

# ***KNAUF***

**AQUAPANEL®**

## ***AQUAPANEL® EXTERIOR CEILING SYSTEM***

For soffits and exposed ceilings



***Build on us.***

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**A world leader in building materials, Knauf's commitment to innovation, quality and service provides effective solutions for the construction industry.**

The Knauf AQUAPANEL® Exterior Ceiling System provides a cost effective complete system with the highest standards in design, installation and sustainability.

Ideal for use on exterior ceiling areas such as soffits, balconies, underpasses and underground car parks, Knauf AQUAPANEL® Exterior Ceiling System prevents damage from water, providing perfect protection from the effects of weather, moisture and mildew.

From spectacularly large and impressive ceiling surfaces to round, organic shapes, these lightweight, resilient and easy to install materials ensure quality and durability.

Meaning you can specify Knauf AQUAPANEL® Exterior Ceiling System with confidence.

***Build on us.***

**Knauf AQUAPANEL® Exterior Ceiling System is engineered to withstand the most challenging of wet conditions.**

## System introduction

**Knauf AQUAPANEL® Exterior Ceiling System is a high-performance, economical solution for dry lining style construction of exteriors.**

**From external soffits, underpasses or open and underground car parks to exterior ceilings, our solutions are engineered to withstand the most challenging wet conditions.**

### Perfect protection against high humidity and chemicals

Knauf AQUAPANEL® Exterior Ceiling System is the perfect solution for ceilings exposed to moisture, wind loading and coastal environments. All components are designed and tested to achieve the highest performance of construction.

Knauf AQUAPANEL® Cement Boards are unaffected by exposure to moisture and are made of inorganic materials, which prevents mould from forming and spreading.

Our range of coated suspended ceiling structures is available in both a C3 or C5 class of corrosion resistance. This ensures the system is suitable for outdoor areas from urban and industrial atmospheres, with moderate sulphur dioxide pollution to coastal areas with associated salinity.

The complete system can be specified to withstand specific project location based wind loads.

### Simple installation

The combination of lightweight materials and the simplicity of installation makes the overhead work easier and faster.

### Complete Knauf engineered and specified system with one single point of contact

Our team of Project Specification Managers and Area Sales Managers will provide you with support throughout the project; from reviewing the architect's drawings and wind load calculations at the very early stage so that the initial specification can be created, to regular visits on site to ensure optimum system performance.

Working with our team of specialists will guarantee you the highest standards in design, construction, cost-effectiveness and durability.

