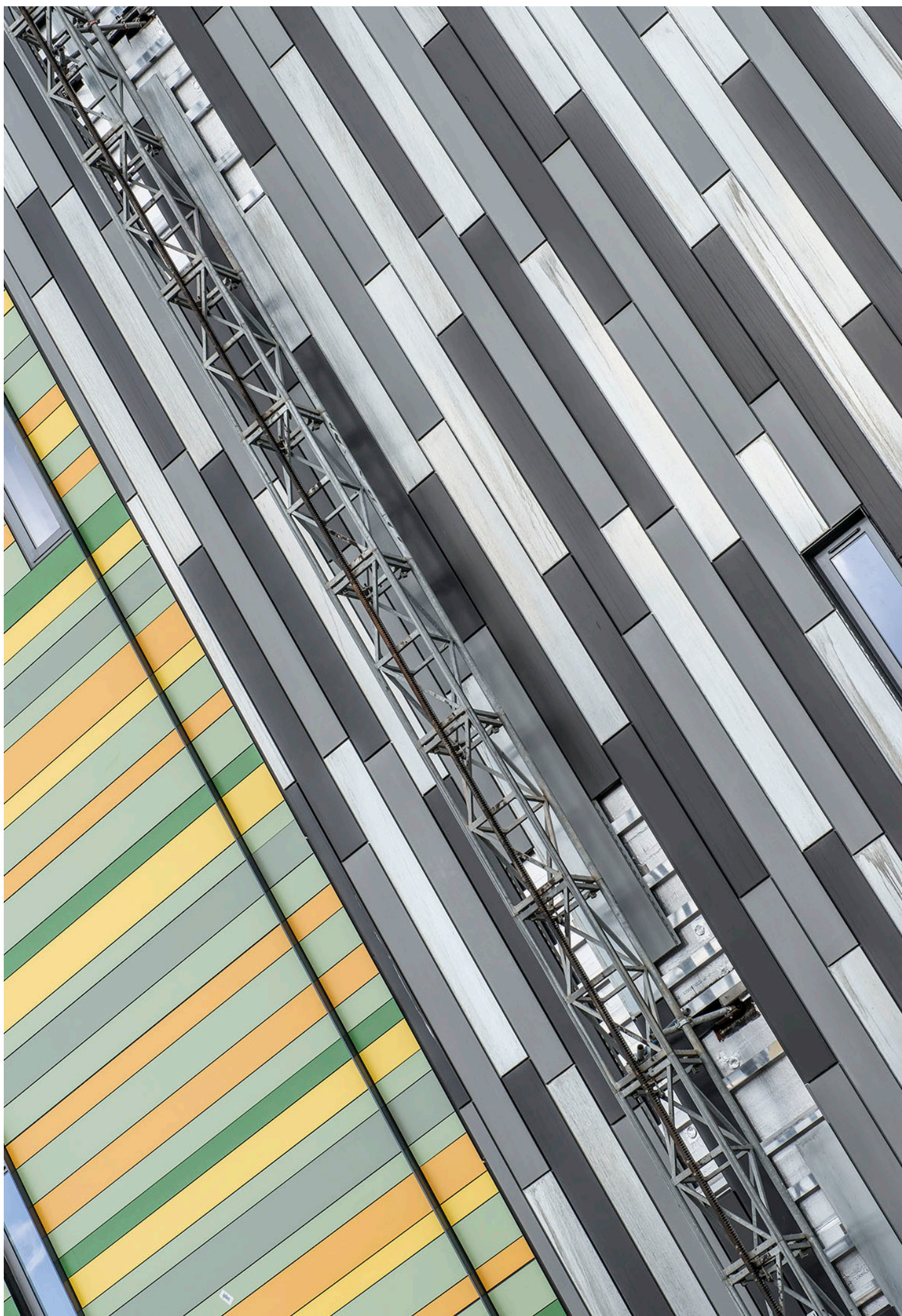




NVELOPE[®]

Rainscreen

Subframe



The building envelope specialist

We strive for continuous improvement and innovation – always in close collaboration with our customers, colleagues and suppliers. We want to be successful together, improve all the time, see where the technological limits are and drive them forward. SFS creates value with advanced fixing and rainscreen subframe systems for the building envelope. As the leading specialist in this application we offer the highest possible expertise.

Together with our partners we invent new products and services for our shared success.





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NVELOPE® Rainscreen Subframe-Systems

How to use this brochure

The SFS NVELOPE® Capability brochure has been designed to help you find the right rainscreen solutions quickly. To do this;
Identify the right NVELOPE® subframe system for your decorative panel type.

Identify the right bracket for the situation.

Select the level 1 fixings.

Identify the right profile and cutting service options.

Select the level 2 fixings.

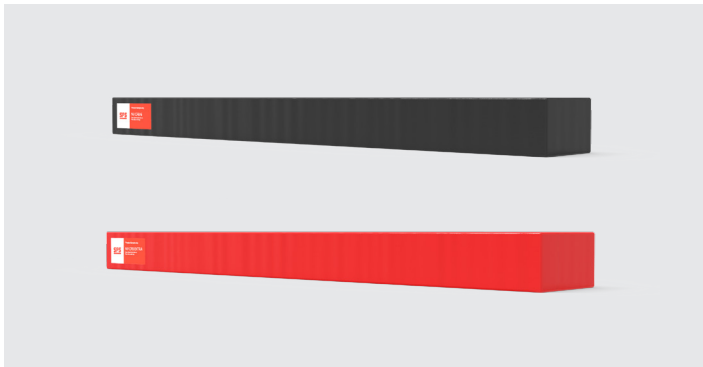
Select the level 3 fixings.

Choose any accessories you may need.

Or **make it really simple** and use the Project Builder tool to do all the hard work. Visit www.uk.sfs.com → for more information.

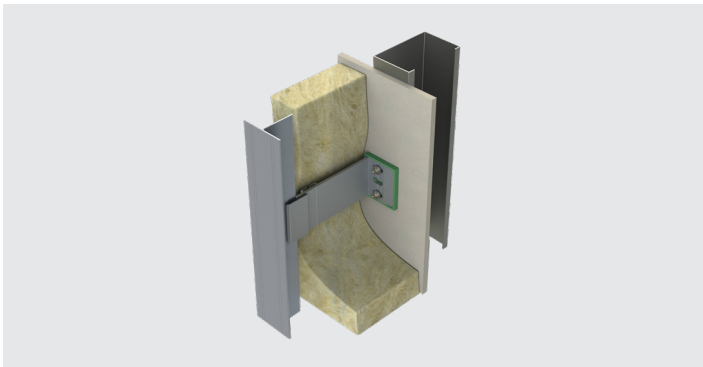
Latest additions to the range

Cavity Fire Barriers



The new SFS CFB (Cavity Fire Barrier) system → and our supporting NVELOPE® Technical Service is created for Designers and Specialist Cladding Contractors who require clear and straight forward approach to aid the selection and supply of Cavity Fire Barriers appropriate for ventilated rainscreen applications.

Thermal Solutions



SFS have recently introduced our “Thermal Solutions” range → of subframe brackets which help to minimise the effect of cold bridging within the ventilated rainscreen.

Thermal Solutions makes use of 4 bracket ranges which offer the maximum flexibility to balance budget against thermal performance. The ranges are suitable across virtually all of the industry leading NVELOPE® rainscreen subframe systems.

Thermal Solutions also introduces our new non-compressible Thermal Pad which eliminates the effects of thermal degradation during installation thus helping to bridge the performance gap between design and installation.



Additional Support

Introducing SFS ConnectSuite®

**Designed to support you through the
life-cycle of designing a project.**

The right solution or product for your needs. These tools are free to use and accessible through our SFS website. For Rainscreen subframe systems, Project Builder and Thermal Builder are particularly useful tools. Check out the following pages to learn more.

- Page 10 – Project Builder →
- Page 11 – Thermal Builder →
- Page 12 – Drawing Overlay Service →
- Page 13 – Cutting Service →
- Page 15 – Specification →



Project Builder

Through our SFS ConnectSuite® tools, you can easily find the right solution for your project.

SFS ConnectSuite® includes Project Builder, a free online service that allows visitors to our portal to submit their rainscreen building project requirements.

We recognise that each rainscreen design can vary. Our innovative calculation tool is approaching ten years since it was launched and remains the industry standard. Thousands of users have benefited, as a result tens of thousands of calculations have been produced for our customers throughout the past decade.

The design requirements for each rainscreen cladding project are often different and depend on factors such as local wind loads, building height, primary substrate being fixed to, selected cladding material and the chosen cladding zone. All our NVELOPE® systems can be engineered to project specific requirements utilising Project Builder.

NVELOPE® technicians and technology then process the enquiry to output a Project Builder PDF document which provides project specific bracket and rail spacings, guide pricing per m² and a prefilled NBS specification document.



Thermal Builder

To help identify the optimised solution, SFS can take your project details and create specific thermal calculations.

Based on your project’s unique wall build-up configuration, our thermal service 3D models each bracket variant to calculate each point loss Chi value. This service is able to dynamically calculate the required insulation depth to achieve your target U-value.

These calculations conform to BS EN:10211 as well as BRE 443 (Convections for U-value calculations) and ensure the full detailed construction is understood rather than a generic scenario which as such, play no reference to the intended design. Our Static calculations determine the parameters for these calculations and thus can also include project specific information such as insulation type and brand.



Thermal calculations made easy

Our free service lets you submit your rainscreen building project requirements online and our technical experts will get back to you within 24 hours, to get your project moving quickly.

Our calculations consider the following criteria

- Thermal bridges via bracket point loss cause increased flow of heat and should be taken into consideration when designing a façade/façade system. Since the fixing of ventilated cladding must go through the thermal insulation into the substrate it cannot be avoided.
- Thermal decoupling of the substructure from the ventilated façade is achieved through thermal separation layers. Our SFS NVELOPE® + Thermal Range can significantly improve bracket point loss and ultimately improve thermal performance.
- The U-value of the plane elements, necessary for the calculation of the overall loss from the building.
- Corrections that need to be made for any thermal bridging, fixings & bracketry. This includes linear heat loss should the rail penetrate the insulation layer.
- The Chi value is the heat loss at (for example) a bracket and is measured as W/mK. Either a default correction is used or a 3D calculation is carried out.

Drawing Overlay Service

SFS are able to provide a Drawing Overlay service for specific projects.

This service correctly positions bracket and rails as calculated by our Project Builder static tool into building drawings as supplied to SFS. As part of this process, SFS are able to “optimise” the lengths of profiles used from standard lengths thus reducing wastage. The profile optimisation feature aligns perfectly with our Profile Cutting service described within the following page. The service also produces a list of required fixings and quantifies accordingly.

SFS Drawing overlays can be utilised for:

- Quoting purposes – the provision of a indicative or sample façade area.
- Final quantification of components – the full drawing overlay can be issued, which are based on the drawings forwarded to us.

SFS Drawing Overlays provide a valuable quantification recommendation which further helps to offer additional assurance that our NVELOPE® systems are economically integrated within a safe and effective design.

To find out how our Technical Team can support you with your design, please contact info-nvelope@sfs.com. →

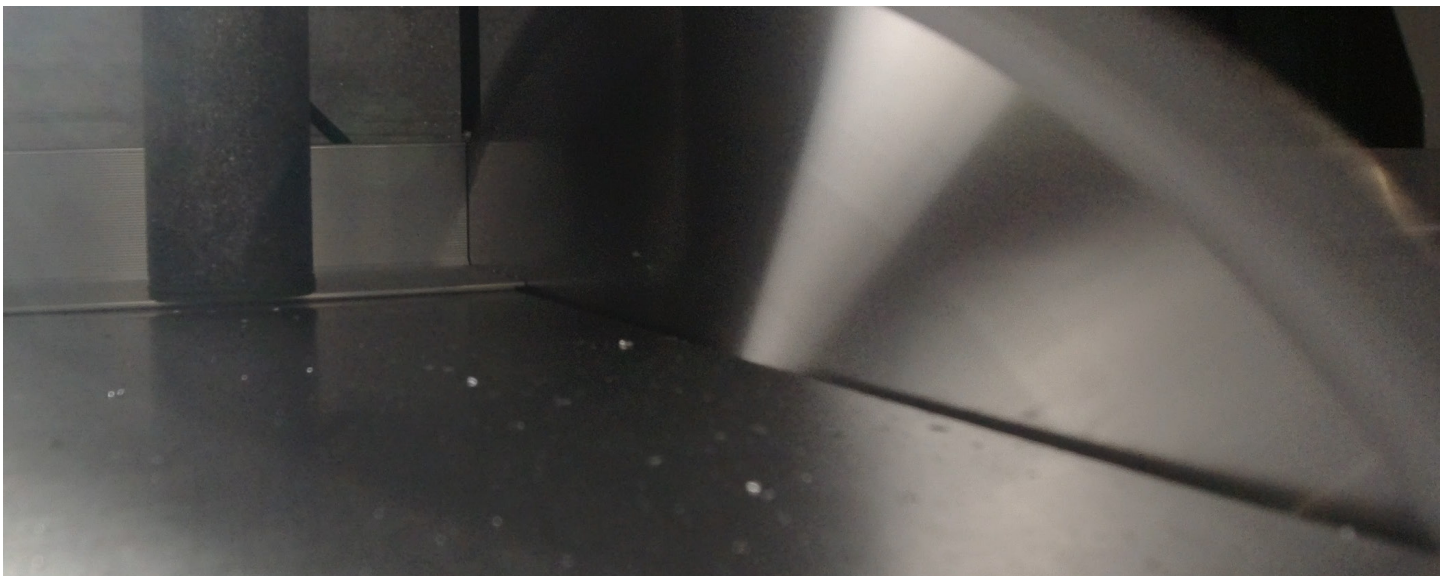


Cutting Service

Reduce waste and install more quickly with our unique optimised profile cutting service.

SFS have recognised a market need to move more activities “off-site” and we recognise the benefits this brings. Our optimised profile cutting service offers additional benefits:

- Optimised material usage – Less waste, lower costs, more environmentally sound
- No disposal issues on site – Lower costs, less space devoted to waste, assures waste is correctly recycled
- Staged Deliveries – Reduces storage, minimises damages and losses
- Health & Safety – Reduced noise and lessened chance of injury
- Optimised Labour – Site teams are focused on installation alone





Digital Construction and Specification

The method for digitally designing and constructing our buildings continues to evolve and so our approach at SFS is to be flexible, listen to the needs of our customers and develop tools that assist with the correct use of our systems.

We can offer

- Structured Product Data – allowing relevant attributes to your specific project to be supplied for incorporation into models.
- BIM Models – a range of our systems can be downloaded from the NBS BIM Library (which contain geometry and data.
- 2D and 3D geometry models for use in your system designs.

SFS recognise that the specifier has challenges to overcome which often requires a tailored approach, because of this, we offer a dedicated specification team to support you, ensuring the right solutions are incorporated into your project. Our team understand key issues such as fire and thermal performance, corrosion and air tightness. They can provide guidance on how different systems will perform within the building envelope, ensuring the relevant building standards for your project, are met.

To support, we can offer

- RIBA accredited CPD seminars
- Bespoke system presentations
- Specification writing including the latest NBS Chorus
- Review of project requirements and guidance on our solutions
- Engagement with associated OEM's to provide

For more details please visit uk.sfs.com/specification. →



Approvals

BBA – British Board of Agrément



BBA certification is a mark of excellence based on rigorous National and European standards that validate a construction products formulation, capability and uniqueness.

Earning and maintaining BBA certification demonstrates a commitment to ongoing innovation.

It is recognised, respected and sought after by specifiers, architects and contractors. Assessment reassures all parties that we are an expert in our specialty and we continue to offer the latest advances and best practices, enabling us to deliver the safest, most efficient and highest quality product possible. Our NVELOPE® Rainscreen Subframe System was first awarded a British Board of Agrément certification over ten years ago and was the first system in the UK to gain recognition.

CE/UKCA



All our UK sourced NVELOPE® Subframe stainless steel and aluminium components are covered by our Declaration of Performance (DoP) meeting the requirement of conformity to EN 1090-1:2009+A1:2011 and the technical requirements according to EN 1090-3 & 1090-2.

The content of our DoP is in accordance with ZA3.1 & ZA3.2 of EN1090-1 and assessed under system 2+. Our systems are CE marked as approved by our European Notified Body partner accordingly. UKCA mark will be mirrored during 2021.

Passive House



The Passive House Institute (PHI) is an independent research institute that has played an especially crucial role in the development of the passive House concept, an internationally recognised, performance-based, energy standard for the construction industry.

Passive House Certification assures that strict quality requirements of the Passive House Standard have been achieved for buildings and particularly building components.

Our **NVELOPE® NVS Stainless Steel bracket** combined with our unique **Thermal Pad** (NVS + Thermal) has been awarded Passive House component accreditation, falling within the Facade Anchor category. The significant reduction in thermal point loss which may be achieved by utilising our **NVS + Thermal system** is clearly recognised by the PHI.





Thermal Solutions

Optimised Thermal Solutions

Excellent thermal performance linked to rainscreen façades is a vital prerequisite if we're to meet our carbon reduction targets.

Our NVELOPE® rainscreen subframe systems are an integral part of rainscreen cladding build-up and their impact on heat loss from the façade, plays a key role. By calculating the U-value (Thermal Transmittance W/m^2k) of a building envelope, it is possible to understand the implication thermal performance has when aiming to meet or exceed current building regulations.

As buildings become better insulated, the importance of the effects cold bridging or thermal point loss can have on the overall thermal performance of a dwelling can be significant. Recent research has shown that thermal bridging can be responsible for up to 30% of a dwelling's heat loss (source BRE).

Subframe systems, including the use of brackets which penetrate the insulation layer, can provide a potential source of cold bridging within a ventilated rainscreen. To achieve the ideal thermal solution for your project, SFS have created an innovative range of Thermal Brackets which can be used across the wide range of NVELOPE® systems.

Thermal bracket ranges which work across most of the NVELOPE® systems

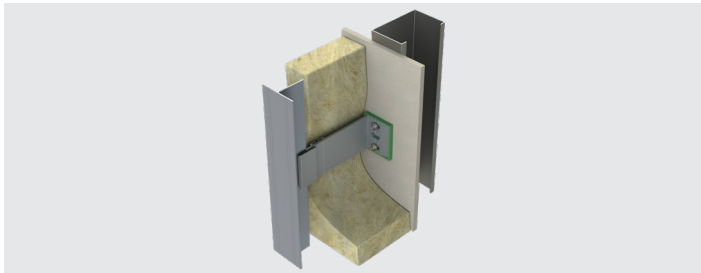
NVELOPE® Thermal Solutions makes use of 4 bracket ranges to ensure maximum flexibility to balance budget against thermal performance and are available across virtually all NVELOPE® systems.

Bridging the performance gap

Utilising our UK patent pending technology, SFS have created a thermal pad which guards against thermal degradation due to compression during installation ensuring no loss in thermal performance. The thermal pad can be universally used with most of our bracket ranges.

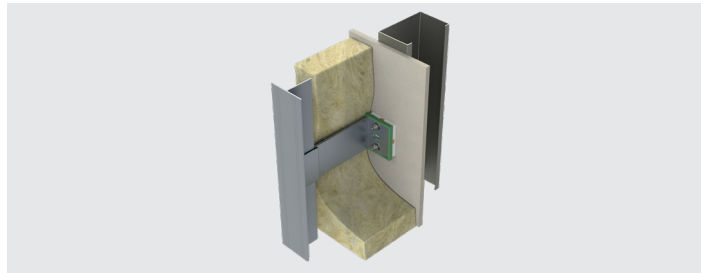
NVELOPE® Thermal Solutions Ranges

NVELOPE® VB/HB



NVELOPE® VB/HB aluminium brackets are supplied with a green plastic "isolator" which offers a degree of thermal benefit. However, it's principle function is to eliminate any potential of galvanic corrosion between masonry and aluminium substrates.

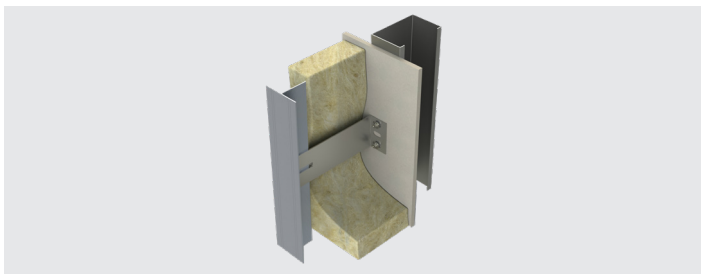
NVELOPE® VB/HB + Thermal



Whilst strong and easy to install, aluminium is very thermally conductive e.g. $>200 \text{ W/m}^2\text{k}$. Therefore, the thermal point loss affects can be significant when aluminium brackets are utilised depending on the combination of various elements within the rainscreen build-up.

The NVELOPE® VB/HB + Thermal range includes an insulation pad at the base of the bracket. This dramatically improves the thermal performance of the rainscreen build-up.

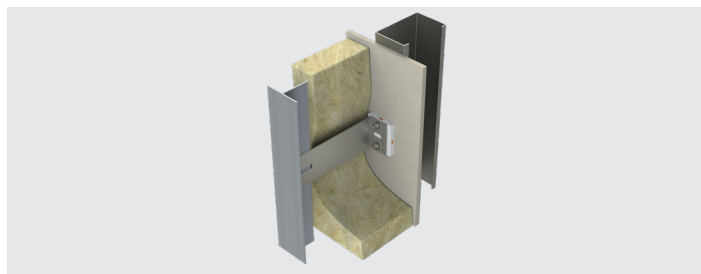
NVELOPE® NVS



For greater performance SFS have recently introduced a complete range of stainless steel brackets to complement our vertical aluminium ranges. Our stainless steel range is made from superior 316 grade which exhibits far greater resistance to localised corrosion in marine and in contact with atmospheric pollution found in most built up environments.

Stainless steel will demonstrate a much improved increase in thermal performance. Typically stainless steel of approximately $16 \text{ W/m}^2\text{K}$. This represents a $12 \times$ thermal improvement over and above aluminium. Additionally stainless steel brackets have no requirement to utilise an isolator to alleviate galvanic corrosion.

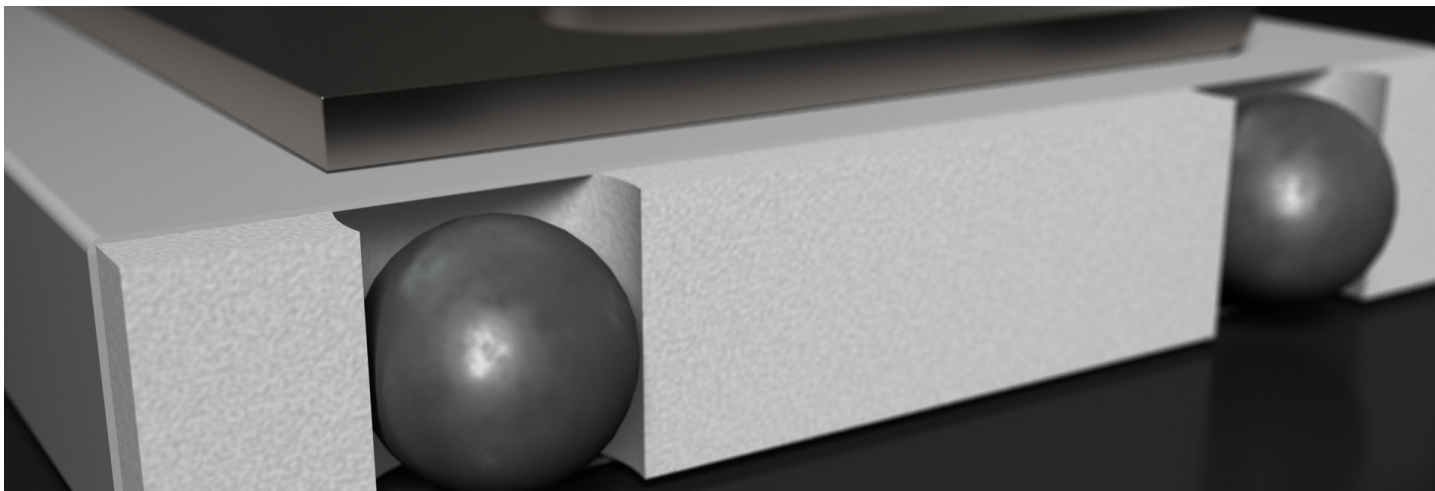
NVELOPE® NVS + Thermal



For **optimum thermal performance** NVELOPE® NVS + Thermal is the ideal choice. It offers the combined benefits of high thermal performance with high corrosion resistance for coastal environments.

Where rainscreen build up designs prescribe demanding thermal solutions, this option could offer the ideal high performance answer! Our NVELOPE® NVS Stainless Steel bracket combined with our unique Thermal Pad (NVS + Thermal) has been awarded Passive House component accreditation, falling within the Facade Anchor category.

Optimised Thermal Solutions



NVELOPE® Thermal Solutions Benefits

- 4 ranges across many NVELOPE® Rainscreen subframe systems.
- Includes aluminium and stainless steel brackets.
- Non-compressible thermal pad reduces thermal performance gap.
- Thermal pad is bonded to the bracket to save on installation time.
- Good to excellent thermal performance.
- Supported by our Project Builder software.

SFS can assist with an understanding of the Thermal effects caused by our components within the rainscreen build-up in respect of heat loss and U-values for a rainscreen project by visiting and using our Thermal Builder, ConnectSuite®, digital tool.

Materials

Aluminium brackets are manufactured from extruded 6005A T6 alloys conforming to EN 573-3 material and EN 755 production standards providing exceptional strength and durability and ideal for good thermal performance. The Stainless Steel brackets utilise the superior 316 grade of material which provides increased resistance to localised corrosion such as in marine or polluted environments. The stainless steel brackets also provide superior thermal performance. The Thermal options incorporate the addition of thermal insulant in the form of a bonded non-compressible insulating pad.

Reduction in the performance gap

Non-compressible insulation pad on the NVELOPE® VB+Thermal, NVELOPE® HB+Thermal and the NVELOPE® NVS + Thermal products reduces the effects from thermal degradation due to compression of the insulating pad. This helps to reduce the performance gap from design to real world installation.

Thermal enhancement

NVELOPE® VB + Thermal, NVELOPE® HB + Thermal and the NVELOPE® NVS + Thermal come with a pre-installed thermal insulated pad. There is no need to assemble these on site which ensures that all brackets are installed correctly with the insulated pad saving time on rework or assembly on site.

Fire Safety

All our NVELOPE® aluminium and stainless steel brackets are defined as Euroclass A1 Non Combustible EC Directive – 94/611/EC. Our Thermal pad has an A2 Non Combustible Euroclassification.

Thermal Pad

NVELOPE® VB + Thermal, NVELOPE® HB + Thermal and the NVELOPE® NVS + Thermal come with a pre-installed thermal insulated pad. There is no need to assemble these on site which ensures that all brackets are installed correctly with the insulated pad saving time on rework or assembly on site.

Full technical support

As with all NVELOPE® products we offer full technical support.

Warranty

As with all qualifying SFS products we offer an industry leading warranty.

Find out more... →



Corrosion

Corrosion in Subframe Systems

Corrosion is an important consideration when using differing metal substrates in combination together.

Galvanic corrosion is an electrochemical process, it occurs as a result of the flow of very small electric currents usually between two dissimilar metals which causes the more anodic of the two metals to corrode. The most common solution to prevent galvanic corrosion is to select materials that are close together in the galvanic series.

The main exception to using stainless steel and aluminium together is the quantity of each material in contact, in the case of the NVELOPE® NVS stainless steel system, the bracket contains the smaller quantity of material.

The cathode area (stainless steel bracket) is very small when compared to the anode area (aluminium rail), this combination will not dramatically decrease the life span.

The table below is taken from “Stainless Steel in Contact with Other Metallic Materials’ published by The European Stainless Steel Development Association, 2009.

Recommended material connections/combinatons

Material with a large area	Materials with a small area				
	Carbon steel/Cast iron	Zn galvanised steel	Al	Cu	Stainless steel
Carbon steel/Cast iron	good	poor	poor	good	good
Zn galvanised steel	good	good	good	uncertain	good
Al	uncertain/poor	uncertain	good	uncertain/poor	good
Cu	poor	poor	poor	good	good
Stainless steel	poor	poor	uncertain/poor	good	good

Table from “Stainless Steel in Contact with Other Metallic Materials” by The European Stainless Steel Development Association, 2008



Fire

Safety

Fire Safety

Euroclass Standard EN13501-1 provides the reaction to fire classification process for all components and building elements.

The standard defines a reaction to fire as the response of a construction product in contributing by its own decomposition to a fire which it is exposed, under specific conditions. It does not define resistance to fire.

Construction products are classified according to harmonised test methods in Euroclass A1, A2, B, C, D, E and F. Products falling into A1 & A2 classes are classified as non-combustible.

All our NVELOPE® stainless steel and aluminium brackets and profiles are defined as A1 within an EC Directive – 94/611/EC.

Throughout England, a ban exists on the use of combustible materials used in the external walls of certain high rise buildings and has been implemented by amending Regulation 7 of the building regulations, which deals with materials and workmanship. The amended regulations list materials which are exempt from the limits on combustibility introduced by Regulation 7 (2).

The list of exemptions are described within 7 (3). The list includes Thermal break materials where the inclusion of the materials is necessary to meet the thermal bridging requirements of Part L or Schedule 1 & Fixings.

These exemptions to Regulation 7 may apply to:

- All our aluminium brackets are supplied with “Green” polypropylene isolators which impart improved thermal performance.
- Our Thermal pad, a core component utilised within our Thermal Solutions systems.
- Our fixings and fasteners.

The use of any material exempted by Regulation 7 (3) must also be used in conjunction with the requirements of B4 of Schedule 1 of the Building Regulations 2010.

