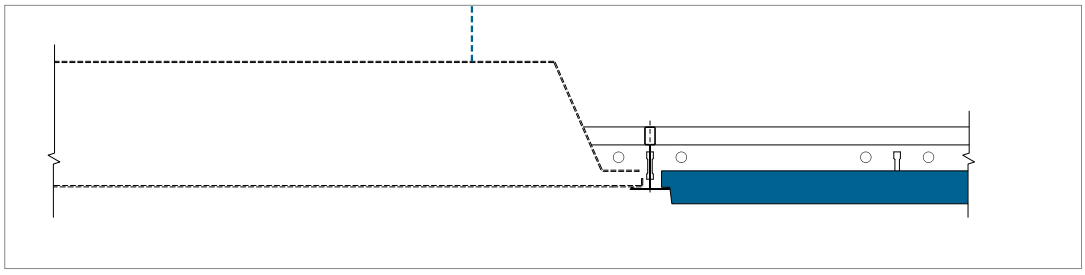
Drawing B

The integration of a downlight, spotlight, smoke detector, loud speaker, etc. (weighing 0.25 ≥ 3.0kg/pcs).
Use of an appropriate yoke to spread the load to the grid (as shown in the detail) or use of support arms to spread the load to the grid system is strongly recommended. The use of additional hangers to avoid excess deflection and a centralised installation of the lighting in the tile is strongly recommended.



Drawing C

The integration of a modular luminaire or air vent (evenly distributed over grid), weighing max. the system loading capacity. If the load capacity of the system is likely to be exceeded it is strongly recommended to suspend the service independently. Alternatively use services equipped with supporting arms on minimum two opposite sides to transfer the weight of the service to the top of the bulb of the grid. This is safer and reduces the likelihood of cross tee rotation.

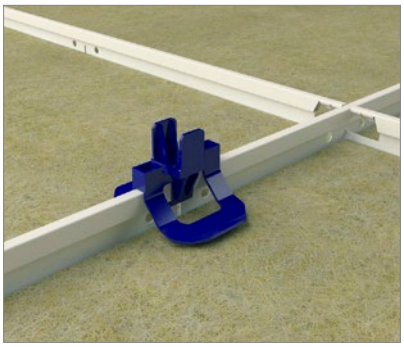


Specific Solutions

Hold down clip

For maintaining tiles in place in humid and harsh environments, Rockfon provides hold-down clips in plastic.

For fire resisting/ protecting ceilings, tiles should be clipped at the rate of 2 clips per 600mm edge and 3 clips per 1200mm edge. In small rooms, entrance areas, staircases and other areas which may be subject to air pressure differences between the room and ceiling void, it is recommended to alleviate pressure build up with the use of vents or grills. Alternatively, in some situations, clips can be used to secure the tiles into the grid system.



Specific recommendations in humid and harsh environments

Parameters to be assessed for swimming pools and other harsh environment applications with high humidity and corrosive atmospheres

A number of important parameters must be considered in humid and harsh environments to limit the risk of corrosion and secure the safety of the users of such buildings:

HVAC/Ventilation

Air-conditioning/dehumidifying equipment should be designed to ensure the average relative humidity is within the range 50-65%, under all likely circumstances and in all areas of the building (especially where the load bearing elements are). It should maintain the same conditions above and below the ceiling. Local pockets of still/slow moving air must be avoided to prevent local areas of high/low relative humidity.

Heating/cooling

The heating/cooling equipment (in combination with the insulation and solar influx) must maintain the temperature in the norm range (in order to avoid local areas of low/fluctuating relative humidity).

Condensation

Condensation must be avoided on all ceiling elements (tiles and suspension system) under normal circumstances. Lowering of temperature at night to save energy may create risk of condensation. It is therefore recommended to carry out condensation risk calculations at the project specification stage.

Inspections

Visual inspections of load bearing elements at suitable intervals is recommended, increasing the chance of discovering corrosion before it becomes critical. 1-2 year interval inspection of ceilings and ceiling load bearing elements are recommended. If significant amounts of red rust appears, the frequency of inspections must be increased.

Recommended component materials

In humid and harsh environments, stainless steel (austenitic steel) must not be used if components are load bearing in any way due to high risk of stress corrosion leading to breakage and failure !

