



HAZ METAL FIXING SYSTEMS

Your Fixing Systems Specialist

Brickwork Support Systems Technical Product Catalogue HAZ-BS-EN/04.16





Bosmos Flats, Switzerland

Contents

Company profile	1-2	HMS-ES & GS Prefabricated component inserts	39
Brickwork support systems overview	3-4	HMS-AW Special restraint channel	40
Brickwork support systems design principles	5-8	HWP Wind post restraints introduction	41
Stainless steel	9	HLS Brickwork lintel supports introduction	43
Eurocode concept	10	HMP Brickwork wall tie channels	45
FIX Brickwork support brackets introduction	11	HWT-M Brickwork wall ties	46
FIX Brickwork support bracket product details	17	HRST Restraining ties	47
Brickwork support systems - application examples	29	CMWT Brickwork wall ties product details	48
ISO-FIX Brickwork support brackets introduction	31	HMHR Brickwork head restraints	52
FIX Adjustable plate introduction	32	HMPR Cast in channels	53
HMCS Continuous brickwork support introduction	33	HB Expansion bolts & chemical anchor bolts	54
HMCS Continuous supports product details	34	References	55-56
HMS-AV & AVS Angled brackets	37		



Company Profile

Introduction

HAZ Metal is located in Iskenderun, in the southern part of Turkey, based in the company owned property, with an area of 17.000 square meters.

The company provides services in the design and production of stainless steel fixing systems for natural stone installation and a variety of products used in construction.

The company's objective is to assist and advise its clients in choosing the most suitable fixing systems for their requirements and to provide them with quality production and supply with timely deliveries.

HAZ Metal has dedicated itself to supplying its clients with easy to use, secure and economical fixing systems. Along with this principle, HAZ Metal has organized a technical department to design and produce fixing systems in accordance with international standards.

HAZ Metal has 200 employees working both in Turkey and in its foreign branches. Along with a sales office in Istanbul, Turkey, there are HAZ branches in the United Arab Emirates, Germany, the United Kingdom, Russia, Qatar, Egypt and Singapore. With this network, HAZ Metal reaches out closer to its clients, to provide better services to meet local requirements.

The innovative design and production techniques offer practical and economic solutions to solve every possible problem within the scope of natural stone installation. As a supplier of fixing systems to major projects around the world, HAZ Metal has proven its quality and reliability to its clients. The company enjoys serving the sector and works hard to constantly improve and develop its services.

Product Range

HAZ Metal started producing fixing systems in 1993. Today, the company has the technical know how and technology to produce all types of natural stone fixing systems used for ventilated stone facades. Production of a variety of fixing systems such as channels, cast-in channels, masonry support anchors and expansion bolts is also available.

- Sub channel systems.
- Cast in channel systems.
- Framing systems.
- Masonry support systems.
- Structural building components.
- Expansion bolts.
- Various construction accessories.

Standard and customized production is made to meet the special application requirements.



Production Capacity

HAZ Metal has the capacity to produce over 300 tons of materials every month with over 100 production units and work stations. The production plant boast a series of high grade machinery ranging from a slitting line to eccentric presses and 6 meter press brakes.

There is well equipped welding unit with proper welding benches and a welding robot that does precision welding. Two automated welding units are also available for the fast and economic process. All of the operators in the welding unit are certified and carry licenses from Lloyds quality assurance institute.

Technical Know-How

HAZ Metal's technical staff, each with more than 10 years experience, has an outstanding technical knowledge in the field of stainless steel production.

The maintenance of the machines and the preparation of moulds for production are done in the company's workshop. This ensures higher efficiency and productivity in production, increasing the quality of services with competitive prices.

Welding processes are well understood and controlled by the experienced and responsible staff. In ensuring high quality welding of steel and stainless steel, highly skilled, certified operators are recruited for the welding unit. Appropriate machines and welding techniques are in use to offer the structural integrity of the welded products.

Quality Standards

HAZ Metal implements EN and ASTM standards in the production of channels. Production is strictly controlled within the tolerances of these standards.

All products are produced by its personnel, applying the latest production methods with advanced machinery. The quality control team, under the supervision of a mechanical engineer, is selected from long serving and experienced foremen.

Production is checked during each production step and is compared with production drawings and specifications. The company is strictly bound to the concept of ISO 9001:2008 and "Total Quality Management" system. A quality assurance system is set up and is running to cover the control of each process in manufacturing. The control checks are documented and recorded.

The application of this management system is maintained and is a part of day to day operations. HAZ Metal gives great emphasis in keeping the high level quality of manufacturing and strides to improve its processes to meet the increasing demands of the construction industry.





FIX Brickwork Support Systems - Overview

FIX brickwork support systems are used for the secure and easy installation of brickwork facades. The **FIX** brickwork brackets are used to transfer the dead loads of non load bearing outer shell brickwork walls to the load bearing inner walls of buildings. Load bearing brickwork support brackets are fixed on concrete beams which carry the dead load of the facade. **HRST** Restraints ties or **HWT-M** wall ties are used along the rest of the storey height to secure the brickwork facade against wind loads.

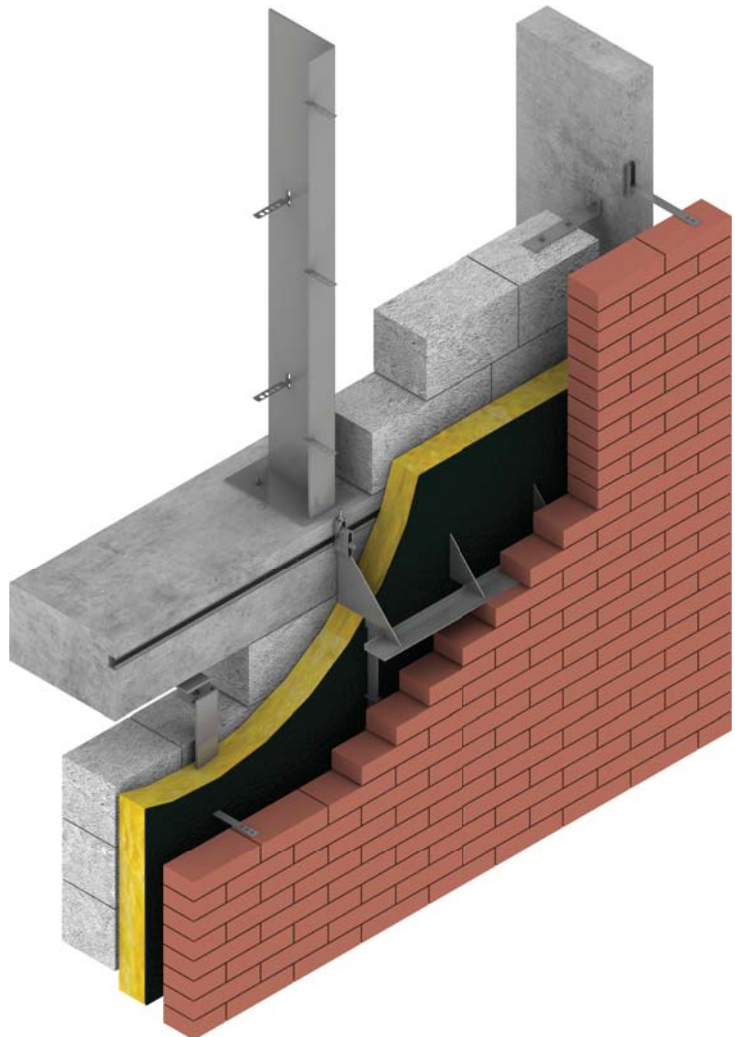
FIX brickwork support systems provide support for brickwork as non-load bearing external cladding which is attached on the substrate. The relatively thin outer skin of brick wall will not maintain its integrity unless it is properly supported by suitably designed load bearing brackets and restraint ties. In addition, the substrate may move differentially in relation to the cladding, so horizontal soft joints are required to keep the outer skin separate from the frame. Careful design and designation of fixing systems needs to be carried out in order to achieve stable facade installation.

FIX brickwork support systems are designed to be positioned at beam level and are fixed on to either cast-in channels or on to concrete with expansion or chemical anchor bolts. When fixing is made with cast-in channels, quick installation and horizontal adjustability is achieved which increases the rate of productivity.

The brickwork facade is planned according to the individual brickwork. There may be a lot of variations in terms of insulation thicknesses, cavity sizes, height of floor levels etc. Extensive design must be made for corners, lintels, joints as well as the straight facades. There are a wide range of brackets available for different executions.

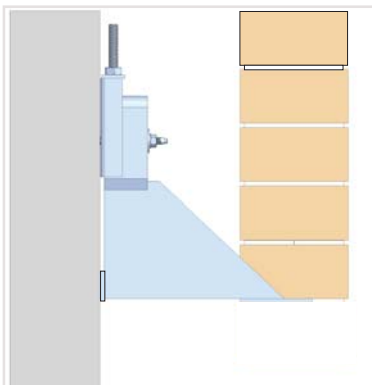
A technical service is available for proposing fixing system after viewing the details of the project. The fixing system elements are available in stainless steel grade 1.4401 (A4) & 1.4301 (A2).

Various accessories are designed and produced in Haz Metal to cover all aspects of the brickwork facade installation.

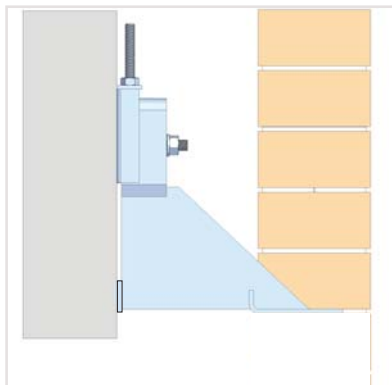


Application Variations

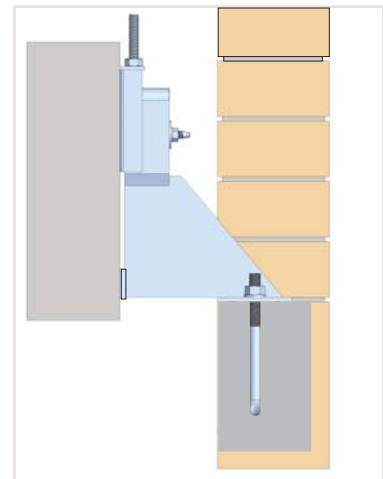
Single brickwork support bracket for the installation of bricks which are laid between two brackets. Fixing on to concrete made with cast in channels, expansion bolts or chemical anchor bolts.



Brickwork support brackets with welded continuous L angles. Brick support is made along the length of the L angles.

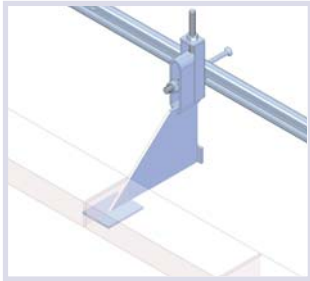


Brickwork support brackets with slot holed welded plates for installing prefabricated components. With cast in channels or u bolt inserts within the component, the fixing is made safely and easily.



Brickwork Support Systems - Overview

Brickwork Facade

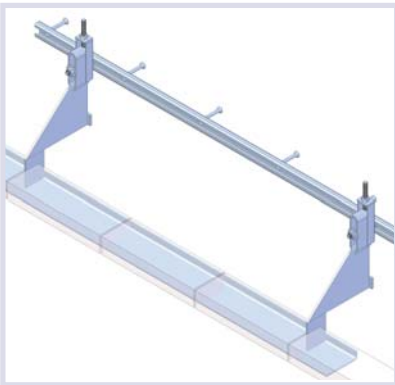


A brickwork facade built with brickwork is formed out of a load bearing inner wall, an insulating layer and an outer wall. The outer wall cannot be used for load bearing purposes nor can it be used for attachments of various components. The outer wall is a design element that satisfies the aesthetics and also serves as a means of weather protection. The outer wall which is constructed of layers of brickwork needs to be supported at regular intervals. The load of the brickwork is transferred on to the inner load bearing wall by brickwork support anchors. Restraining of the outer wall is made with restraint wall ties. Therefore, both the inner and outer wall shells are connected to each other with load bearing brackets and restraint wall ties.

Facade Design

The following points should be carefully evaluated when designing a brickwork facade.

- thickness of insulation and air gap,
- design of details, such as,
- wall areas,
- joints,
- external and internal corners,
- lintels above doors and windows,
- columns.



Many product variations are available for these situations, including the fixing of precast brickwork lintels and prefabricated elements.

The thickness of the insulation together with the air gap make up the dimension a for the distance between structural leaf and facing leaf. The greater the distance is between the two leaves, the larger has to be the projection K of the support brackets.

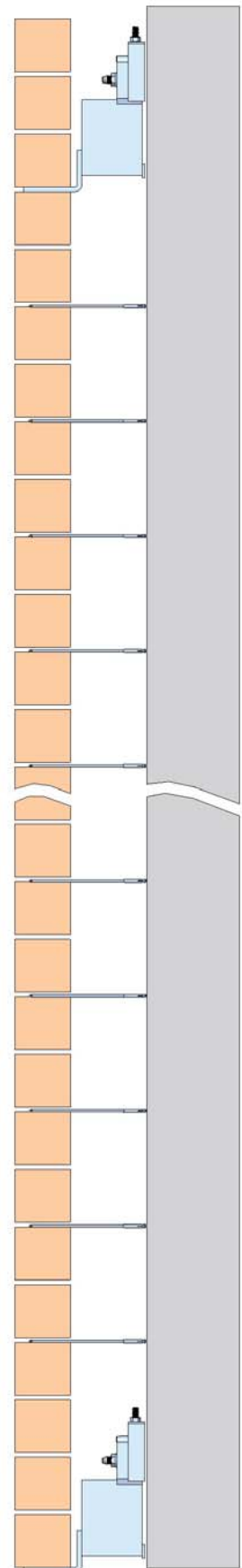
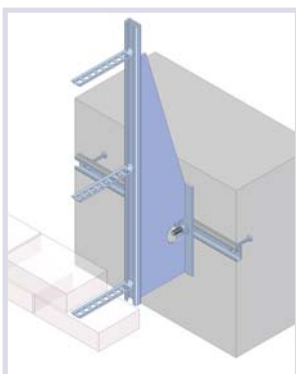
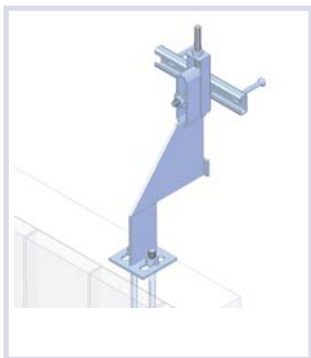
Brickwork support brackets are suitable for distances between leaves of 40 to 160 mm. The corresponding brickwork support brackets come with projections K of 130 to 350 mm. Angle supports are used for any cavity sizes that are less than 40 mm.