NVELOPE[®] Systems



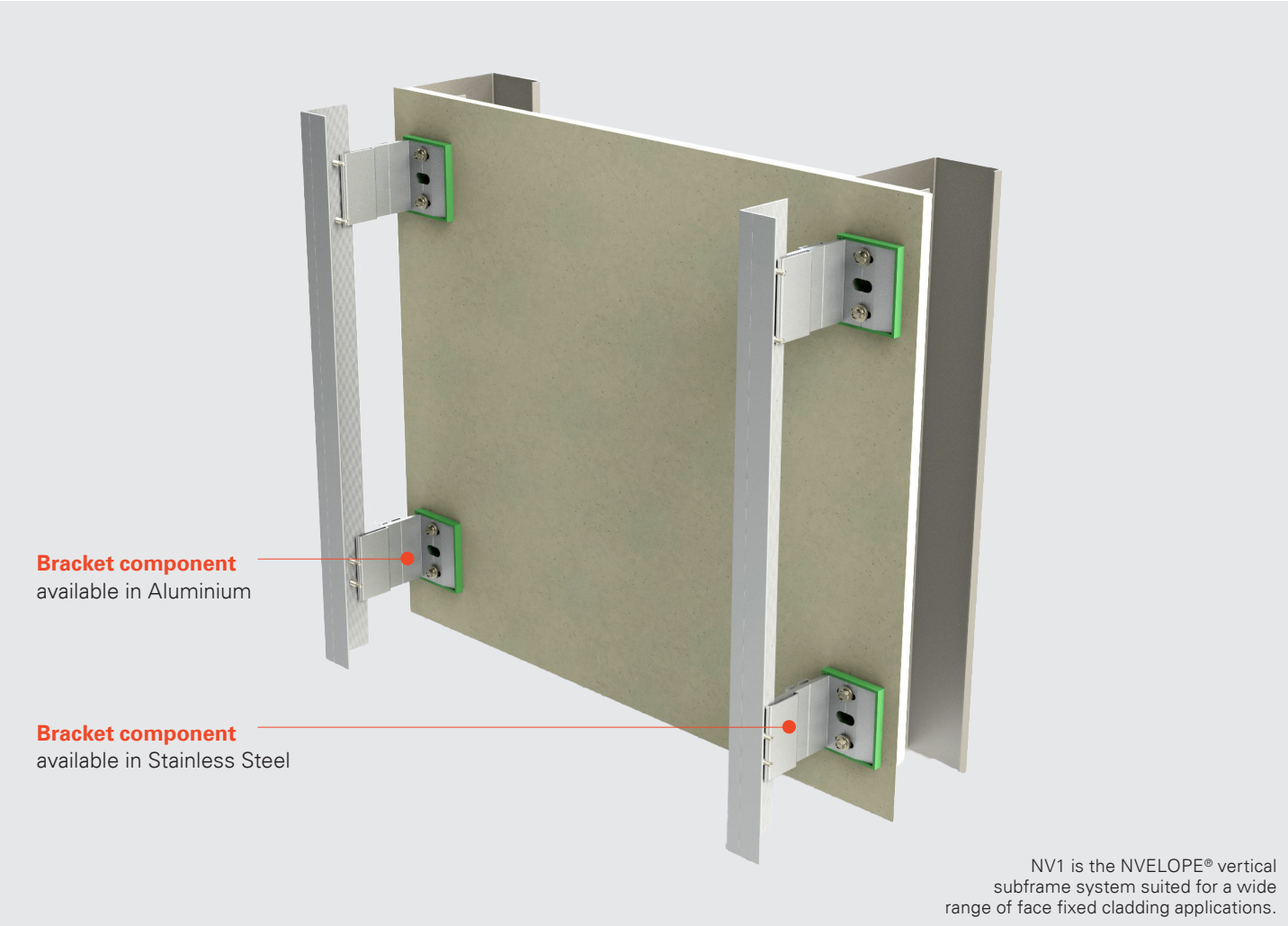
Overview

NVELOPE® systems are made up from brackets and profiles and are available in various configurations to suit your project or application needs.

Systems

- NV1 →
- NV2 →
- NV3 →
- NV4 →
- NV5 →
- NV6 →
- NV7 →
- NV8 →
- NV9 →
- NV10 →
- NS1 →
- NVF2F →
- NH3 →

NV1



NV1 is the NVELOPE® vertical subframe system suited for a wide range of face fixed cladding applications.

NV1 L and T corner profile

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Face Fixed	Standard Isolator NVELOPE® Thermal	Vertical & Horizontal	Yes	All fixings	SDA5	Rivet/Panel fixing

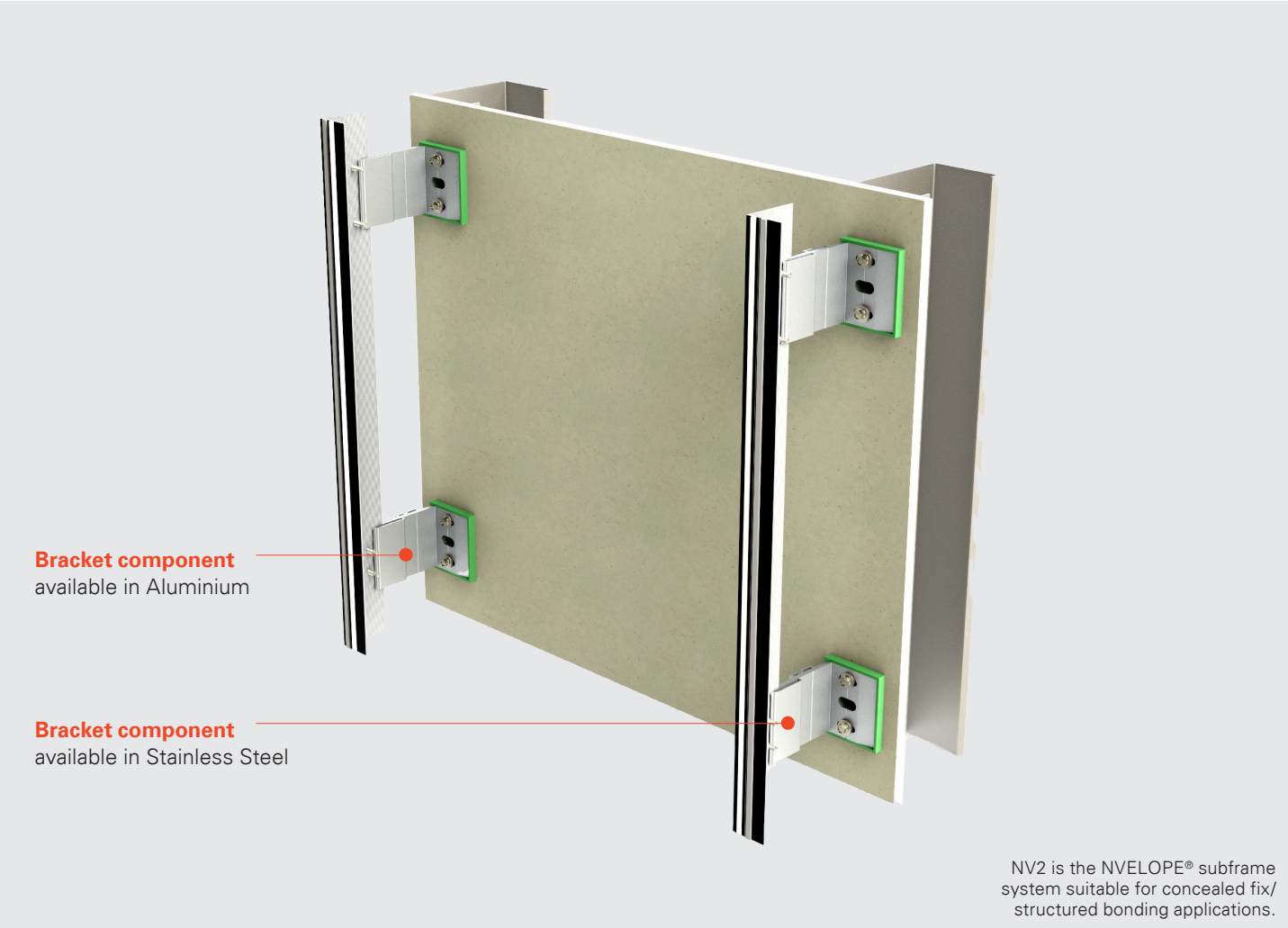
*British Board of Agreement



Features & Benefits

- NV1 is the basis of most of our NVELOPE® support systems.
 - It forms the backframe for the face fixing of decorative panels and a wide range of other NVELOPE® systems.
 - It is compatible with a wide range of NVELOPE® profiles.
 - It is suitable for 3rd level fixing and riveting systems.
 - Ideal solution for OEM system support.
-

NV2



NV2 L and T corner profile

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Adhesive Concealed Fix**	Standard Isolator NVELOPE® Thermal	Vertical & Horizontal	No	All fixings	SDA5	N/A

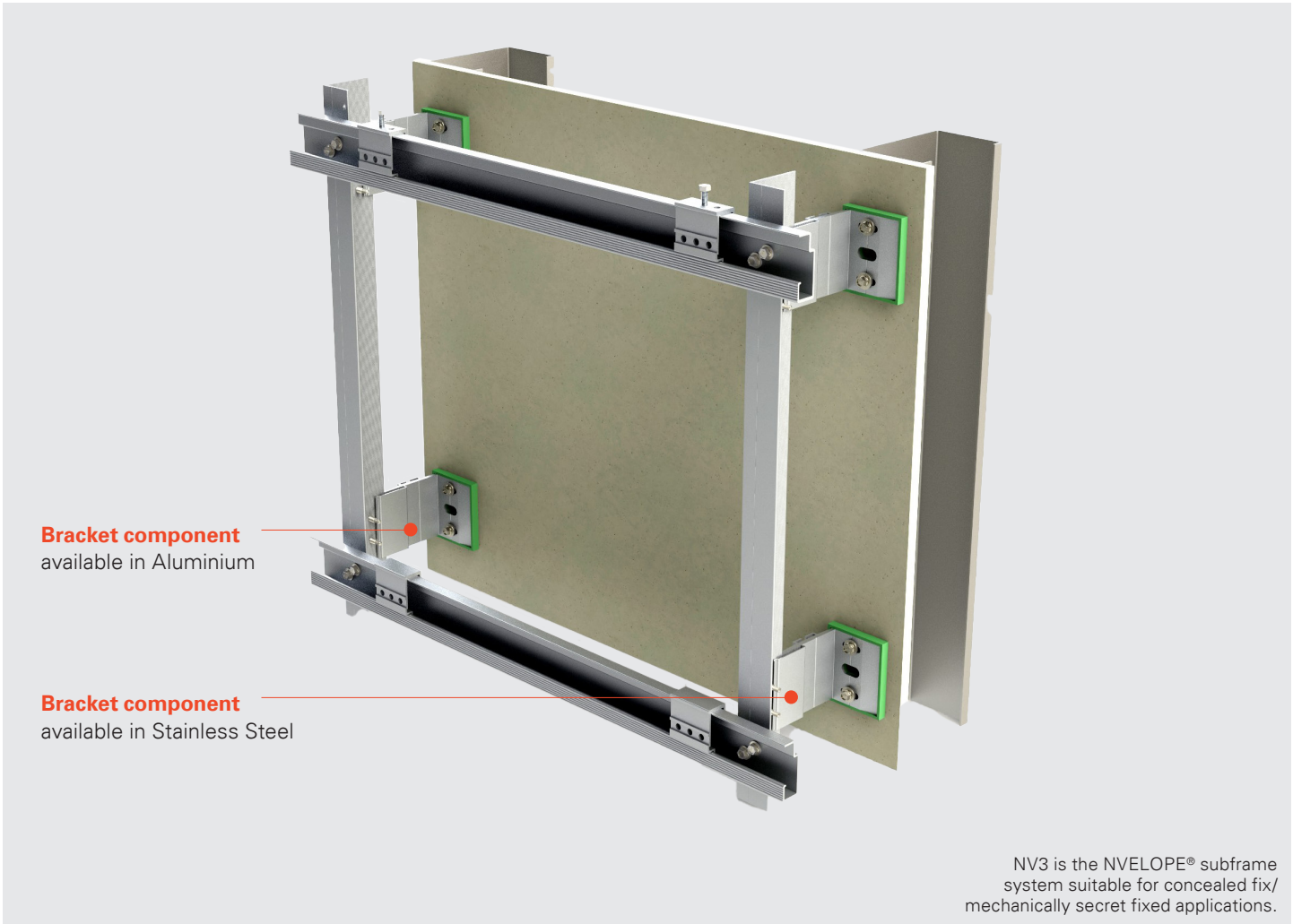
*British Board of Agreement/**Seek the relevant adhesive manufacturers advice and recommendation.



Features & Benefits

- NV2 provides a back frame for structural adhesive bonded systems*
 - It is compatible with a wide range of NVELOPE® profiles
 - Ideal solution for OEM system support.
-

NV3



NV3 Only L profile, NV3 profile, NV3 hangers

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical Concealed Fix	Standard Isolator NVELOPE® Thermal	Vertical & Horizontal	Yes	All fixings	SDA5 SN3	TUF anchor

*British Board of Agreement

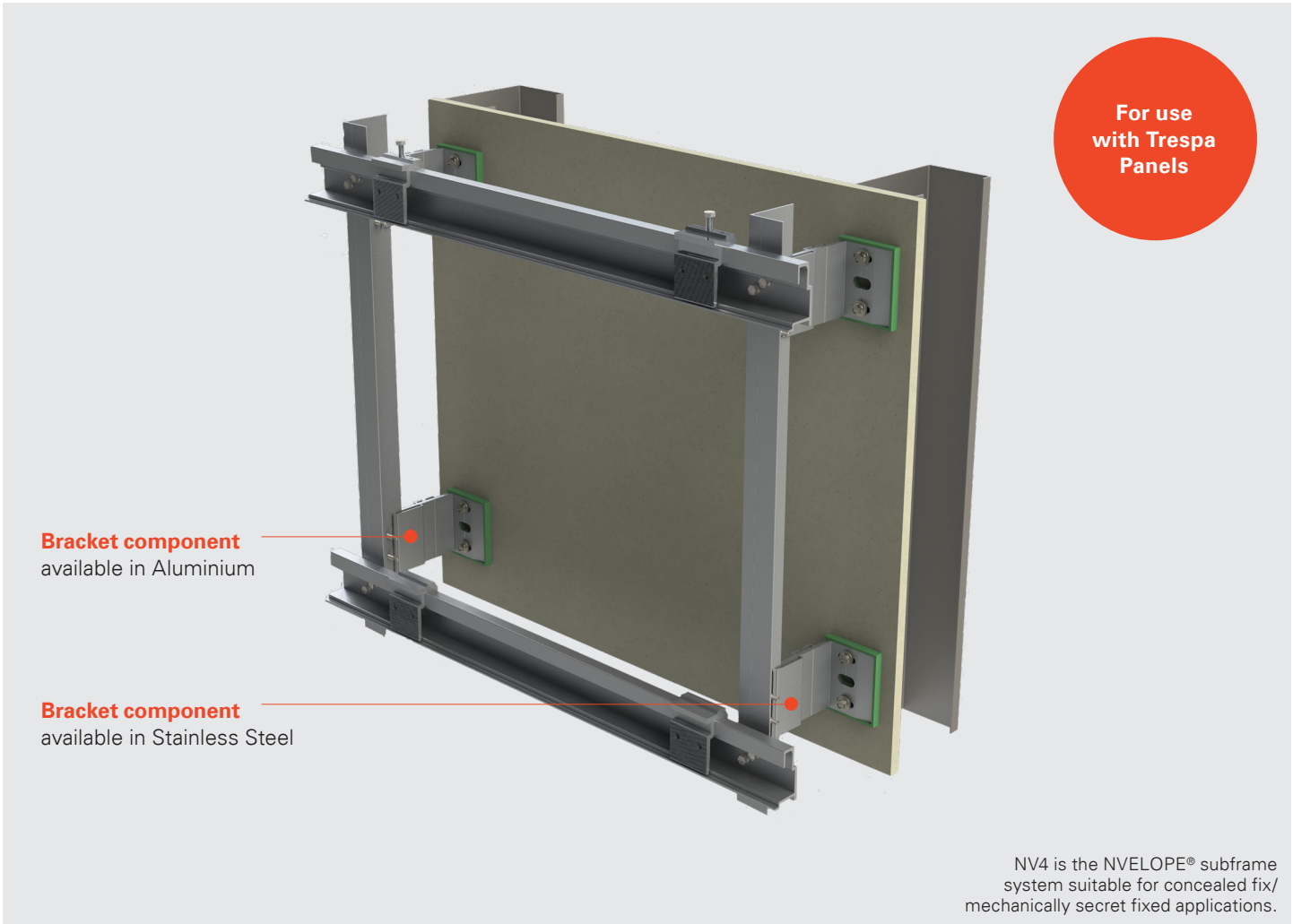


NV3
Edgware Road Station Building

Features & Benefits

- NV3 provides a “hook on” mechanical fix system for concealed panels.
 - Fully adjustable hangers.
 - Hangers to suit different types of anchor fixing.
 - Increased flexibility in panel layout design.
 - Can be used in conjunction with our unique TUF secret fixing fastening system.
 - Ideal solution for OEM system support.
-

NV4



NV4 Only L profile, NV4 profile, NV4 hangers

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical	Standard Isolator	Vertical & Horizontal	No	All fixings	SDA5	TUF
Concealed Fix	NVELOPE® Thermal				SN3	PTS

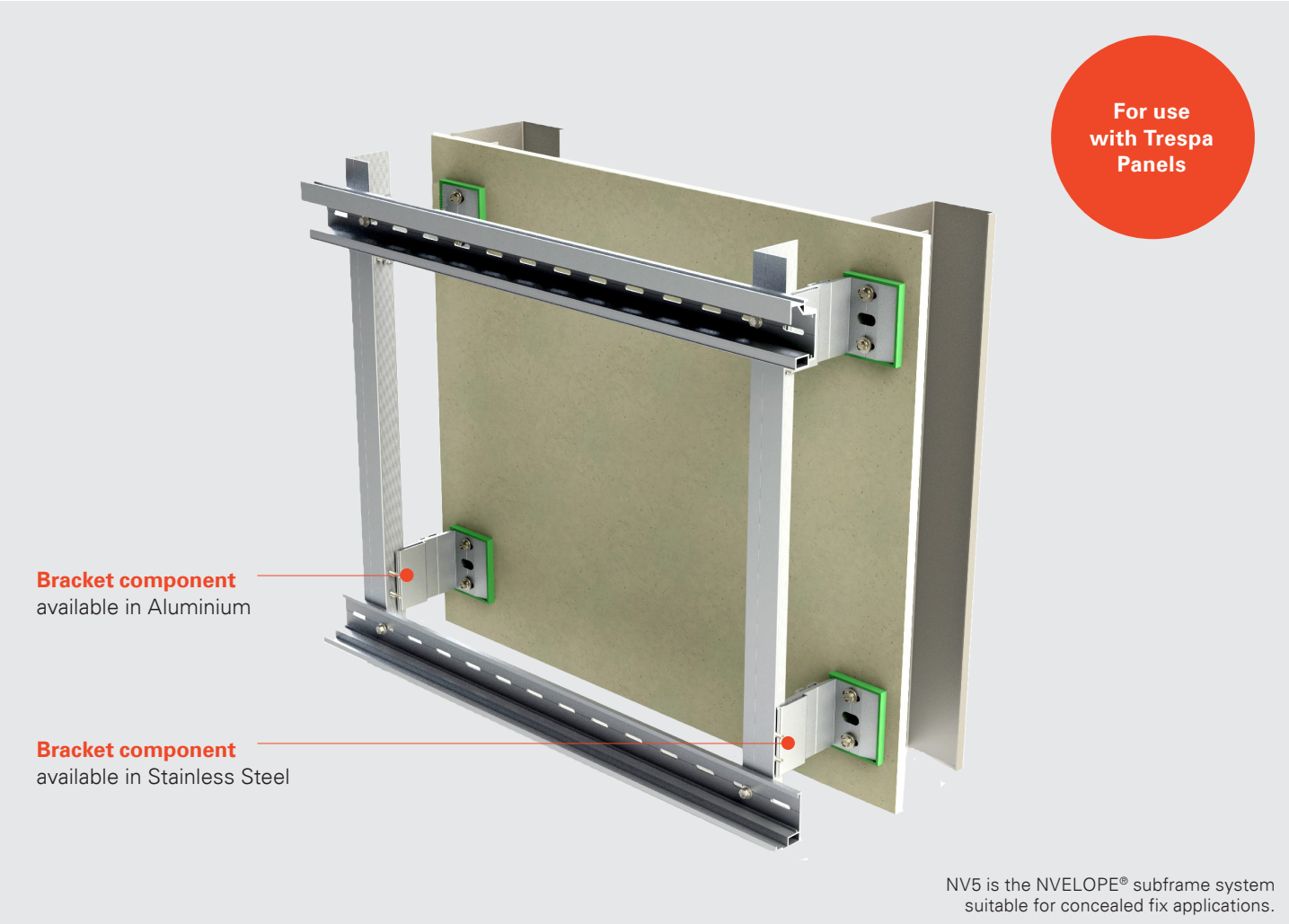
*British Board of Agreement



Features & Benefits

- NV4 provides a “hook on” mechanical fix systems for concealed panels.
 - Fully adjustable hangers.
 - Hangers to suit different types of anchor fixing.
 - Increased flexibility in panel layout design.
 - Used in combination with our unique TUF secret fix fastening system.
 - Ideal solution for OEM system support.
-

NV5



NV5 Only L profile, NV5 Starter Rail, NV5 Mail Rail

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical	Standard Isolator	Horizontal	No	All fixings	SDA5	N/A
Concealed Fix	NVELOPE® Thermal					

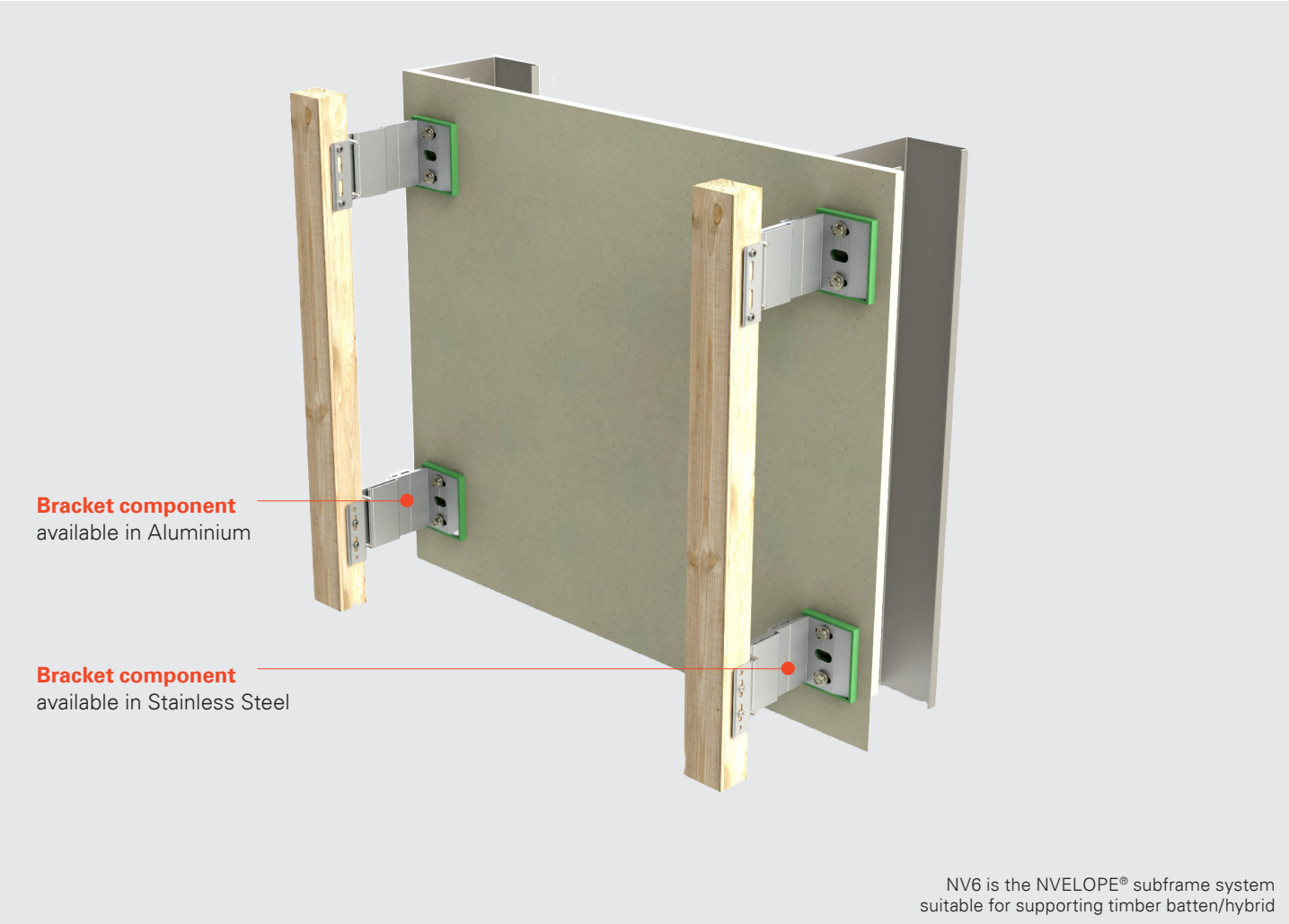
*British Board of Agreement



Features & Benefits

- NV5 provides a mechanical concealed fix channel system for narrow horizontal panels.
 - Can support a range of different panel edge designs.
 - Ideal solution for OEM system support.
-

NV6



NV6 N/A

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Timber Face Fixed	Standard Isolator	Vertical &	No	All fixings	SDA5	Panel Fixing
Concealed Fix	NVELOPE® Thermal	Horizontal			SR2	

*British Board of Agreement

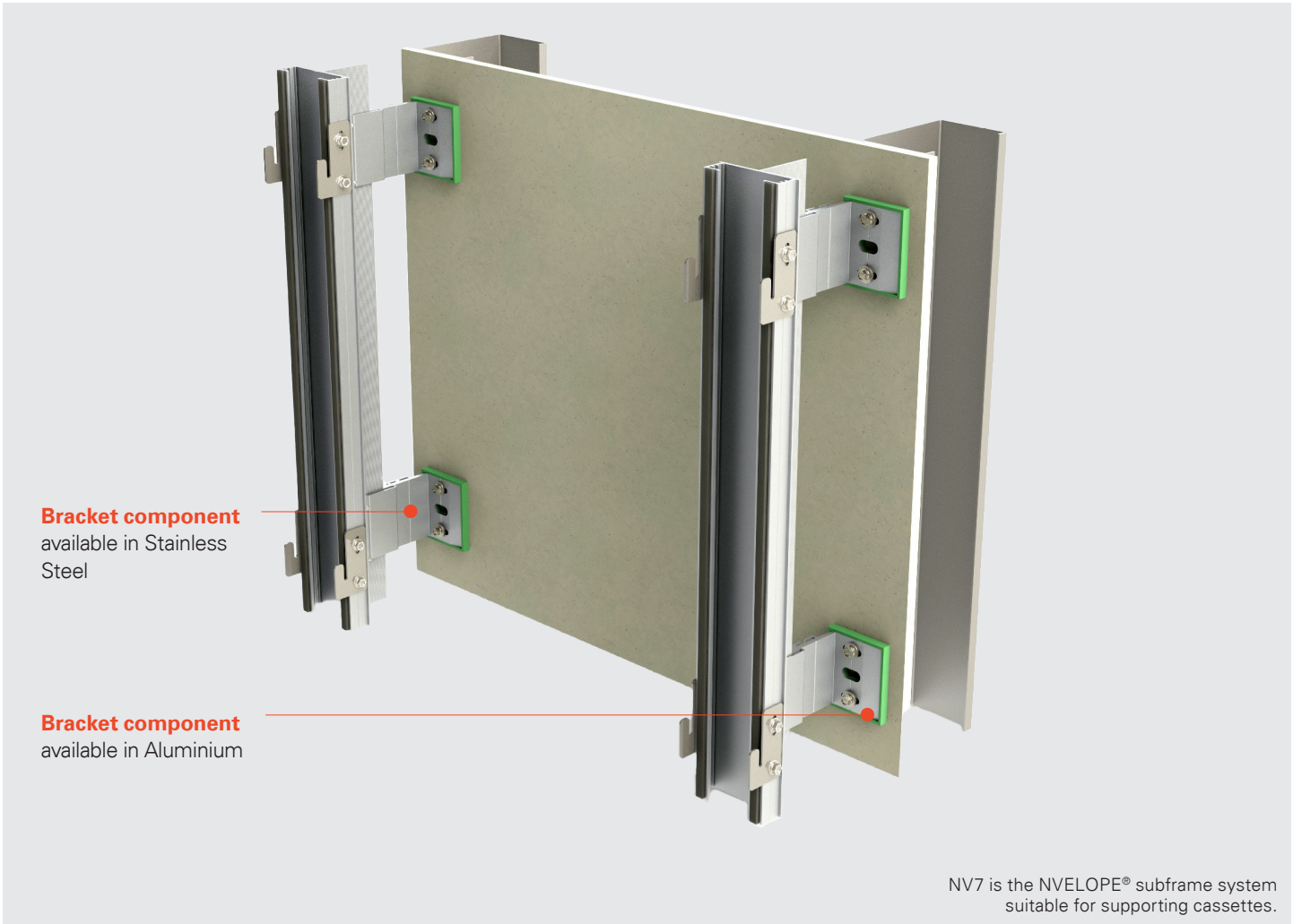


NV6
Packington Estate

Features & Benefits

- NV6 is a hybrid system.
 - It creates a timber back frame support system, suitable for face fix panels or concealed fix timber cladding/ weatherboarding systems.
 - Range of carrier sizes to suit different size timber.
 - Ideal solution for OEM system support.
-