## External soffits and ceilings

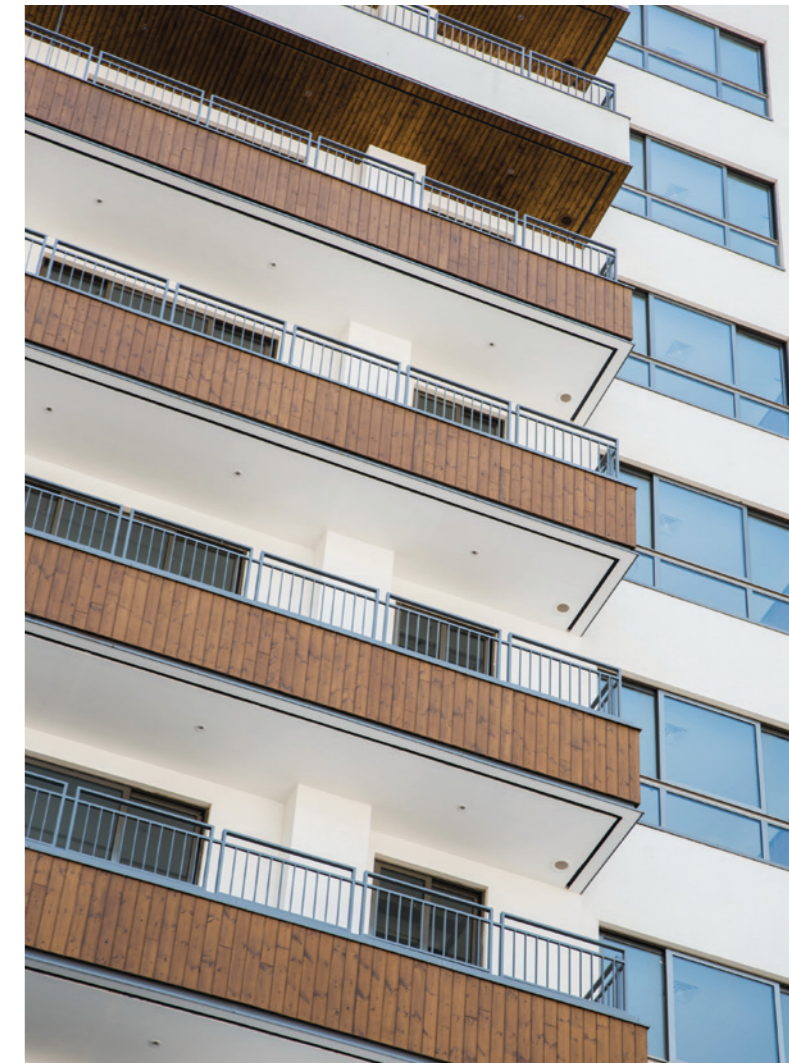
### Benefits

- Simple installation
- Resistant to moisture and driving rain
- Mould-resistant
- Stable, robust and durable
- Creative design opportunities
  - Spectacular ceilings thanks to expansion joints that are only needed every 15m and enable a 225m<sup>2</sup> closed area without a visible joint\*

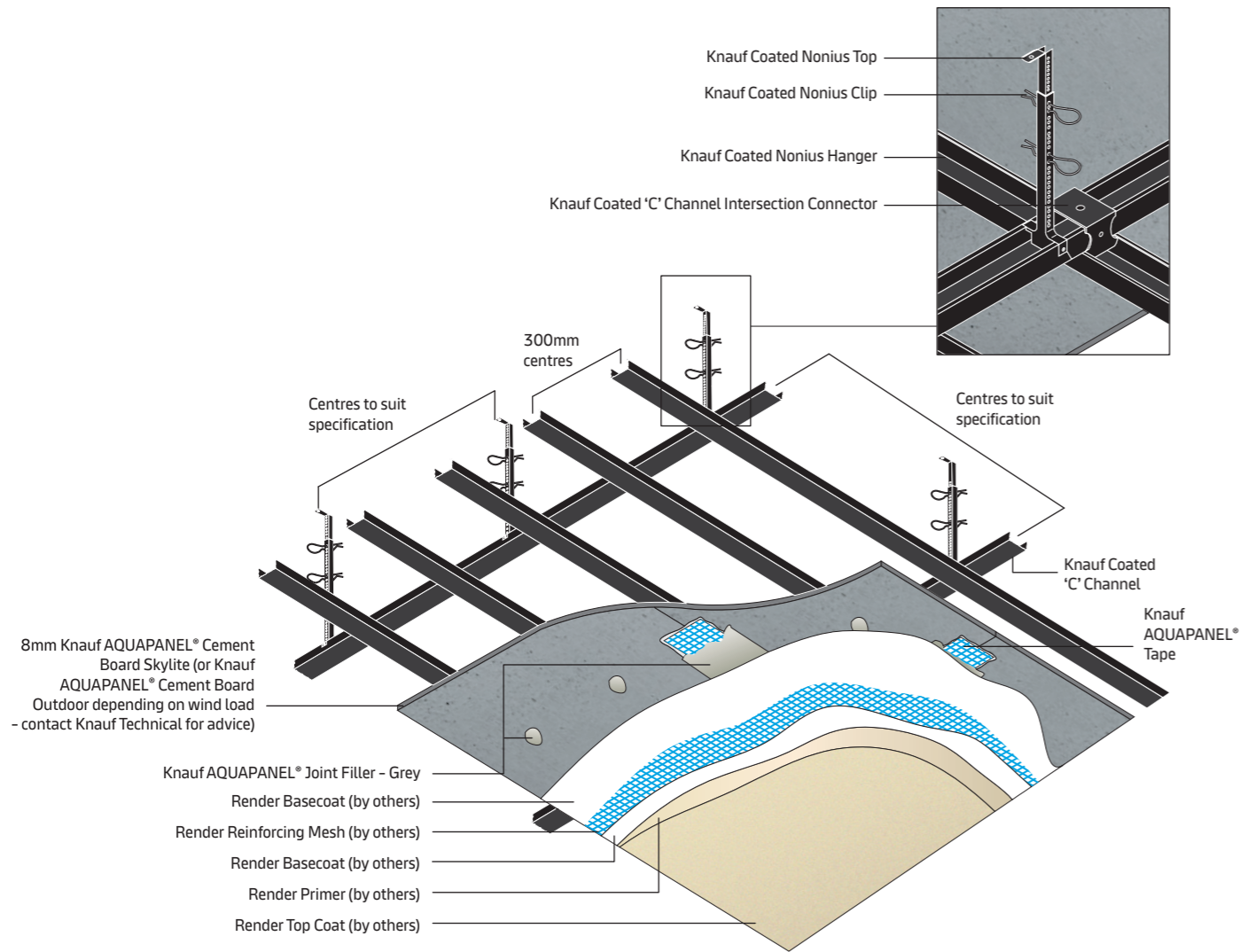
Ideal dry lining solution for exterior ceilings such as soffits, undersides of balconies, underpasses and underground car parks. This eliminates any risk of moisture forming and spreading.