In order to cover all the loads within the application of brickworks installation, there are three load groups that the brackets can carry. The load categories are 3,5 kN, 7,0 kN and 10,5 kN.

The following standards are used in the design of brickwork support systems:

EN Eurocode 6 Design of brickwork structures

EN 1996-1 Rules for reinforced and unreinforced brickwork



FIX Brickwork Support Systems - Design Principles

The brackets are available in three load categories. 3.5 kN, 7.0 kN and 10.5 kN. Projection sizes are available between 130 and 350 mm.

Anchoring positioning is calculated from the lower edge of the brickwork wall to be intercepted at x installation height. All brackets are adjustable in the vertical axis through the set screw from + / - 30 mms.

Fixing system design is formulated according to the utilisation rate, wall distance and the height of the facade.

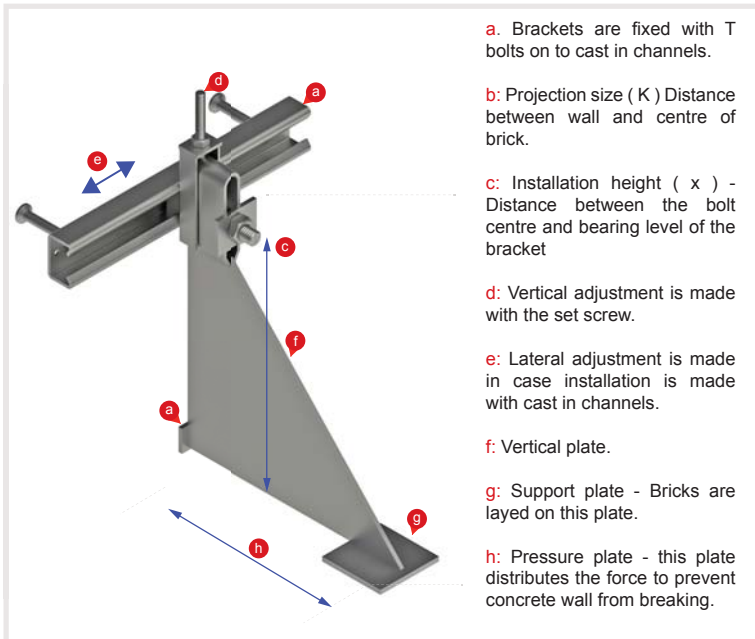
The required connection types on to the walls are as follows.

Load category 3.5 kN: Cast-in channel 38/17 or Expansion bolt M12 *

7.0 kN: Cast-in channel 49/30 or Expansion bolt M12 *

10.5 kN: Cast-in channel 54/33 or Expansion bolt M16 *

* The fastenings has to be calculated in each individual case

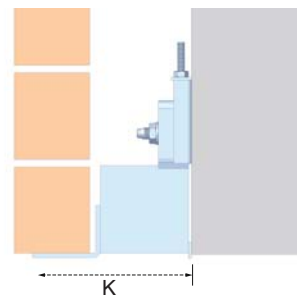


Load Categories: There are three load categories and anchors are structurally designed to take the mentioned loads.

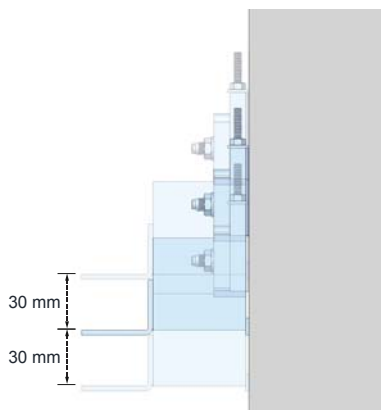
	Load Category	
	Allowable Load	Design Resistance
	3.5 kN	4.7 kN
	7.0 kN	9.5 kN
	10.5 kN	14.2 kN

Facade Height: Brickwork support brackets can take a maximum height of 12 metres depending on the thicknesses of the bricks. Generally brackets are fixed at floor levels to support the brickwork wall and restraining is done using restraint ties.

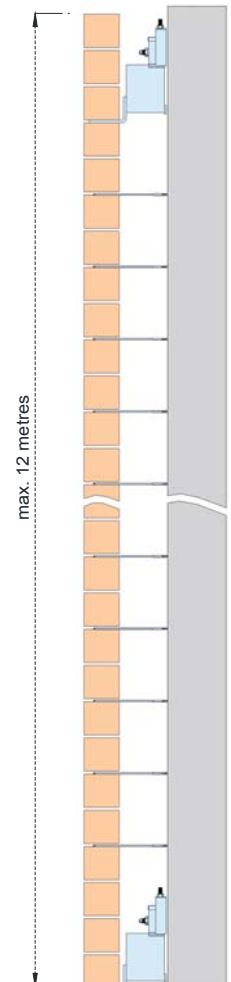
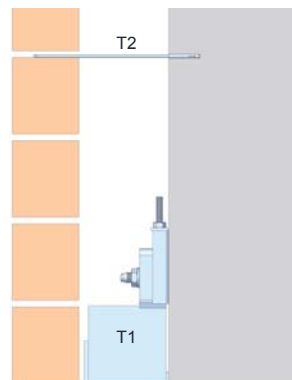
Projection Size: There are different projection sizes (K) that the brackets can accommodate. The standard projections are between 130 mm and 350 mm.



Vertical Adjustability: Adjustability in the vertical axis is made by swirling the set screw on top of the bracket. A total of 60 mm adjustability is possible.



Load Bearing & Restraining: Support of the brickwork walls is made with load bearing brackets (T1). Restraining of the wall is made with restraint ties (T2)



FIX Brickwork Support Systems - Design Principles

Load Calculation Principles

When determining the applied loads on the brickwork support brackets, the following principles need to be considered. The applied loads should be lower than the allowable loads.

$$\text{Applied loads (} F \text{) } \leq \text{Allowable loads (all. } F \text{)}$$

When using the Eurocode standard the conversion from global safety factors to partial safety factors should be adopted. The acting loads should be factored by 1.4 to determine the Design loads.

$$\text{Design Effect Load (} F_{Ed} \text{) } \leq \text{Design Resistance (} F_{Rd} \text{)}$$

The brickwork support anchors are available in the following load categories:

Allowable load:

3.5 kN
7.0 kN
10.5 kN

Design resistance load:

4.7 kN
9.5 kN
14.2 kN

Dead Load Calculation:

Dead Load (F_v) is important in order to choose the bracket with adequate load bearing capacity. Dead Load should be determined using the following formula: γ is density which is considered to be 18 kN / m³ for bricks.

$$F_v = H * cs * bt * \gamma$$

(Loading height) * (Bolt spacing) * (Brick thickness) * (density)

$$F_{Ed} = F_v * 1.35$$

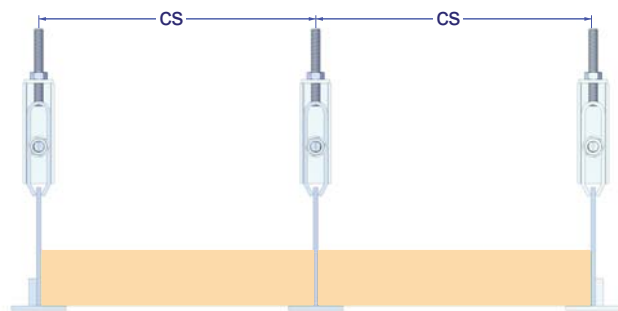
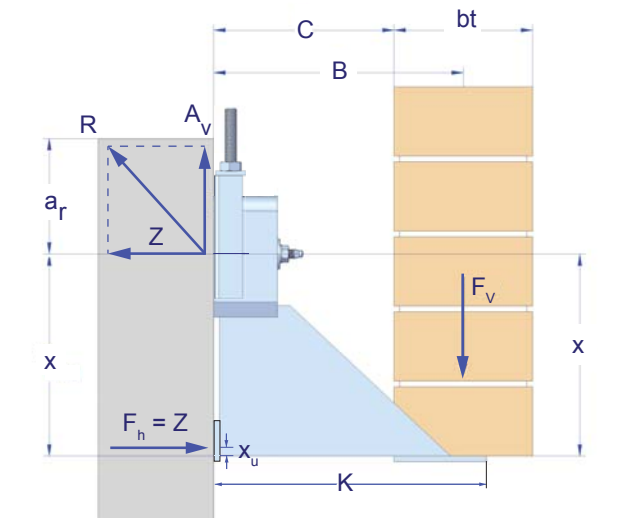
Resultant Load Calculation:

$$B = C + (d/3) + 15 \text{ mm}$$

$$M = F_v * B$$

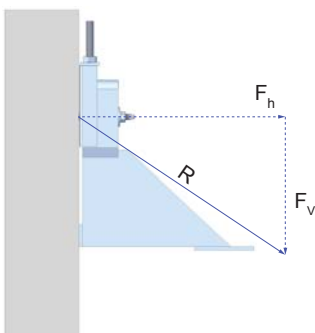
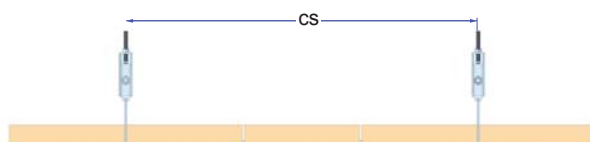
$$Z = M / (x - x_u - 30 \text{ mm})$$

$$R = \sqrt{F_v^2 + F_h^2}$$



Legend

H:	Loading height	F_v :	Dead load
C:	Wall cavity	F_h :	Horizontal reaction load
K:	Projection	R:	Resultant load
B:	Lever (load distance) (C + (d/3)+15)		
bt:	Brick thickness		
cs:	Bolt spacing		
γ :	Density of bricks		

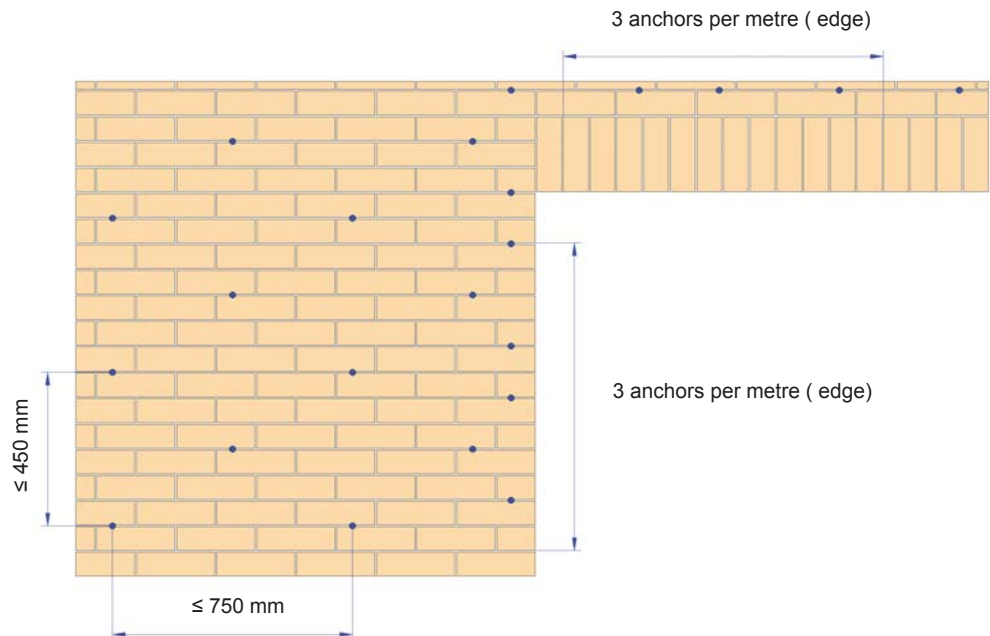


HMS Brickwork Support System - Design Principles

Restraining Of Facing Shell Brickwork Walls

Brick faced brickwork walls form a thin outer layer shell. This wall needs to be strengthened against buckling and must transfer wind loads into the load bearing walls. The brick shells are to be connected using restraining ties that are produced from stainless steel. The positioning of the restraining ties should be made according to the illustration on the right hand side. The vertical distance between the restraining ties should not exceed 500 mm. The horizontal distance between the ties should not exceed 750 mm.

Along the edges where there are free openings such as corners of buildings, expansion joints, window and door openings, and upper ends of external walls; three restraining ties should be used per metre of edge length in addition to the specifications provided. Restraint ties must absorb a tensile force of 1 kN with a slip of maximum 1 millimetre per tie.