NV7



NV7 profile

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Concealed Fix	Standard Isolator	Vertical &	Yes	All fixings	SDA5	N/A
Cassette	NVELOPE® Thermal	Horizontal			SX3	

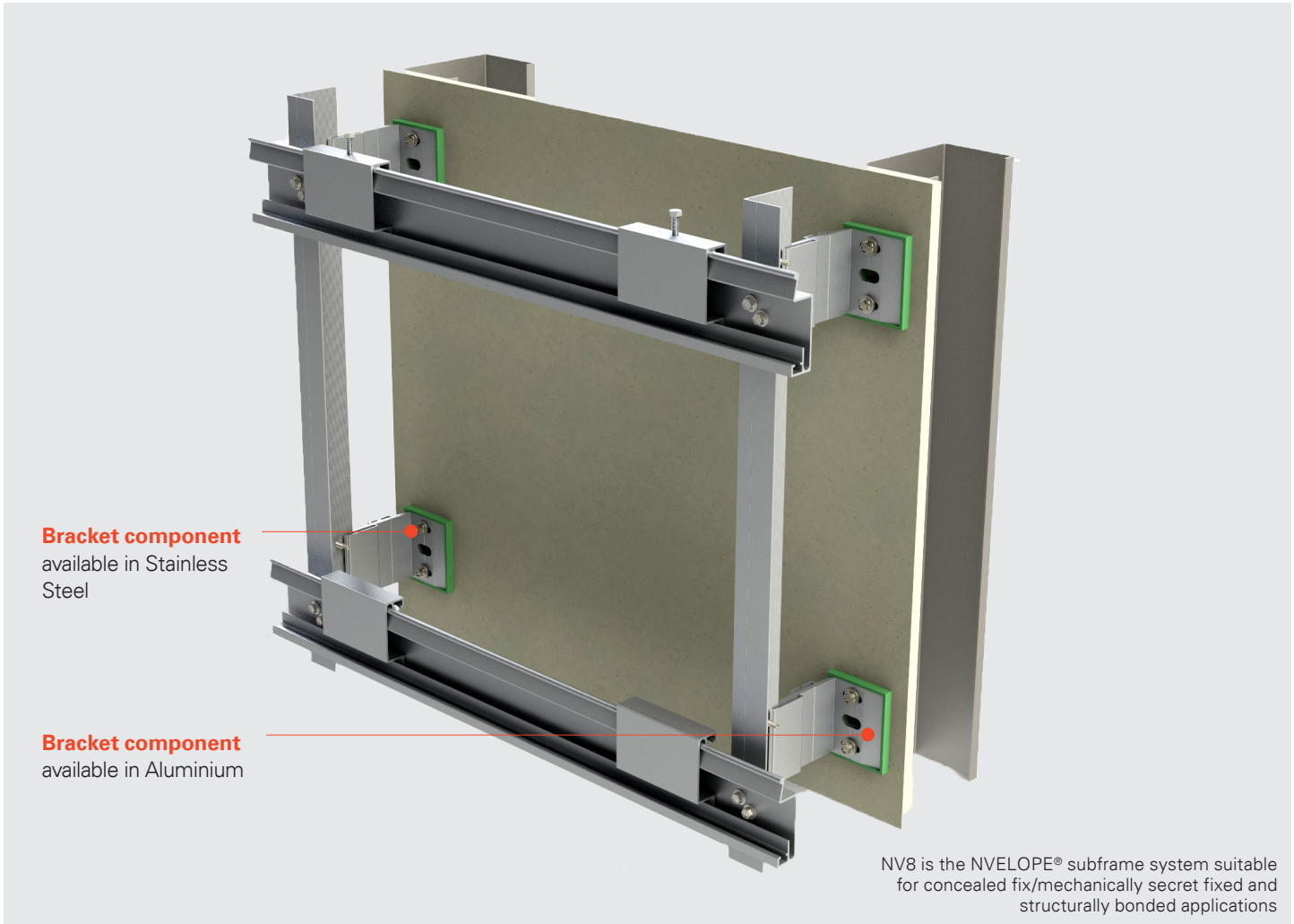
*British Board of Agreement



Features & Benefits

- NV7 provides a “hook on” mechanical fix system for concealed cassette panels specifically metal panels and ACM.
 - Cassette hanger plates fix to the NV7 profile to create a concealed fix.
 - Contains panel anti-rattle properties.
 - Ideal solution for OEM system support.
-

NV8



NV8 Only L profile

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level
Mechanical/ Adhesive Concealed Fix	Standard Isolator NVELOPE® Thermal	Vertical & Horizontal	No	All fixings	SDA5 SX3	TUF

*British Board of Agreement



Features & Benefits

- NV8 provides a “hook on” mechanical fix system for concealed panels.
 - Fully adjustable hanger.
 - Hangers designed for structurally bonded adhesive systems or mechanical anchor fixings.
 - Increased flexibility in panel layout design.
 - Ideal solution for OEM system support.
-

NV9



NV9 Omega & Zed profiles

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level	3 rd Level Fix
Adhesive Fix Face Fixed	No thermal options	Vertical & Horizontal	No	All fixings	N/A	Panel Fixings

*British Board of Agreement

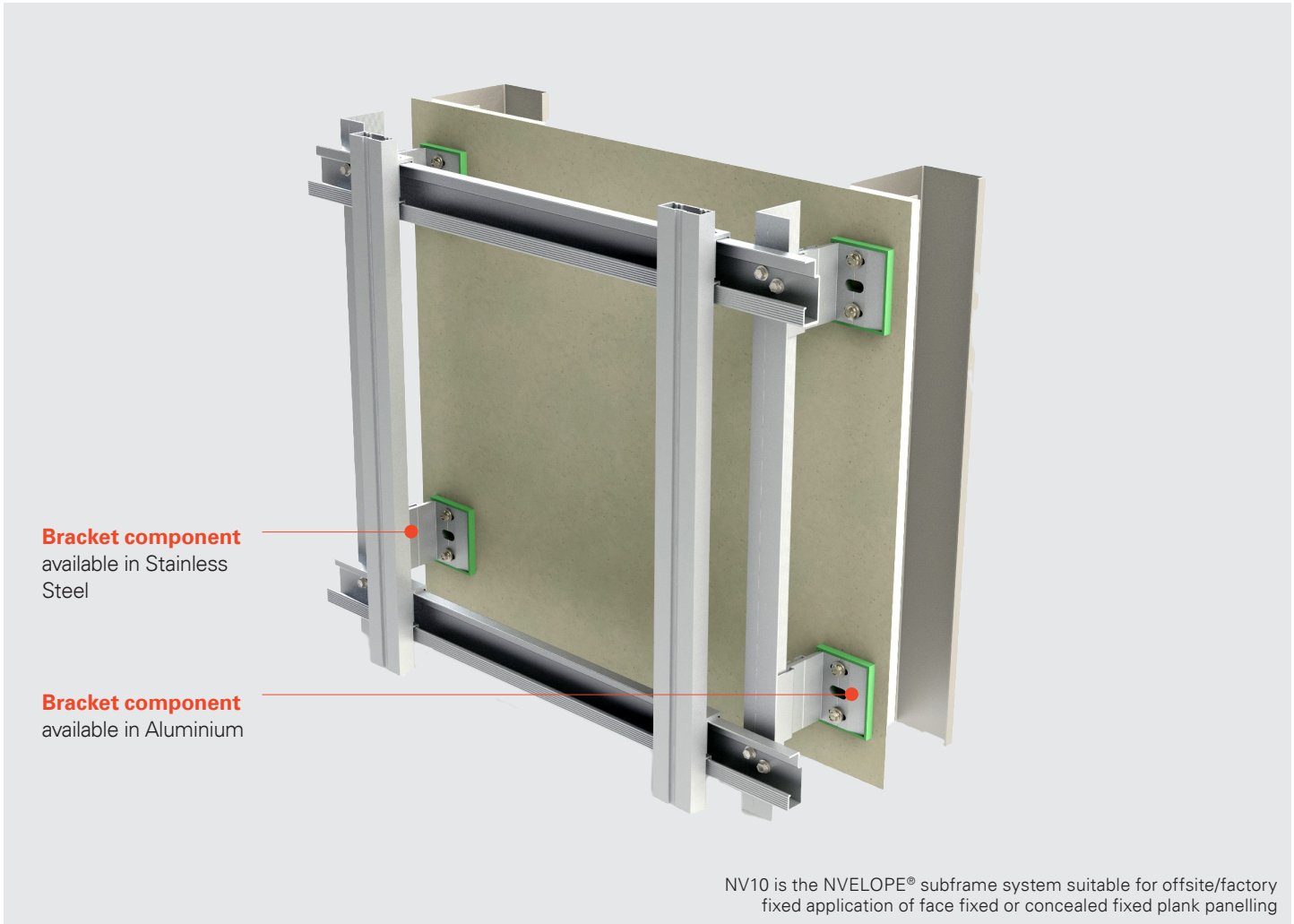


NV9
The Springs

Features & Benefits

- NV9 is for face fixed or adhesive fix panel systems.
 - Pre-set profile cladding zones (25mm or 40mm).
 - Bracket-less system.
 - Ideal solution for OEM system support.
-

NV10



NV10 Only L profiles

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical/ Adhesive Concealed Fix	Standard Isolator NVELOPE® Thermal	Vertical & Horizontal	No	All fixings	SDA5 SX3	TUF

*British Board of Agreement

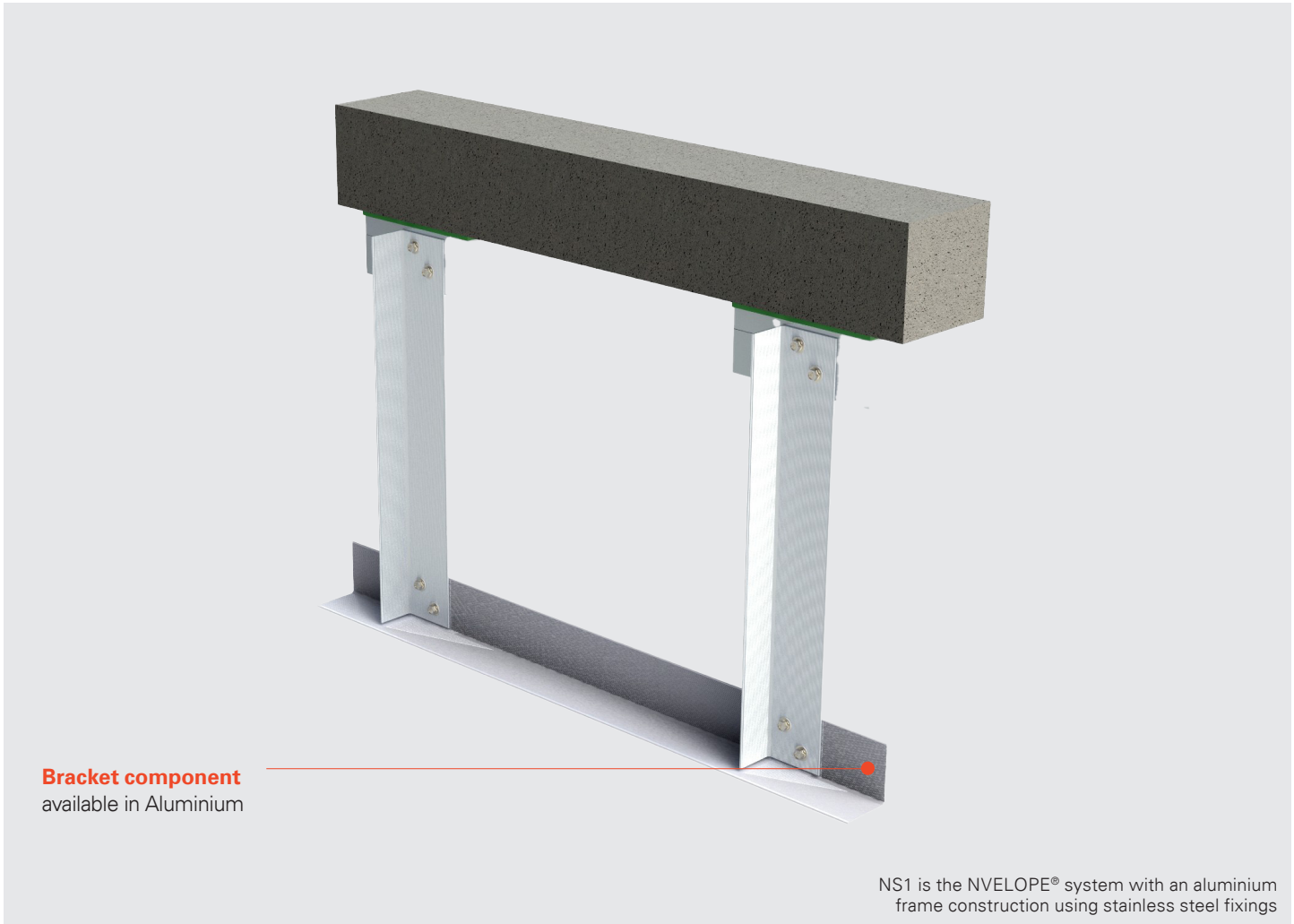


NV10
TK Maxx Distribution Centre

Features & Benefits

- NV10 provides a “hook on” mechanical system for concealed or face fix plank panelling.
 - Fully adjustable hangers.
 - Install multiple panels at once fixed to the NV10 profile.
 - Suited for offsite installation.
 - Ideal solution for OEM system support.
-

NS1



NS1 L and T profiles

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level	2 nd Level Fix	3 rd Level
Mechanical/ Adhesive Concealed Fix	Standard Isolator	Vertical & Horizontal	No	All fixings except SXR	SX3 29 mm	Rivet/Panel Fixing

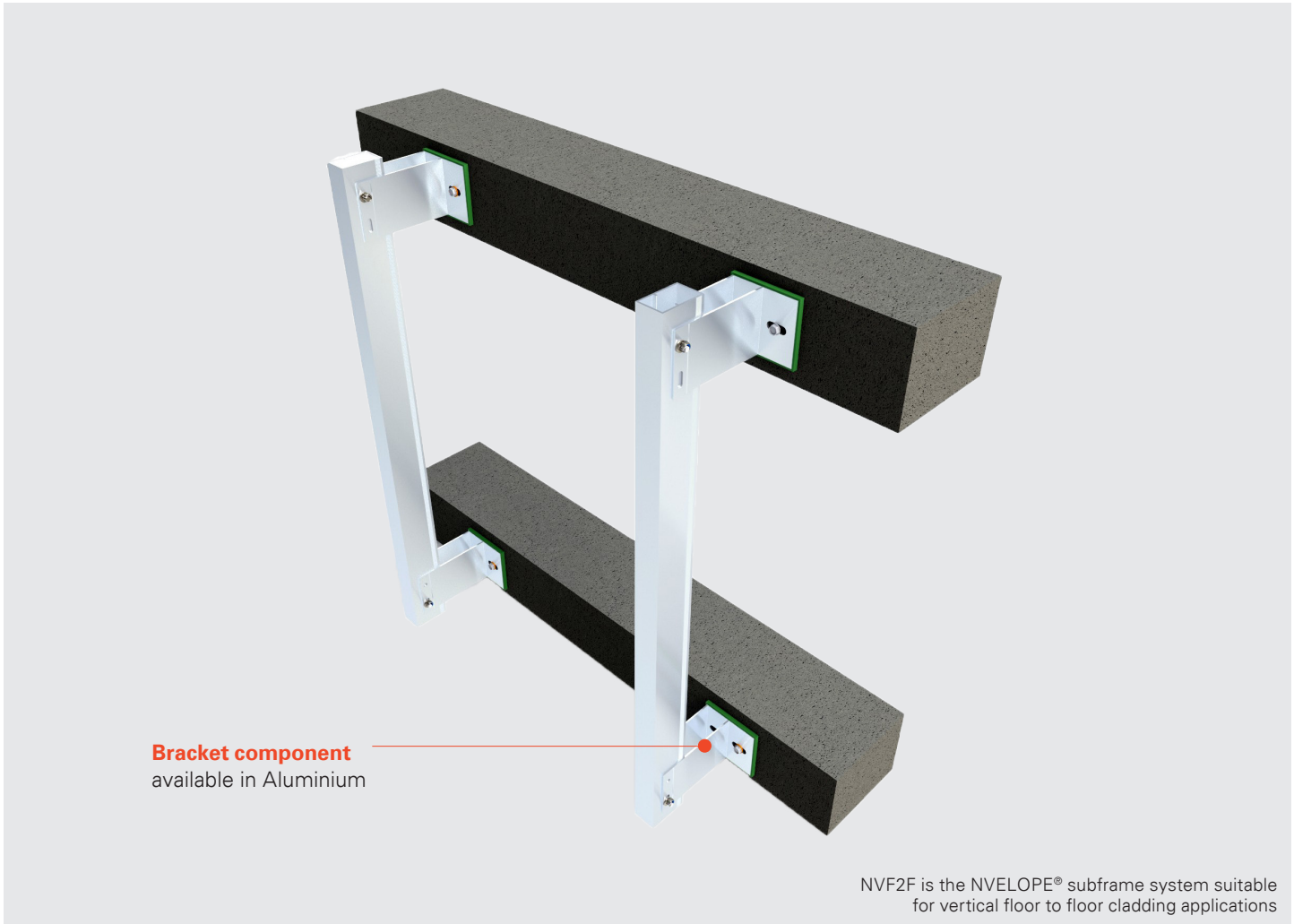
*British Board of Agreement



Features & Benefits

- NS1 is a Soffit solution for face fix panel systems.
 - Soffit drops up to 1 Metre.
 - Simple system consisting of NVELOPE® profiles.
 - Ideal solution for OEM system support.
-

NVF2F



NVF2F is the NVELOPE® subframe system suitable for vertical floor to floor cladding applications

NVF2F Box profile/T Box profile

System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical/Adhesive Concealed Fix	Standard Isolator	Vertical & Horizontal	Yes	Multi-Monti	M8 Bolt Kit	Rivet/Panel fixing

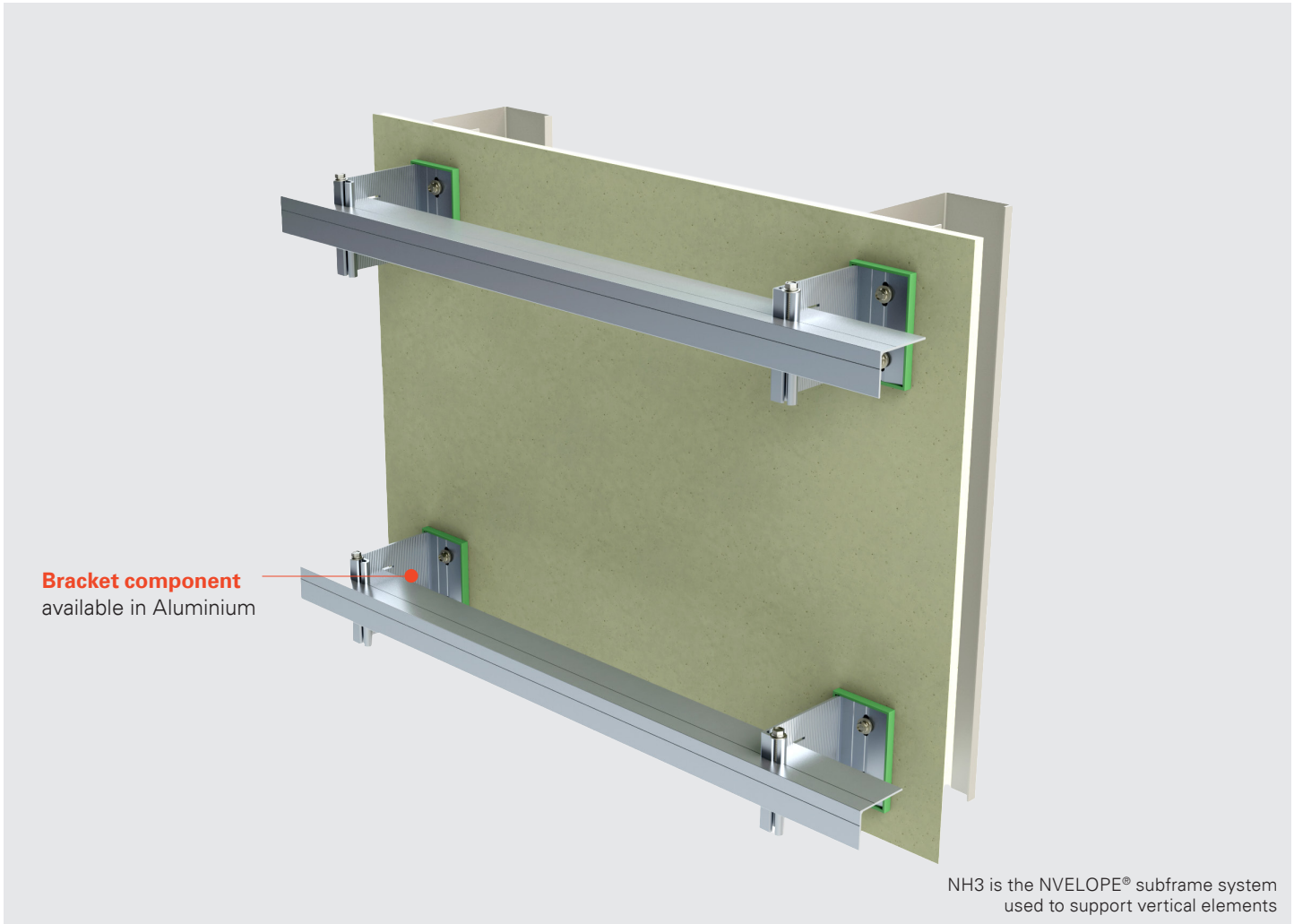
*British Board of Agrement



Features & Benefits

- The NVF2F system is designed to span across floor levels.
 - It consists of aluminium box profiles and dual leg brackets.
 - NVF2F can also support NVELOPE® concealed fix systems.
 - Can be used where it is not possible to fix brackets between floor levels.
 - Ideal solution for OEM system support.
-

NH3



NH3 is the NVELOPE® subframe system used to support vertical elements

NH3 L Profile

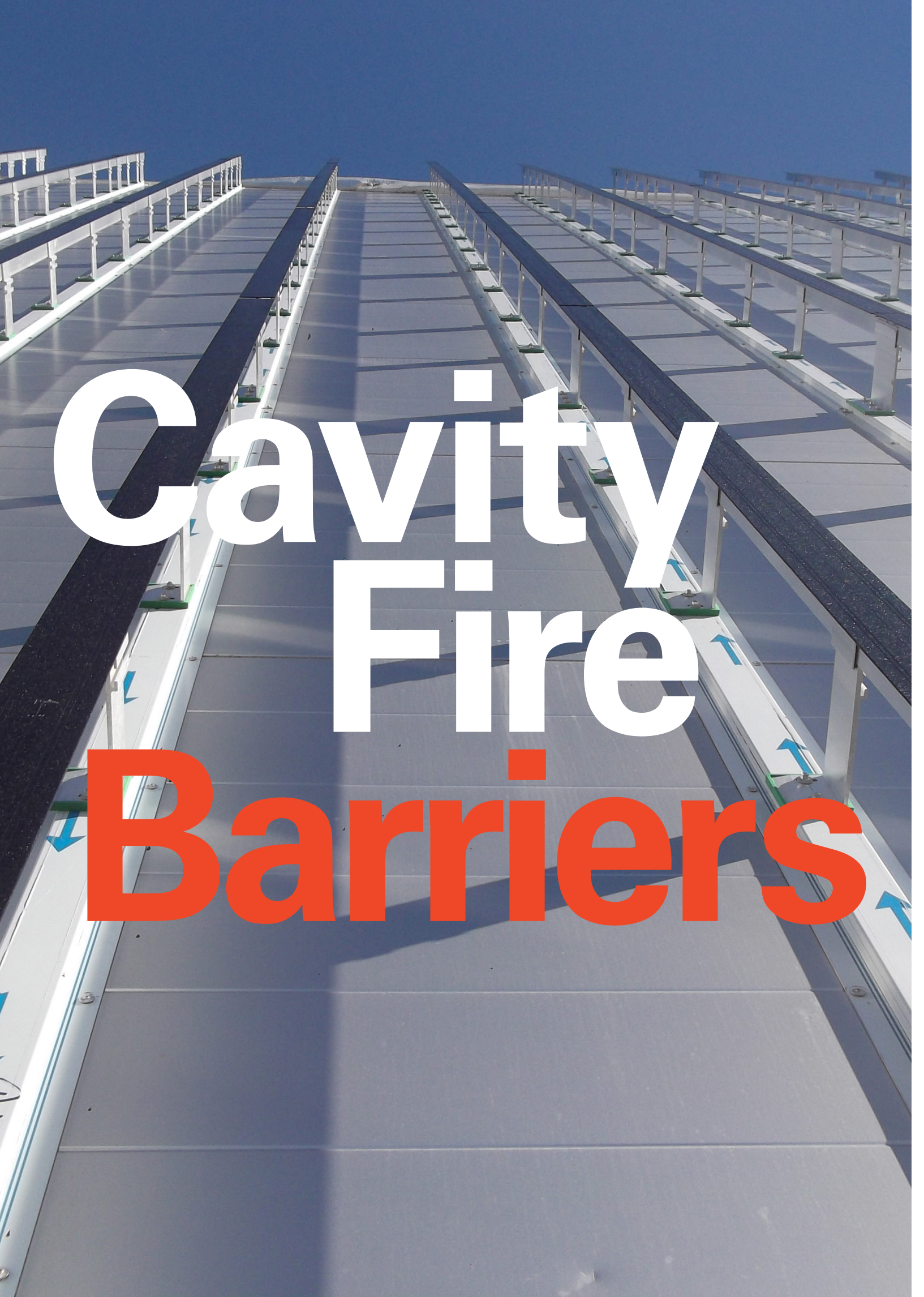
System Type	Isolator Options	Panel Orientations	*BBA	1 st Level Fix	2 nd Level Fix	3 rd Level Fix
Mechanical/Adhesive Concealed Fix	Standard Isolator NVELOPE® Thermal	Vertical	Yes	All fixings	SDA5 45 mm	Rivet/Panel fixing

*British Board of Agreement



Features & Benefits

- The NH3 system provides a horizontal backframe
 - Provides a solution for vertically aligned face fix panel systems
 - A unique bracket design for horizontal applications
 - The NH3 bracket matches the NVELOPE® range of bracket sizes
 - Ideal solution for OEM system support.
-



Cavity Fire Barriers

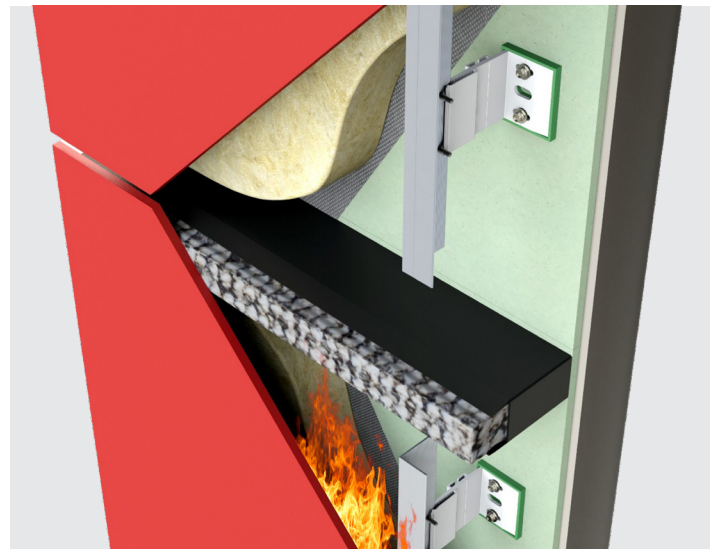
Passive Fire Protection

The SFS NVELOPE® CFB system has been created for Designers and Specialist Cladding Contractors who demand a clear and straightforward approach to aid the selection and supply of subframe cavity fire barriers.

The requirement to prevent fire breaking into and spreading within the cavity of a rainscreen build-up has gained a high degree of traction in the UK and further afield in certain international regions. The Centre for Window and Cladding Technology (CWCT) describes a rainscreen cladding system as “a wall comprising of an outer skin of panels and an airtight insulated backing wall separated by a ventilated cavity or airgap”.

The basic principle of a ventilated rainscreen system allows any penetrating rain or moisture to “drain” or evaporate and vent back to the outside. Further the effects of pressure equalisation allow the movement of air between the inside and outside so that rain is not driven through into the building structure. These principles rely on free movement of air throughout the cavity or air gap.

During a fire event, however, this freedom of movement could act as a chimney and draw smoke and fire along the cavity. That’s where Cavity Fire Barriers come into effect. Passive cavity fire barriers are an accepted method to support the achievement of fire safety requirements. These functional requirements are defined within UK Building Regulations and further practical guidance is described within ADB.



Strategies to remediate at risk buildings are latterly considering passive fire control, including cavity fire breaks, in addition to the façade panel and insulation. Cavities in the construction of a building provide a ready route for the spread of smoke and flame, which can present a greater danger as any spread is concealed. To reduce the potential for fire spread, cavity barriers should be provided for both of the following:

- To divide cavities
- To close the edges of cavities

Cavity barriers should be provided at all of the following locations:

- At the edges of cavities, including around openings (such as windows, doors and exit/entry points for services).
- At the junction between an external cavity wall and every compartment floor and compartment wall.

NVELOPE® CFB

The NVELOPE® CFB range comprises of 4 horizontal open state barriers.

NV CFB 6 →

An open state cavity fire barrier for ventilated cavities up to 450 mm. Utilises an high performance intumescent seal fixed to a high density mineral wool backer. It is mechanically fixed and usually orientated horizontally.