With Knauf AQUAPANEL® Exterior Ceiling Systems, exterior ceilings are optimally protected against all types of weather effects, regardless of their location.

\*A movement joint must be installed if there is a movement joint in the structure above.



# System overview



# System component details

A range of Knauf metal components coated to achieve a C3 or C5 corrosion resistance and suitable for exterior ceilings. Used as part of a complete AQUAPANEL® Interior Ceiling System that provides protection against moisture and mold for projects exposed to humidity and chemicals, such as chlorine.

## Knauf Coated 'C' Channel

Coated steel section for use as support channel for Knauf AQUAPANEL® Ceiling system.

Coating	Dimensions (mm)				Material No.	Ex Stock	Pack Details	
	Gauge	Size/webb	Length	Flange			Items/Pack	kg (Approx.)
C3	0.60	60	4000	27	57983	✗	12	27
C3	0.60	60	cut to order	27	322198 <sup>CF</sup>	✗	12	-
C5	0.60	60	4000	27	322196	✗	12	27
C5	0.60	60	cut to order	27	322197 <sup>CF</sup>	✗	12	-

Compliance: EN 13964. Material Pricing Group: PG

## Knauf Coated 'U' Channel

Coated steel section for use as perimeter channel in Knauf AQUAPANEL® Ceiling system.

Coating	Dimensions (mm)				Material No.	Ex Stock	Pack Details	
	Gauge	Size/webb	Length	Flange			Items/Pack	kg (Approx.)
C3	0.60	28	3000	27	59877	✗	16	18
C5	0.60	28	3000	27	322228	✗	16	18

Compliance: EN 13964. Material Pricing Group: PG

## Knauf Coated 'C' Channel Intersection Connector

Connects primary and secondary channels in the Knauf AQUAPANEL® Ceiling system.



Coating	Material No.	Ex Stock	Pack Details	
			Items/Pack	kg (Approx.)
C3	824269	✗	50	2
C5	322206	✗	50	2

Compliance: EN 13964. Material Pricing Group: PO

## Knauf Coated 'C' Channel Connector

Connects base and support profiles in the Knauf AQUAPANEL® Ceiling system.



Coating	Material No.	Ex Stock	Pack Details	
			Items/Pack	kg (Approx.)
C3	824270	✗	50	2.3
C5	324008	✗	50	2.3

Compliance: EN 13964. Material Pricing Group: PO

Refer to Knauf Technical or the Knauf Project Specification for clarification on whether C3 or C5 metal should be used

## System component details

### Knauf Coated 'U' Mounting Bracket

Locates Knauf 'C' Channel to background support.



Coating	Dimensions (mm)			Material No.	Ex Stock	Pack Details	
	Size/webb	Length	Flange			Items/Pack	kg (Approx.)
C3	60	120	27	824268	✗	50	3
C3	60	200	27	323977	✗	50	4
C5	60	120	27	322018	✗	50	3
C5	60	200	27	323996	✗	50	4

Compliance: EN 13964. Material Pricing Group: PO

### Knauf Coated Nonius Top

Coated suspending brackets for use in Knauf AQUAPANEL® Ceiling system.



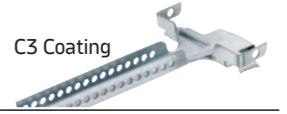
Coating	Max. Void Depth*	Material No.	Ex Stock	Pack Details	
	a			Items/Pack	kg (Approx.)
C3	200	785365	✗	50	1.7
C3	300	785369	✗	50	2.5
C3	200	785368	✗	50	3.3
C3	500	787799	✗	50	4.2
C3	600	785367	✗	50	4.9
C3	700	785370	✗	50	5.8
C3	800	785408	✗	50	6.8
C3	900	785410	✗	50	7.8
C3	1000	785412	✗	50	8.7
C3	1200	785413	✗	50	10.5
C3	1500	785414	✗	50	13.1
C3	1800	785415	✗	50	15.0
C5	200	785711	✗	50	1.7
C5	300	785886	✗	50	2.5
C5	400	785885	✗	50	3.3
C5	500	785343	✗	50	4.2
C5	600	785887	✗	50	4.9
C5	700	785888	✗	50	5.8
C5	800	785889	✗	50	6.8
C5	900	785890	✗	50	7.8
C5	1000	785695	✗	50	8.7
C5	1200	785696	✗	50	10.5
C5	1500	785891	✗	50	13.1
C5	1800	785892	✗	50	15.0