Minimum Quantity And Diameter Of Wire Anchors Per Square Meter

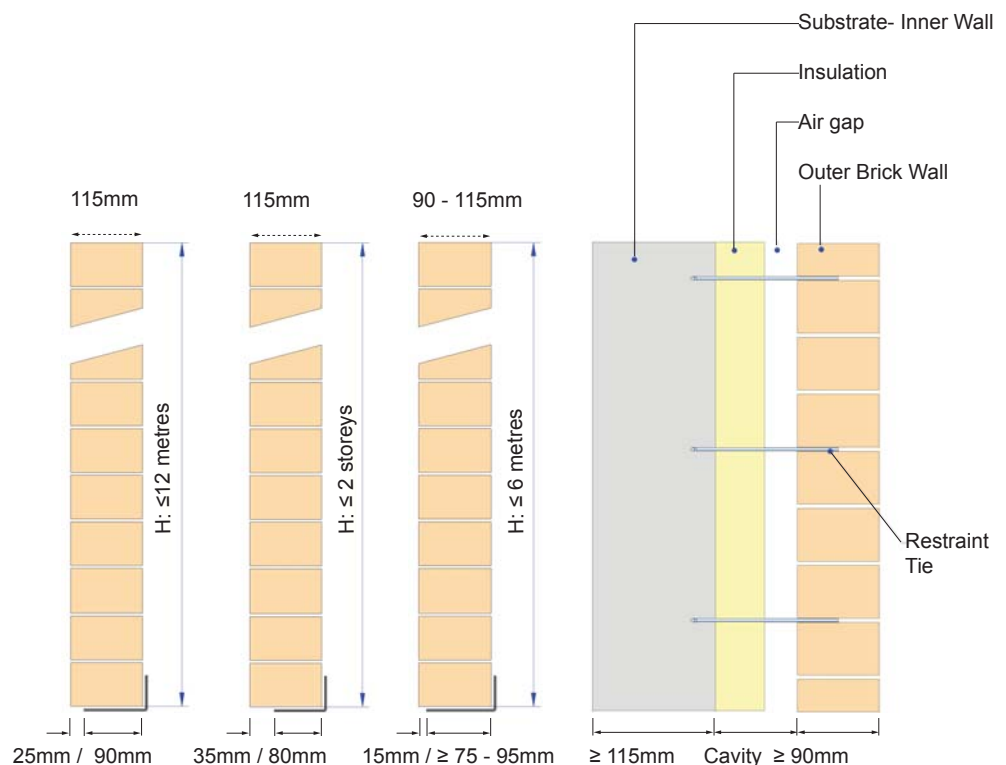
	Minimum quantity	Diameter
1. Wall area higher than 12 m above ground or cavity size from 70 to 120 mm	5	4
2. Cavity from 120 to 150 mm	7	4
3. Cavity from 120 to 150 mm	5	5
4. Cavity from 150 to 170 mm	8	5
5. Cavity from 170 to 200 mm	9	5

Bearing On The Support Brackets

When designing a non load bearing outer shell brickwork wall in front of a load bearing inner shell, the minimum thickness of the outer shell must be 90 mm. Thinner outer shell walls are classified as cladding and these claddings must be installed so that they are supported individually.

Outer brickwork shells can be supported with a maximum height of 12 metres. They may project up to 25 mm beyond their bearing structure. If the 115 mm thick outer shell is not higher than 2 floors then it may project up to one third of its width from its bearing.

Outer shells with thicknesses less than 115 mm must not be built to a height of more than 20 metres above ground and have to be supported in vertical intervals of about 6 metres.



HMS Brickwork Support Systems - Design Principles

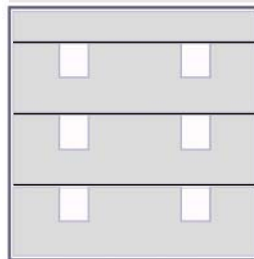
Layout And Design Of Expansion Joints

Fluctuations in temperature result in changes of lengths and volume of materials. There will also be movements on the building through the deflection of beams and columns. Expansion joints are incorporated on the facade in order to compensate for these movements to avoid any cracking of the brickwork facade.

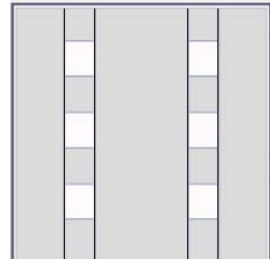
Positioning Of Expansion Joints:

Horizontal joints are positioned at each supporting level. The distance between the support level thus the expansion joints are determined according to the maximum permissible height on to which the brickwork wall can be built. The distances between vertical expansion joints depend on climatic loads and the type of materials. The expansion joints in the brick facing shell must continue along the facing load bearing structure. The appearance choice of the expansion joints also is a factor that needs to be taken into consideration. Some examples of the expansion joint positioning are shown in the figures on the right.

Horizontal joints on supporting levels at every floor level

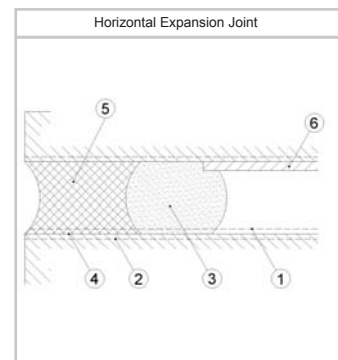
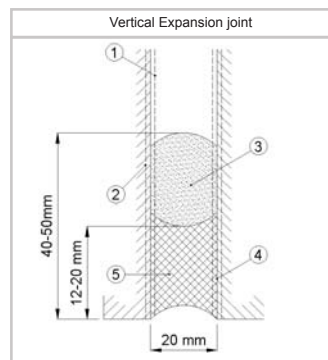


Continuous vertical joints next to openings



Vertical And Horizontal Joint Details:

Expansion joints should be placed in the outer shell of the brick wall. The distances of the expansion joints depend on various factors such as temperature, humidity, the type of materials used, height of the building, type of the load bearing walls etc. The expansion joints should take the movements of the building structure as well as the thermal expansion of the cladding material. Free mobility of the outer shell must be enabled in order to avoid cracking of the brick work. The expansion joints should be filled with suitable material and must be tightly sealed. The structure of the expansion joints should be as shown below:



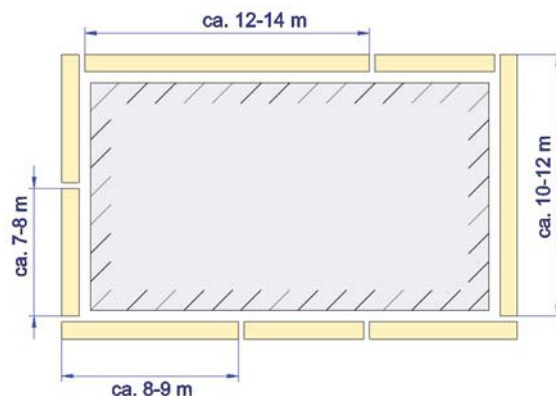
Details:

1. Compressed joint. 2. Elongated joint. 3. Joint gasket.
4. Keyed surface. 5. Joint sealant. 6. Bracket.

Expansion Joint Arrangement:

The distance between the vertical expansion joints depends on the climate conditions of the geographical area in which the construction will be made. In general, the connected brickwork walls should not be built wider than 7-14 metres. In the corner areas. The wall slabs can be interrupted with a vertical joint or continue around the corner as shown in the diagram on the right.

Thermal expansion coefficient	
Clay bricks	0.006 mm / m K
Calcium silicate blocks	0.008 mm / m K
Gas concrete	0.008 mm / m K
Concrete	0.012 mm / m K
Steel	0.012 mm / m K



Stainless Steel - Overview

Stainless steel has been used in the construction industry for over 75 years and the consumption of this material increases constantly due to its high benefits and advantages. The cost of stainless steel is almost three times higher than galvanized steel. However when comparing the benefits of stainless steel use over galvanized steel, the use of stainless steel exceeds by far the cost difference between the two types of materials.

The benefits of stainless steel are:

- High corrosion resistance
- Highly ductile and strong
- Excellent temperature properties
- Recyclable
- Life cycle costing benefits

Stainless steel is a corrosion resistant steel which represents a group of materials that possess a minimum 12 % chromium content. The chromium content is the alloy that protects stainless steel from corrosion. This content reacts with oxygen and forms a thin and inert film layer over the metal. The chromium oxide rich film protects the material from corrosion. Unlike any other coating like paint or galvanization, the chromium oxide film regenerates itself after being damaged and continues to protect the metal.

There are four categories of stainless steels which are called; Austenitic, Martensitic, Ferritic and Duplex & Super Stainless steels. In construction the Austenitic Stainless steels are widely used because of their high corrosion resistance and ductility properties. Austenitic stainless steels are rich in chromium content which provides excellent corrosion resistance and high strength. These materials are suitable for machining, stamping, forming and welding. After the machining process, these materials get higher strengths and become slightly magnetic due to the formation of positive electrons during the production processing.

Stainless Steel Specification

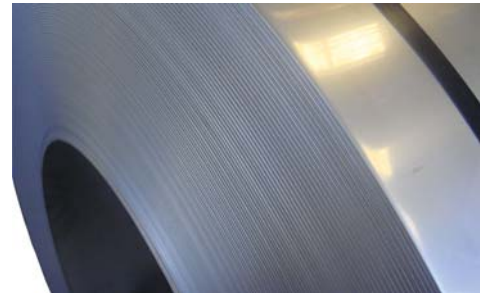
Out of the many grades of stainless steel, there are two grades of Austenitic stainless steels that are used in the production of HAZ fixing systems. The grades 1.4301 (AISI 304) and 1.4401 (AISI 316) are austenitic stainless steels that are suitable for use in almost all of the applications in construction.

Grade 1.4301 (AISI 304)

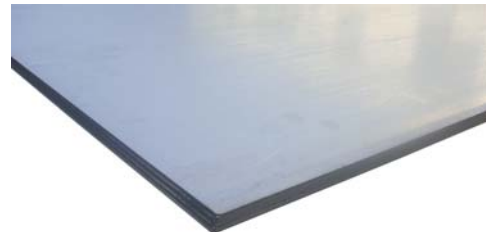
Austenitic Stainless steel grade 1.4301 (AISI 304) is the most common material that is used in construction applications. Grade 1.4301 contains alloys of at least 18% chromium and 8-10% nickel. There may be marginal differences in the chemical composition but this has no effect on the excellent corrosion resistance properties of the material.

Grade 1.4401 (AISI 316)

Austenitic Stainless steel grade 316 has higher corrosion resistance and ductility properties than grade 1.4301 (AISI 304). The use of grade 1.4401 stainless steel is recommended in marine areas and where there are hazardous chemicals in the air around highly polluted areas. This grade type consists of 2% molybdenum and a content of 10-13 nickel alloys. This chemical composition forms a more robust passive film on the material which therefore increases the corrosion resistance properties.



• Stainless Steel Coil



• Stainless Sheets



• Stainless Steel Wire Coil



• Stainless Bars

EN 10088 Number	EN 10088 Name	BS Code	ASTM Code	Alloy Elements	Applications
1.4301	X5CrNi18-10	304S31	AISI 304	Chromium - nickel steel	Suitable for rural, urban areas
1.4401	X5CrNiMo17-12-2	316S31	AISI 316	Chromium - nickel molybdenum steel	Recommended for industrial and coastal areas
1.4404	X2CrNiMo17-12-2	316S11	AISI 316L	Low carbon Chromium - nickel molybdenum steel	Considered for welded fabrications

Eurocode Concept

Partial vs Global Safety

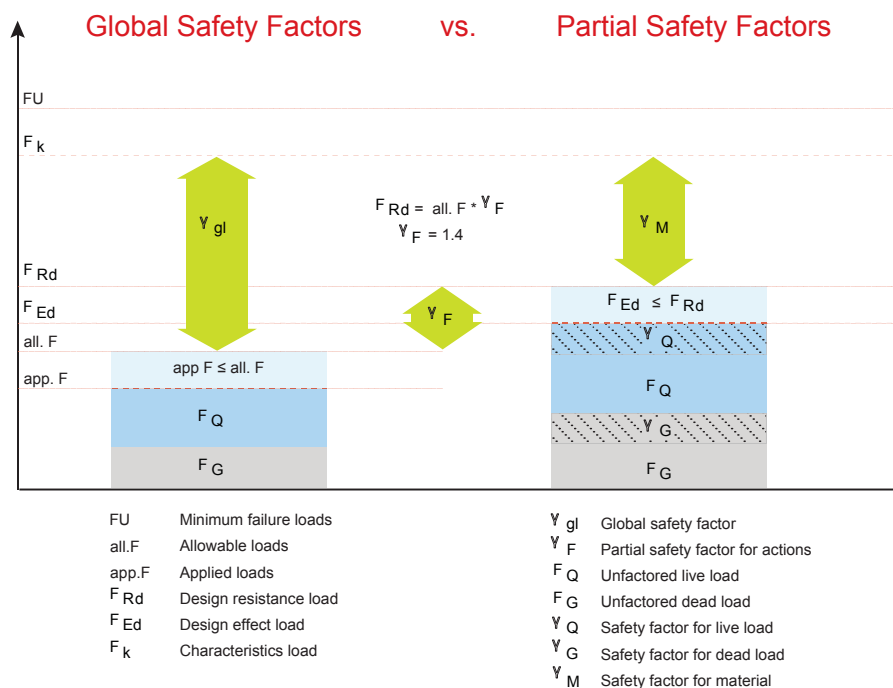
Factors

The new DIN 1045-1:2008-08 standard has created the basis of abandoning the Global Safety factors and is leading towards a common standard design concept in Europe.

The change from allowable loads to design resistance loads may cause confusion when selecting fixings.

When mistakes are made the choice of fixings is either 40 % over design making it uneconomical because the fixings selected are too big or 40 % under design making it unsafe because the loads applied are 40 % higher then assumed.

In order to prevent mistakes the applied loads and the resistance of fixings must be correctly determined and compared.



Global Safety Factors

With the current Global safety factor concept, the allowable loads (all. F) are determined for fixings. Applied characteristic force loads (app. F) are compared with the allowable loads. Allowable loads represent the nominal load capacity and are derived from test results which are then divided by the global safety factor (γ_{gl}). The chosen fixing is considered safe with the following condition:

$$\text{Applied loads (app. F)} \leq \text{Allowable loads (all. F)}$$

Partial Safety Factors

The design verification according to Euro code 2 for concrete and Euro code 3 for steel is taken into consideration during the design stage. The applied loads (app. F) are factored with partial factors: for permanent actions 1.35 and for variable actions 1.5. The applied design forces (F_{Ed}) are compared with the Design resistance (F_{Rd}). The design resistance is determined by dividing the characteristic resistance of the fixings with the partial material safety factors subsequently for concrete and steel. The chosen fixing is considered safe with the following condition:

$$\text{Design Effect Load (F}_{Ed}\text{)} \leq \text{Design Resistance (F}_{Rd}\text{)}$$

The new Euro code concept leads to achieving a more constant and reliable safety level by taking into account different influences of load and materials.