Technical Data

Thickness	Up to 450 mm
Colour	Black
Integrity Fire Rating	Up to 60 minutes
Insulation Fire Rating	Up to 60 minutes



Features & Benefits

- Up to 60 minutes Integrity and Insulation Fire Rating
- Maintains a 25 mm air gap
- Up to 450 mm cavities

NV CFB 12 →

An advanced open state cavity fire barrier for ventilated cavities up to 450 mm. Utilises an high performance intumescent seal fixed to a high density mineral wool backer which offer extended performance over and above CFB 6. It is mechanically fixed and usually orientated horizontally.

Technical Data

Thickness	Up to 450 mm
Colour	Black
Integrity Fire Rating	Up to 120 minutes
Insulation Fire Rating	Up to 90 minutes



Features & Benefits

- Up to 120 minutes Integrity and 90 minutes Insulation Fire Rating
- Maintains a 25 mm air gap
- Up to 450 mm cavities

NV CFB EXTRA →

The superior open state cavity fire barrier for ventilated cavities up to 450 mm which provides additional protection for larger air gaps up to 44 mm. Utilises an high performance intumescent seal fixed to a high density mineral wool backer which offers extended performance over and above CFB 6. It is mechanically fixed and usually orientated horizontally.



Technical Data

Thickness	Up to 450 mm
Colour	Red
Integrity Fire Rating	Up to 60 minutes
Insulation Fire Rating	Up to 60 minutes

Features & Benefits

- Up to 60 minutes Integrity and Insulation Fire Rating
- Maintains a 44 mm air gap
- Up to 450 mm cavities

NV CFB 12/50 →

A ventilated fire barrier that is a rigid, high expansion intumescent strip encased in aluminium foil. It is particularly versatile and can be mechanically fixed both horizontally and vertically within ventilated cavities behind rainscreen or cladding systems to act as a cavity fire barrier. The barrier is simply mechanically fixed in position to leave up to a maximum 44 mm air gap.



Technical Data

Thickness	Up to 50 mm
Colour	Silver
Integrity Fire Rating	Up to 120 minutes
Insulation Fire Rating	Up to 120 minutes

Features & Benefits

- Up to 120 minutes Integrity and Insulation Fire Rating
- Up to 50 mm cavities

NVELOPE® CFB

For closed state vertical or window sealing the NV CFB range describes.

NV CFB UV →

This is a barrier for non ventilated applications and is ideally suited to prevent fire penetration between adjacent vertical compartments within a rainscreen. Manufactured from high density mineral wool to suit a wide range of cavity depths. They are held in place by a combination of compression and multi purpose brackets.

Technical Data

Thickness	Up to 600 mm
Colour	–
Integrity Fire Rating	Up to 120 minutes
Insulation Fire Rating	–



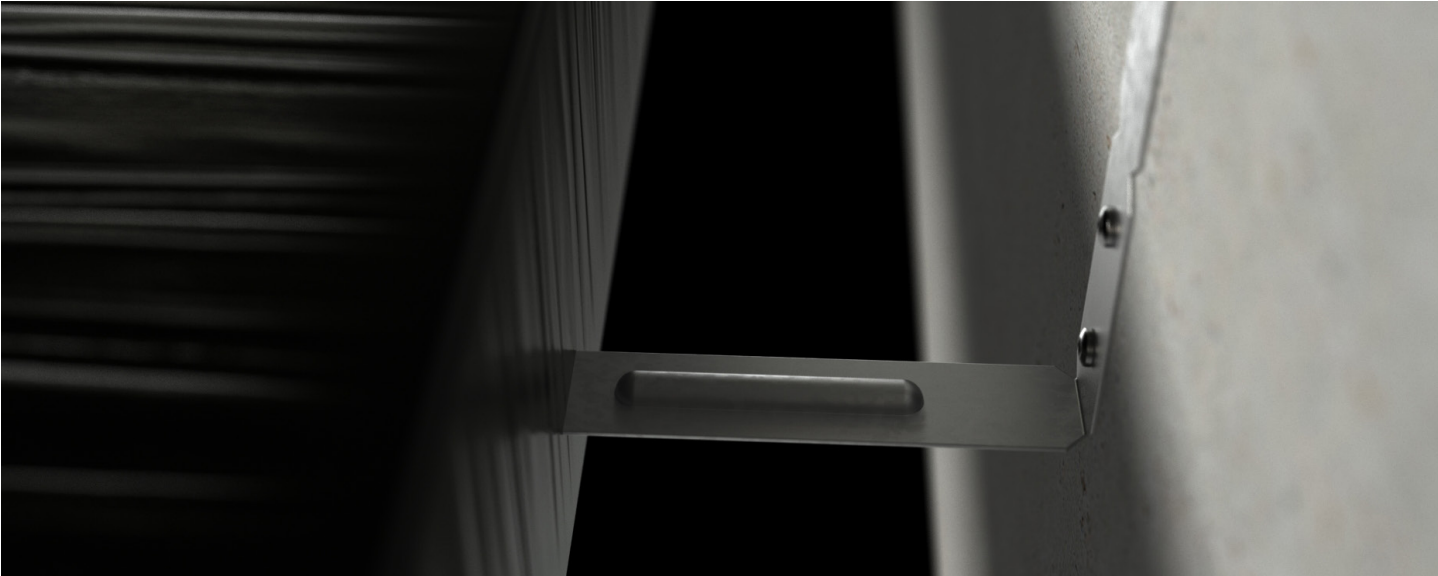
Features & Benefits

- Up to 120 minutes Fire Rating
- Maintenance free
- Unaffected by humidity and moisture
- Up to 600 mm cavities

Barrier Sizes Available

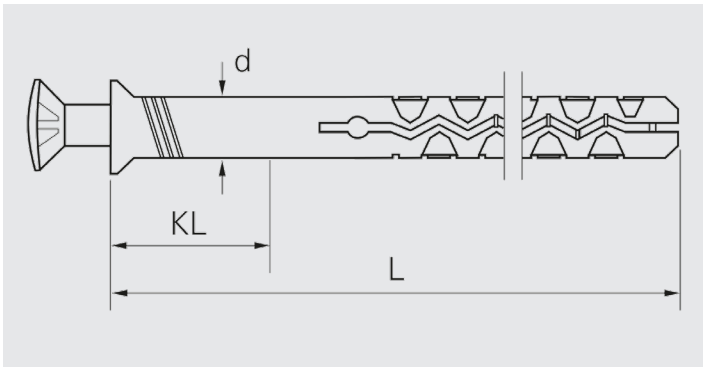
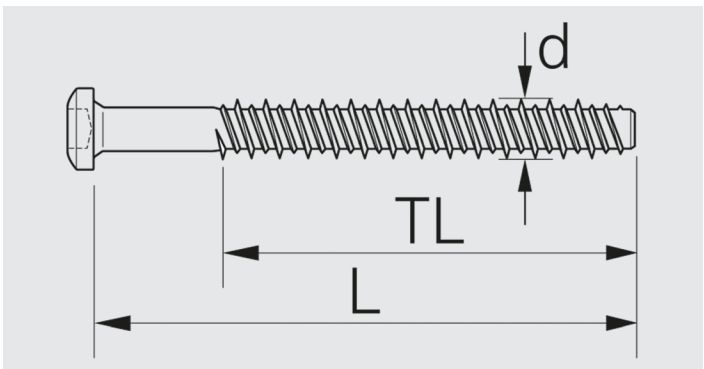
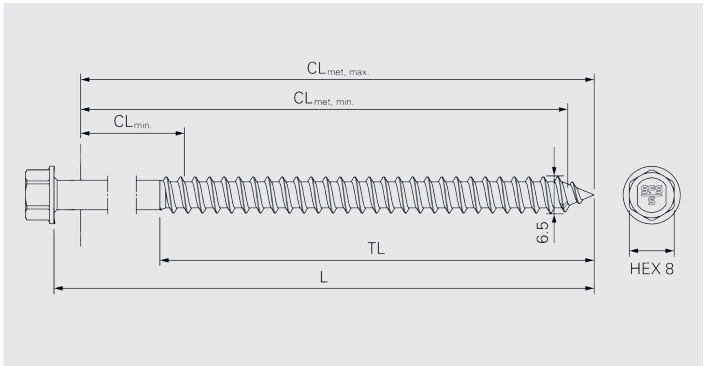
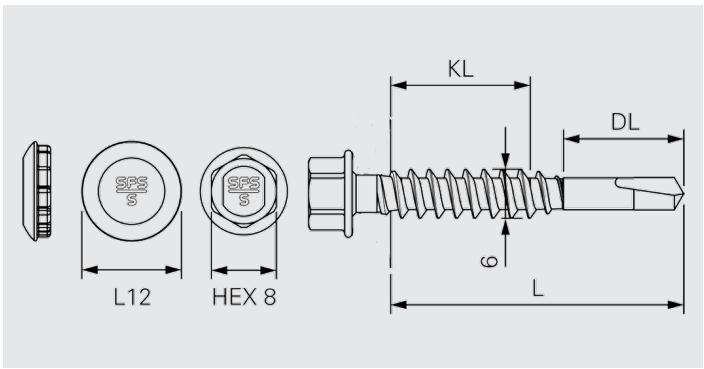
Type	Cavity mm	Product Thickness mm
NV CFB 6	60 (+10 increments up to) 440	35 (+10 increments up to) 415
NV CFB 12		
NV CFB EXTRA		16 (+10 increments up to) 396
NV CFB UV	10	80
	20	
	30 (+5 increments up to)	
	95	
	100 (+10 increments up to)	100
	600	
NV CFB 12/50	Up to 50	6

To view the relevant fixings for our Cavity Fire Barriers, visit www.uk.sfs.com/systems/nvelope/cavity-fire-barrier.



Fixings for Cavity Fire Barriers

For Barrier Brackets



Steel Substrate

Product Code

SX3/9-S16/A4-6x29-A4
SX3/18-S16/A4-6x38-A4
SX3/20-S16/A4-6x50-A4
SX3/28-S16/A4-6x48-A4

Timber Substrate

Product Code

TDA-S-S16/A4-6,5x60-A4
TDA-S-S16-6,5x20
TDA-S-S16-6,5x25
TDA-S-S16-6,5x32
TDA-S-S16-6,5x40

Concrete/Brick/Block Substrate

Sleeveless Option – Product Code

TI-S-Z10-6,3x45
TI-S-Z10-6,3x75
TI-S-Z10-6,3x115

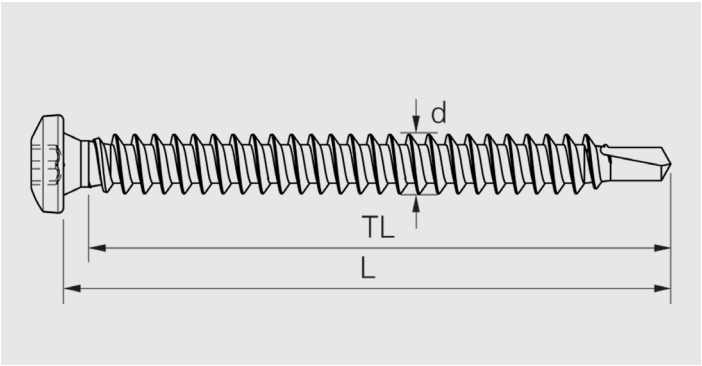
Concrete/Brick/Block Substrate

Sleeved Option – Product Code

MNA-S-6,0x35
MNA-S-6,0x50
MNA-S-6,0x60

Fixings for Cavity Fire Barriers

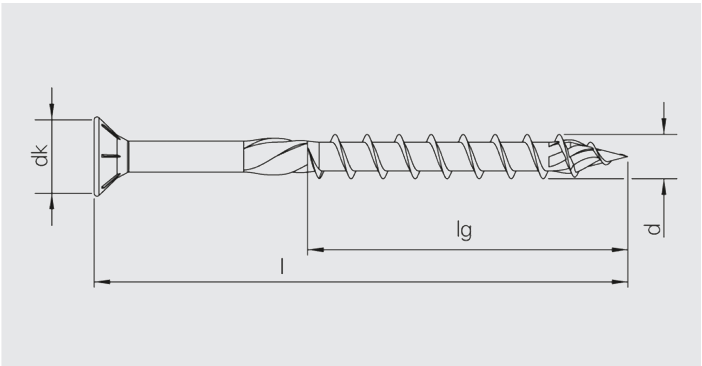
For Direct Fix



Steel Substrate

Product Code

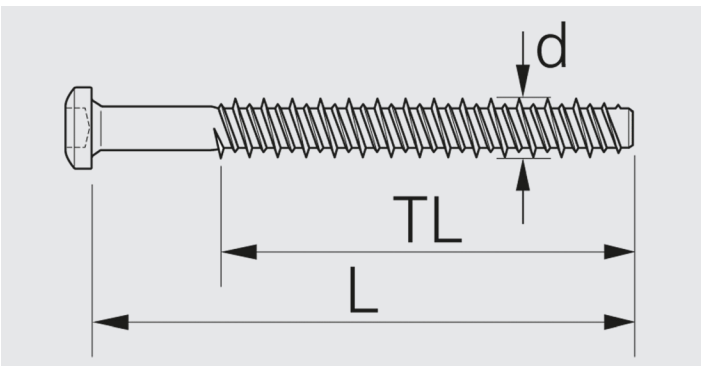
- BS-S-4,8x60
- BS-S-4,8x80
- BS-S-4,8x100
- BS-S-4,8x120
- BS-S-4,8x140
- BS-S-4,8x160



Timber Substrate

Product Code

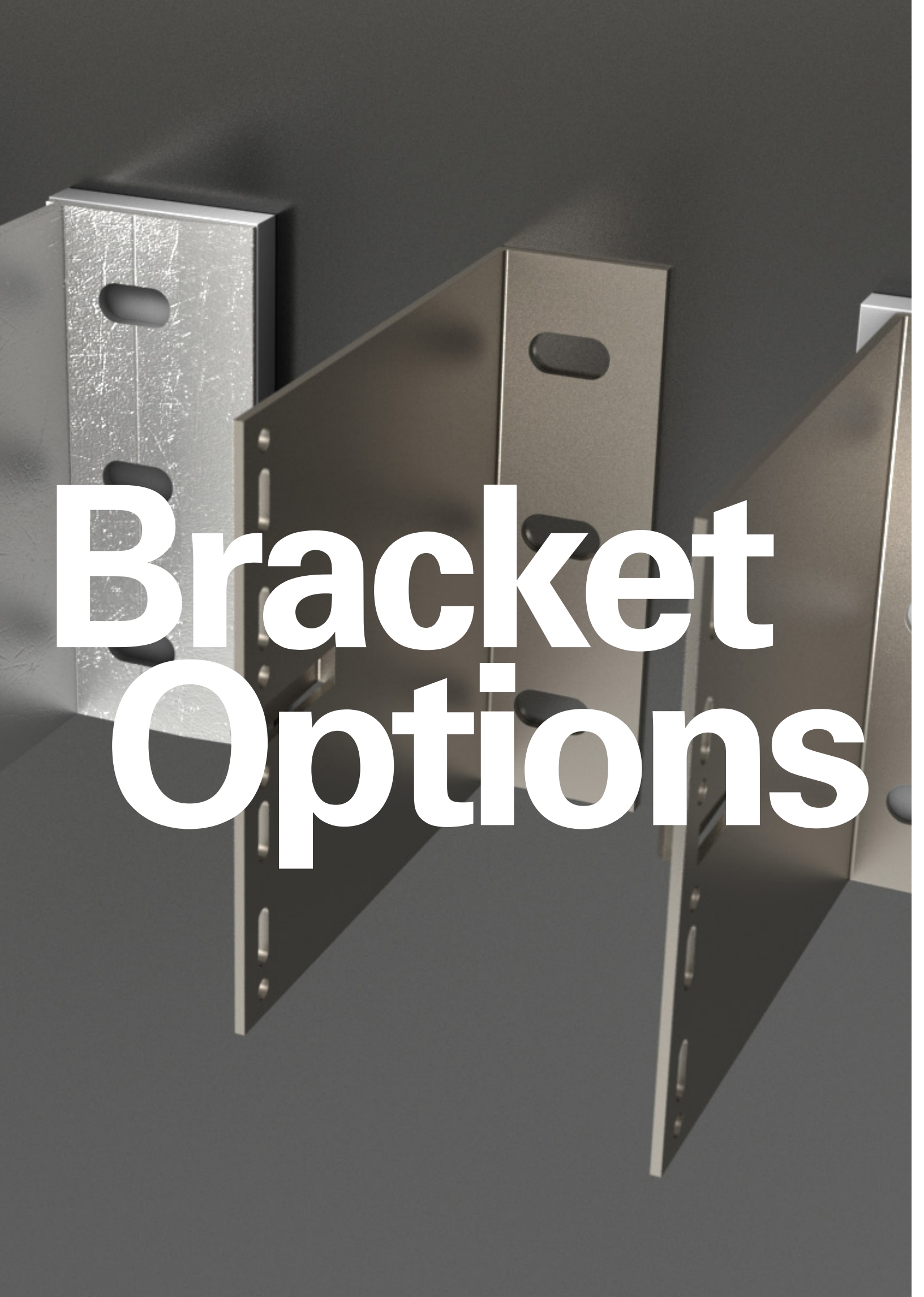
- HTP-S-CS-PT-6,0x60
- HTP-S-CS-PT-6,0x70
- HTP-S-CS-PT-6,0x80
- HTP-S-CS-PT-6,0x90
- HTP-S-CS-PT-6,0x100
- HTP-S-CS-PT-6,0x110
- HTP-S-CS-PT-6,0x120
- HTP-S-CS-PT-6,0x140
- HTP-S-CS-PT-6,0x160



Concrete/Brick/Block Substrate

Sleeveless Option – Product Code

- TI-S-Z10-6,3x45
- TI-S-Z10-6,3x75
- TI-S-Z10-6,3x115



Bracket Options

Aluminium

NVELOPE® aluminium brackets are available in two options.

NVELOPE® VB/HB

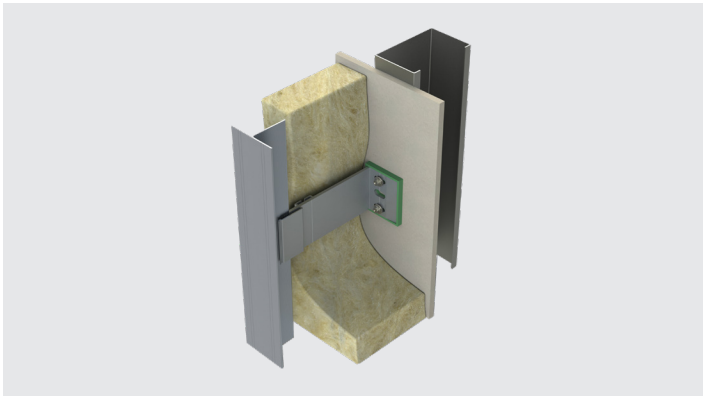
NVELOPE® VB/HB aluminium brackets are supplied with a polypropylene “Green Isolator” which offers a degree of thermal benefit. However, its principal function is to eliminate any potential for corrosion between masonry and aluminium substrates.

NVELOPE® VB/HB + Thermal

Whilst strong and easy to install, aluminium is very thermally conductive e.g. $> 200 \text{ W/mK}$. Therefore the thermal point loss affects can be significant when aluminium brackets are utilised depending on the combination of various elements within the rainscreen build-up. The NVELOPE® VB/HB + Thermal range includes an insulation pad at the base of the bracket. This dramatically improves the thermal performance of the rainscreen build-up.

Eurocode 9 (EN 1999-1-1:2007+A1)

The Eurocode series of EN standards relate to the construction industry. Eurocode 9: Design of Aluminium Structures (abbreviated EN 1999 or EC9) describes how to design aluminium structures. It complies with the principles and requirements for the safety and serviceability of building structures and the basis of their design. It further sets the requirements for structural integrity including strength, durability and fire resistance. NVELOPE® aluminium subframe brackets and associated fixings used for rainscreen cladding applications have been designed in accordance with Eurocode



9 and are implemented to the National Annex BS EN 1999 1–5 relevant for the UK.

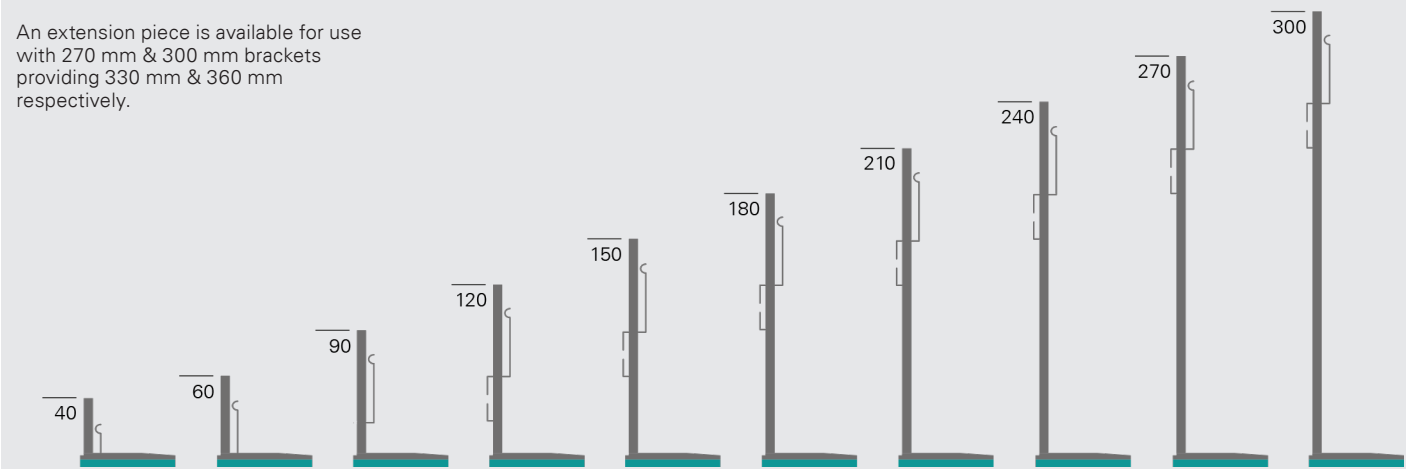
Eurocode 3 (EN 1993-1-1:2005)

Eurocode 3 applies to the design of buildings, utilising in steel. It complies with the principles and requirements for the safety and serviceability of structures, and the basis of their design. It is concerned with requirements for resistance, durability and fire resistance.

NVELOPE® Stainless steel subframe brackets and associated fixings used for rainscreen cladding applications have been designed in accordance with Eurocode 3 and are implemented to the National Annex BS EN 1993 (informative) relevant for the UK.

NVELOPE® Aluminium Brackets

An extension piece is available for use with 270 mm & 300 mm brackets providing 330 mm & 360 mm respectively.



Aluminium Fixed Point & Sliding Point

Profiles (rails) are attached to brackets by a combination of fixed and sliding points to allow for and assure dead load and dynamic load performance. Sliding points are important to accommodate differing thermal effects of materials (dilation) being combined. Dead and dynamic loads as well as dilation effects must be fully accounted for.

The rainscreen façade must be able to “float” on the subconstruction. Each element should have one fixed point. All other fixing points must be executed as sliding points. Fixed point brackets and profiles are connected (Level 2 Fixings) by round holes in the brackets. The fixed point absorbs both vertical weight (deadload) and horizontal wind loads.

Sliding point brackets and profiles are connected (Level 2 Fixings) at the elongated holes (slots) in the brackets. Their primary function is to absorb dynamic horizontal wind loads.

Cementitious Surfaces

All aluminium components in direct contact with cementitious primary substrates, where a risk of corrosion exists, shall be isolated. All NVELOPE® aluminium brackets are isolated via the addition of a polypropylene “Green Isolator” to the foot of the bracket.

This isolator also provides additional thermal insulation which in turn can improve thermal point loss (Chi value) for individual brackets and ultimately, support greater thermal efficiency.

Helping Hands

NVELOPE® vertical brackets come in standard dimensions of 40- 300mm and are available in two sizes, Single and Double. Each bracket has 40mm of adjustment (except the 40mm bracket which has 20mm adjustment). The profiles (rails) are held in place by friction afforded by the ‘helping hands’ feature of the bracket. Once adjusted for line and level they are fixed using the appropriate Level 2 stainless steel fixing.

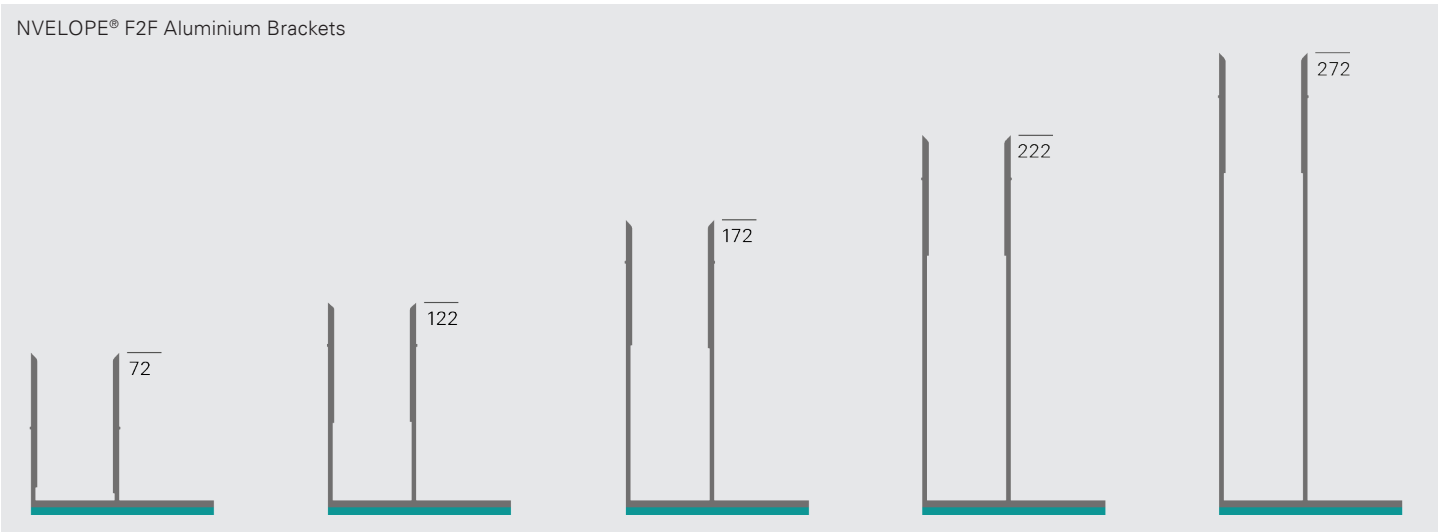
Aluminium Bracket Options – Suitable for all NVELOPE® systems except NVF2F

Bracket Size mm	min.	max.	Single (6.5/11 mm slot)	6.5 mm	Double 11 mm
40	47	67	1582505	1521239	1521238
60	62	102	1582506	1521247	1521246
90	92	132	1582508	1521255	1521254
120	122	162	1582509	1521263	1521262
150	152	192	1582510	1521273	1521271
180	182	222	1582511	1521282	1521281
210	212	252	1582512	1521291	1521290
240	242	282	1582514	1521300	1521299
270	272	312	1582517	1521309	1521308
300	302	342	1582520	1521317	1521316
270 (+extension)*	332	372	1582517 (+1521188)	1521309 (+1521187)	1521308 (+1521187)
300 (+extension)*	362	402	1582520 (+1521188)	1521317 (+1521187)	1521316 (+1521187)

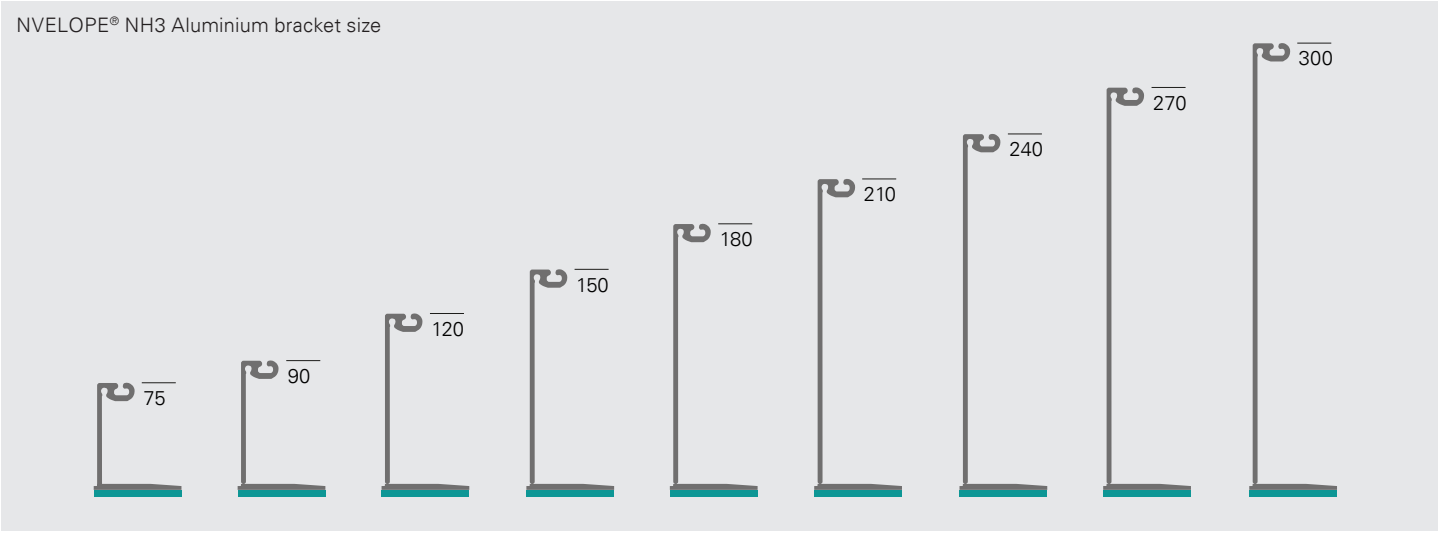
*Example to show largest possible cladding zones. Extension piece is compatible with all bracket sizes, and is available as single (1521188) or double (1521187). Please visit the Accessories page (page 91) for more information.