Compliance: EN 13964. Material Pricing Group: PO

## System component details

### Knauf Coated Nonius Hanger

Coated suspending brackets for use in Knauf AQUAPANEL® Ceiling system.



Coating	Dimensions (mm)	Material No.	Ex Stock	Pack Details	
	Length			Items/Pack	kg (Approx.)
C3	100	824263	✗	50	2
C5	100	322195	✗	50	2

Compliance: EN 13964. Material Pricing Group: PO

### Knauf Nonius Clip

Clip for use in combination with the Knauf Coated Nonius Top for adjustment of ceiling heights. Any scratches on the coated clips must be coated with Corrosion Resistant Paint when installed. The non-coated clips must be fully coated with Corrosion Resistant Paint when installed.



Coating	Material No.	Ex Stock	Pack Details	
			Items/Pack	kg (Approx.)
C3	591247	✗	100	0.7
C5	591249	✗	100	0.7

\*MUST be painted with Knauf Corrosion Resistant Paint. Compliance: EN 13964. Material Pricing Group: PO

### Knauf Coated Metal Hanger To Profile Screw LN 3.9 11

Secure Knauf Coated Nonius Hanger to Knauf Coated 'C' Channel. Screws must be fully coated with Corrosion Resistant Paint when installed.



Material No.	Ex Stock	Pack Details		
		Items/Pack	kg (Approx.)	Tub Size (L)
46175	✗	1000	1.37	-

Compliance: EN 13964. Material Pricing Group: PO

### Corrosion Resistant Paint

Corrosion resistant paint for use in the Knauf AQUAPANEL® Interior and Exterior Ceiling Systems. Any scratched or uncoated metal and all Blackstar screws must be coated with Corrosion Resistant Paint when installed.



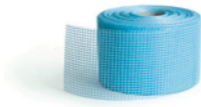
Material No.	Ex Stock	Pack Details		
		Items/Pack	kg (Approx.)	Can Size (L)
64776	✗	6	5	0.75

Material Pricing Group: PO

## System component details

### Knauf AQUAPANEL® Tape

Knauf AQUAPANEL® Tape is a 100mm wide, glass fibre tape with an alkaline-resistant coating. It is embedded into Knauf AQUAPANEL® Joint Filler - Grey to reinforce joints as part of a Knauf AQUAPANEL® Exterior system.



Roll Size		Material No.	Carton Details	
Length (m)	Width (mm)		Rolls per Carton	Kg (Approx.)
50	100	429471	12	4

Estimating Guide: 2.1m/m<sup>2</sup>.

### Knauf AQUAPANEL® Joint Filler - Grey

Knauf AQUAPANEL® Joint Filler - Grey is a cement-based material for filling joints and embedding Knauf AQUAPANEL® Tape and Knauf AQUAPANEL® Reinforcing Mesh as part of the Knauf AQUAPANEL® Exterior and Interior Ceiling systems.