Allowable Loads vs Design Resistance

In order to design fixings according to the new Euro concept, the applied loads must be factored using partial safety factors to determine the design loads (F_{Ed}). The design loads must be compared with the design resistance (F_{Rd}) values of the products to be chosen. If the design resistance values are not available and only allowable loads are available, the new design resistance values must be calculated. The partial factor for actions here 1.4 is the weighted average of partial load safety factors 1.35 for permanent actions and 1.5 for variable actions. The global safety factor remains safe with this equation.

$$\text{Design Resistance (F}_{Rd}\text{)} = \text{allowable loads (all. F)} * 1.4$$

Loads Approved by The German Supervisory Board Dibt

The loads approved in the certificate from DIBt, are the allowable loads already factored from the characteristic loads. The allowable loads are labelled as (all. F).

$$\text{Allowable loads (all. F)}$$

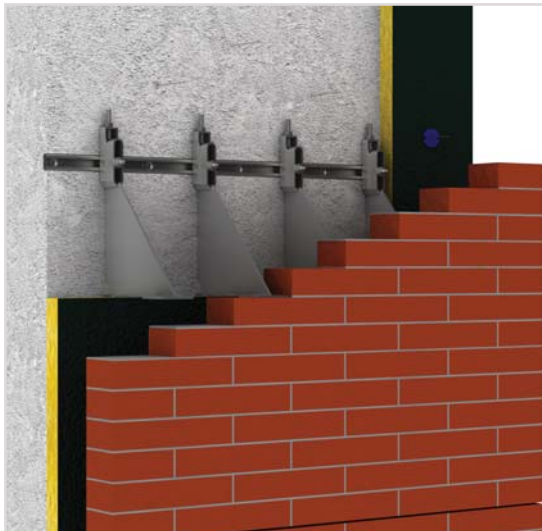
FIX Brickwork Support Brackets - Introduction

FIX Brickwork support brackets are adjustable and secure brackets that are designed for the easy and quick installation of brick facing walls.

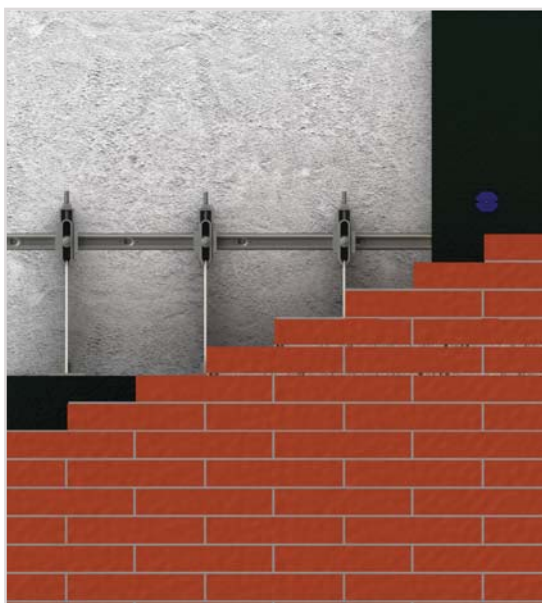
FIX support brackets are user friendly and are combined with a patented adjustable profile part that is assembled in the top of the bracket body. The brackets can be mounted by one single person. During the installation no loose parts fall down and the installer always has a hand free for adjusting.

When the **FIX** brickwork brackets are fixed on to walls, the vertical adjustability of the brackets is made by the set screw and nut. There is an adjustability space of 60 mm. The **FIX** brickwork anchors are installed either with expansion bolts or T head bolts into channels.

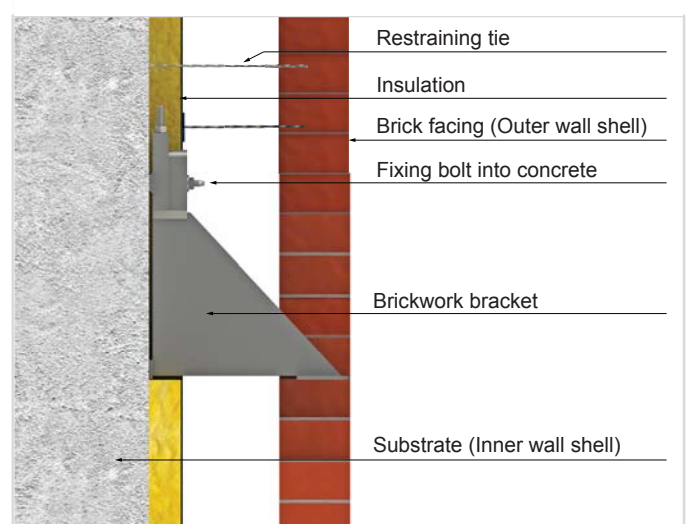
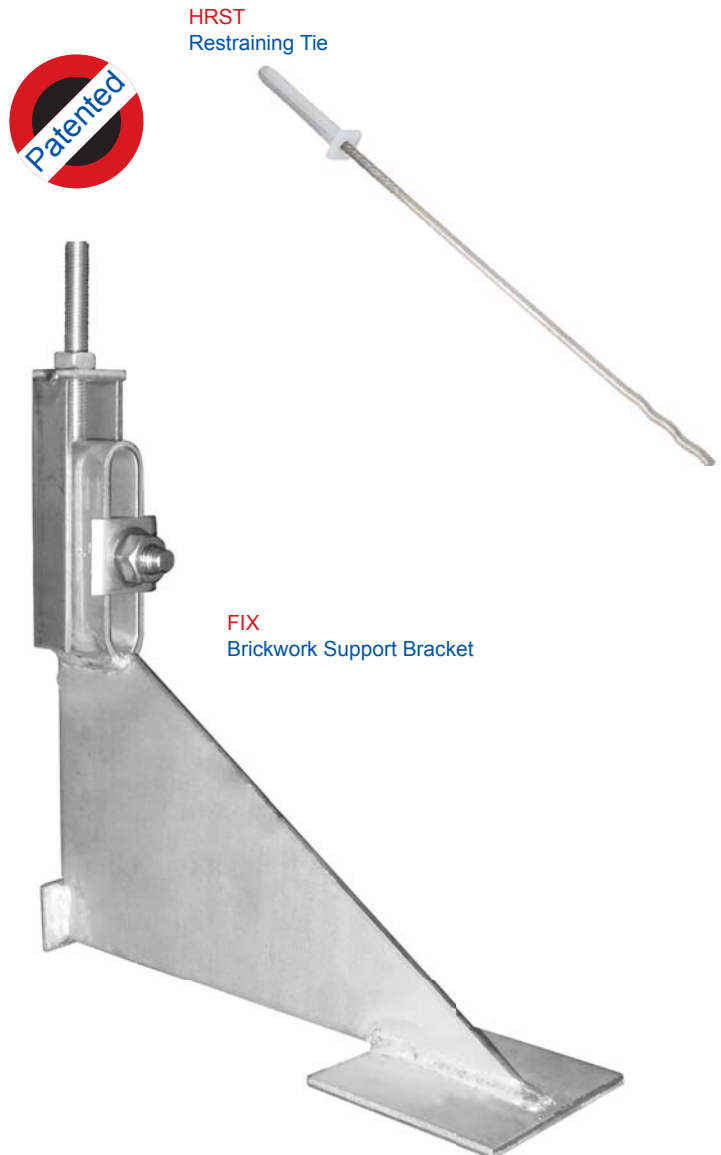
There are various type of **FIX** anchors that can be used for different applications.



• Perspective picture of brick facing installation with **FIX-U** brackets.



• Elevation picture of brick facing installation with **FIX-U** brackets

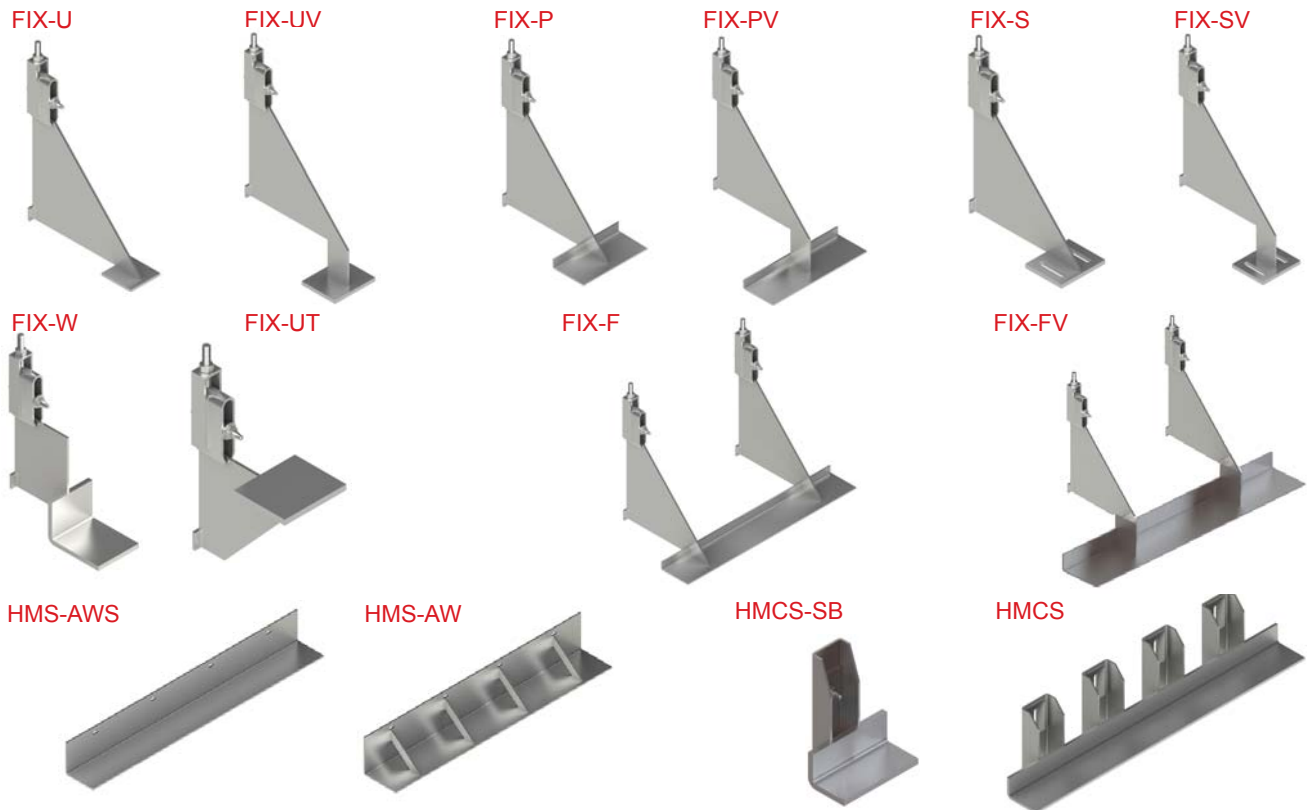


• Section picture of brick facing wall

Brickwork Fixing Systems - Product Range

The production of various types of brickwork support systems is available at HAZ Metal. There is a standard product range shown below. Special parts can be produced according to project requirements. Materials used are stainless steel and galvanized mild steel. Brickwork support anchors are produced from stainless steel 1.4301 (AISI 304) & 1.4401 (AISI 316).

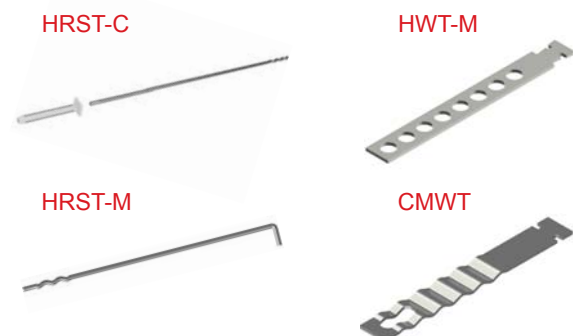
Load Bearing Brackets



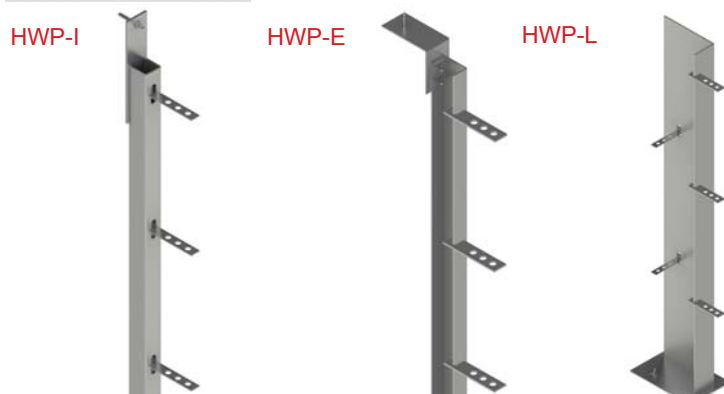
Accessories



Wall Restraining Ties



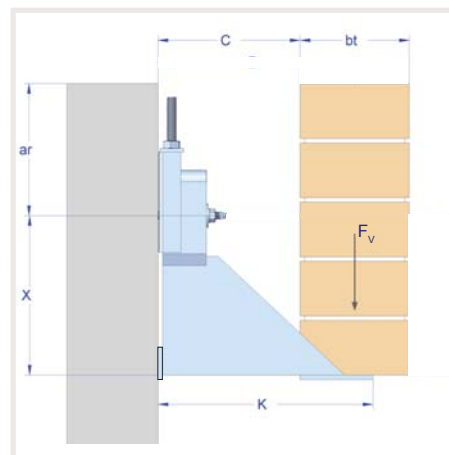
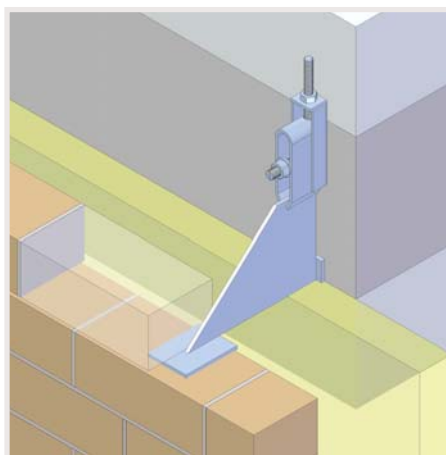
Windpost Restraints



Lintel Supports



FIX-U Support Bracket - Product Details



	Load Category 3,5 kN FRd = 4,7 kN		Load Category 7,0 kN FRd = 9,5 kN		Load Category 10,5 kN FRd = 14,2 kN	
Cavity a (mm)	Projection K (mm)	x size (mm)	Projection K (mm)	x size (mm)	Projection K (mm)	x size (mm)

60 ± 15	150	150	150	200	150	250
80 ± 15	170	150	170	200	170	250
100 ± 15	190	150	190	200	190	250
120 ± 15	210	150	210	200	210	250
140 ± 15	230	175	230	250	230	300
160 ± 15	250	175	250	250	250	300
180 ± 15	270	200	270	270	270	320
200 ± 15	290	200	290	290	290	340
220 ± 15	310	220	310	310	310	360
240 ± 15	330	240	330	330	330	380
260 ± 15	350	260	350	350	350	400

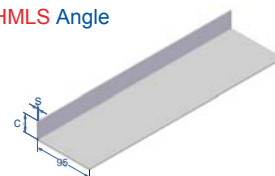
Anchor bolt	HB03 M12x135	HB03 M12x135	HB03 M16x145
-------------	--------------	--------------	--------------

Cast in channel	HMPR 38/17 with T head bolt M12x70	HMPR 49/30 with T head bolt M16x80	HMPR 54/33 with T head bolt M16x80
-----------------	---------------------------------------	---------------------------------------	---------------------------------------

- Specified load-bearing capacities refer to fixings in concrete $\geq$ C20/25
- Material : Stainless Steel 1.4301 (A2) & 1.4401 (A4)
- Expansion bolts and cast-in channels are provided separately
- Structural calculation reports are available upon order
- The fastenings have to be calculated for each individual case

Distance between supports	Angle Length L (mm)	c (mm)	s (mm)
500	480	30	2
750	730	30	3
1000	980	40	4

HMLS Angle



FIX-U Brickwork Support Bracket

This brickwork support bracket is with a single welded plate used for independent installation of each brick block. This bracket is used for closed surface elevation brick cladding.