Aluminium Bracket Options NVF2F – suitable for NVELOPE® F2F systems only

Bracket Size mm	min.	max.	Single
72	79	127	1600061
122	125	177	1600062
172	175	227	1600063
222	225	277	1600065
272	275	327	1649538



Aluminium



Aluminium Bracket Options – NH3 Suitable for NVELOPE® NH3 systems only

Bracket Size mm	6.5 mm slot	11 mm slot
75	1602052	1602050
90	1602054	1602053
120	1602057	1602056
150	1602059	1602058
180	1062062	1602061
210	1602064	1602063
240	1602066	1602065
270	1602068	1602067
300	1602070	1602069

Profile mm	Size	Product Code
Horizontal Bracket L Profile	60×40×2.5×3'000	1521346
90	60×40×2.5×6'000	1602053



Stainless Steel

NVELOPE® stainless steel brackets are available in two options.

NVELOPE® NVS

For greater thermal performance, SFS have recently introduced a complete range of stainless steel brackets to complement our vertical aluminium ranges. Our stainless steel range is made from superior 316 grade which exhibits greater resistance to localised corrosion in marine environments and in contact with atmospheric pollution found in many built-up environments.

Stainless steel will demonstrate a much improved increase in thermal performance. Typically, stainless steel has a thermal conductivity of 16 W/mK. This represents a 12x thermal improvement over and above aluminium. Additionally, stainless steel brackets have no requirement to utilise an isolator to alleviate corrosion.

NVELOPE® NVS + Thermal

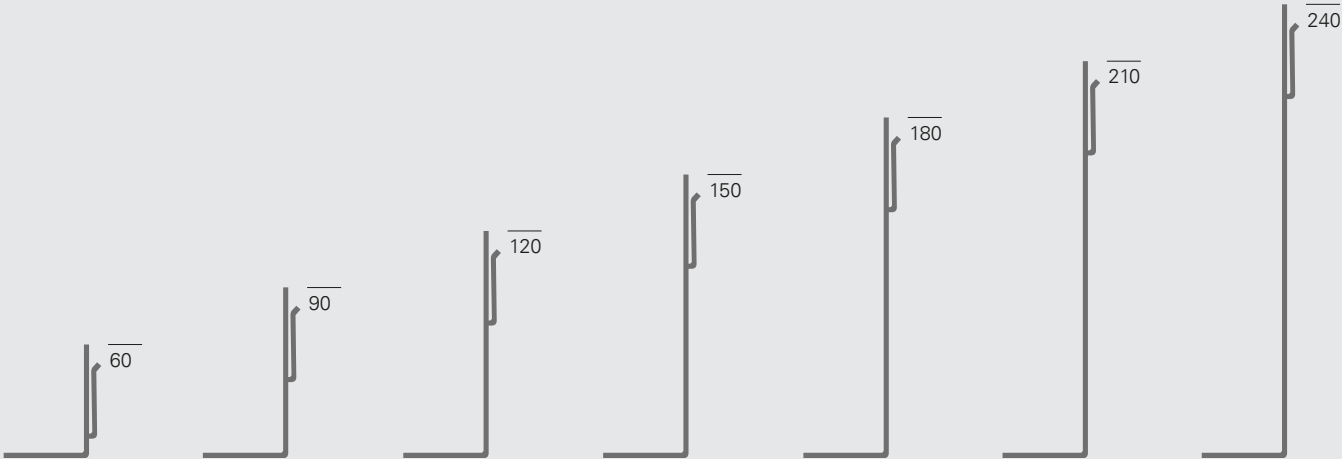
For **optimum, thermal performance**, NVELOPE® NVS + Thermal is the ideal choice.

It offers the combined benefits of high thermal performance where rainscreen build-up designs prescribe demanding thermal solutions, this option could offer the ideal high performance answer. Our NVELOPE® NVS Stainless Steel bracket combined with our unique Thermal Pad (NVS + Thermal) has been awarded Passive House component accreditation, falling within the Facade Anchor category. The significant reduction in thermal point loss which may be achieved by utilising our NVS + Thermal system is clearly recognised by the Passive House Institute.



Stainless Steel Bracket Options

NVELOPE® Stainless steel bracket sizes



Bracket Size			Single	Double	
	min.	max.		6.5 mm	11 mm
60	70	105	1667550	1667502	1667508
90	100	135	1667552	1667503	1667509
120	130	165	1667569	1667504	1667510
150	160	195	1667570	1667505	1667545
180	190	225	1667571	1667500	1667546
210	220	255	1667572	1667520	1667548
240	250	285	1667573	1667514	1667549



First Level Fixings

Level 1 Fixing

Fixing subframe/insulation back to the substrate

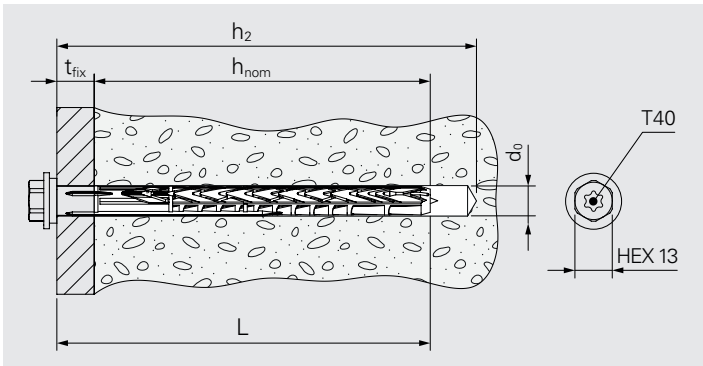
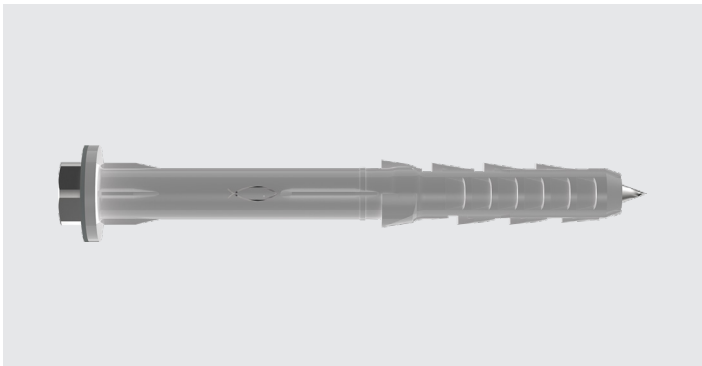
Fixing Design and Specification considerations: NVELOPE® subframe systems can be used in conjunction with most types of primary wall substrates and includes: masonry – brick, concrete, block & stone; lightweight steel framing systems (SFS); Timber frame and Structural Insulated Panels (SIPS).

The method of (Level 1) fixation depends on the type of substrate the NVELOPE® system is going to be fixed to. Our level 1 fixing range includes insulation fasteners and support anchors designed to fix to a variety of substrates including concrete, steel, and timber. To follow is further information on our core 1st level fixings.

Further consideration must also be made regarding the design loading capabilities of the level 1 fixings as defined by Technical Performance Values within European Technical Approval (ETA) standards or determined via On-Site “Pull-Out” strength testing. Windload evaluation and calculations derived from our Project Builder digital tool can be utilised to accurately predict the vertical and horizontal centres of our NVELOPE® subframe supporting brackets for any particular project.

[View on our website →](#)

SXR-FUS



Application

Fastening of a bracket onto substrate

Component 1 (t_i)

Bracket

Component 2 (t_{II})

Substrate

Fastener material

Body: Polyamide PA6
Fastener: Galvanized steel or austenitic stainless steel A4

Approvals



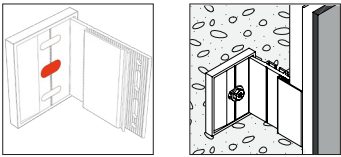
Features and Benefits

- Anchor suitable for installation of a bracket onto various substrates
- Geometry of the expansion element enables the use in many substrates
- Short expansion element requires only a small drilling depth
- Distinctive rotation lock increases the ease of assembly and provides additional safety

Documentation

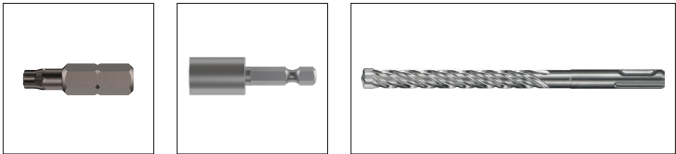
Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Frame anchor in polyamide and A4
onto cladding panel

Product code	PU	L	t _{fix}	h _{nom}	h ₂	d ₀	
SXR-10×60-FUS-A4	50	60	10	50	70	10	1333579
SXR-10×80-FUS-A4		80	30		90		1551174



Accessories/Ancillaries

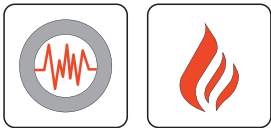
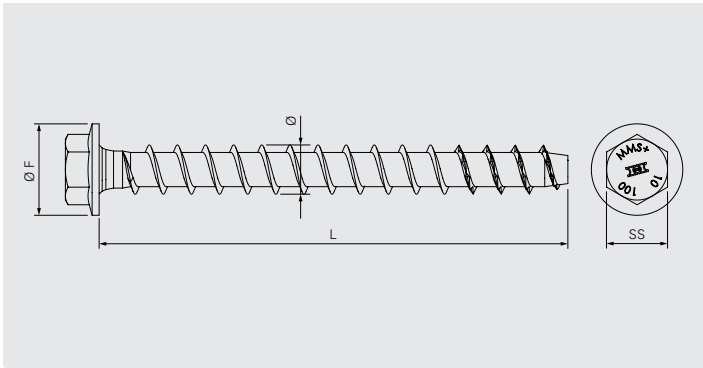
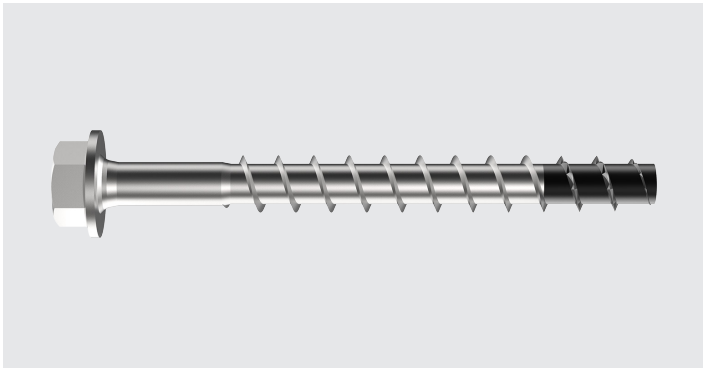
Product code	PU	L	Drive	Head drive	D	WL	FL	
T40-25-HEX¼"	1	25	¼"	T40	–	–	–	769474
E313-¼"-50		50		HEX13				508029
SDS-10×215/150-4C		215	–	–	10	150	150	1487586

View on the website →

All measures in mm

All information is non-binding and without guarantee. Before using the products, all specifications and calculations must be checked by a suitably qualified person and local regulations must be observed. This document is subject to revision. We reserve the right to make technical changes.

MMS-plus-A4



Application

Fastening of metal plates, profiles, brackets onto concrete

Fastener Ø	7.50	10.0	12.0
Pre-drill Ø	6.0	8.0	10.0
Embedment depth	40/55/75	70/85	100/115

Fastener material

Austenitic stainless steel A4, case hardened tip

Approvals

CE
ETA-15/0784

Features and Benefits

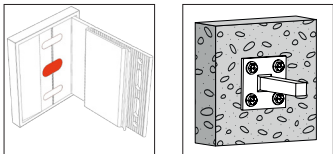
- Self tapping fastener suitable for installation onto concrete
- Easy settable
- More flexibility given by two embedment depths
- Settable by means of power-tools and immediately loadbearing
- Highest demands and economical fixations given by reduced clearance hole displacements
- Faster setting due to toothed functional tip
- Multiple use in temporary fixations from diameter 10 mm
- Small spacing and edge distances thanks to no spreading effect

Documentation

Approval document (ETA) | Declaration of performance (DoP)

All measures in mm

All information is non-binding and without guarantee. Before using the products, all specifications and calculations must be checked by a suitably qualified person and local regulations must be observed. This document is subject to revision. We reserve the right to make technical changes.



Fastener in A4
onto concrete

Product code	PU	L	t _{fix}	Ø F	Drive/Head	
MMS-plus-A4-SS-7,5×75	50	75	0–20/35	14.5	HEX10	1205112
MMS-plus-A4-SS-10×85	25	85	0-15	19.5	HEX13	1205146



Accessories/Ancillaries

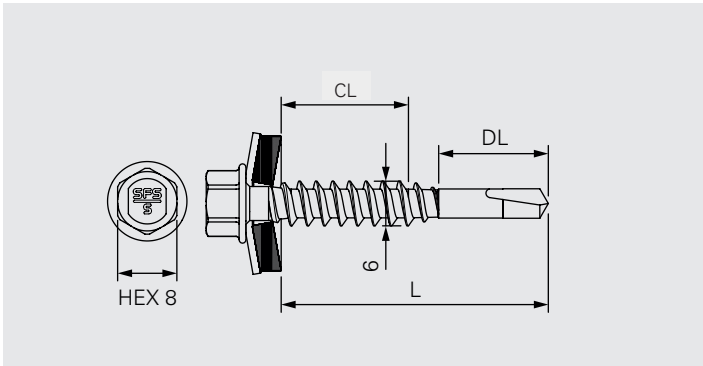
Product code	PU	Drive	Head Drive	D	L	WL	FL	
SDS-6×215/150-4C	1	–	–	6	215	150	150	1487583
SDS-8×215/150-4C				8				1487585
SDS-10×215/150-4C				10				1487586
E313-¼"-50	1	¼"	HEX13	–	–	–	–	508029
10mm Magnetic Hex Socket			HEX10					1237597
T30-25-HEX¼"	10	¼"	T30	–	–	–	–	24010
T40-25-HEX¼"			T40					769474
Bit holder ZA¼"	1		¼"					1162306
T30-40-½"	10	½"	T30	–	–	–	–	1489154
T40-40-½"			T40					1489155
T45-40-½"			T45					1489157
T50-40-½"			T50					1489158

View on our website →

All measures in mm

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SX3-6.0



Application

Fastening of steel or aluminium sheet to steel or aluminium structure.

Component 1 (t _i)		Component 2 (t _{ii})		Σ _{max} t _i +t _{ii}
Steel	0.50–1.50	Steel	0.63–2.50	3.50
Aluminium	0.50–1.50	Steel	2×0.63–1.50	4.0
–	–	Aluminium	1.0–2.50	3.50
–	–	Aluminium	2×1.0–1.50	4.0

Fastener material

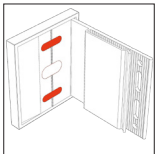
Austenitic stainless steel A2/A4
Sealing washer: Austenitic stainless steel A2/A4, EPDM-seal

Approvals

Features and Benefits

- Self drilling fastener that fastens in one operation: drilling, thread forming and sealing
- Easy drilling through the whole clamping thickness given by the long drill point.

All measures in mm



Fastener in A4
onto steel and aluminium

Product code	PU	L	CL _{met}	DL	S16	S19
SX3-S16/A4-6x48-A4	100	48	0-28	9	1575777	-

Material numbers shown are for mill finish items, contact a member of the team for painted variant codes.
Product is available with S29 washer, contact a member of the team for material number.
CL_{met} = thickness of component I (sheet) and component II (substrate)



Accessories/Ancillaries

Product code	PU	Drive	Head Drive	Length	
ZA1/4" drive bar*	1	1/4"	3/8"	50	7645
Socket E380*	1	3/8"	HEX8	34	8018
Socket E308-1/4"-50	1	1/4"	HEX8	50	1646160
Socket E420-1/4"-74	1	1/4"	Irius®	74	973316

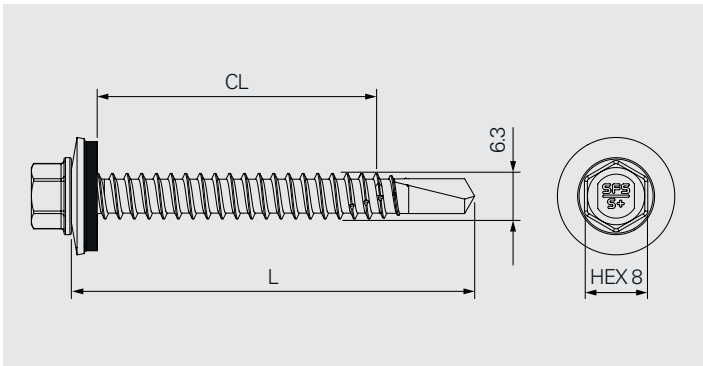
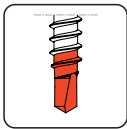
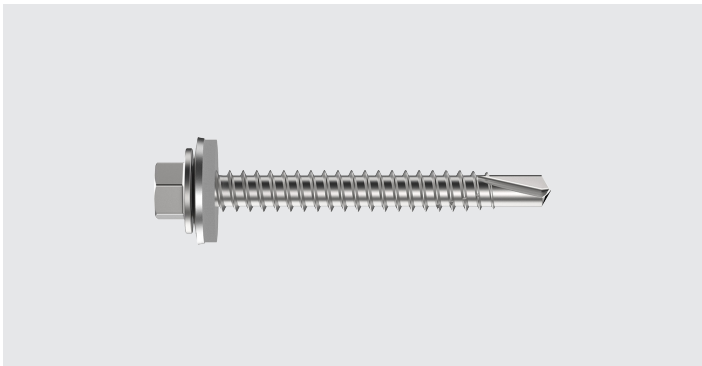
*Socket E380 needs to be used in conjunction with the ZA1/4" drive bar.

View on our website →

All measures in mm

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SX5-6.3



Application

Fastening of bracket through cement bonded particle board to steel stud

Component 1 (t _i)		Component 2 (t _{ii})	
Bracket		Steel	1.2–3.0
Pre-drill Ø	6.5		
Cement bonded			
Particle board	≤16.0		

Fastener material

Fastener: Austenitic stainless steel A4, case hardened drill point
Washer: Austenitic stainless steel A4 with EPDM-seal

Approvals



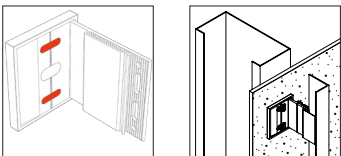
Features and Benefits

- Self drilling fastener suitable for fastening bracket through cement bonded particle board sheeting onto steel stud
- Penetrates board and substructure in one operation without pre-drilling
- Versatile applications possible given by the large clamping range
- Optical recognition of whether fastener is properly tightened thanks to the washer

Documentation

Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Fastener in A4
onto steel

Product code	PU	L	CL	
SX5/36-S16/A4-6,3×55-A4	250	55	0–36	1570614



Accessories/Ancillaries

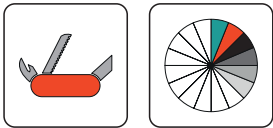
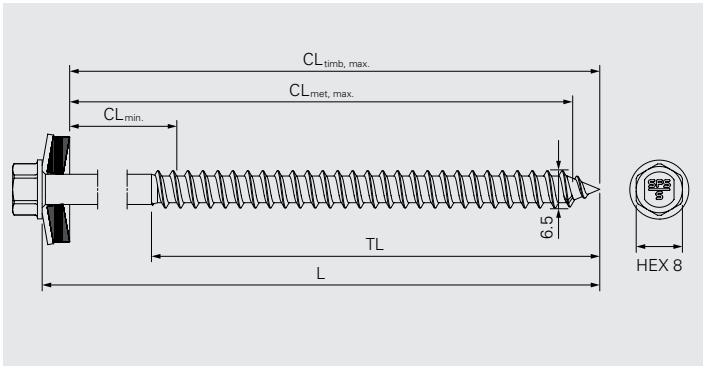
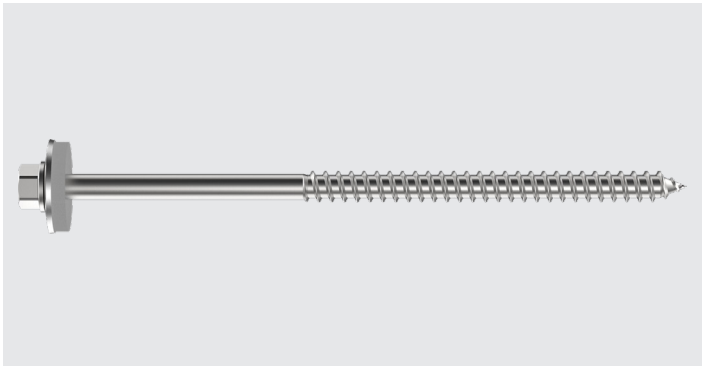
Product code	PU	L	Drive	Head drive	
E308-¼"-50	1	50	¼"	HEX8	1646160

View on our website →

All measures in mm

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TDA-S-6.5



Application

Fastening of bracket into timber

Fastener material

Austenitic stainless steel A4
Sealing washer: Austenitic stainless steel A4, EPDM-seal

Component 1 (t _i / t _{NII})		Component 2 (t _{II})	Σ _{max} t _i + t _{II}
Steel	≥0.40	Steel 0.63–3.0	4.50
Aluminium	0.50–1.50	Steel 2×0.75–2×1.50	4.50
–	–	Aluminium 1.0–3.0	4.50
–	–	Timber ≥35.0	–

Approvals

CE₂₂
ETA-10/0198

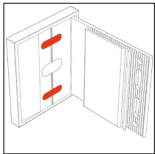
Features and Benefits

- Self tapping fastener suitable for the installation of brackets back to timber.
- High quality EPDM sealing washer for long-term weather sealing.

Documentation

Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Fastener in A4
onto steel, timber and aluminium

Product code	PU	L	CLmet	S16
TDA-S-S16/A4-6,5 X 50 - A4	100	50	0-40	1671374

Pre-drill diameter

Application	Steel/Steel and Alu/Steel				Steel/Timber	Alu/Alu		
Component 2 (t _{ii})	S280GD – S450GD (EN10346) HX300LAD to HX460LAD (EN10346)				Timber (EN14081)	Aluminium (EN573)		
	0.63	0.75	0.88–1.25	1.50–3.0	≥35.0	1.0–1.50	2.0–2.50	3.0
		2×0.75–2×1.0	2×1.25–2×1.5					
Pre-drill Ø	3.50	4.0	4.50	5.0	4.0	4.50	5.0	5.30



Accessories/Ancillaries

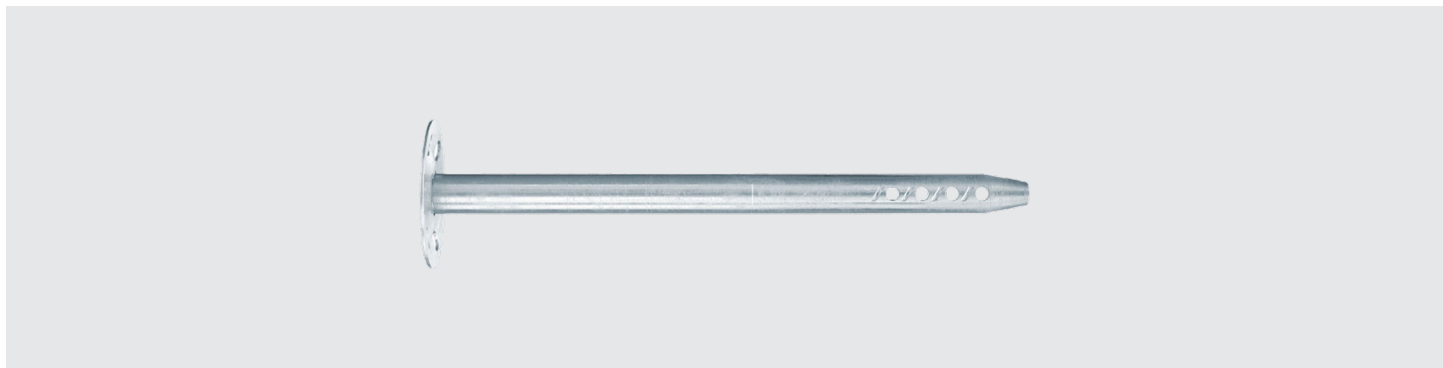
Product code	PU	
ZA1/4" drive bar*	1	7645
Socket E380*	1	8018
Socket E480	1	1646160

View on our website →

All measures in mm

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DHM/DHM A2



Application

Insulation support for pressure-resistant insulation boards

Fastener material

Austenitic stainless steel/ grade A151 304/A2
Carbon Steel, Aluzinc plated

Features and Benefits

- The simple hammer-set installation allows for a quick installation process and thus reduces workload.
- The shaft geometry allows setting in aerated concrete without pre-drilling, thus saving a stage of installation
- The metal installation insulation support achieves fire resistance F120.
- A2 material provides increased corrosion resistance

All measures in mm

A2 stainless steel fastener for insulation boards

Product code	PU	D X L	
DHM 40 A2 (8 X 80)	250	8 X 80	1749575
DHM 100 A2 (8 X 140)		8 X 140	1749525
DHM 130 A2 (8 X 170)		8 X 170	1744742
DHM 160 A2 (8 X 200)		8 X 200	1745070
DHM 210 A2 (8 X 250)		8 X 250	1743083
DHM 260 A2 (8 X 300)		8 X 300	1749576

Carbon Steel Fastener for insulation boards

Product code	PU	D x L	
DHM 70 (8 x 110)	250	8 x 110	1746883
DHM 100 (8 x 140)		8 x 140	1746977
DHM 130 (8 x 170)		8 x 170	1744742



Accessories/Ancillaries

Product code	PU	D X L	
SDS 10 X 160/100-SP	1	10 X 160/100	1146918
SDS 10 X 210/150-SP		10 X 210/100	1162306

View on our website →

All measures in mm

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DHK



Application

Plastic insulation support for soft insulaion

Fastener material

Plug: Polypropylene

Features and Benefits

- The optimised geometry of the expansion section ensures a low anchorage depth and reduces the amount of drilling required
- The simpleammerset installation allows for a quick installation process and thus reduces workload
- Flexible pins in the plate area adapt to the insulating material, and ensure a sustained contact pressure
- The colouring of the DHK means that it does not stand out on black clad insulating material in rear-ventilated facades.