Alternatively some elements can be made from non-steel based durable materials, as long as it is ensured that life time can be expected to be equivalent to the galvanised versions. Aluminium components can be used if protected by at least 20 micron anodisation.

Galvanised elements can receive minor scratching during installation, but as they are to a certain degree self-repairing, this is no cause for alarm.
If additional holes are required in grid components, it is recommended that these be punched as opposed to drilled.
If holes are drilled in suspension components for assembly purposes, galvanised screw/bolts must be used.

There is no need for extra protection (e.g. paints) of cuts in galvanised main runners and other grid, as any corrosion in such a small open surface area will have no significant impact on the load bearing capacity nor the life time, but red rust may occur over time giving rise to occasional staining of the back of tiles.

In general, spring-clips are NOT recommended for swimming pools solutions. With stainless steel spring-clips the risk of stress corrosion is very high, due to the way metal is stretched. With galvanised spring-clips, the protective layer can peel off when the spring is compressed.

Local regulations

Relevant local regulations applying to harsh environments and which may be stricter than the above should always be followed.

General installation recommendations

Junction between ceiling and wall or other vertical surface

The perimeter trim should be fastened to vertical surfaces at the required level using appropriate fixings at every 300-450 mm centres. Ensure that butt joints between adjoining lengths of trim are neat and that the trim is free from kinks and remains true and level. For the best aesthetics, use as long a length of trim as possible. The minimum recommended cut length is 300 mm.

Perimeter trims

Timber trims, timber shadow battens and metal Shadow mouldings should not be used with fire resisting/protecting ceilings.

Junction between ceiling and curved vertical surface

The use of a preformed curved perimeter trim is the most appropriate method. Rockfon can provide details of curved perimeter trims on request.

Corners

Perimeter trims should be neatly mitred at all corner joints. Overlap mitres are acceptable on metal trims on internal corner joints unless specified otherwise.

Suspension grid

Unless specified otherwise, the ceiling should be set out symmetrically and where possible, perimeter tiles should be greater than 200 mm in width. The hangers should be fastened with appropriate top fixings and to the main runners at 1200 mm centres (or less with greater load).

Main runners should be positioned at 1200 mm centres for 600 x 600 mm and 1200 x 600 mm module sizes. For 1800 x 600 mm module size, main runners are installed at 1800 mm centres.

For proper grid installation, ensure the T profiles are perfectly aligned horizontally and diagonals of modules are equal (see requirements and tolerances on page 5). Main runner joints should be staggered and there should be a hanger positioned within 150 mm of the fire expansion element/cut-out and within 450 mm of the end of the main runner where it terminates at a perimeter.

Additional hangers may be necessary to support the weight of ceiling services.

Tiles

We recommend the use of clean nitrile or PU coated gloves when installing Rockfon tiles in order to avoid fingerprint marking on the surface.

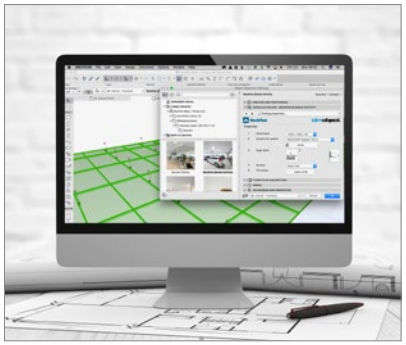
Cutting is made easy with a sharp knife. All off-cuts and holes must be treated according to local Building Regulations.

For an optimum work environment, we recommend installers always observe common work practices and follow the installation advice as shown on our packaging.

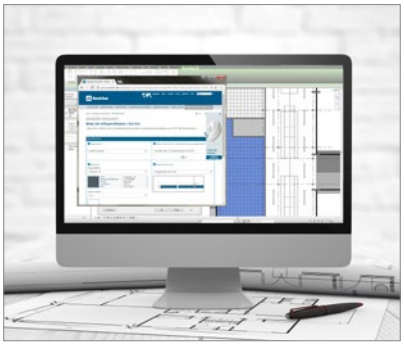
Note! Certain smooth matt surfaces are directional. To ensure consistency of the finished ceiling, it is important that all tiles are installed in one direction indicated by the arrow printed on the back of each tile.

Tools

Rockfon has developed specific tools that are available on **www.rockfon.co.uk**



For further information see the CAD library on our website.



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