Product Code Description

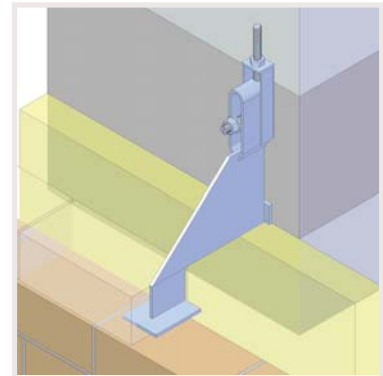
FIX-U - 3,5 / 150

Projection (mm)
Load Capacity (kN)
Type

FIX Support Brackets - Information

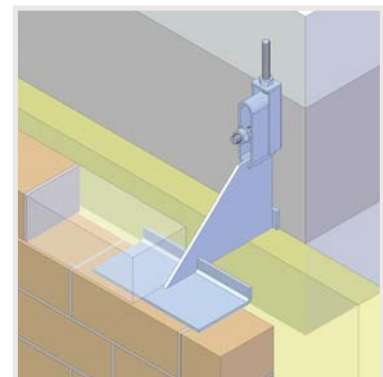
FIX-UV Support Bracket

- Single bracket with welded support plate and an offset supporting level plate.
- The offset level plate height distance can be designed according to the application requirement.
- Used for installing bricks with a lower level support than the fixing level on the substrate.



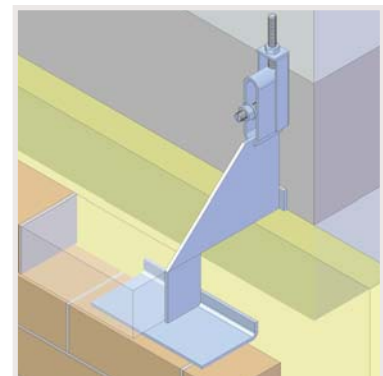
FIX-P Support Bracket

- Single bracket with welded short angle.
- The angle can be dimensioned according to the application details.
- Preferably used for installing bricks in edge situations, such as on inside corners or vertical joints.



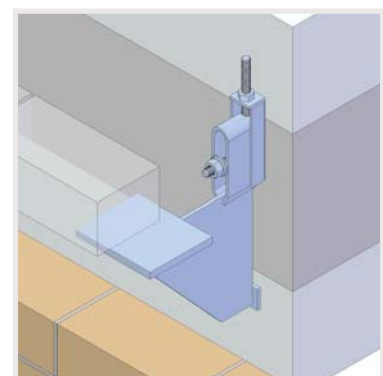
FIX-PV Support Bracket

- Single bracket with welded short angle and an offset support level plate.
- The angle and the offset plate can be dimensioned according to the application details.
- Preferably used for installing bricks in edge situations, with a lower offset support level than the fixing level on the substrate.



FIX-UT Support Bracket

- Single bracket with welded high set support plate.
- Used for installing bricks at high joint level.

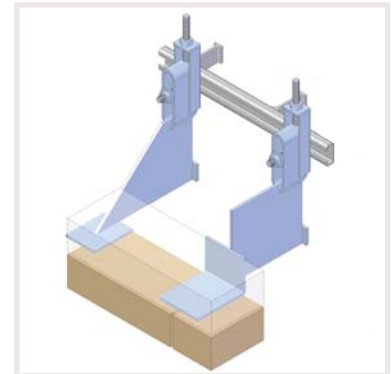




FIX Support Bracket - Information

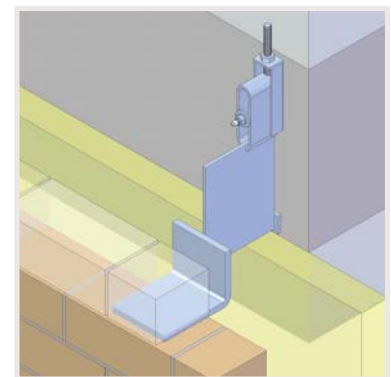
FIX-W Support Bracket

- Single bracket with welded L shaped support plate.
- This type of brickwork support bracket is used in areas such as edges, corners and where there are expansion joints.
- The welded L shaped support plate can be designed according to application details.



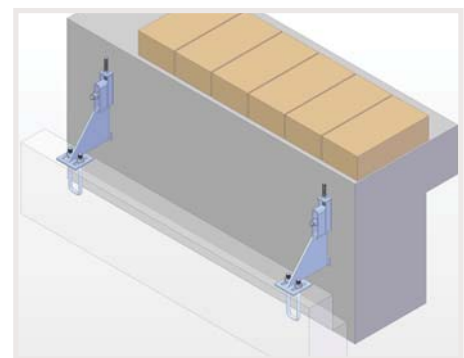
FIX-WV Support Bracket

- This support bracket has the same properties as the FIX-W bracket with a higher offset level distance.
- The offset level height distance can be designed according to the application requirement.
- Used for installing bricks at edges and corners where the support level is lower than the fixing level on the substrate.



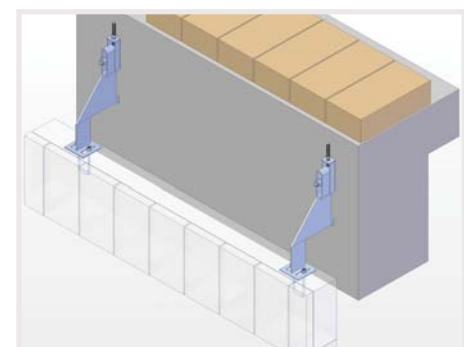
FIX-S Support Bracket

- Single bracket with welded plates with slotted holes.
- This bracket is used for supporting precast lintels above openings which do not have bearings at the sides. Support are connected to the Cast in channels or loops are inserted in the lintels.



FIX-SV Support Bracket

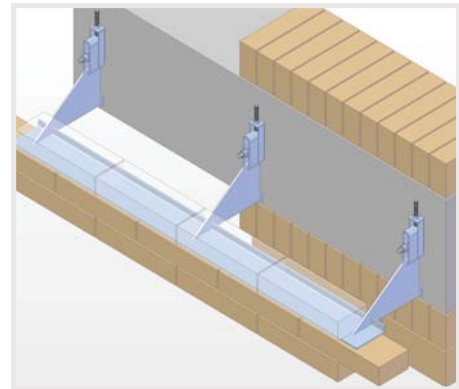
- Single bracket with welded plates with slot holes and an offset level plate.
- This bracket is used to support lintels where the support offset level is lower than the fixing level on the substrate.
- The offset level plate height distance can be designed according to the application details.



FIX Support Brackets - Product Information

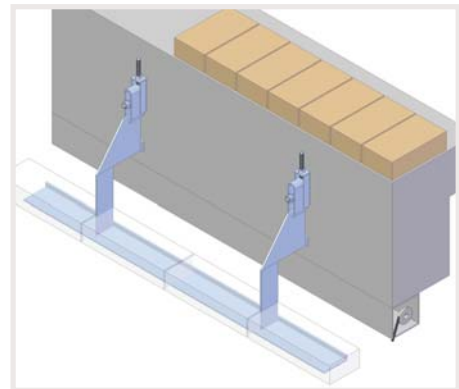
FIX-F Support Bracket

- These brackets are combined supporting brackets with a continuous supporting angle welded on to two or more bracket backs
- They are used to support visible or hidden openings in buildings or outside corners with or without vertical joints
- Available in multiples of 250 mm with up to three welded bracket backs



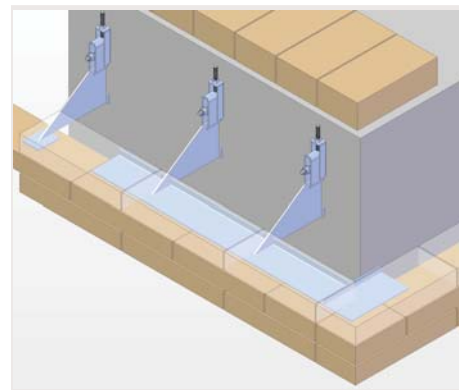
FIX-FV Support Bracket

- This continuous support bracket has the same properties as the FIX-F type support, with an additional welded offset level plate.
- The use of this bracket is necessary where the support offset level is lower than the level of fixing on the substrate



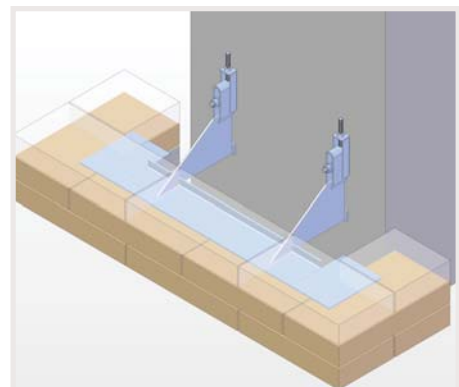
FIX-FSC Support Bracket

- These brackets are continuous supporting angles with a welded corner part at one end of the angle
- This support bracket is used to allow easy and secure installation of bricks at corner turns



FIX-FDC Support Bracket

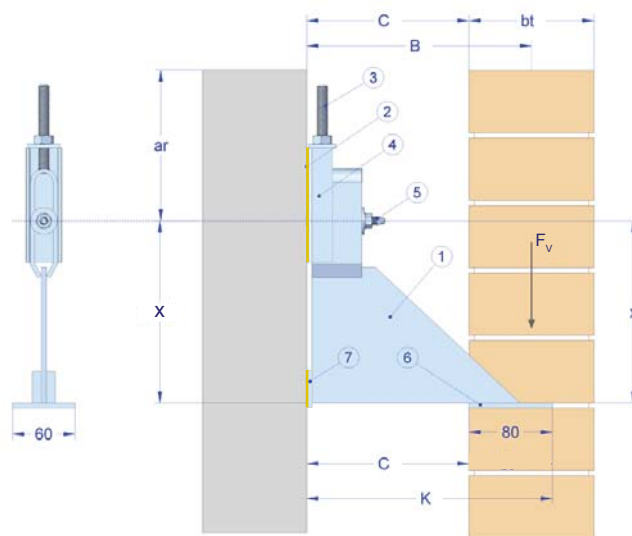
- These brackets are continuous supporting angles with a welded corner part at both ends of the angle
- This support bracket is used to allow easy and secure installation of bricks on to columns



FIX-U Support Bracket - Product Details



- 1 - Bracket body
- 2 - Thermal break
- 3 - Threaded rod
- 4 - Adjustable profile
- 5 - Anchor bolt
- 6 - Support plate
- 7 - Welded pressure plate



Product Code	Technical Details					
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	X size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾
	K (mm)	F _v (kN)	C (mm)	X (mm)	E.b. (mm)	CI (mm)
FIX-U-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70
FIX-U-3,5/170	170		80	150		
FIX-U-3,5/190	190		100	150		
FIX-U-3,5/210	210		120	150		
FIX-U-3,5/230	230		140	175		
FIX-U-3,5/250	250		160	175		
FIX-U-3,5/270	270		180	200		
FIX-U-3,5/290	290		200	200		
FIX-U-3,5/310	310		220	220		
FIX-U-3,5/330	330		240	240		
FIX-U-3,5/350	350		260	260		
FIX-U-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80
FIX-U-7,0/170	170		80	200		
FIX-U-7,0/190	190		100	200		
FIX-U-7,0/210	210		120	200		
FIX-U-7,0/230	230		140	250		
FIX-U-7,0/250	250		160	250		
FIX-U-7,0/270	270		180	270		
FIX-U-7,0/290	290		200	290		
FIX-U-7,0/310	310		220	310		
FIX-U-7,0/330	330		240	330		
FIX-U-7,0/350	350		260	350		
FIX-U-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80
FIX-U-10,5/170	170		80	250		
FIX-U-10,5/190	190		100	250		
FIX-U-10,5/210	210		120	250		
FIX-U-10,5/230	230		140	300		
FIX-U-10,5/250	250		160	300		
FIX-U-10,5/270	270		180	350		
FIX-U-10,5/290	290		200	350		
FIX-U-10,5/310	310		220	360		
FIX-U-10,5/330	330		240	380		
FIX-U-10,5/350	350		260	400		

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-U Support Bracket

This brickwork support bracket is manufactured with a single welded plate which is used for installation of each brick block independently. The FIX-U brickwork support bracket is used for straight and curved elevation brick installation.