All measures in mm

Polypropylene fastener for insulation support

Product code	D X L	PU	Setting depth	
DHK 60	8 X 85	500	25	1743065
DHK 80	8 X 105			1744432
DHK 100	8 X 125			1746976
DHK 120	8 X 145			1749295
DHK 140	8 X 165			1749574



Accessories/Ancillaries

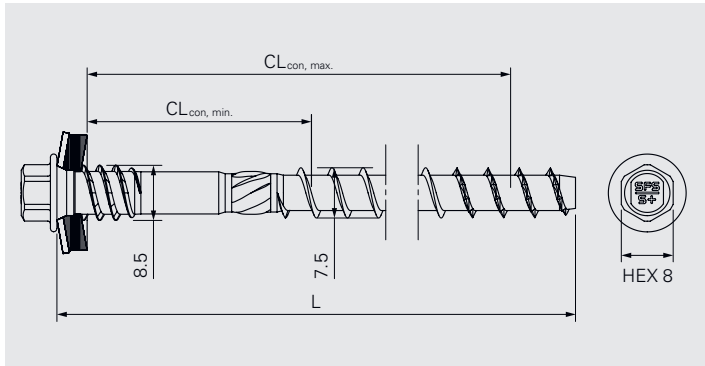
Product code	PU	D X L	
SDS 10 X 160/100-SP	1	10 X 160/100	1407992
SDS 10 X 210/150-SP		10 X 210/100	1407993

View on the website →

All measures in mm

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MXC-7.5



Application

Fastening of insulation onto concrete

Pre-drill Ø	6.0
Embedment depth	35/55

Fastener material

Austenitic stainless steel A4, case hardened tip
Sealing washer: Austenitic stainless steel A4, EPDM-seal

Approvals

-

Features and Benefits

- Self tapping fastener suitable for the installation of insulation onto concrete
- Optimized support function achieved by engineered double support thread and cut-off thread end.
- High bending capacity for absorption of thermal expansion
- Easy insertion and high load capacities given by the ideal core/thread geometry
- Reduced abrasion achieved by toother functional tip
- To be used with an IDR plate to spread retaining load.
- Available in lengths to accommodate insulation up to a thickness of 300mm

All measures in mm

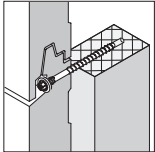
Fastener in A4
onto concrete

Product code	PU	L	CL _{con}	t _{fix, con}	S16/A4
MXC-S19/A4-7,5×95-A4	100	95	20–92	20–27	1596755
MXC-S19/A4-7,5×115-A4	100	115	37–112	37–47	1596786
MXC-S19/A4-7,5×135-A4	100	135	57–132	57–67	1596802
MXC-S19/A4-7,5×155-A4	100	155	77–152	77–87	1596812
MXC-S19/A4-7,5×175-A4	100	175	97–172	97–107	1596862
MXC-S19/A4-7,5×195-A4	100	195	117–192	117–127	1596947
MXC-S19/A4-7,5×215-A4	100	215	137–212	137–147	1597023
MXC-S19/A4-7,5×235-A4	100	235	157–232	157–167	1597028
MXC-S19/A4-7,5×255-A4	100	255	177–252	177–187	1598678
MXC-S19/A4-7,5×275-A4	100	275	197–272	197–207	1598722
MXC-S19/A4-7,5×295-A4	100	295	217–292	217–227	1598733
MXC-S19/A4-7,5×315-A4	100	315	237–312	237–247	1598798
MXC-S19/A4-7,5×335-A4	100	335	257–332	257–267	1598917
MXC-S19/A4-7,5×355-A4	100	355	277–352	277–287	1598993
MXC-S19/A4-7,5×375-A4	100	375	297–372	297–307	1599216

Material numbers shown are for mill finish items, contact a member of the team for painted variant colours

All measures in mm

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Fastener in A4
onto concrete

Product code	PU	L	CL _{con}	t _{fix, con}	No washer
MXC-7,5×95-A4	100	95	23–95	23–30	1596782
MXC-7,5×115-A4	100	115	40–115	40–50	1596801
MXC-7,5×135-A4	100	135	60–135	60–70	1596811
MXC-7,5×155-A4	100	155	80–155	80–90	1596820
MXC-7,5×175-A4	100	175	100–175	100–110	1596891
MXC-7,5×195-A4	100	195	120–195	120–130	1596957
MXC-7,5×215-A4	100	215	140–215	140–150	1597026
MXC-7,5×235-A4	100	235	160–235	160–170	1598675
MXC-7,5×255-A4	100	255	180–255	180–190	1598720
MXC-7,5×275-A4	100	275	200–275	200–210	1598728
MXC-7,5×295-A4	100	295	220–295	220–230	1598795
MXC-7,5×315-A4	100	315	240–315	240–250	1598816
MXC-7,5×335-A4	100	335	260–335	260–270	1598972
MXC-7,5×355-A4	100	355	280–355	280–290	1599215
MXC-7,5×375-A4	100	375	300–375	300–310	1599219



Accessories/Ancillaries

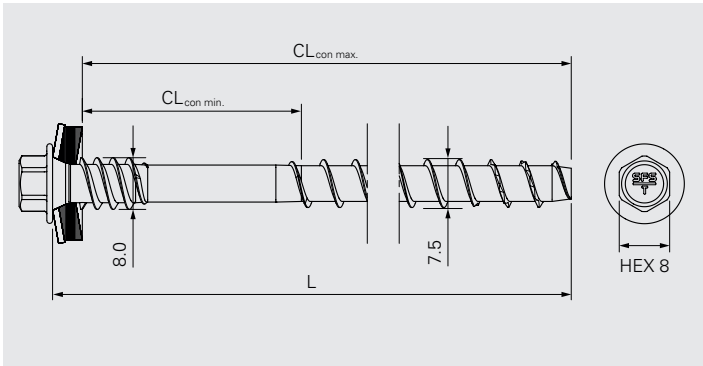
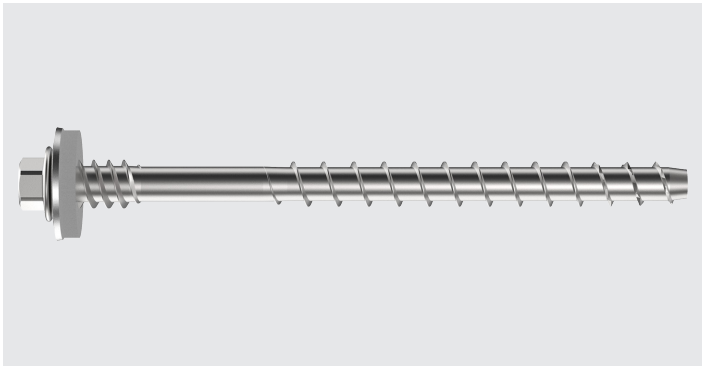
Product code	Drive	Head drive	PU	D	L	WL	FL	
SDS-6x210/150-4C	–	–	1	6	210	150	150	1487583
SDS-6x310/250-4C	–	–	1	6	210	250	250	1487584
SDS-6x515/455-4C	–	–	1	6	515	455	200	1608141
E308-¼"-50	¼"	HEX8	1	–	–	–	–	1646160
E508-½"-40	½"	HEX8	1	–	–	–	–	1648380
IDR 70-12,0	–	–	100	12	–	–	–	1281656

View on website →

All measures in mm



MDC-7.5



Application

Fastening of insulation onto concrete

Fastener Ø	7.50		
Pre-drill Ø	6.0		
Embedment depth	35/55		

Fastener material

Carbon steel, Durocoat® 480
Sealing washer: Austenitic stainless steel A2, EPDM-seal

Approvals
—

Features and Benefits

- Self tapping fastener suitable for the installation of insulation onto concrete
- Optimized support function achieved by engineered double support thread and cut-off thread end.
- High bending capacity for absorption of thermal expansion
- Easy insertion and high load capacities given by the ideal core/thread geometry
- Reduced abrasion achieved by toothed functional tip
- To be used with an IDR plate to spread retaining load.
- Available in lengths to accommodate insulation up to a thickness of 300mm
- High corrosion durability thanks to special galvanic zinc coating.

All measures in mm

Fastener in carbon steel
onto concrete

Product code	PU	L	CL _{con}	t _{fix, con}	S16
MDC-S19-7,5×85	100	85	12–82	12–27/47	1574300
MDC-S19-7,5×105	100	105	32–102	32–47/67	1574321
MDC-S19-7,5×125	100	125	52–122	52–67/87	1574324
MDC-S19-7,5×145	100	145	72–142	72–87/107	1574326
MDC-S19-7,5×165	100	165	92–162	92–107/127	1574328
MDC-S19-7,5×185	100	185	112–182	112–127/147	1574329
MDC-S19-7,5×205	100	205	132–202	132–147/167	1574332
MDC-S19-7,5×225	100	225	152–222	152–167/187	1574334
MDC-S19-7,5×245	100	245	172–242	172–187/207	1574335
MDC-S19-7,5×265	100	265	192–262	192–207/227	1574340
MDC-S19-7,5×285	100	285	212–282	212–227/247	1574353
MDC-S19-7,5×305	100	305	232–302	232–247/267	1574355
MDC-S19-7,5×325	100	325	252–322	252–267/287	1574413
MDC-S19-7,5×345	100	345	272–342	272–287/307	1574416
MDC-S19-7,5×365	100	365	292–362	292–307/327	1574418

t_{fix, con}: CL_{con, min.} – (CL_{met, max.} – h_{nom, min.})



Accessories/Ancillaries

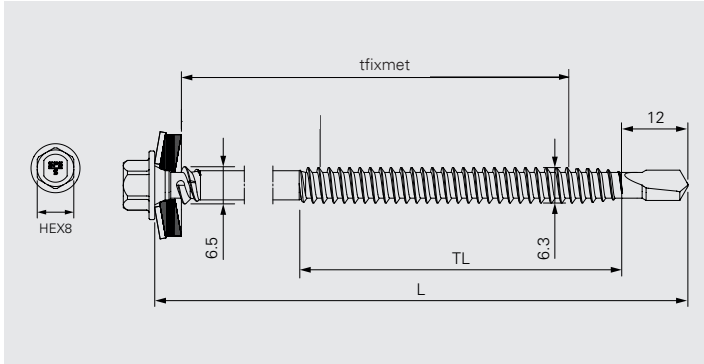
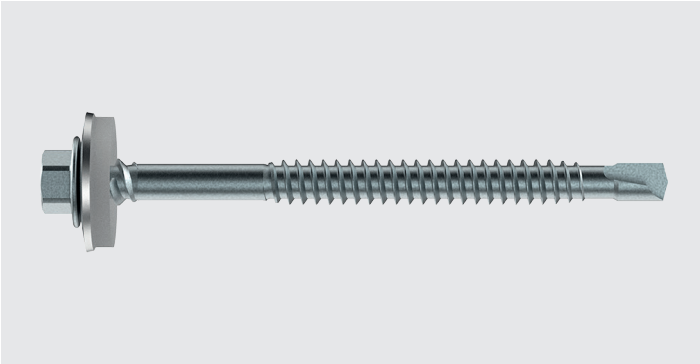
Product code	Drive	Head drive	PU	D	L	WL	FL	
SDS-6x210/150-4C	–	–	1	6	210	150	150	1487583
SDS-6x310/250-4C	–	–	1	6	210	250	250	1487584
SDS-6x515/455-4C	–	–	1	6	515	455	200	1608141
E308-¼"-50	¼"	HEX8	1	–	–	–	–	1646160
E508-½"-40	½"	HEX8	1	–	–	–	–	1648380
IDR70-12.0	–	–	100	12	–	–	–	1281656

View on the website →

All measures in mm

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SXC5-6.3



Application

Fastening of insulation through sheathing boards into steel or timber

Suitable performance must be checked specific to the sheathing board fitted.

Component 1 (t _I)	Component 2 (t _{II})	$\Sigma_{max} t_I + t_{II}$
-	Steel 1.0–4.0	5.0
	Steel 2×0.75–2×2.70	6.50
	Timber ≥35	–

Fastener material

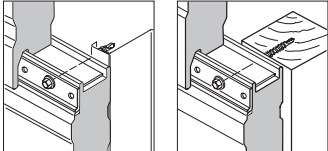
Austenitic stainless steel A2/A4, case hardened drill point

Approvals

Features and Benefits

- Self drilling fastener suitable for the installation of insulation through sheathing board into steel or timber.
- Optimized support function achieved by engineered double support thread
- Easy drilling through overlapped metal profiles given by the long point
- High tension resistance achieved by optimized fastener geometry
- High bending capacity for absorption of thermal expansion
- Available in lengths to accommodate insulation up to 300mm
- To be used with an IDR plate to spread the retaining load.
- Thread free zone preventing the top thread from stripping

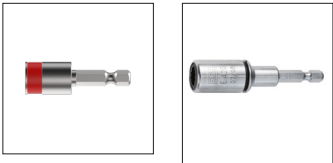
All measures in mm



Fastener in A4
onto steel and timber

Product code	PU	L	tfix met	tfix timb	No washer
SXC5-6,3×80-A4	100	80	30–50/54	15-40	1600004
SXC5-6,3×100-A4	100	100	40–70/74	25-60	1600010
SXC5-6,3×120-A4	100	120	50–90/94	35-80	1600025
SXC5-6,3×140-A4	100	140	70–110/114	55-100	1600029
SXC5-6,3×160-A4	100	160	90–130/134	75-120	1600045
SXC5-6,3×190-A4	100	190	110–160/164	95-150	1600052
SXC5-6,3×220-A4	100	220	140–190/194	125-180	1600058
SXC5-6,3×250-A4	100	250	170–220/224	155-210	1600073
SXC5-6,3×290-A4	100	290	210–260/264	195-250	1600137
SXC5-6,3×345-A4	100	345	268–318/322	250-305	1600185

Material numbers shown are for mill finish items, contact a member of the team for painted variant codes.
tfix = thickness of component l (sandwich panel)



Accessories/Ancillaries

Product code	PU	Drive	Head Drive	Length	Diameter
ZA 1/4" drive bar*	1	1/4"	3/8"	50	-
Socket E380*	1	3/8"	HEX8	34	-
Socket E308-1/4"-50	1	1/4"	HEX8	50	-
Socket E420-1/4"-74	1	1/4"	Irius®	74	-
IDR 70-6,8	100	-	-	-	6,8

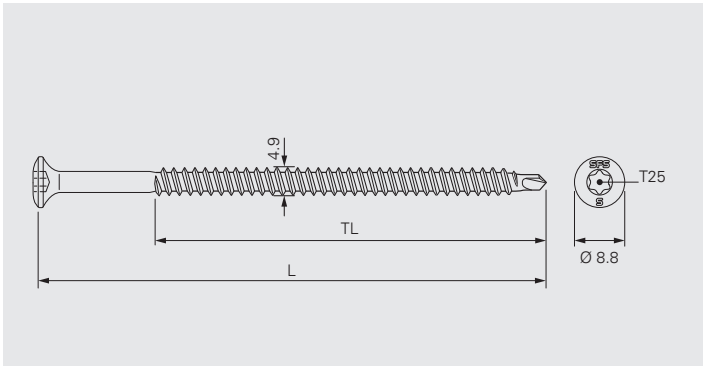
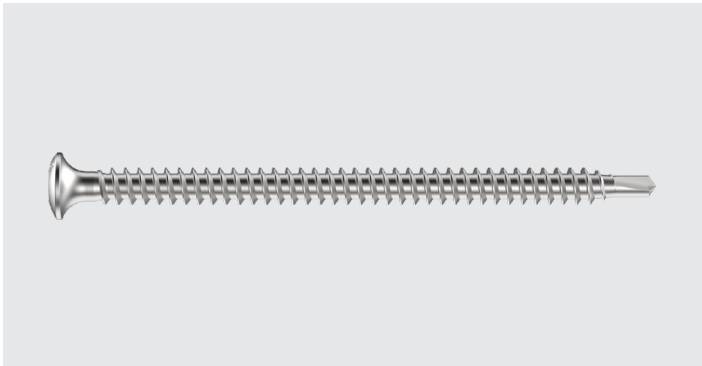
*Socket E380 needs to be used in conjunction with the ZA1/4 drive bar.

View on the website →

All measures in mm

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BS-S-4,8



Application

Fastening of insulation through sheathing board into steel or timber.
Suitable performance must be checked specific to the sheathing board being fitted.

Fastener material

Austenitic stainless steel A4, case hardened drill point

Steel

Substrate Material Thickness:	Min 0.6 mm Max 2 x 1.0 mm
Setting Depth:	Min 20 mm

Timber

Substrate Material Thickness:	Min 18 mm
Setting Depth:	Min 30 mm

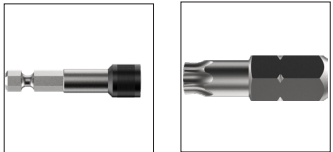
Features and Benefits

- Fast and easy installation due to optimised drill tip.
- To be used with an IDR 70-6,8 to spread the retaining load.
- Lengths available to fix insulation up to 160mm thick.

All measures in mm

Fastener in A4
onto steel and timber

Product code	L	TL	PU	
BS-S-4,8 X 60	60	55	250	1341595
BS-S-4,8 X 80	80	75		1341596
BS-S-4,8 X 100	100			1341587
BS-S-4,8 X 120	120			1341588
BS-S-4,8 X 140	140			1341589
BS-S-4,8 X 160	160			1341591
BS-S-4,8 X 180	180			1341593
BS-S-4,8 X 200	200			1341594



Accessories/Ancillaries

Product code	PU	Diameter	Drive	
SDS-6x210/150-4C	100	6.8	–	1487583
SDS-6x310/250-4C	1	–	¼"	1487584
SDS-6x515/455-4C	1	–	¼"	1608141

View on the website →

All measures in mm

All information is non-binding and without guarantee. Before using the products, all specifications and calculations must be checked by a suitably qualified person and local regulations must be observed. This document is subject to revision. We reserve the right to make technical changes.

IDR70



Application

Metal disc to increase surface area of retainment on soft insulation

Fastener material

Stainless steel A2

Features and Benefits

- Pressure resistant insulation boards, PIR, Phenolic, Mineral Wool
- Designed to accept any SFS fastener
- Suitable for fixing all insulation boards to LGSF, timber and sheathing boards
- Fastener should be selected based on substrate

All measures in mm

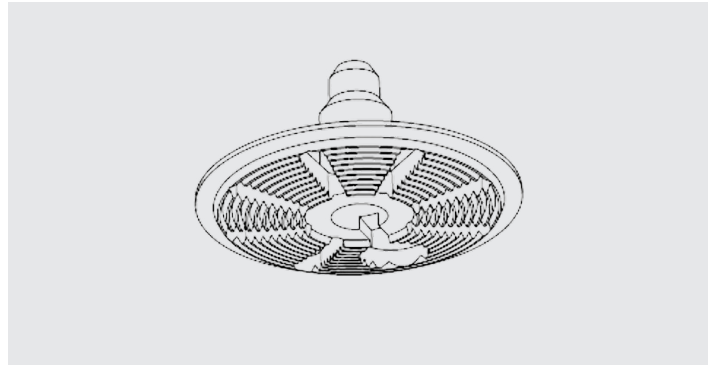
Product code	Internal Dia.	D X L	PU	Article No.	Notes
IDR 70-6,8	6,8	70 X 70	100	1281659	Suitable for BS-S and SXC5
IDR 70-12,0	12,0			1281656	Suitable for use with MXC and MDC

View on the website →

All measures in mm

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ISP



Application

Plastic disc to increase surface area of retainment on insulation.

Disc material

High quality universal polypropylene insulation retaining disc

Features and Benefits

- Pressure resistant insulation boards, PIR, Phenolic, Mineral Wool
- Designed to accept any SFS fastener
- Suitable for fixing all insulation boards to LGSF, timber and sheathing boards
- Fastener should be selected based on substrate
- Can be applied to upstand a diameter of 18mm and a depth of 28mm

All measures in mm

Product code	Internal Dia.	D X L	PU	
ISP - 18 X 28	8,0	70 X 30	100	1342125

View on the website →

All measures in mm

All information is non-binding and without guarantee. Before using the products, all specifications and calculations must be checked by a suitably qualified person and local regulations must be observed. This document is subject to revision. We reserve the right to make technical changes.



Profiles (Rails)

SFS manufacture and supply a wide range of aluminium profiles (rails) engineered for specific use with our NVELOPE® aluminium or stainless steel bracket systems.

Profiles (rails) are used in combination with all our bracket variations. The length of profiles used in vertical applications is dependent on the building storey height. Due to expansion dilation effects, the relationship between the cladding material and sub-frame support system must be considered.

The designer will consider the structural design or preliminary survey of the sub structure, to prepare a layout or grid for the positioning of the subframe (brackets and profiles).

SFS have identified a market need to move more activities “off-site” and we recognise the benefits that this brings. Our profile cutting service optimises material usage, reduces waste and lowers costs. View the Cutting service page (page 13) for more information.

Profile overview

Name	Profile Size mm	Compatible Systems	Grade	Available Lengths m	Available Finishes	Thickness mm
L Profile	60×40	NV1, NV2, NV3, NV4, NV5, NV8, NV10, NH3, NS1	6005A T6	3.0, 3.60 4.85, 6.0	PC, An, MF	2.20

Key Features: Supports the face fix of intermediate panel spans and edges. Provides a permanent framework for many other NVELOPE® system profiles.

T Profile	60×80	NV1, NV2	6005A T6	3.0, 6.0	PC, An, MF	2.20
	60×100			3.0, 3.60 4.85, 6.0		
	40×100			3.0, 6.0		
	60×120					
	60×140					

Key Features: Supports face fix at the vertical joints between two adjacent panels.

Lipped L Profile	60×40×12.5	NH3	6005A T6	3.0, 6.0	PC, An, MF	2.50
Omega	25×120	NV1, NV9, NH3, F2F	6063 T6			2.40
	40×140					

Key Features: Provides the vertical framework that makes up NV9. Utilised horizontally, fixed to NV1 to receive faced fixed panels.

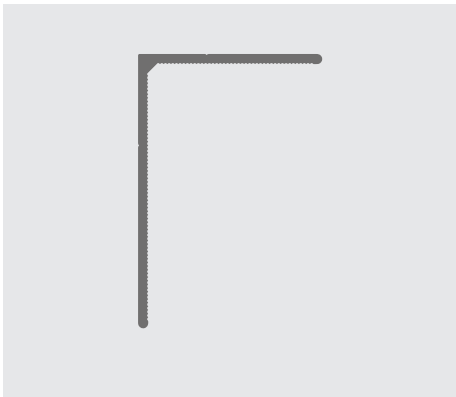
Zed	25×45×30	NV1, NV9, NH3, F2F	6063 T6	3.0, 6.0	PC, An, MF	2.40
	40×55×30					

Key Features: Provides the vertical framework that makes up NV9. Utilised horizontally, fixed to NV1 to receive faced fixed panels.

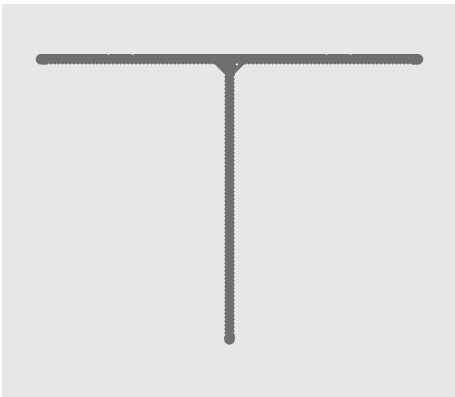
Corner Profile	60×60	NV1	6005A T6	3.0, 6.0	PC, An, MF	2.20
NV3 Profile	60×21	NV3, NV9, F2F				2-30
NV4 Profile	60×32	NV4, NV9, F2F				
NV5 Profile	Start Rail 36×54 Main Rail 36×65	NV5, NV9, F2F	6005 T6		PC, An	2.0
NV7 Profile	85×90	NV7	6063 T6	3.0	PC, An, MF	2.20–2.70
NV8 Profile	24×86	NV8, F2F	6005A T6	3.0, 6.0		2.0
NV10 Profile	52×21	NV10		3.0		
F2F Box	75×46	F2F		3.0, 6.0		3.0
F2F T Box	75×125					
Steel Top Hat	150×25	NV1, NV2, NV3, NV4, NV5, NV6, NV7, NV8, NV10	S280 GvS	3.0	GvS	2.0

PC – Powder Coated An – Anodised MF –Mill Finish GvS – Galvanised Steel

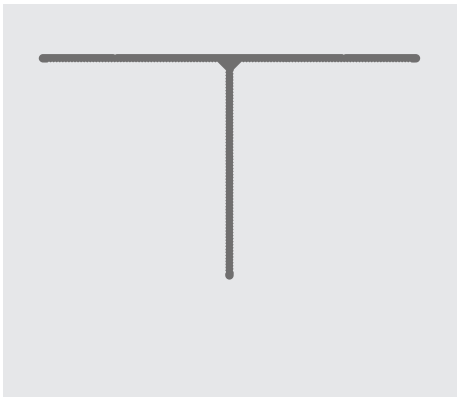
L Profile 60x40



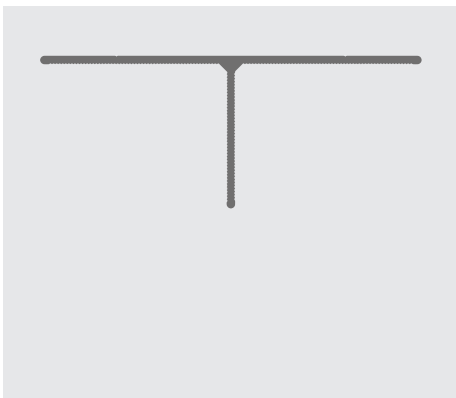
T Profile 60x80



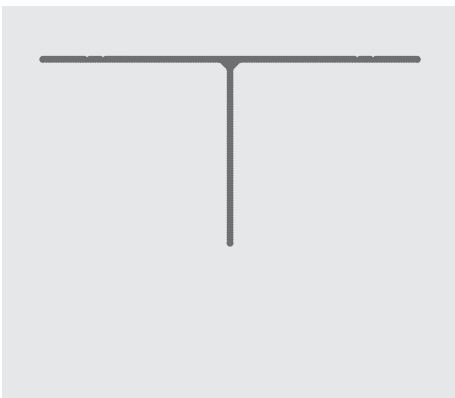
T Profile 60x100



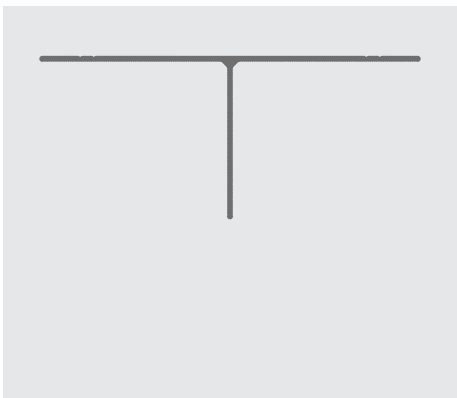
T Profile 40x100



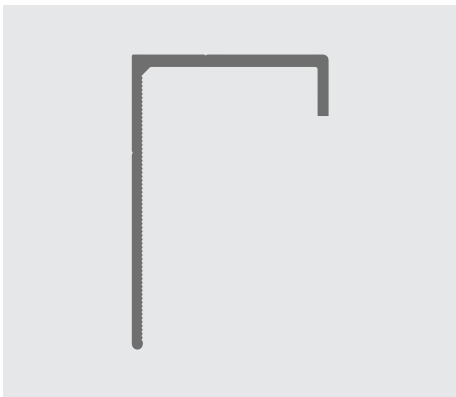
T Profile 60x120



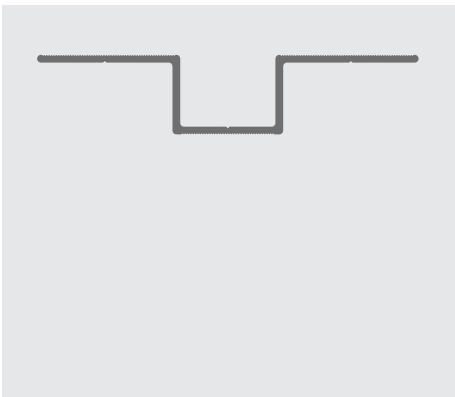
T Profile 60x140



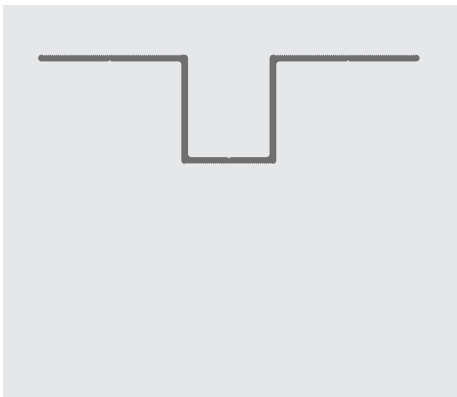
Lipped L Profile



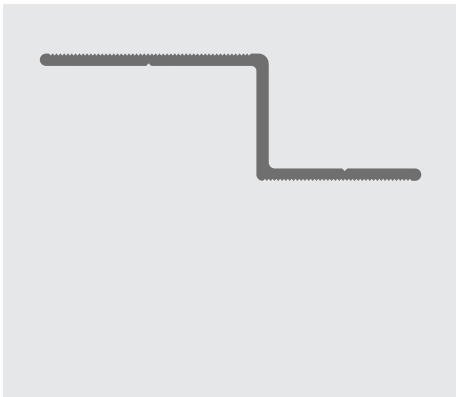
Omega 25x120



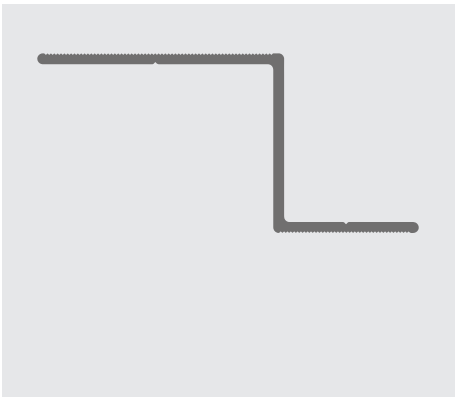
Omega 40x140



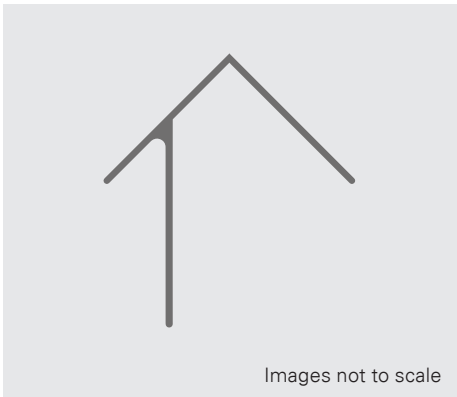
Zed 25x45x30



Zed 40x55x30

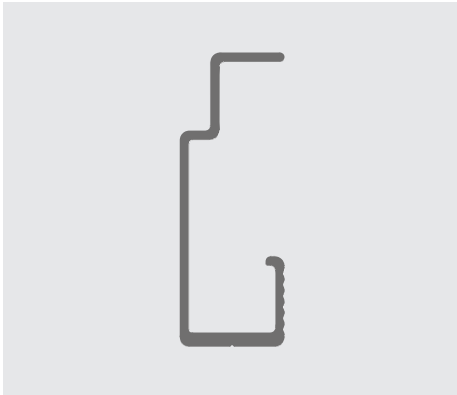


Corner Profile

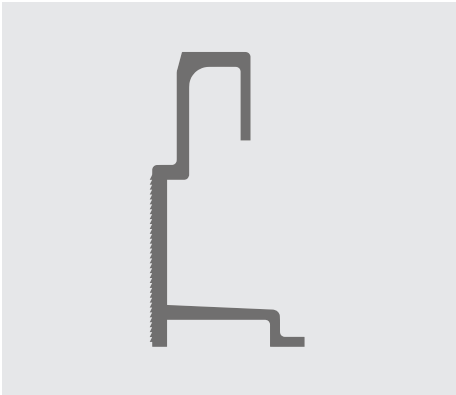


Images not to scale

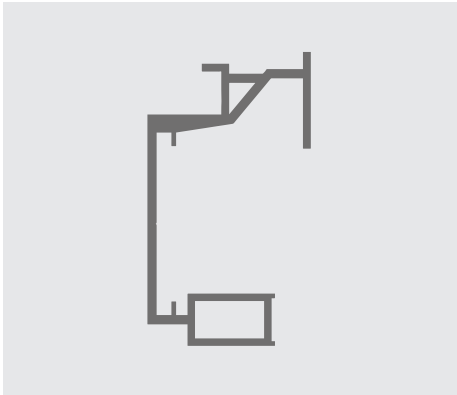
NV3 Profile



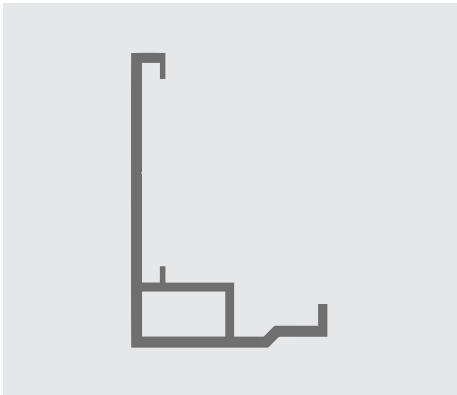
NV4 Profile



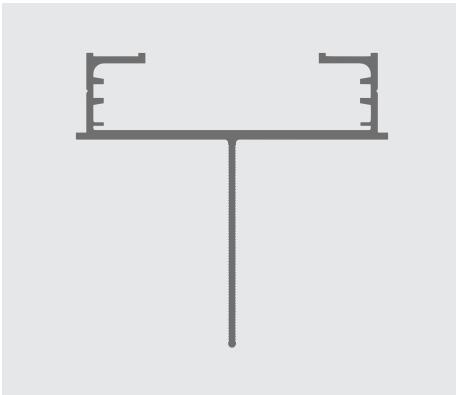
NV5 Profile – Main



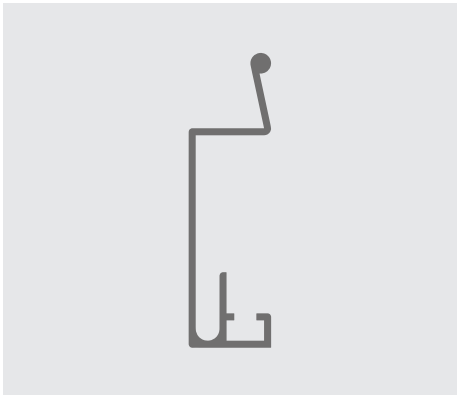
NV5 Profile – Starter



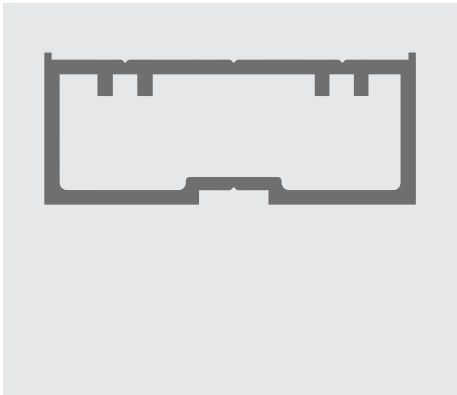
NV7 Profile



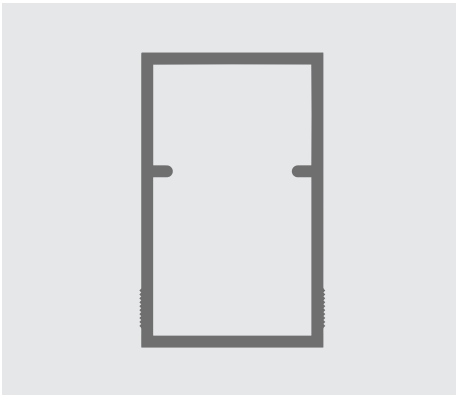
NV8 Profile



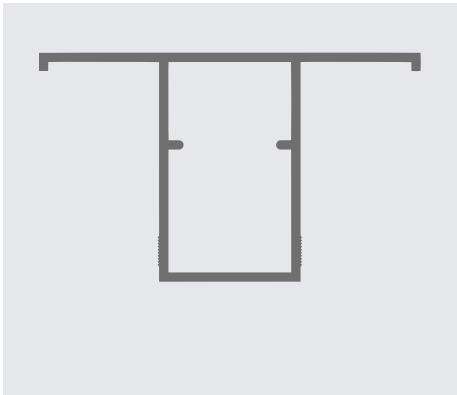
NV10 Profile



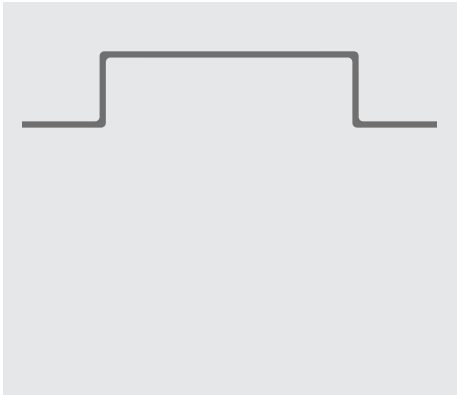
F2F Box



F2FT Box



Steel Top Hat







Second Level Fixings

Level 2 Fixings

Fixing rails/brackets within the subframe.