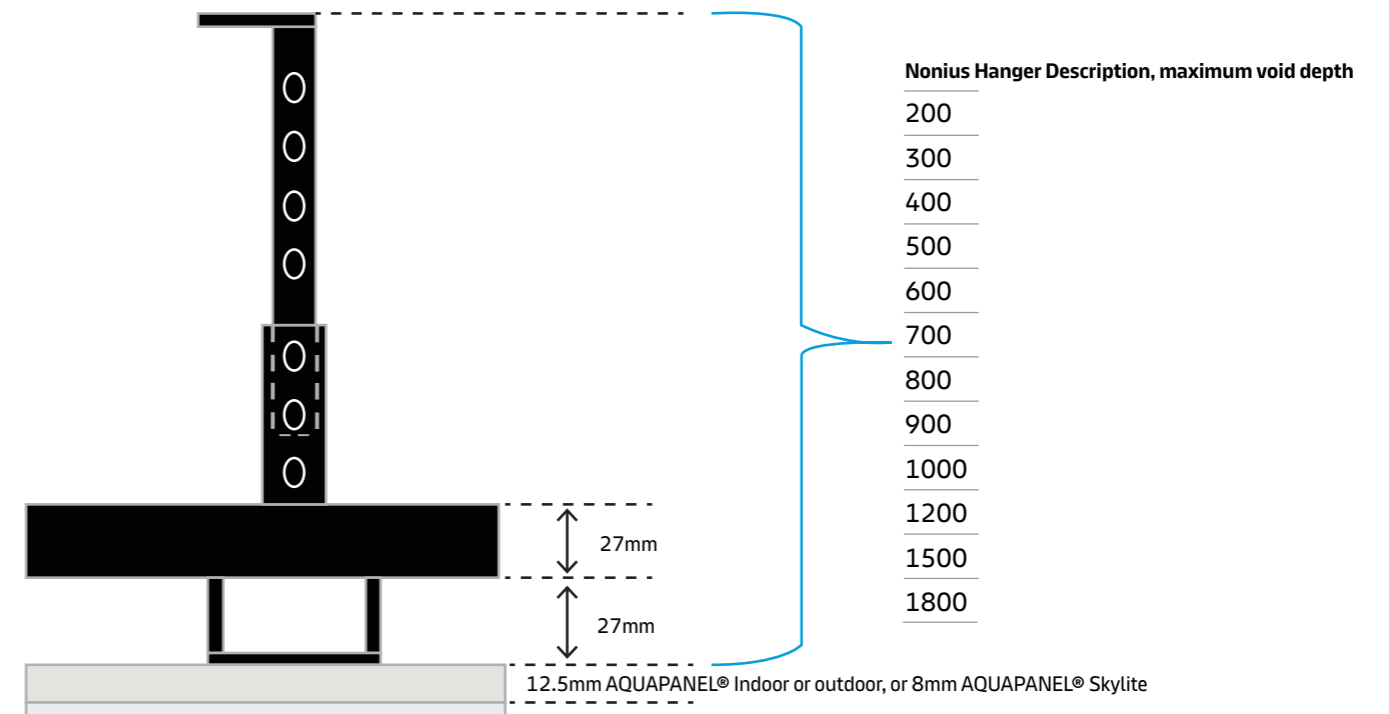
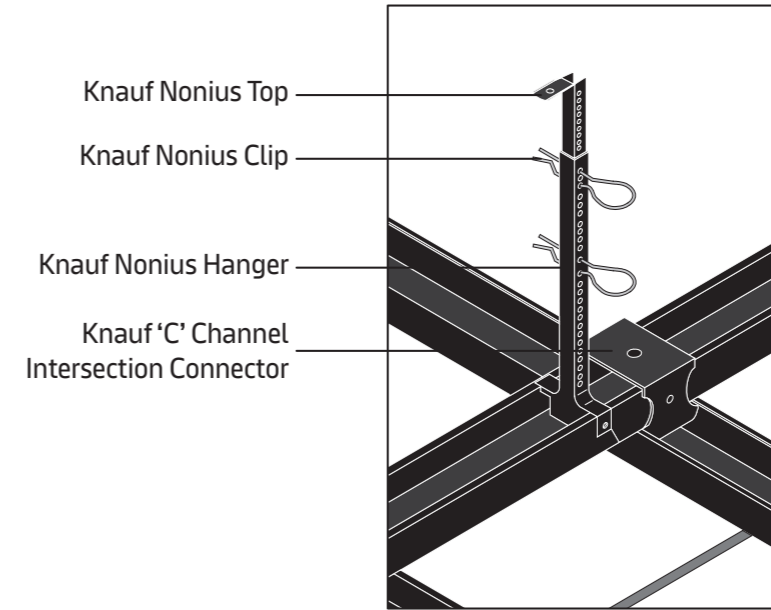


Bag Size		Material No.	Pallet Details	
Kg			Bags	Tonnes (Approx.)
20		131094	48	0.96

Estimating Guide: One bag will cover approximately 28m<sup>2</sup>. Compliance: EN 998-1:2016.

## Selecting the correct components for your coated metal ceiling

We've recently changed how we measure the Knauf Coated Nonius Top to make it easier to understand which product you need to order. The column labelled maximum void depth is the new measurement used to calculate the components needs. This reflects the maximum void depth as shown in the image below of the metal frame assembly, considering all products used. Simply use this measurement to select the appropriate Knauf Nonius Top.