Product Code Description

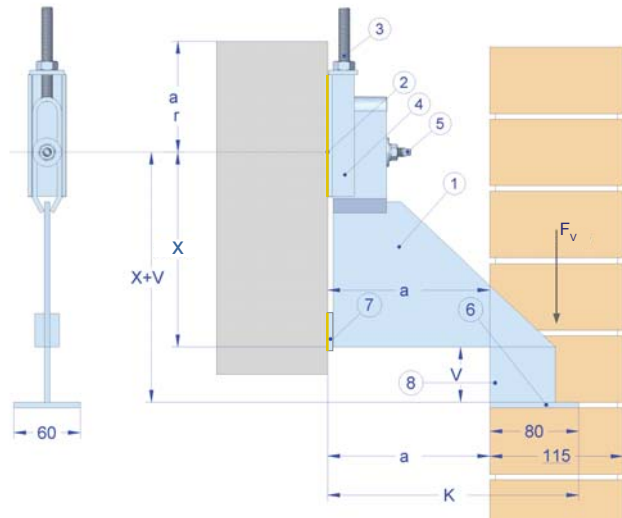
FIX-U - 3,5 / 150

Projection (mm)
 Dead Load (kN)
 Type

FIX-UV Support Bracket - Product Details



- 1 - Bracket body
- 2 - Thermal break
- 3 - Threaded rod
- 4 - Adjustable profile
- 5 - Anchor bolt
- 6 - Support plate
- 7 - Welded pressure plate
- 8 - Extension plate



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel ¹⁾ T Head Bolt	Welded Extension Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	Cl (mm)	V (mm)
FIX-UV-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-UV-3,5/170	170		80	150			
FIX-UV-3,5/190	190		100	150			
FIX-UV-3,5/210	210		120	150			
FIX-UV-3,5/230	230		140	175			
FIX-UV-3,5/250	250		160	175			
FIX-UV-3,5/270	270		180	200			
FIX-UV-3,5/290	290		200	200			
FIX-UV-3,5/310	310		220	220			
FIX-UV-3,5/330	330		240	240			
FIX-UV-3,5/350	350		260	260			
FIX-UV-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-UV-7,0/170	170		80	200			
FIX-UV-7,0/190	190		100	200			
FIX-UV-7,0/210	210		120	200			
FIX-UV-7,0/230	230		140	250			
FIX-UV-7,0/250	250		160	250			
FIX-UV-7,0/270	270		180	270			
FIX-UV-7,0/290	290		200	290			
FIX-UV-7,0/310	310		220	310			
FIX-UV-7,0/330	330		240	330			
FIX-UV-7,0/350	350		260	350			
FIX-UV-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-UV-10,5/170	170		80	250			
FIX-UV-10,5/190	190		100	250			
FIX-UV-10,5/210	210		120	250			
FIX-UV-10,5/230	230		140	300			
FIX-UV-10,5/250	250		160	300			
FIX-UV-10,5/270	270		180	350			
FIX-UV-10,5/290	290		200	350			
FIX-UV-10,5/310	310		220	360			
FIX-UV-10,5/330	330		240	380			
FIX-UV-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads

• Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

¹⁾ The fastenings has to be calculated for each individual case

FIX-UV support bracket

This brickwork support bracket is used for installing brick above window and door opening. An extension plate is welded on to the bracket body in order to reach down to desired position of fixing. The extension plate labeled as V on the table above can be produced in the required size to fit the application.

Product Code Description

FIX-UV - 3,5 / 150 - V

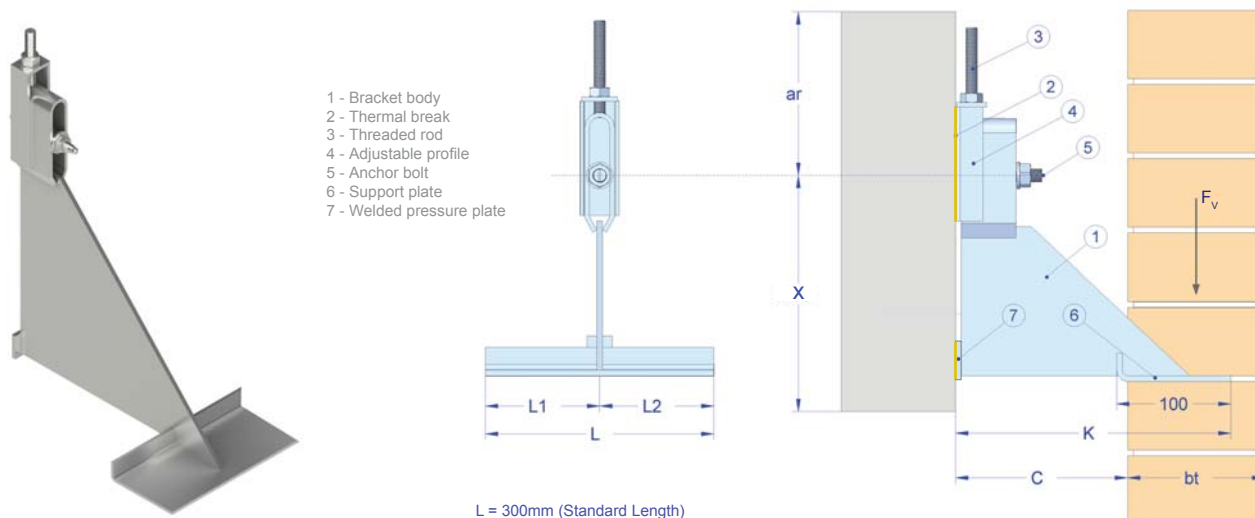
Ext. plate length (mm)

Projection (mm)

Dead load (kN)

Type

FIX-P Support Bracket - Product Details



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel ¹⁾ T Head Bolt	Welded Support Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)	L1/L2 (mm)
FIX-P-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-P-3,5/170	170		80	150			
FIX-P-3,5/190	190		100	150			
FIX-P-3,5/210	210		120	150			
FIX-P-3,5/230	230		140	175			
FIX-P-3,5/250	250		160	175			
FIX-P-3,5/270	270		180	200			
FIX-P-3,5/290	290		200	200			
FIX-P-3,5/310	310		220	220			
FIX-P-3,5/330	330		240	240			
FIX-P-3,5/350	350		260	260			
FIX-P-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-P-7,0/170	170		80	200			
FIX-P-7,0/190	190		100	200			
FIX-P-7,0/210	210		120	200			
FIX-P-7,0/230	230		140	230			
FIX-P-7,0/250	250		160	250			
FIX-P-7,0/270	270		180	270			
FIX-P-7,0/290	290		200	290			
FIX-P-7,0/310	310		220	310			
FIX-P-7,0/330	330		240	330			
FIX-P-7,0/350	350		260	350			
FIX-P-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-P-10,5/170	170		80	250			
FIX-P-10,5/190	190		100	250			
FIX-P-10,5/210	210		120	250			
FIX-P-10,5/230	230		140	300			
FIX-P-10,5/250	250		160	300			
FIX-P-10,5/270	270		180	340			
FIX-P-10,5/290	290		200	350			
FIX-P-10,5/310	310		220	360			
FIX-P-10,5/330	330		240	380			
FIX-P-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-P Support Bracket

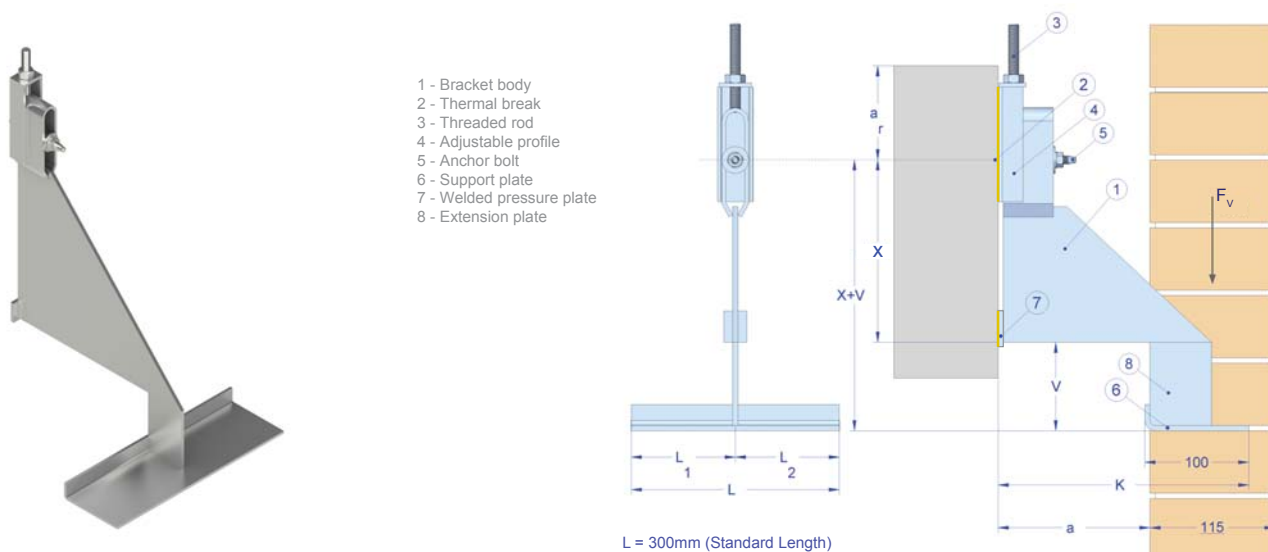
This type of brickwork support bracket has a wide welded support plate for more secure positioning of the brick blocks. The width of the welded support is determined according to the application detail.

Product Code Description

FIX-P - 3,5 / 150 - L

- Sup. plate width (mm)
- Projection (mm)
- Dead Load (kN)
- Type

FIX-PV Support Bracket - Product Details



Product Code	Technical Details							
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾	Welded Extension	Welded Support
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	Cl (mm)	V (mm)	L1/L2 (mm)
FIX-PV-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail	Determined according to application detail
FIX-PV-3,5/170	170		80	150				
FIX-PV-3,5/190	190		100	150				
FIX-PV-3,5/210	210		120	150				
FIX-PV-3,5/230	230		140	175				
FIX-PV-3,5/250	250		160	175				
FIX-PV-3,5/270	270		180	200				
FIX-PV-3,5/290	290		200	200				
FIX-PV-3,5/310	310		220	220				
FIX-PV-3,5/330	330		240	240				
FIX-PV-3,5/350	350		260	260				
FIX-PV-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail	Determined according to application detail
FIX-PV-7,0/170	170		80	200				
FIX-PV-7,0/190	190		100	200				
FIX-PV-7,0/210	210		120	200				
FIX-PV-7,0/230	230		140	230				
FIX-PV-7,0/250	250		160	250				
FIX-PV-7,0/270	270		180	270				
FIX-PV-7,0/290	290		200	290				
FIX-PV-7,0/310	310		220	310				
FIX-PV-7,0/330	330		240	330				
FIX-PV-7,0/350	350		260	350				
FIX-PV-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail	Determined according to application detail
FIX-PV-10,5/170	170		80	250				
FIX-PV-10,5/190	190		100	250				
FIX-PV-10,5/210	210		120	250				
FIX-PV-10,5/230	230		140	300				
FIX-PV-10,5/250	250		160	300				
FIX-PV-10,5/270	270		180	320				
FIX-PV-10,5/290	290		200	340				
FIX-PV-10,5/310	310		220	360				
FIX-PV-10,5/330	330		240	380				
FIX-PV-10,5/350	350		260	400				

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads

• Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

1) The fastenings has to be calculated for each individual case

FIX-PV Support Bracket

This brickwork support bracket has the same features as the FIX-P bracket, however it has an extension down wards for brick installation above window and door openings. The welded extension plate can be produced in desired lengths.

Product Code Description

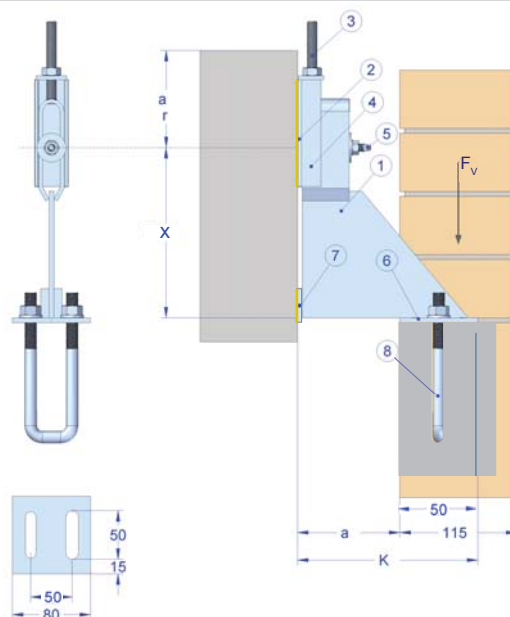
FIX-PV - 3,5 / 150 - L / V

Ext. plate length (mm)
Sup. plate width (mm)
Projection (mm)
Dead Load (kN)
Type

FIX-S Support Bracket - Product Details



- 1 - Bracket body
- 2 - Thermal break
- 3 - Threaded rod
- 4 - Adjustable profile
- 5 - Anchor bolt
- 6 - Support plate
- 7 - Welded pressure plate
- 8 - U insert (to be ordered separately, see page 39)



Product Code	Technical Details					
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)
FIX-S-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70
FIX-S-3,5/170	170		80	150		
FIX-S-3,5/190	190		100	150		
FIX-S-3,5/210	210		120	150		
FIX-S-3,5/230	230		140	175		
FIX-S-3,5/250	250		160	175		
FIX-S-3,5/270	270		180	200		
FIX-S-3,5/290	290		200	200		
FIX-S-3,5/310	310		220	220		
FIX-S-3,5/330	330		240	240		
FIX-S-3,5/350	350		260	260		
FIX-S-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80
FIX-S-7,0/170	170		80	200		
FIX-S-7,0/190	190		100	200		
FIX-S-7,0/210	210		120	200		
FIX-S-7,0/230	230		140	230		
FIX-S-7,0/250	250		160	250		
FIX-S-7,0/270	270		180	270		
FIX-S-7,0/290	290		200	290		
FIX-S-7,0/310	310		220	310		
FIX-S-7,0/330	330		240	330		
FIX-S-7,0/350	350		260	350		
FIX-S-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80
FIX-S-10,5/170	170		80	250		
FIX-S-10,5/190	190		100	250		
FIX-S-10,5/210	210		120	250		
FIX-S-10,5/230	230		140	300		
FIX-S-10,5/250	250		160	300		
FIX-S-10,5/270	270		180	320		
FIX-S-10,5/290	290		200	340		
FIX-S-10,5/310	310		220	360		
FIX-S-10,5/330	330		240	380		
FIX-S-10,5/350	350		260	400		

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-S Support Bracket

This brickwork support bracket is used for fixing of prefabricated components. A U shaped bar is precasted in to the components which is then fixed on to the support plate which have slotted holes, using nuts and washers. A cast in channel can also be used for casting into prefabricated components.