Fixing Design and Specification considerations: SFS Level 2 fixings are support structure fasteners and are used to connect our NVELOPE® profiles (rails) to each other and various bracket combinations.

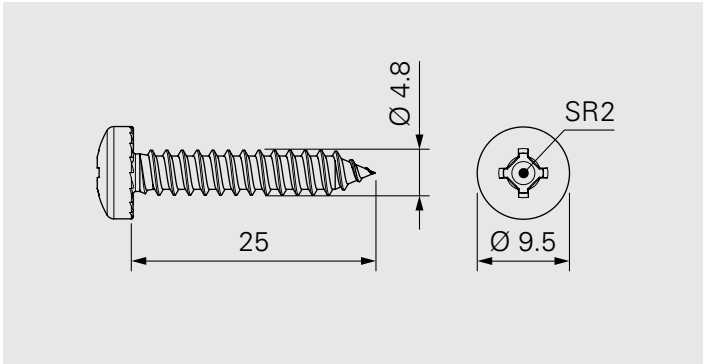
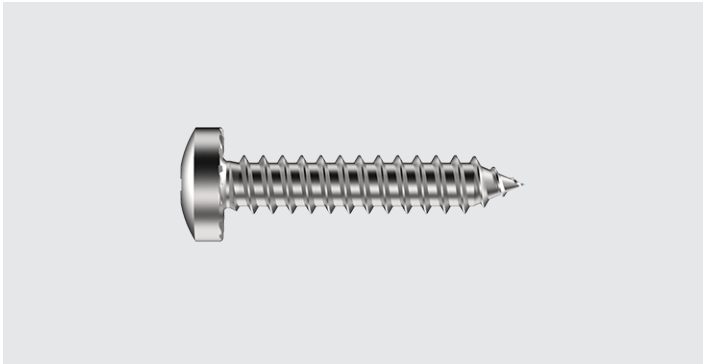
Our SFS fixings used for level 2 subframe applications assure:

- Long-term performance. All our fixings are available in corrosion resistant stainless steel and available as A4 (AISI 316).
- High shear loads offering greater security.
- Permanent fixation. Our SDA5 fixings feature a “unique thread geometry” which allows overwinding during installation and at the same time prevents unwinding once installed.

To follow is further information on our core 2ND level fixings.

View on the website →

VAT-S



Application
Fastening of pre-punched brackets back to timber battens

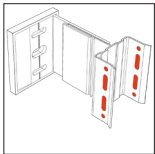
Component 1 (t _i)	Component 2 (t _{ii})
Pre-punched bracket	Timber

Fastener material
Austenitic stainless steel, grade AISI 304/A2

Approvals
-

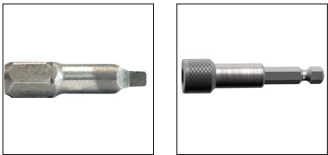
Features and Benefits
<ul style="list-style-type: none">• Self-drilling fastener compatible with the NV6 subframe system.• SR2 square drive to prevent fastener falling from the bit, providing a 'stick fit'.• Thanks to the threaded tip, the fastener grips immediately and is pulled into the timber.

All measures in mm



Fastener in stainless steel A2
onto timber battens

Product code	CL	D x L	PU	
VAT-S-7049/SR2-4,8 X 25	20	4,8 x 25	500	848571



Accessories/Ancillaries

Product code	PU	L	
SR2-25-HEX¼"	10	–	1646160
Bit holder ZA¼" 58	1	58	1146918
Bit holder ZA¼" 300	1	300	1162306

View on the website →

All measures in mm

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SN3

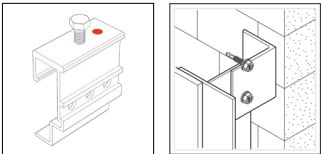


Application	Component 1 (t _i)	Component 2 (t _{ii})
Self-drilling fastener for fixing pre-punched stainless steel or pre-punched aluminium cladding support to aluminium framework	Cladding panel	Aluminium 2.0 - 3.0

Fastener material	Approvals
Austenitic stainless steel, grade AISI 316/A4	-

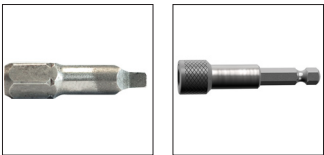
Features and Benefits
<ul style="list-style-type: none">• SR2 square drive to prevent fastener falling from the bit, providing a 'stick fit.'• Fully stainless fastener, optimised for the application use.

All measures in mm



Fastener in stainless steel A4
onto aluminium frameworks

Product code	Max drilling capacity	CL	D x L	
SN3/11-S--7049/SR2	3	11	4,2 x 19	858655



Accessories/Ancillaries

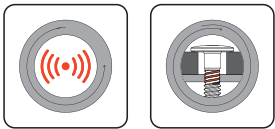
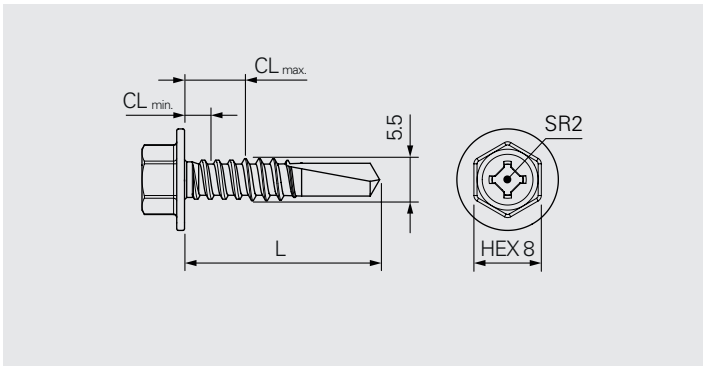
Product code	PU	L	
SR2-25-HEX¼"	10	–	1646160
Bit holder ZA¼" 58	1	58	1146918
Bit holder ZA¼" 300	1	300	1162306

View on the website →

All measures in mm

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SDA5-5.5



Application

- Fastening of pre-punched bracket to aluminium rail
- Fastening of aluminium rail to aluminium rail
- Fastening of a hanger to an aluminium rail

Component 1 (t _I)		Component 2 (t _{II})		$\Sigma_{\max} t_I + t_{II}$
Aluminium	≥2.0	Aluminium	1.5–4.0	5.0
Aluminium	≥2.0	Aluminium	1.5–4.0	–
Pre-drill Ø	5.2–5.5			
Steel	≥1.5	Aluminium	1.5–4.0	–
Pre-drill Ø	5.5			

Fastener material

Austenitic stainless steel A4/316

Approvals



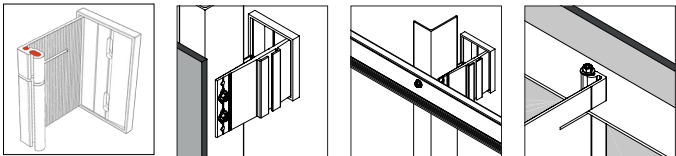
Features and Benefits

- Self drilling fastener suitable for installation of metal bracket or aluminium profile onto aluminium structure
- Secured against rattling given by reduced thread and perfectly matched clamping length
- No torque control required given by reduced thread
- Secured against unwinding given by reduced thread
- Connecting components are pulled together during setting process given by reduced thread
- Fastener can be over-tightened

Documentation

Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Fastener in A4
onto aluminium

Product code	PU	L	CL	
SDA5/3,5-6-H13-S4-5,5×20	500	20	3.5–6.0	1499657
SDA5/3,5-8-H13-S4-5,5×22		22	3.5–8.0	1507572
SDA5/25-28-H13-S4-5,5×45		45	25.0–28.0	1645134



Accessories/Ancillaries

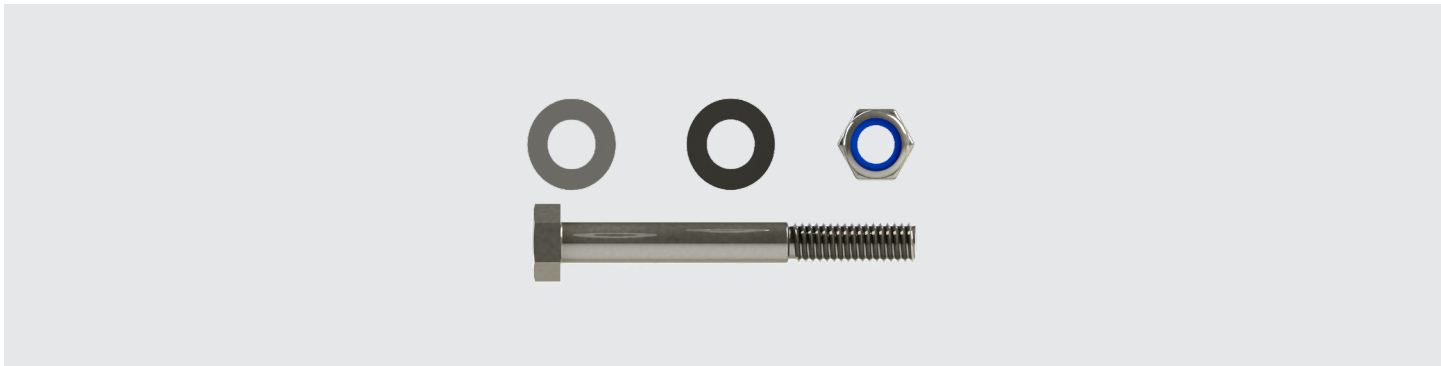
Product code	PU	L	Drive	Head drive	
E308-¼"-50	1	50	¼"	HEX8	1646160
SR2-25-HEX¼"	10	–		SR2	1146918
Bit holder ZA¼"	1	58		¼"	1162306

View on the website →

All measures in mm

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M8 Bolt Kit



Application

Fastening of Floor to Floor box profiles to Floor to Floor brackets

Fastener material

Austenitic stainless steel, grade A4/316 Bolt

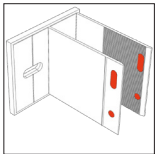
Stainless Steel washer

Nylon Washer and Insert

Features and Benefits

- Designed to compensate for the heavier loads of Floor to Floor systems
- Security against unwinding from vibrations, thanks to the addition of the nylon insert.

All measures in mm



Fastener in stainless bolt kit
for Floor to Floor Sytems

Product code	Head	L (for bolt)	PU	
M8 Bolt Kit	HEX	70	1	1600079

Accessories/Ancillaries

Product code	PU	L	Drive	Head Drive	
E313-1/4"-50	1	50	¼	HEX13	508029

View on the website →

All measures in mm

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Third Level Fixings

Level 3 Fixings

Fixing Facade Panels to Rails/Hangers

Fixing Design and Specification considerations: SFS Level 3 fixings are designed to fix façade panels back to our NVELOPE® rails and hangers.

A variety of fasteners that can provide both visible and secret fixing methods.

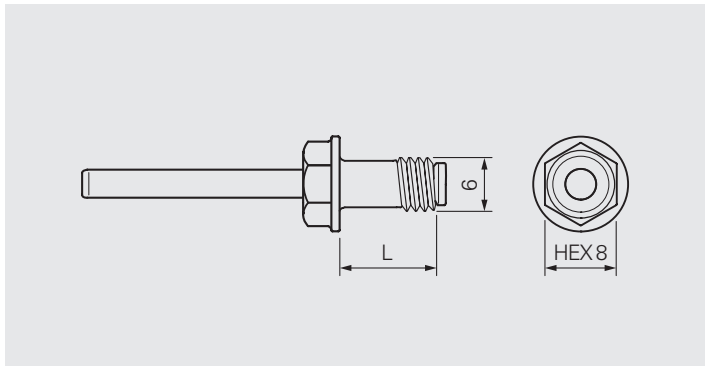
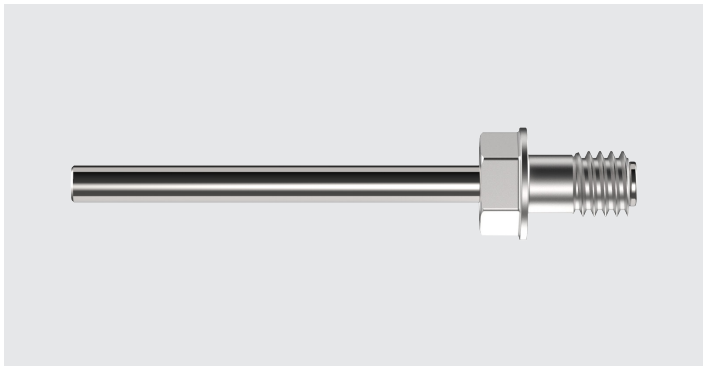
AP rivets are ideal for visible fixing high performance cladding panels to aluminium support systems and can be colour matched to leading OEM's panels.

The TUF-S blind fastening range from SFS is the superior solution to the concealed attachment of HPL or fibre cement cladding panels with regards to installation and long-term security. Installation is performed quickly and securely by one person, without the need of special tools. Installation time is also reduced by up to 50% when compared to conventional blind attachments.

To follow is further information on our core 3RD level fixings.

View on the website →

TU-S



Application

Concealed fastener for fixing a metal hanger to cladding panel

Component 1 (t _i)		Component 2 (t _{II})	
Metal hanger		Cladding panel	–
Pre-drill Ø	6.5–7.0	Pre-drill Ø	5.9–6.0

Fastener material

Body: Austenitic stainless steel A4
Mandrel: Carbon steel

Approvals

CE
ETA-18/0883
(Rockpanel Premium A2)

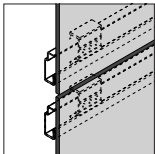
Features and Benefits

- Concealed fastener suitable for installation of a metal hanger onto cladding panel
- Secured against unwinding
- Time saving installation compared to conventional blind attachments
- Simple standard blind hole sufficient - no complex undercut hole required
- Quick and easy installation with battery rivet gun
- Blind holes can even be drilled on site
- Removable is possible via hex head

Documentation

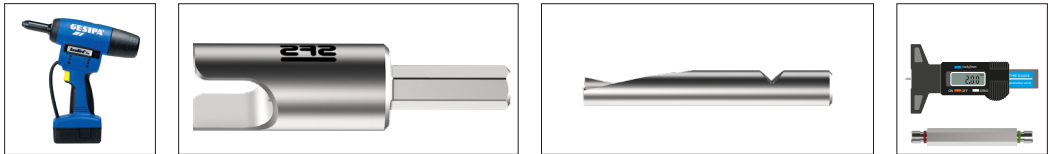
Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Fastener in A4
onto cladding panel

Product code	PU	L	
TU-S-6x11-A4	250	11	1692258
TU-S-6x13-A4		13	1692260



Accessories/Ancillaries

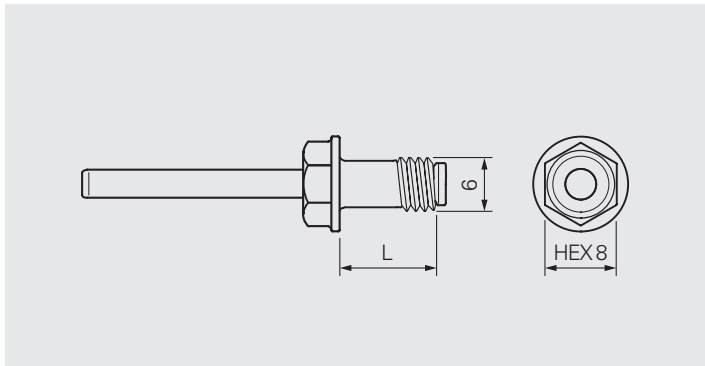
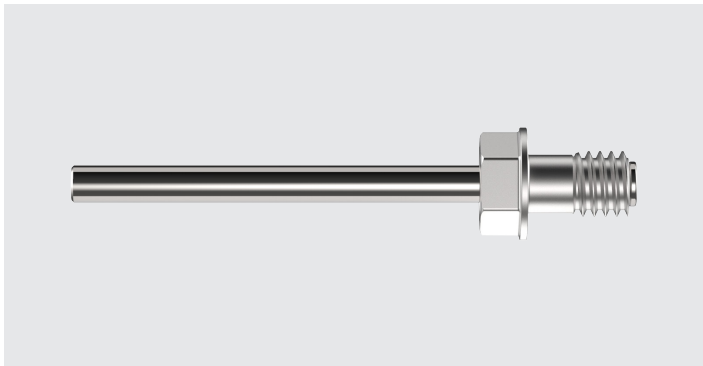
Product code	PU	L	Drill depth	Drive	D	
Accu-Bird®	1	–	–	–	–	1679661
Depth locator universal				HEX8		1478567
VHM-6,0x40		40	5	–	6	1615070
VHM-6,0x40,5		40.5	5.5			1586737
VHM-6,0x41		41	6			1615072
VHM-6,0x41,5		41.5	6.5			1615073
VHM-6,0x42		42	7			1615074
VHM-6,0x42,5		42.5	7.5			1615075
VHM-6,0x43		43	8			1615077
VHM-6,0x43,5		43.5	8.5			1615078
VHM-6,0x45		45	10			1479984
MEASURING-SET-DRILLS-5.9-6.0		–	–		–	1715384

View on the website →

All measures in mm

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TUF-S



Application

Concealed fastener for fixing a metal hanger to cladding panel

Component 1 (t _i)		Component 2 (t _{II})	
Metal hanger		Cladding panel	—
Pre-drill Ø	6.5–7.0	Pre-drill Ø	5.9–6.0

Fastener material

Body: Austenitic stainless steel A4
Mandrel: Carbon steel

Approvals

CE
ETA-15/0476

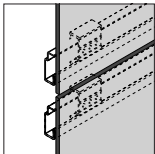
Features and Benefits

- Concealed fastener suitable for installation of a metal hanger onto cladding panel
- Secured against unwinding
- Time saving installation compared to conventional blind attachments
- Simple standard blind hole sufficient - no complex undercut hole required
- Quick and easy installation with battery rivet gun
- Blind holes can even be drilled on site
- Removable is possible via hex head

Documentation

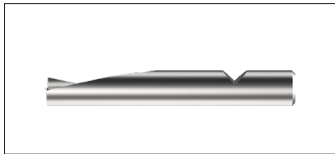
Approval document (ETA) | Declaration of performance (DoP) | Technical Data

All measures in mm



Fastener in A4
onto cladding panel

Product code	PU	L	
TUF-S-6×7-A4	250	7	1692229
TUF-S-6×7.5-A4		7.5	1692230
TUF-S-6×8-A4		8	1692241
TUF-S-6×8.5-A4		8.5	1692243
TUF-S-6×9-A4		9	1692245
TUF-S-6×10-A4		10	1692253
TUF-S-6×11-A4		11	1692254
TUF-S-6×12-A4		12	1692255
TUF-S-6×13-A4		13	1692256



Accessories/Ancillaries

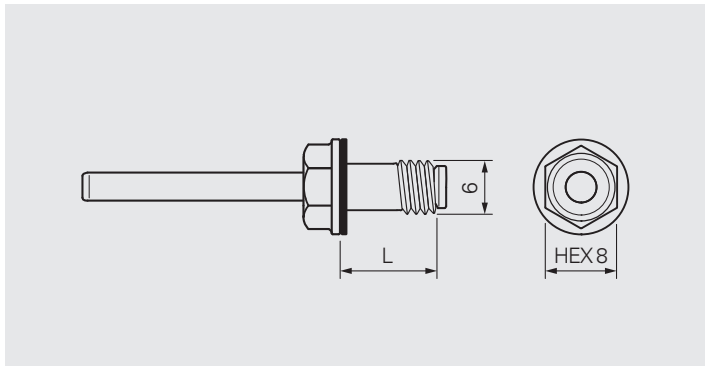
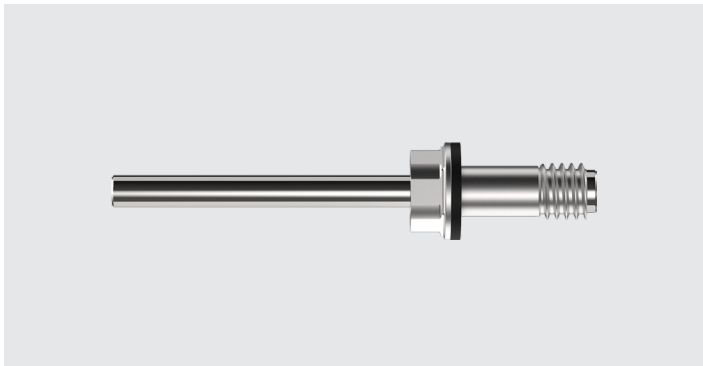
Product code	PU	L	Drill depth	Drive	D	
Accu-Bird®	1	–	–	–	–	1679661
Depth locator universal				HEX8		1478567
VHM-6,0×40		40	5	–	6	1615070
VHM-6,0×40,5		40.5	5.5			1586737
VHM-6,0×41		41	6			1615072
VHM-6,0×41,5		41.5	6.5			1615073
VHM-6,0×42		42	7			1615074
VHM-6,0×42,5		42.5	7.5			1615075
VHM-6,0×43		43	8			1615077
VHM-6,0×43,5		43.5	8.5			1615078
VHM-6,0×45		45	10			1479984
MEASURING-SET-DRILLS-5.9-6.0		–	–		–	1715384

View on the website →

All measures in mm

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TUC-S



Application

Concealed fastener for fixing a metal hanger to cladding panel

Component 1 (t_i)

Metal hanger

Pre-drill Ø

6.5–7.0

Component 2 (t_{II})

Cladding panel

Pre-drill Ø

5.9–6.1

Fastener material

Body: Austenitic stainless steel A4

Mandrel: Carbon steel

Washer: EPDM

Approvals

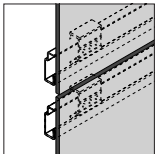
Features and Benefits

- Concealed fastener suitable for installation of a metal hanger onto cladding panel
- Secured against unwinding
- Time saving installation compared to conventional blind attachments
- Simple standard blind hole sufficient - no complex undercut hole required
- Quick and easy installation with battery rivet gun
- Blind holes can even be drilled on site
- Removable is possible via hex head

Documentation

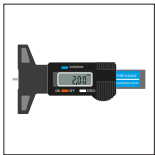
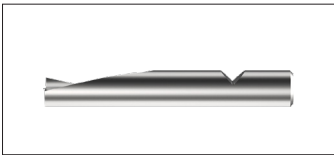
Technical Data

All measures in mm



Fastener in A4
onto cladding panel

Product code	PU	L	
TUC-S-W10-6×14-A4	250	14	1745715



Accessories/Ancillaries

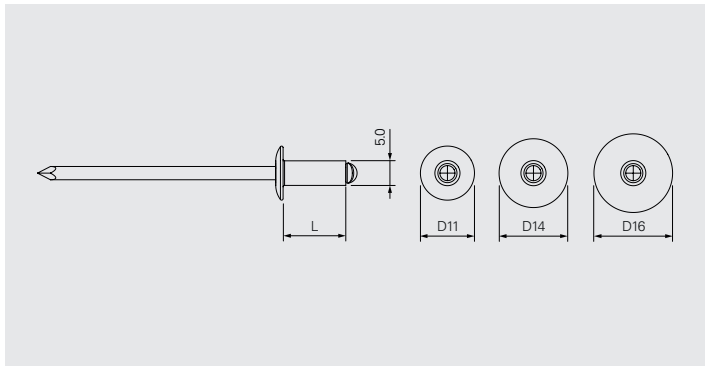
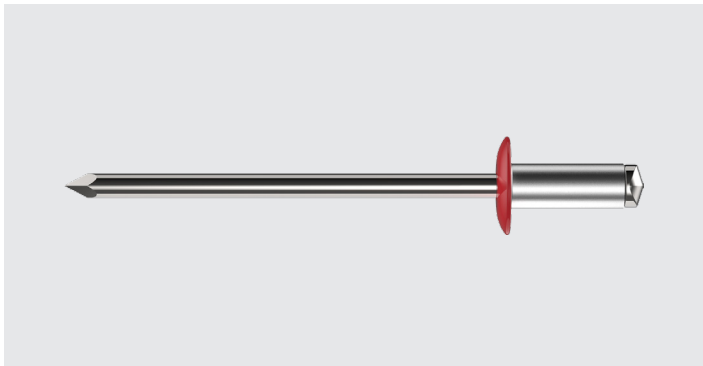
Product code	PU	Drill depth	Drive	
AccuBird®Pro	1	–	–	1679661
Depth locator universal		–	HEX8	1478567
VHM-6,0×45		10.0	–	1479984
MEASURING-SET-DRILLS-5,9–6,1		–	–	1715384

View on the website →

All measures in mm

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AP-5.0



Application

Fastening of cladding panel to aluminium profile

Component 1 (t_i)

Cladding panel

Component 2 (t_{II})

Aluminium	≥1.0
Pre-drill Ø	5.1

Fastener material

Body: Aluminium AlMg5
Mandrel: Austenitic stainless steel A2

Approvals

CE₁₈
ETA-21/0951

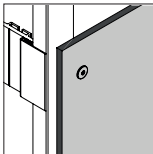
Features and Benefits

- Blind rivet suitable for installation of pre-drilled cladding panels onto pre-drilled aluminium structure
- High clamping range with clamping force independent of the clamping thickness
- Non-detachable and vibration-resistant connection

Documentation

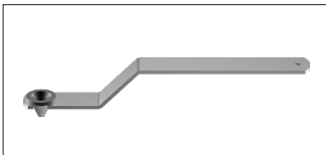
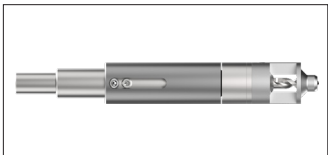
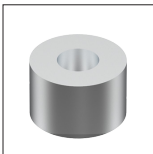
Approval document (ETA)