## Installation

The Knauf AQUAPANEL® Exterior Ceiling System must be installed in accordance with Knauf recommendations and in accordance with BS: 8000-0:2014. Any cut, chipped or exposed edged metalwork should be painted with our Corrosion Resistant Paint. All installed Knauf Coated Metal Hanger to Profile Screws should also be fully coated with our Corrosion Resistant Paint.

### 1. Perimeter

Knauf Coated 'U' Channel – Perimeter Support forms the perimeter of the ceiling. Channels should be installed at required heights and fixings\* should be installed at maximum 600mm centres and 50mm centres from ends of channels. Where ceiling runs exceed the Perimeter Support Channels length, additional channels should be installed and butted together to continue the run.

### 2 & 3. Suspension

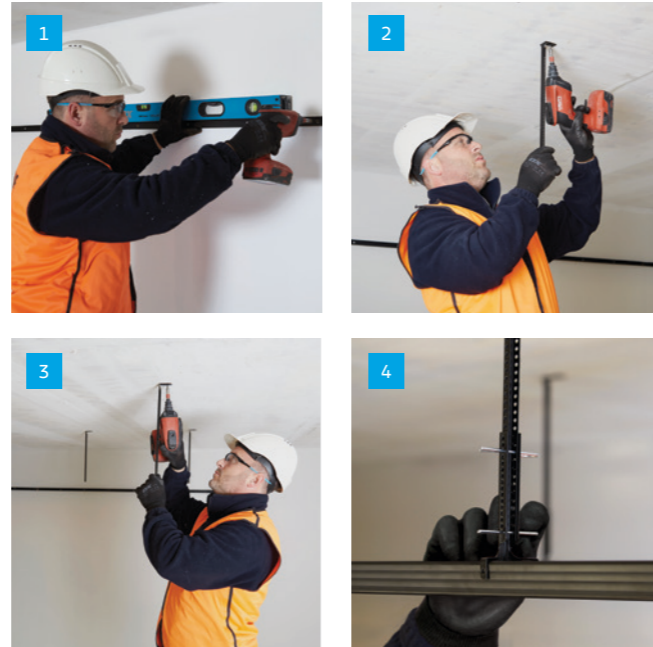
When creating a shallow void, Knauf Coated 'U' Mounting Bracket can be used. For drops less than 150mm, use the 'U' Mounting Bracket to secure the upper channel. Screw and securely fix the 'U' Mounting Bracket into the super-structure using appropriate fixings\* which are designed to take the required loadings. These are to be fixed at maximum dimensions as per project specification and allow for measurement of the channel to the required depth on the bracket. Once the required measurement is located, screw the channel into the bracket using two Knauf Blackstar Screws TN 3.5 25, which should subsequently be coated with corrosion resistant paint.

For greater void depths Knauf Coated Nonius Hangers in combination with Knauf Coated Nonius Tops should be used. The connection of Knauf Coated Nonius Hangers with Knauf Coated Nonius Tops is fixed using two Knauf Nonius Clips and should be fully engaged. Knauf Coated Nonius Clips, once installed, should be touched up with Corrosion Resistant Paint where the coating is removed. If using uncoated Nonius Clips, the entire clip must be coated with Corrosion Resistant Paint after installation. The suspension hangers should be installed at maximum dimensions as per project specification to the superstructure using appropriate fixings\* which are designed to take the required loadings.

### 4. Upper Channels

The Knauf Coated 'C' Channels are located at maximum dimensions as per project specification. Hangers should be mechanically clipped and screwed to Knauf Coated 'C' Channel using Knauf Blackstar Screws TN 3.5 25, which should subsequently be coated with corrosion resistant paint. The Knauf Coated 'C' Channels should lie on top of the upper flange of the Knauf Coated 'U' Channel – Perimeter Support.

\* fixings supplied by other manufacturers



### 5, 6 & 7. Lower Channels

The Knauf Coated 'C' Channels are located maximum 300mm centres within the perimeter channel, to coincide with the abutments of the Knauf AQUAPANEL® Cement Board SkyLite, which will be fixed later. The upper and lower Knauf Coated 'C' Channels are connected using Knauf Coated Channel Intersection Connectors. The connectors ensure positioning is maintained throughout the ceiling. Connectors fit over the upper channels and snap fix into the lower channels.

When ceilings exceed 4m, a Knauf Coated Channel Connector is required between 'C' Channels.

The Coated Channel Connector is friction fit between the channels.