Product Code Description

FIX-S - 3,5 / 150

Projection (mm)

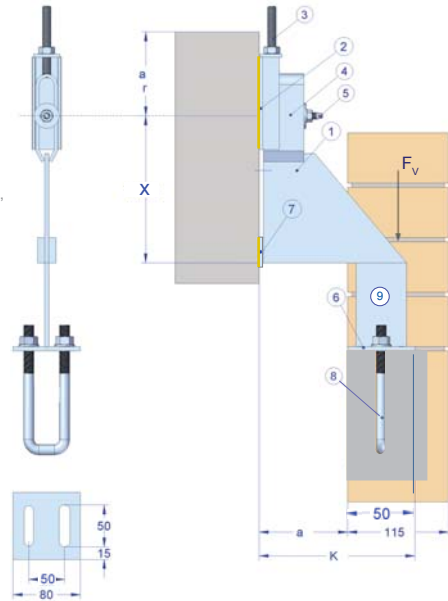
Dead Load (kN)

Type

FIX-SV Support Bracket - Product Details



- 1 - Bracket body
- 2 - Thermal break
- 3 - Threaded rod
- 4 - Adjustable profile
- 5 - Anchor bolt
- 6 - Support plate
- 7 - Welded pressure plate
- 8 - U insert (to be ordered separately, see page 39)
- 9 - Extension plate



Product Code	Technical Details						
	Projection +/- 15 mm K (mm)	Load Range F_v (kN)	Cavity +/- 15 mm C (mm)	x size x (mm)	Bolt Size ¹⁾ E.b. (mm)	Cast-in Channel T Head Bolt ¹⁾ Cl (mm)	Welded Extension Plate V (mm)
FIX-SV-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-SV-3,5/170	170		80	150			
FIX-SV-3,5/190	190		100	150			
FIX-SV-3,5/210	210		120	150			
FIX-SV-3,5/230	230		140	175			
FIX-SV-3,5/250	250		160	175			
FIX-SV-3,5/270	270		180	200			
FIX-SV-3,5/290	290		200	200			
FIX-SV-3,5/310	310		220	220			
FIX-SV-3,5/330	330		240	240			
FIX-SV-3,5/350	350		260	260			
FIX-SV-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-SV-7,0/170	170		80	200			
FIX-SV-7,0/190	190		100	200			
FIX-SV-7,0/210	210		120	200			
FIX-SV-7,0/230	230		140	230			
FIX-SV-7,0/250	250		160	250			
FIX-SV-7,0/270	270		180	270			
FIX-SV-7,0/290	290		200	290			
FIX-SV-7,0/310	310		220	310			
FIX-SV-7,0/330	330		240	330			
FIX-SV-7,0/350	350		260	350			
FIX-SV-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-SV-10,5/170	170		80	250			
FIX-SV-10,5/190	190		100	250			
FIX-SV-10,5/210	210		120	250			
FIX-SV-10,5/230	230		140	300			
FIX-SV-10,5/250	250		160	300			
FIX-SV-10,5/270	270		180	320			
FIX-SV-10,5/290	290		200	340			
FIX-SV-10,5/310	310		220	360			
FIX-SV-10,5/330	330		240	380			
FIX-SV-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads

• Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

1) The fastenings has to be calculated for each individual case

FIX-SV Support Bracket

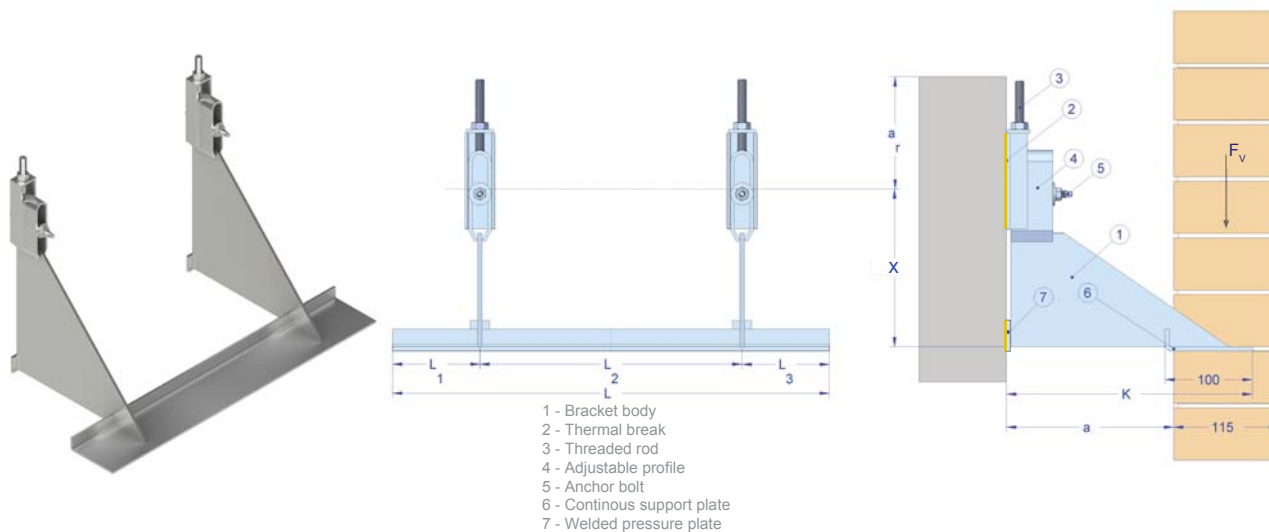
This brickwork support bracket is the same as FIX-S type brickwork support bracket which is used for fixing prefabricated components. There is an extension plate welded for positioning the bracket well above window and door openings.

Product Code Description

FIX-SV - 3,5 / 150 - V

- Type
- Dead Load (kN)
- Projection (mm)
- Ext. Plate Length (mm)

FIX-F Support Bracket - Product Details



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾	Welded Support Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)	L (mm)
FIX-F-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-F-3,5/170	170		80	150			
FIX-F-3,5/190	190		100	150			
FIX-F-3,5/210	210		120	150			
FIX-F-3,5/230	230		140	175			
FIX-F-3,5/250	250		160	175			
FIX-F-3,5/270	270		180	180			
FIX-F-3,5/290	290		200	200			
FIX-F-3,5/310	310		220	220			
FIX-F-3,5/330	330		240	240			
FIX-F-3,5/350	350		260	260			
FIX-F-7,0/150/7	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-F-7,0/170/7	170		80	200			
FIX-F-7,0/190/7	190		100	200			
FIX-F-7,0/210/7	210		120	200			
FIX-F-7,0/230/7	230		140	250			
FIX-F-7,0/250/7	250		160	250			
FIX-F-7,0/270/7	270		180	270			
FIX-F-7,0/290/7	290		200	290			
FIX-F-7,0/310/7	310		220	310			
FIX-F-7,0/330/7	330		240	330			
FIX-F-7,0/350/7	350		260	350			
FIX-F-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-F-10,5/170	170		80	250			
FIX-F-10,5/190	190		100	250			
FIX-F-10,5/210	210		120	250			
FIX-F-10,5/230	230		140	300			
FIX-F-10,5/250	250		160	300			
FIX-F-10,5/270	270		180	320			
FIX-F-10,5/290	290		200	350			
FIX-F-10,5/310	310		220	360			
FIX-F-10,5/330	330		240	380			
FIX-F-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-F Support Bracket

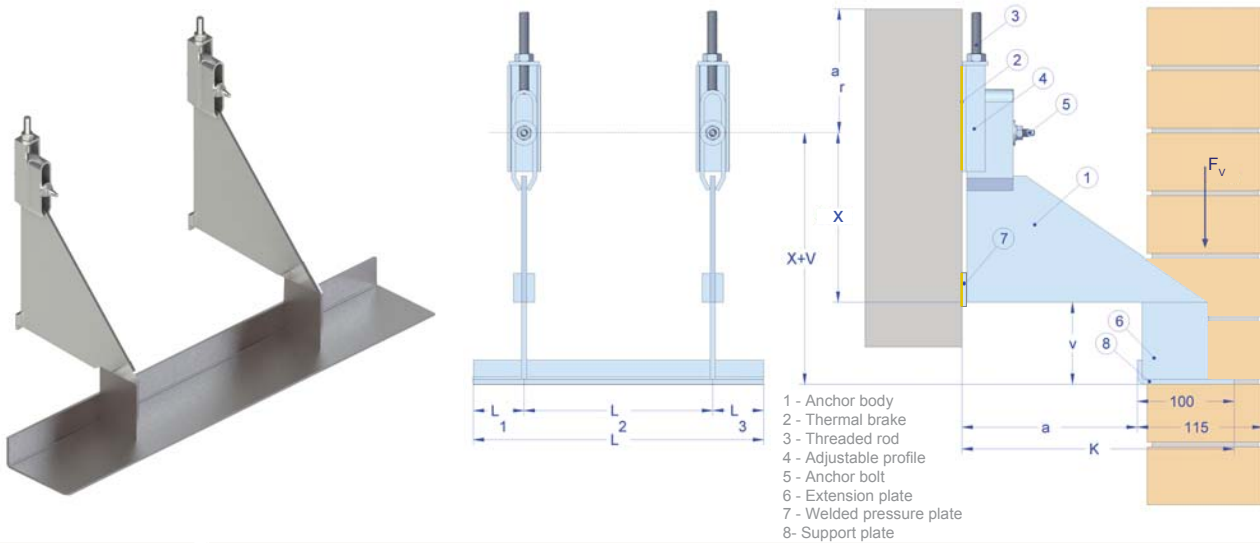
This type of brickwork support anchors have a continues welded support. With this, brick cladding can be made along the length of the continues welded L shaped plate. The length of the L plate can be designed according to the application details.

Product Code Description

FIX-F - 3,5 / 150 - L

- Sup. plate Width (mm)
- Projection (mm)
- Dead Load (kN)
- Type

FIX-FV Support Bracket - Product Details



Product Code	Technical Details							
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾	Welded Extension	Welded Support
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	Cl (mm)	V (mm)	L (mm)
FIX-FV-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail	Determined according to application detail
FIX-FV-3,5/170	170		80	150				
FIX-FV-3,5/190	190		100	150				
FIX-FV-3,5/210	210		120	150				
FIX-FV-3,5/230	230		140	175				
FIX-FV-3,5/250	250		160	175				
FIX-FV-3,5/270	270		180	180				
FIX-FV-3,5/290	290		200	200				
FIX-FV-3,5/310	310		220	220				
FIX-FV-3,5/330	330		240	240				
FIX-FV-3,5/350	350		260	260				
FIX-FV-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail	Determined according to application detail
FIX-FV-7,0/170	170		80	200				
FIX-FV-7,0/190	190		100	200				
FIX-FV-7,0/210	210		120	200				
FIX-FV-7,0/230	230		140	250				
FIX-FV-7,0/250	250		160	250				
FIX-FV-7,0/270	270		180	270				
FIX-FV-7,0/290	290		200	290				
FIX-FV-7,0/310	310		220	310				
FIX-FV-7,0/330	330		240	330				
FIX-FV-7,0/350	350		260	350				
FIX-FV-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail	Determined according to application detail
FIX-FV-10,5/170	170		80	250				
FIX-FV-10,5/190	190		100	250				
FIX-FV-10,5/210	210		120	250				
FIX-FV-10,5/230	230		140	300				
FIX-FV-10,5/250	250		160	300				
FIX-FV-10,5/270	270		180	320				
FIX-FV-10,5/290	290		200	350				
FIX-FV-10,5/310	310		220	360				
FIX-FV-10,5/330	330		240	380				
FIX-FV-10,5/350	350		260	400				

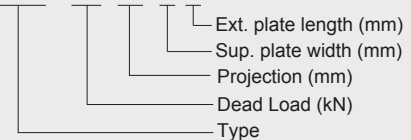
• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-FV Support Bracket

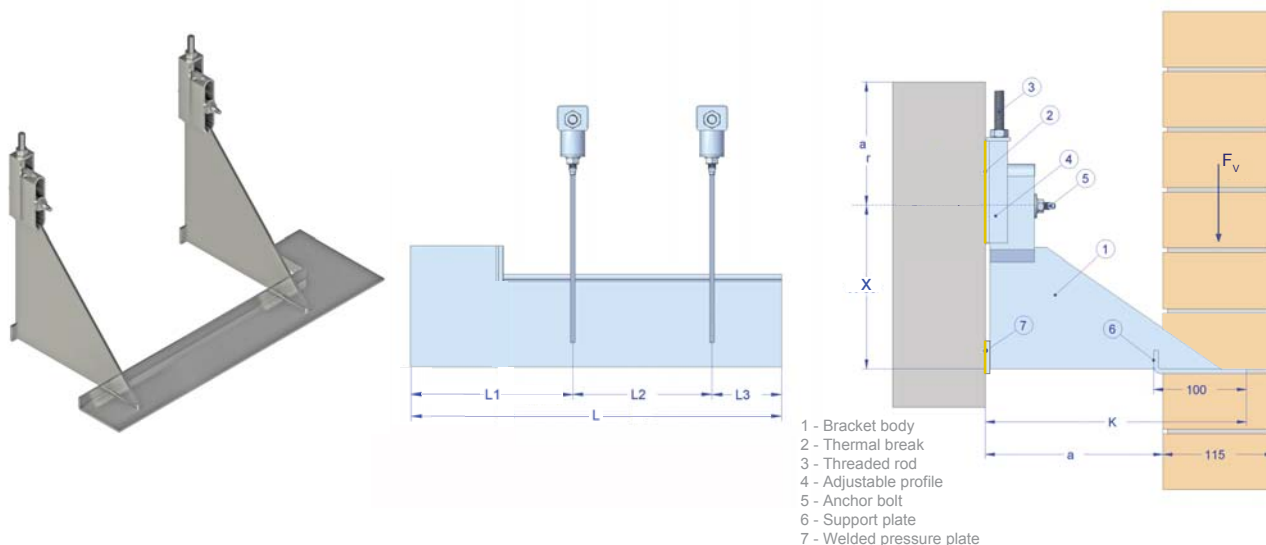
This type of brickwork support bracket has the same properties as the FIX-F type support bracket. The difference is that it has a down word extension plate for brick cladding above window and door openings.