All measures in mm



Blind rivet in aluminium
onto aluminium

Product code	PU	L	CL	Head	Coloured
AP11-50120-S	250	12	2.0–8.0	D11	1363826
AP11-50180-S		18	7.0–13.5	D14	1363851
AP14-50120-S		12	2.0–8.0		1363853
AP14-50160-S		16	6.0–12.0		1363854
AP14-50180-S		18	7.0–13.5		1363855
AP14-50210-S		21	10.0–16.0		1363856
AP14-50230-S		23	12.0–18.0		1363857
AP16-50120-S		12	2.0–8.0	D16	1648414
AP16-50160-S		16	6.0–12.0		1363858
AP16-50180-S		18	7.0–13.5		1363859
AP16-50210-S		21	10.0–16.0		1363861



Accessories/Ancillaries

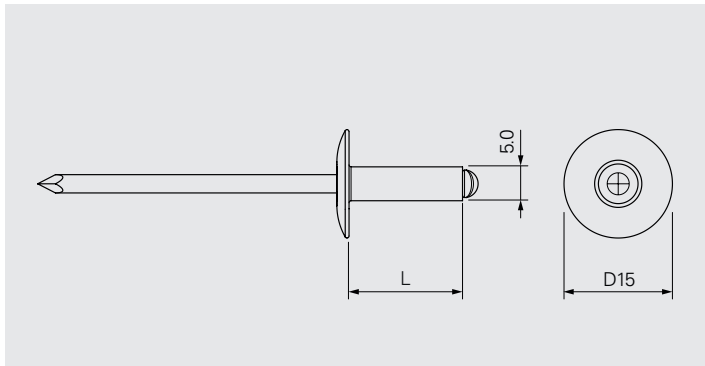
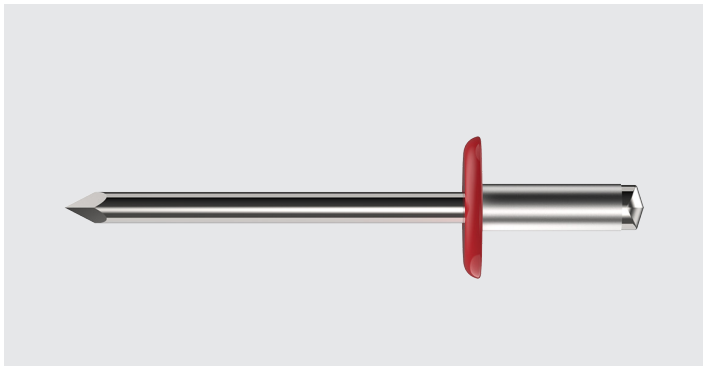
Product code	PU	Pre-drill Ø panel	
AccuBird®Pro	1	–	1679661
FP-A Sleeves	–		"Please See FP Sleeves"
NOSEPIECE-MOVING-POINT AP/ASO	1		974620
DG-146×20-7,0		7.0–7.9	1320657
DG-146×20-8,0		8.0–8.9	1320658
DG-146×20-9,0		9.0–9.9	1320659
DG-146×20-10,0		10.0–10.9	1321704
ZL-5,1/7-18		7.0–18.0	701532

View on the website →

All measures in mm

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SSO-5.0



Application

Fastening of cladding panel to aluminium or steel rail

Fastener material

Body: Austenitic stainless steel A4
Mandrel: Austenitic stainless steel A4

Component 1 (t_i)

Cladding panel

Component 2 (t_{II})

Aluminium	≥1.0
Pre-drill Ø	5.1
Steel	≥1.0
Pre-drill Ø	5.1

Approvals

CE₂₂
ETA-10/0198

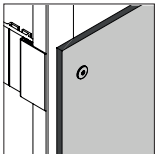
Features and Benefits

- Blind rivet suitable for installation of pre-drilled cladding panels onto pre-drilled aluminium or steel structure
- High clamping range with clamping force independent of the clamping thickness
- Non-detachable and vibration-resistant connection

Documentation

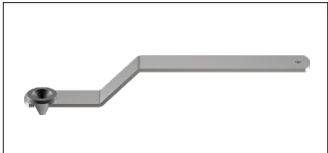
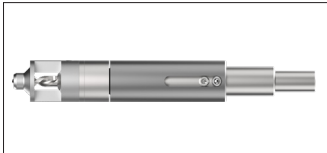
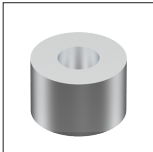
Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Blind rivet in A4
onto aluminium and steel

Product code	PU	L	CL		Coloured
SSO-D15-50140	250	14	4.0–9.5	1262436	1363885
SSO-D15-50180		18	8.0–13.5	1262437	1363886
SSO-D15-50220		22	12.0–18.0	1262439	1363887
SSO-D15-50270		27	17.0–22.0	–	1685313



Accessories/Ancillaries

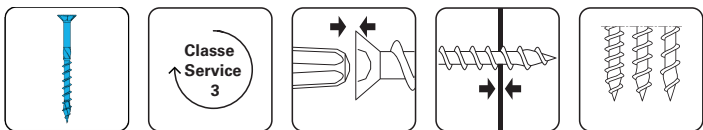
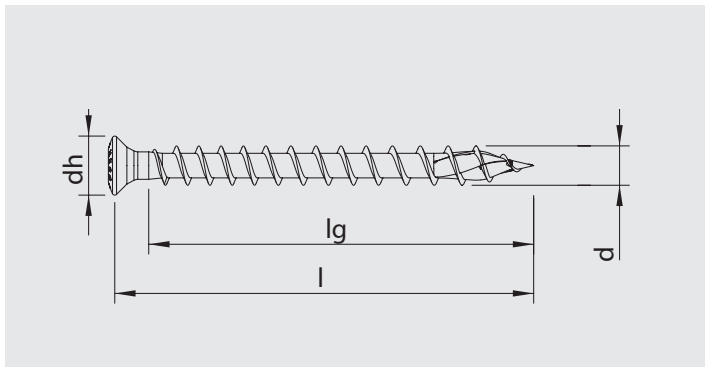
Product code	PU	Pre-drill Ø panel	
AccuBird®Pro	1	–	1679661
FP-S Sleeves	–		–
NOSEPIECE-MOVING-POINT-SSO-D15-50×L	1		1291200
DG-146×20-7,0		7.0–7.9	1320657
DG-146×20-8,0		8.0–8.9	1320658
DG-146×20-9,0		9.0–9.9	1320659
DG-146×20-10,0		10.0–10.9	1321704
ZL-5,1/7-18		7.0–18.0	701532

View on the website →

All measures in mm

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HTP-S-FS-VFT



Application

Timber cladding

Approval

CE₁₉
ETA-19/0553

Material

Austenitic stainless steel A2

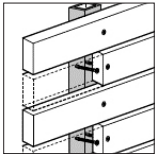
Features and benefits

- Small raised countersunk head improve aesthetics
- 'Stick fit' when using HD20-HECO drive 'Gripfit'
- Full thread with patented 'magic close' pulls fixtures together on installation.

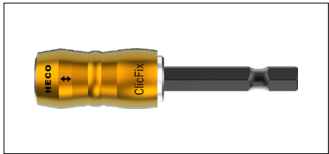
Documentation

Approval document (ETA) | Declaration of performance (DoP)

All measures in mm



Product code	d	L	I _g	d _h	Recess	PU	Code
HTP-S-FS-VFT-4,5×50/45	4.5	50	45	7.2	HD-20	200	1205534
HTP-S-FS-VFT-4,5×60/55		60	55				1205536
HTP-S-FS-VFT-4,5×70/65		70	65				1205538
HTP-S-FS-VFT-4,5×80/75		80	75				1205540
HTP-S-FS-VFT-5,0×40/34	5.0	40	34	7.2	HD-20	200	1205546
HTP-S-FS-VFT-5,0×50/44		50	44				1205552
HTP-S-FS-VFT-5,0×60/54		60	54				1205556
HTP-S-FS-VFT-5,0×70/64		70	64				1205560
HTP-S-FS-VFT-5,0×80/74		80	74				1205564



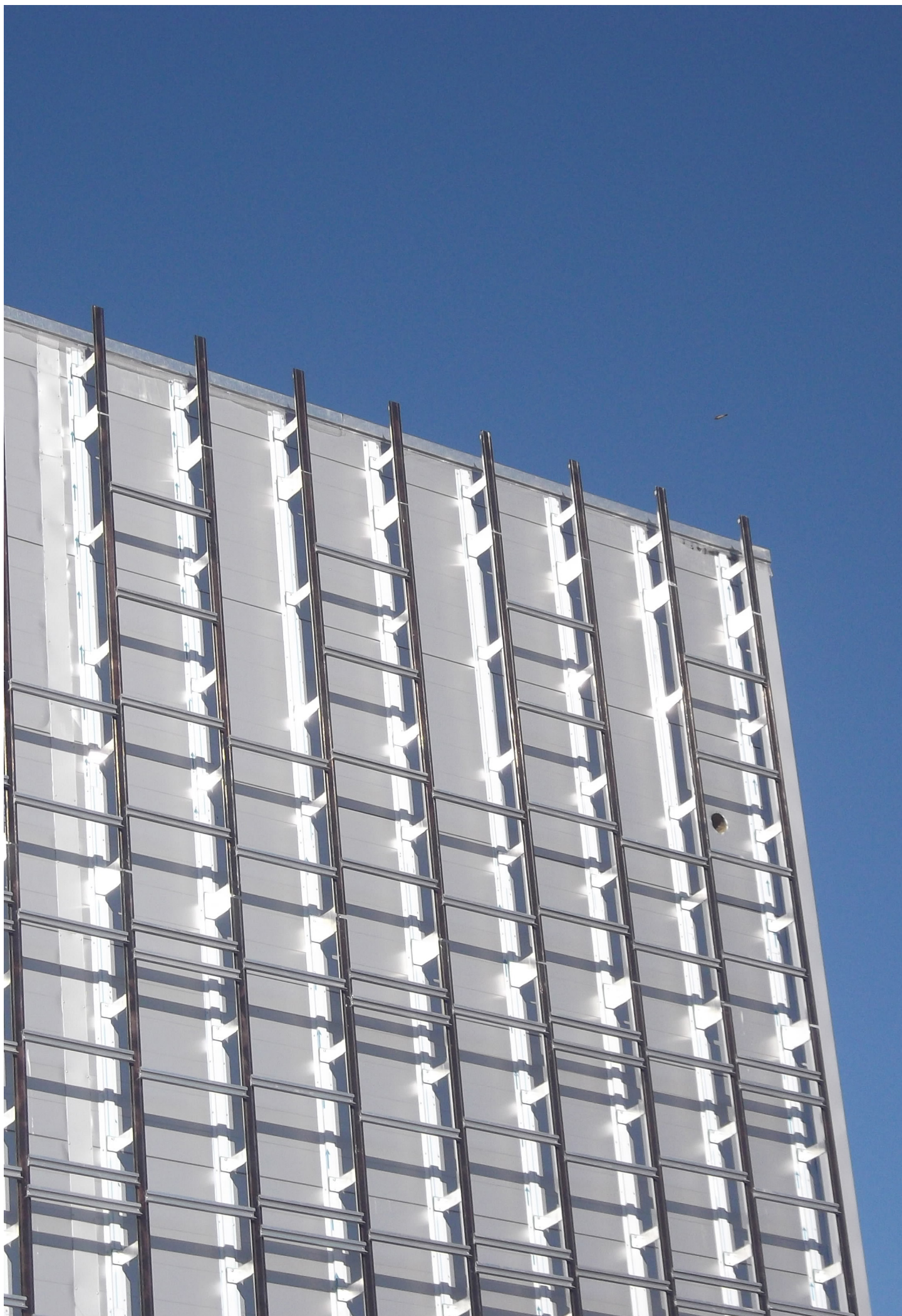
Accessories/Ancillaries

Product code	PU	L	Page	
HD20-25-HEX¼"-HECO	10	25	104	1205164

View on the website →

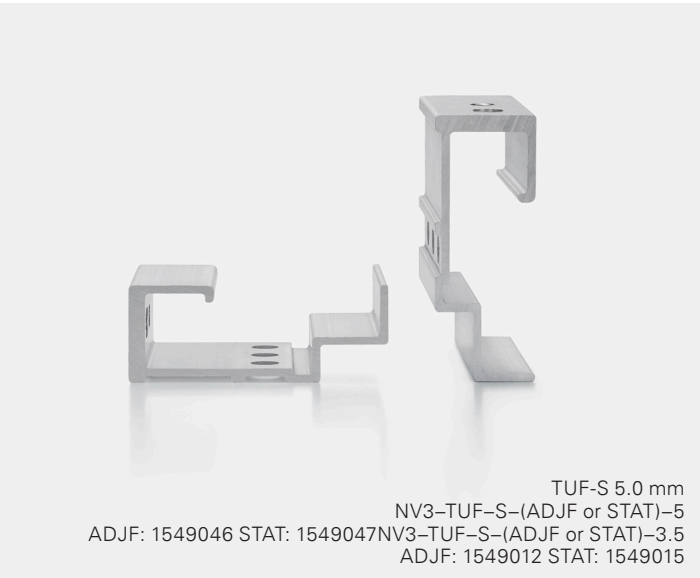
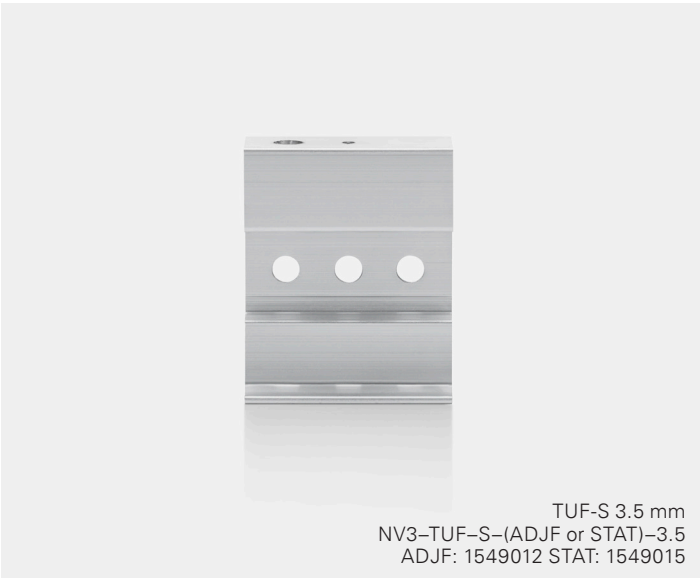
All measures in mm

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NV3 – Hanger Options

NV3 is the NVELOPE® subframe system suitable for concealed fix/mechanically secret fixed applications. The NVELOPE® NV3 system is compatible with high-pressure laminate (HPL), ceramic and thin stone including fibre cement. Horizontal NVELOPE® carrier profiles are fixed to the vertical profiles. Rainscreen panels are hung from and secured with hangers.



Additional Hangers Available

Name	Product Code	ADJF	STAT
PTS	NV3-PTS-(ADJF or STAT)	1521457	1521459
Keil	NV3-KEIL-(ADJF or STAT)	1521454	1521456
Keil 150 mm	NV3-KEIL-ADJF-150	1521455	–
Tergo	NV3-TER-(ADJF or STAT)	1521465	1521468
Tergo Plus	NV3-TER-TEC-(ADJF or STAT)	1521469	1521470

Accessories



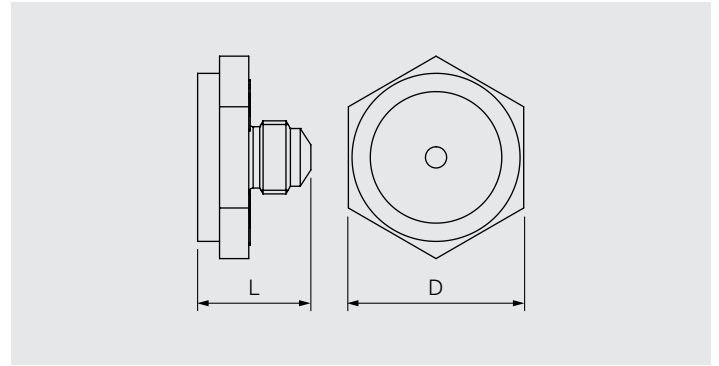
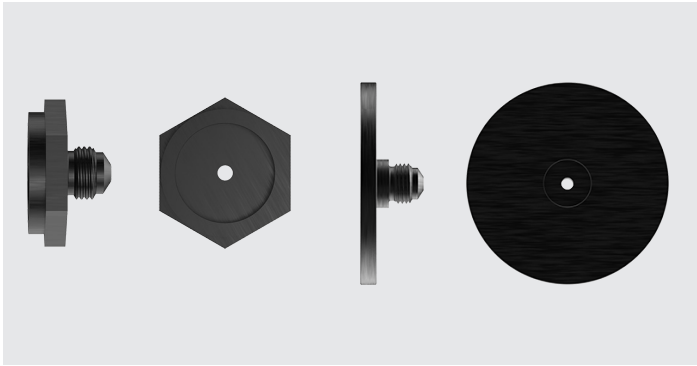
Accessories

NVELOPE® have a range of accessories which can be used in conjunction with many of our subframe systems. They include adaptors, extenders, connectors, corner brackets and corner rails and a useful rail cover. Whilst these component probably won't be needed for many projects they can offer a useful remedy to a particular design requirement.

Item	Description	Supported Systems	Product Code
Adaptor Washers	Available in sizes 11 mm to 6.50 mm and 11 mm to 8.50 mm.	NV1-NV8, NV10, NVF2F, NH3, NS1	1623696
Bracket Extender	Single and Double sizes. Will extend any bracket by 60 mm.	NV1-NV8, NV10	1521187 1521188
Rail Connector	This can be used on any rail to join two pieces together.	NV1-NV5,NV8, NV10	1521190
NV3 Rail Cover	This can be used to cover NV3 rail at open panel joints. This saves powder coating the complete rail length.	NV3, NV4, NV10	1623696
Corner Bracket	Undrilled, single and double corner bracket.	NV1, NV2, NV6	1521185 1521186
Corner Rail	For use with the corner bracket.	NV1, NV2	1607594 1607596

View on the website →

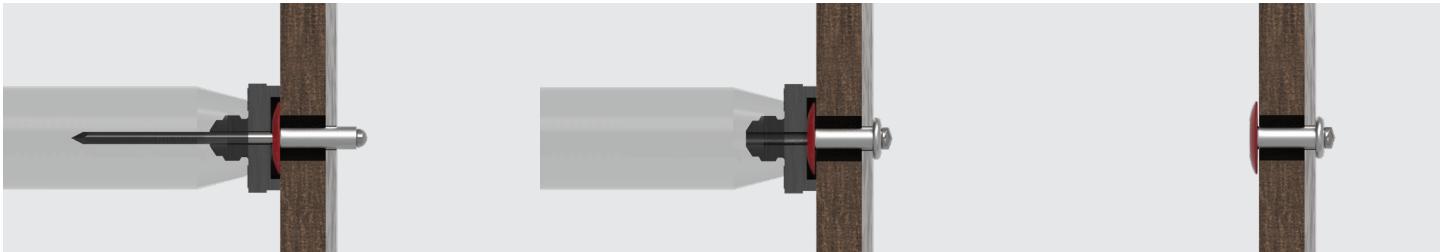
Nosepiece



Application

Nosepiece for a correct installation of a rivet

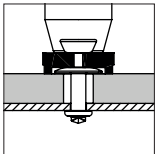
Installation instruction



Features and Benefits

- Nosepiece suitable for installation of a rivet
- Ensures a small gap between the rivet-head and the panel surface
- Movement of the panel is possible thanks to the constraint-free installation of the rivet
- Compatible with the AccuBird® and PowerBird® riveting tools from GESIPA®
- Nosepiece in big outer-diameter for use in ACM panels
- Can easily be screwed onto the riveting tool

All measures in mm



Nosepiece

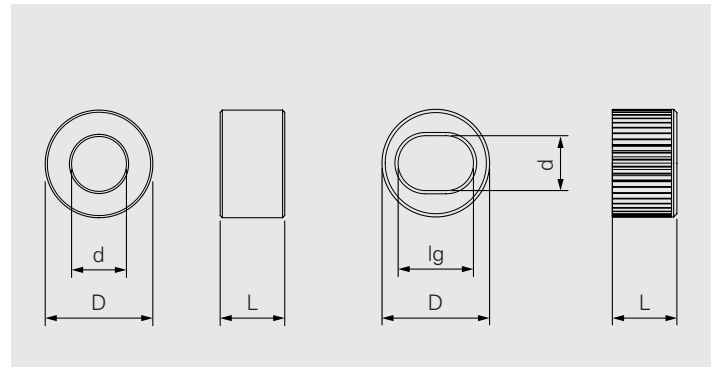
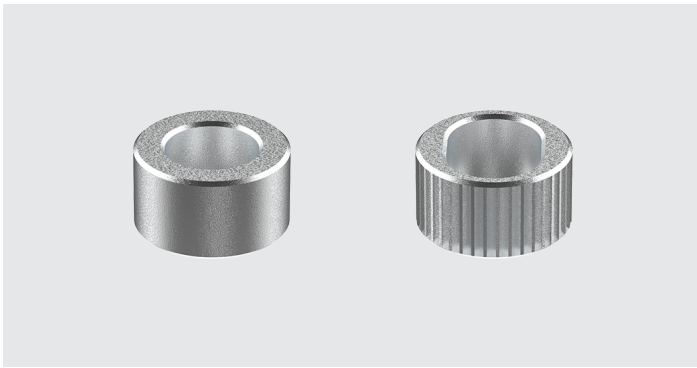
Product code	PU	L	D	To be used for rivets						
				AP-5.0			ASO-5.0		SSO-5.0	
				D11	D14	D16	D11	D14	D15	
NOSEPIECE-MOVING-POINT AP/ASO	1	15.5	23	✓	✓	✓	✓	✓	✗	974620
NOSEPIECE-MOVING-POINT-SSO-D15-50×L			30	✗	✗	✗	✗	✗	✓	1291200

View on the website →

All measures in mm

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FP and GP Sleeves



Application

Sleeve to create a fixed point in a pre-drilled cladding panel

Material

A = Aluminium

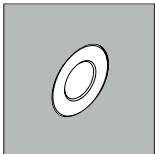
Installation of a gliding point sleeve



Features and Benefits

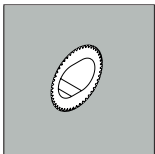
- Sleeve suitable for creating a fixed-point in a pre-drilled panel
- Uniform pilot drilling diameter for all pilot holes in a cladding panel
- Fixed point can be defined on-site, therefore very flexible
- Longevity of the fixed-point sleeves as a result of using aluminium

All measures in mm



Fixed point sleeves in Aluminium

Product code	PU	L	D = Pre-drill Ø	d	
FP-A-7,9x6	100	6	8	5.1	1343278
FP-A-8.5x6-5,1			8.5		1677455
FP-A-9,4x6					1364621



Gliding point sleeves in Aluminium

Product code	PU	L	D = Pre-drill Ø	d	lg	
GP-A-8,0x7,5-5,1	100	7.5	8	5.1	6.2	1677532
GP-A-10,0x6-5.2		6	10	5.2	7.8	1677531



Accessories/Ancillaries

Product code	PU	D	L	
GP-H-8,0	1	8	-	1677534
GP-H-10,0		10		1677533

View on the website →

All measures in mm

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EPDM-Tape



Application

EPDM-base membrane used for sealing interfaces to provide airtight or weather tight seals.

Material

Elastomer sheet made of black EPDM rubber

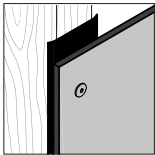
Technical characteristics

Property	Test Method	Result
Fire classification	EN13501-1	Class E
Tensile Strength	DIN 53504	>6.5 N/mm²
Elongation		>300%
UV Resistance	DIN53504	>24 months
Water Vapour Resistance Factor (μ value)	DIN52615	32'000 μ
Moisture Vapour Permeability (sd value)	DIN 4108-3	24 m (0.75 mm (thickness)
Airtightness	EN 12207	>Class 4
Watertightness	EN 12208	> Class 9A
Resistance to Windloading	EN 12210	>Class 3
Dynamic Puncture Resistance	EN 12691	tight (10 mm punch)
Static Puncture Resistance	EN 12730	>250N
Flammability Class	DIN 4102-1	B2 P-NDS04-531
Temperature Resistance		-40°C to +130°C
Application Temperature		+5°C to + 35°C
Storage	Store in dry shaded conditions between +5°C and +25°C	
Shelf Life	Unlimited when stored as recommended in original unopened packaging: 24 months with self-adhesives	

All measures in mm

Features and Benefits

- High resistance to mechanical damage
- Excellent movement capability in both transverse and longitudinal direction with excellent material recovery after elongation.
- Excellent weathering, ageing and UV radiation resistance
- Excellent moisture vapour barrier.
- Does not contain any solvents which could later migrate into adjacent surfaces.



Sealing tape EPDM

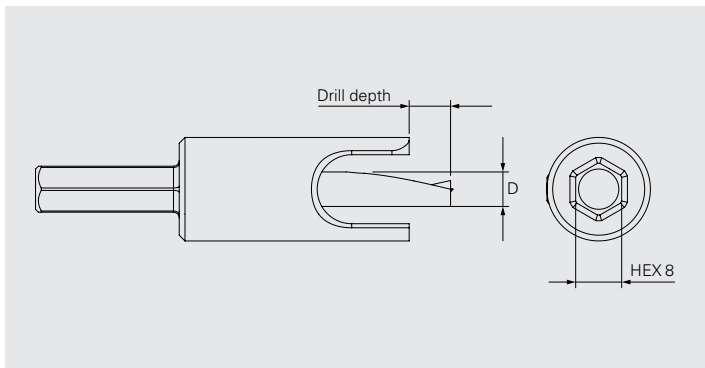
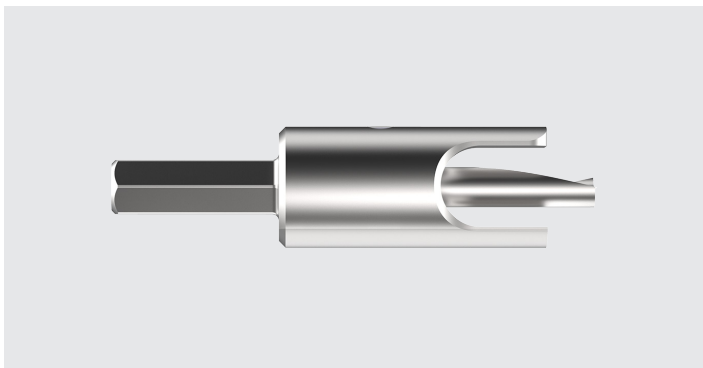
Product code	PU	Wide tape (mm)	Thickness tape (mm)	Roll length (m)	
EPDM-TAPE-60x0.75x25-ME220	1	60	0.75	25	114738
EPDM-TAPE-80x0.75x25-ME220		80			1335291
EPDM-TAPE-100x0.75x25-ME220		100			1144760
EPDM-TAPE-120x0.75x25-ME220		120			1335298

View on the website →

All measures in mm

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Depth locator



Application

Depth locator and drill bits for a correct blind hole

Life expectancy of the drills

	in HPL	in Fibrecement
VHM-6.0	500 drills	500 drills
Recommended rotation-speed max. 1500–1800 rpm		

Installation instruction



Features and Benefits

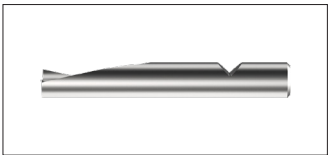
- Depth locator and corresponding drill bits to create a correct blind hole
- Defined drill depth, no adjustment needed
- Drill bit can easily be exchanged

All measures in mm



Depth locator

Product code	PU	
Depth locator for drill bit universal	1	1478567



Drill bits

Product code	PU	L	Drill depth	D	
VHM-6,0×40	1	40	5	6	1615070
VHM-6,0×40,5		40.5	5.5		1586737
VHM-6,0×41		41	6		1615072
VHM-6,0×41,5		41.5	6.5		1615073
VHM-6,0×42		42	7		1615074
VHM-6,0×42,5		42.5	7.5		1615075
VHM-6,0×43		43	8		1615077
VHM-6,0×43,5		43.5	8.5		1615078
VHM-6,0×45		45	10		1479984

View on the website →










All measures in mm

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Bits, sockets and drive bars
















Bit holder and different T-drives

Product code	PU	Drive	Head drive	L		
Bit holder ZA¼"	1	¼"	¼"	58	1162306	
T20-25-HEX¼"	10		T20	25	769471	
T20W-25-HEX¼"	1		T20W		895280	
T25W-25-HEX¼"			T25W*		7662	
T25P-25-HEX¼"	10		T25P**		1658024	
T30-25-HEX¼"			T30		24010	
T40-25-HEX¼"			T40		769474	
SR2-25-HEX¼"			SR2		1146918	
T30-40-½"		½"	T30	40	1489154	
T40-40-½"			T40		1489155	
E308-¼"-50	1	¼"	HEX8	50	1646160	
E313-¼"-50			HEX13		508029	
E420-¼"-74			L12	74	973316	
E508-½"-40		½"	HEX8	40	1648380	
E513-½"-78			HEX13	78	1649258	

*W-Bit for wet painted fasteners | **P-Bit for powder painted fasteners

All measures in mm

Sockets

Product code	PU	Drive	Head drive	L		
E308-¼"-50	1	¼"	HEX8	50	1646160	
E466-¼"-40			Square	40	858496	
E313-¼"-50			HEX13	50	508029	
E420-¼"-74			irius®	74	973316	
E416-½"-38		½"	HEX16	38	1389740	
E508-½"-40			HEX8	40	1648380	
E513-½"-78			HEX13	78	1649258	
E516-½"-78-red			HEX16		1649257	
SOK-IT-¼"-57-6NM		¼"	HEX8	57	1667323	
SOK-IT-¼"-57-8NM					1667322	
E320-¼"-25				25	675725	
E380-⅜"-34		⅜"		34	8018	
ZA-¼"-50		¼"	⅜"	50	7645	

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