All dimensions are supplied as per project specific needs based on wind loads, drops and weight supported by the frame; all framework and hangers should be engineered to suit the location. Contact Knauf to confirm frame layout.

### Movement Control Joints

Movement control joints should be created within the system when runs of ceiling exceed 15m, as well as coinciding with existing movement joints in the surrounding structure.

### 8. Board Preparation

Knauf AQUAPANEL® Cement Board Skylite (or Knauf AQUAPANEL® Cement Board Outdoor dependent on wind load and specification) can be easily and accurately cut using a coarse bladed saw, or by simply scoring and snapping.

Score one side with a sharp knife, cutting through the mesh. Snap the board along the score, and then cut through the mesh on the other side. Smooth any rough areas caused by scoring with a rasp.

### 9. Fixing Board

Apply Knauf AQUAPANEL® Cement Board Skylite to lower 'C' Channels which are at maximum 300mm centres. Ensure there is a gap of 3 – 5mm between the boards and that the members are central behind both boards.

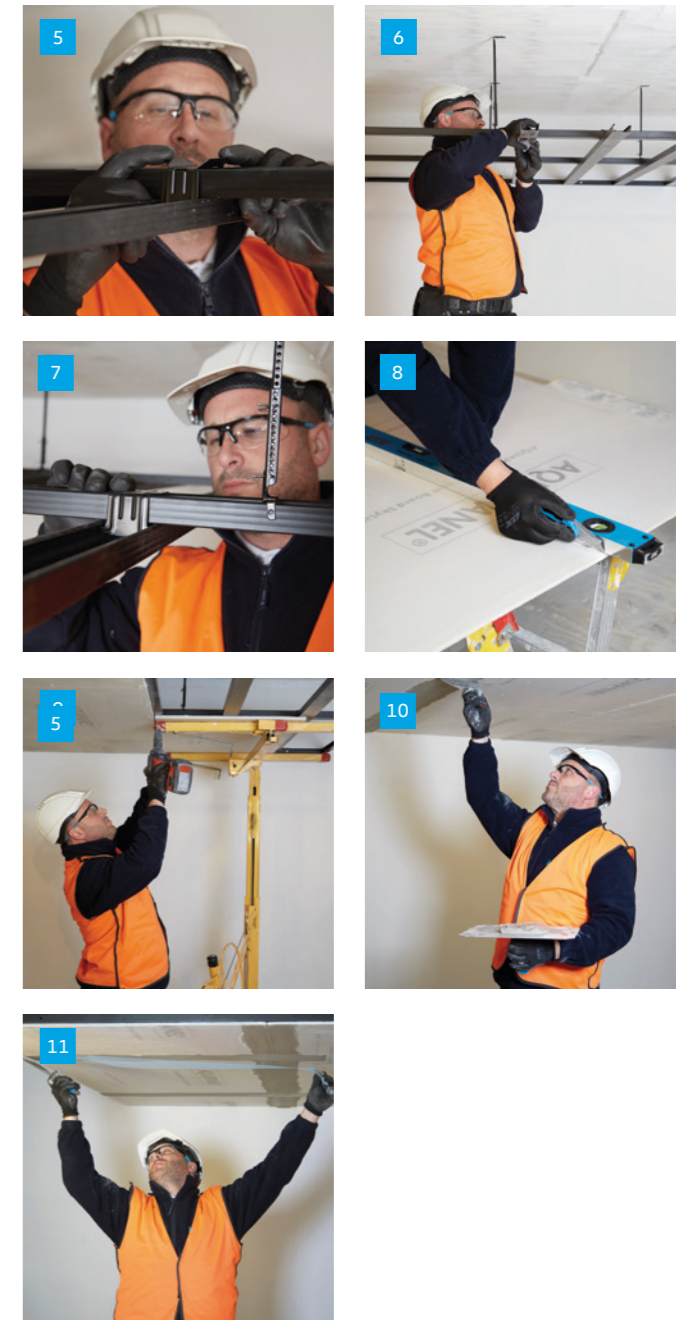
Use Knauf AQUAPANEL® Maxi Screws SN25 to fix the Knauf AQUAPANEL® Cement Board Skylite to the metal 'C' Channels.

Screws should be at least 15mm in from the edge of Knauf AQUAPANEL® Cement Boards and spaced at maximum 200mm centres. Screws should not be over tightened.

### 10 & 11. Reinforcing Joints

All cement board joints should be filled with Knauf AQUAPANEL® Joint Filler – Grey and Knauf AQUAPANEL® Tape.

All screw heads should be covered with Knauf AQUAPANEL® Joint Filler – Grey.





## Case Study

### ICON Outlet at The O2 in London

**Project outline:** A 210,000 square foot designer outlet shopping centre that complements the world's busiest entertainment complex.

**Client:** Crosstree Real Estate Partners and site owner AEG.

**Contractor:** Novo Facades and Lindner Group.

**Product:** AQUAPANEL® Exterior Soffit system, Knauf AQUAPANEL® Exterior Ceiling System, Knauf Coated Metal, Knauf AQUAPANEL® Cement Board SkyLite.



### Complete Knauf Semi-Exposed Soffit System Specified in New London Designer Outlet.

**Knauf UK has specified, designed and supplied a complete Knauf AQUAPANEL® Exterior Soffit system for a brand-new luxury shopping destination at The O2 in London.**

ICON Outlet at The O2 is a 210,000 square foot designer outlet shopping centre that complements the world's busiest entertainment complex, which remained open to visitors throughout the works. The site was made even more challenging as The O2 sits directly next to the River Thames.

This led to the decision to specify the complete Knauf AQUAPANEL® Exterior Ceiling System, incorporating Knauf Coated Metal, Knauf AQUAPANEL® Cement Board SkyLite and accessories.

Matthew Mooney, Pre-Construction Director from Novo Facades explained: "The O2 is close to the River Thames so the architect treated the site as a marine environment due to the amount of moisture in the air.

We were worried about the risk of corrosion, but Knauf's AQUAPANEL® system has a coated metal grid so that was the main reason for choosing to specify Knauf.

"We are very happy with the products used – they were really easy to install and the process itself took just seven weeks. We had one minor issue, but one of the Knauf technical advisers came to site and showed our team how to install the product correctly."

Richard Lord, Knauf Technical Development Manager – AQUAPANEL®, added: "Knauf was introduced to the project by the façade and soffit contractor, Novo Facades, in the summer of 2017, where we worked together to create the specification and design for submission into the package sub contractor Lindner Group and main contractor ISG for approval.

Work started on site for the soffit system in late August 2018 and was completed before the zone opened to the public.

The ICON Outlet, a Joint Venture project between Crosstree Real Estate Partners and site owner AEG, is home to 80 luxury retail outlets including Hobbs, Karen Millen and Kurt Geiger.

# Look to the future – Build on us

We recognise the importance of the buildings in which we all live, work and relax.

We spend 90% of our lives inside buildings, so it is of the utmost importance that the homes we live in, the hospitals where we care for our sick, the schools in which we educate our children and the offices in which business operates are world class, safe, comfortable, sustainable and enjoyable.

The extensive portfolio of products and systems from Knauf UK & Ireland is developed to support that vision.

As a business, we look to the future; building on the knowledge we have acquired with a planned programme of research and development to make sure we continue to keep ahead of current thinking.

In terms of our operation we work hard to minimise our impact on the environment and are proud of our recycling, waste reduction and energy efficiency initiatives.



Healthcare



Education



Residential

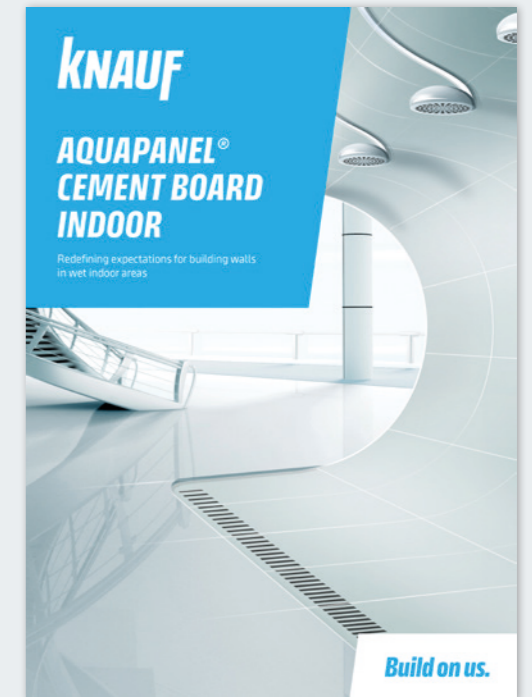


Commercial

## AQUAPANEL® Complete system solutions



Knauf AQUAPANEL®  
Cement Board Outdoor  
Brochure



Knauf AQUAPANEL®  
Cement Board Indoor  
Brochure



Knauf AQUAPANEL®  
Interior Ceiling System  
Brochure



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