Product Code Description

FIX-FV - 3,5 / 150 - L / V



FIX-FSC Support Bracket - Product Details



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾	Welded Support Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)	L (mm)
FIX-FSC-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-FSC-3,5/170	170		80	150			
FIX-FSC-3,5/190	190		100	150			
FIX-FSC-3,5/210	210		120	150			
FIX-FSC-3,5/230	230		140	175			
FIX-FSC-3,5/250	250		160	175			
FIX-FSC-3,5/270	270		180	180			
FIX-FSC-3,5/290	290		200	200			
FIX-FSC-3,5/310	310		220	220			
FIX-FSC-3,5/330	330		240	240			
FIX-FSC-3,5/350	350		260	260			
FIX-FSC-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-FSC-7,0/170	170		80	200			
FIX-FSC-7,0/190	190		100	200			
FIX-FSC-7,0/210	210		120	200			
FIX-FSC-7,0/230	230		140	250			
FIX-FSC-7,0/250	250		160	250			
FIX-FSC-7,0/270	270		180	270			
FIX-FSC-7,0/290	290		200	290			
FIX-FSC-7,0/310	310		220	310			
FIX-FSC-7,0/330	330		240	330			
FIX-FSC-7,0/350	350		260	350			
FIX-FSC-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-FSC-10,5/170	170		80	250			
FIX-FSC-10,5/190	190		100	250			
FIX-FSC-10,5/210	210		120	250			
FIX-FSC-10,5/230	230		140	300			
FIX-FSC-10,5/250	250		160	300			
FIX-FSC-10,5/270	270		180	320			
FIX-FSC-10,5/290	290		200	350			
FIX-FSC-10,5/310	310		220	360			
FIX-FSC-10,5/330	330		240	380			
FIX-FSC-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order
 1) The fastenings has to be calculated for each individual case

FIX-FSC Support Bracket

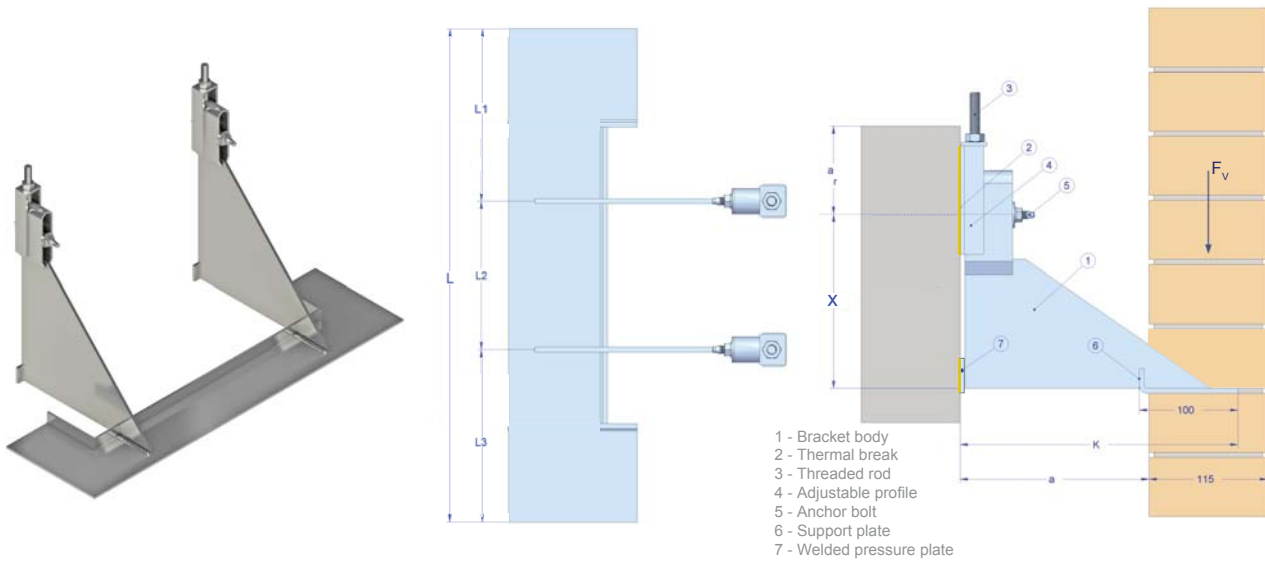
This type of brickwork support bracket has a welded corner support which are used for brick support at wall corners. The length of the welded supports are determined according to the application detail.

Product Code Description

FIX-FSC - 3,5 / 150 - L

Sup. plate width (mm)
 Projection (mm)
 Dead Load (kN)
 Type

FIX-FDC Support Bracket - Product Details



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in Channel T Head Bolt ¹⁾	Welded Support Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	Cl (mm)	L (mm)
FIX-FDC-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-FDC-3,5/170	170		80	150			
FIX-FDC-3,5/190	190		100	150			
FIX-FDC-3,5/210	210		120	150			
FIX-FDC-3,5/230	230		140	175			
FIX-FDC-3,5/250	250		160	175			
FIX-FDC-3,5/270	270		180	180			
FIX-FDC-3,5/290	290		200	200			
FIX-FDC-3,5/310	310		220	220			
FIX-FDC-3,5/330	330		240	240			
FIX-FDC-3,5/350	350		260	260			
FIX-FDC-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-FDC-7,0/170	170		80	200			
FIX-FDC-7,0/190	190		100	200			
FIX-FDC-7,0/210	210		120	200			
FIX-FDC-7,0/230	230		140	250			
FIX-FDC-7,0/250	250		160	250			
FIX-FDC-7,0/270	270		180	270			
FIX-FDC-7,0/290	290		200	290			
FIX-FDC-7,0/310	310		220	310			
FIX-FDC-7,0/330	330		240	330			
FIX-FDC-7,0/350	350		260	350			
FIX-FDC-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80	Determined according to application detail
FIX-FDC-10,5/170	170		80	250			
FIX-FDC-10,5/190	190		100	250			
FIX-FDC-10,5/210	210		120	250			
FIX-FDC-10,5/230	230		140	300			
FIX-FDC-10,5/250	250		160	300			
FIX-FDC-10,5/270	270		180	320			
FIX-FDC-10,5/290	290		200	350			
FIX-FDC-10,5/310	310		220	360			
FIX-FDC-10,5/330	330		240	380			
FIX-FDC-10,5/350	350		260	400			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

¹⁾ The fastenings has to be calculated for each individual case

FIX-FDC Support Bracket

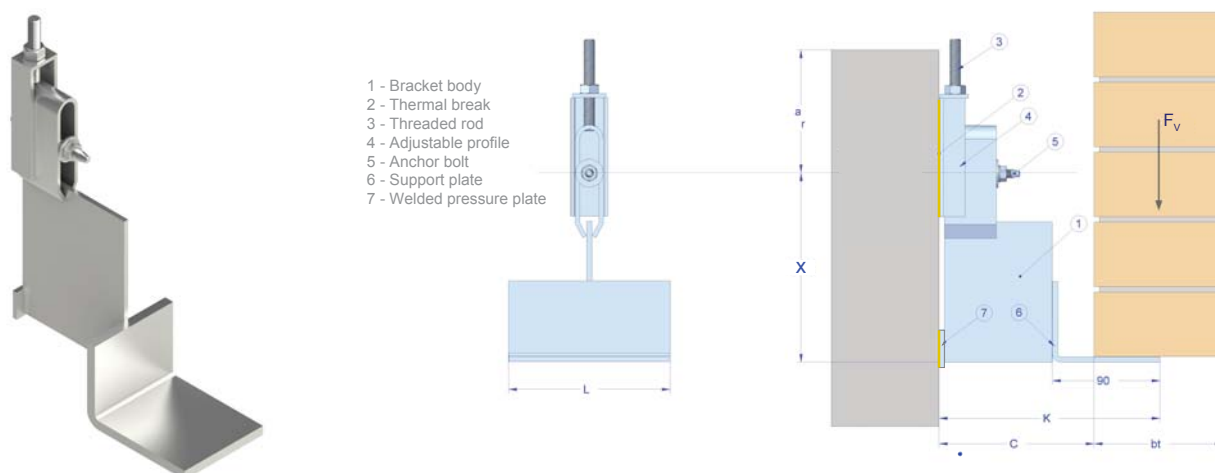
This type of brickwork support is similar to the FIX-C type support bracket, however it has a welded corner support at both sides of the continues support angle. This asupport bracket is suitable for installing brick works on columns where there are corners at both sides of the columns on short distances.

Product Code Description

FIX-FDC - 3,5 / 150 - L

Sup. plate width (mm)
Projection (mm)
Dead Load (kN)
Type

FIX-W Support Bracket - Product Details



Product Code	Technical Details						
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in channel T Head Bolt ¹⁾	Welded Support Plate
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)	L1/L2 (mm)
FIX-W-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70	Determined according to application detail
FIX-W-3,5/170	170		80	150			
FIX-W-3,5/190	190		100	150			
FIX-W-3,5/210	210		120	150			
FIX-W-3,5/230	230		140	175			
FIX-W-3,5/250	250		160	175			
FIX-W-3,5/270	270		180	200			
FIX-W-3,5/290	290		200	200			
FIX-W-3,5/310	310		220	220			
FIX-W-3,5/330	330		240	240			
FIX-W-3,5/350	350		260	260			
FIX-W-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80	Determined according to application detail
FIX-W-7,0/170	170		80	200			
FIX-W-7,0/190	190		100	200			
FIX-W-7,0/210	210		120	200			
FIX-W-7,0/230	230		140	230			
FIX-W-7,0/250	250		160	250			
FIX-W-7,0/270	270		180	270			
FIX-W-7,0/290	290		200	290			
FIX-W-7,0/310	310		220	310			
FIX-W-7,0/330	330		240	330			
FIX-W-7,0/350	350		260	350			

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4)

• Load capacities refer to fixings in concrete ≥ C20/25

• Loads stated are allowable loads

• Other sizes are available for production upon request

• Bolts and channels are provided separately

• Structural calculation reports are available upon order

1) The fastenings has to be calculated for each individual case

FIX-W Support Bracket

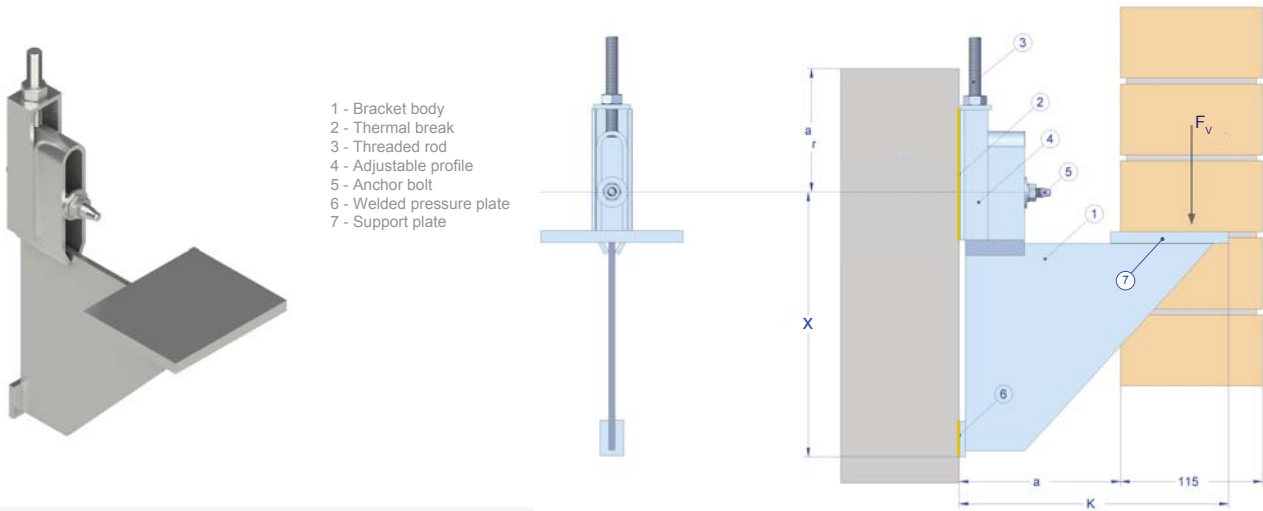
This type of brickwork support bracket has an L plate welded on a single bracket and is used for installing the last brick on a row at the end of a wall. the brackets are primarily used in the edge zones and where there are expansion joints.

Product Code Description

FIX-W - 3,5 / 150 - L

Sup. plate width (mm)
 Projection (mm)
 Dead Load (kN)
 Type

FIX-UT Support Bracket - Product Details



Product Code	Technical Details					
	Projection +/- 15 mm	Load Range	Cavity +/- 15 mm	x size	Bolt Size ¹⁾	Cast-in channel T-Head Bolt ¹⁾
	K (mm)	F _v (kN)	C (mm)	x (mm)	E.b. (mm)	CI (mm)
FIX-UT-3,5/150	150	3,5	60	150	M12x135	38/17 - M12x70
FIX-UT-3,5/170	170		80	150		
FIX-UT-3,5/190	190		100	150		
FIX-UT-3,5/210	210		120	150		
FIX-UT-3,5/230	230		140	175		
FIX-UT-3,5/250	250		160	175		
FIX-UT-3,5/270	270		180	200		
FIX-UT-3,5/290	290		200	200		
FIX-UT-3,5/310	310		220	220		
FIX-UT-3,5/330	330		240	240		
FIX-UT-3,5/350	350		260	260		
FIX-UT-7,0/150	150	7,0	60	200	M12x135	49/30 - M16x80
FIX-UT-7,0/170	170		80	200		
FIX-UT-7,0/190	190		100	200		
FIX-UT-7,0/210	210		120	200		
FIX-UT-7,0/230	230		140	250		
FIX-UT-7,0/250	250		160	250		
FIX-UT-7,0/270	270		180	270		
FIX-UT-7,0/290	290		200	290		
FIX-UT-7,0/310	310		220	310		
FIX-UT-7,0/330	330		240	330		
FIX-UT-7,0/350	350		260	350		
FIX-UT-10,5/150	150	10,5	60	250	M16x145	54/33 - M16x80
FIX-UT-10,5/170	170		80	250		
FIX-UT-10,5/190	190		100	250		
FIX-UT-10,5/210	210		120	250		
FIX-UT-10,5/230	230		140	300		
FIX-UT-10,5/250	250		160	300		
FIX-UT-10,5/270	270		180	350		
FIX-UT-10,5/290	290		200	350		
FIX-UT-10,5/310	310		220	360		
FIX-UT-10,5/330	330		240	380		
FIX-UT-10,5/350	350		260	400		

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete ≥ C20/25 • Loads stated are allowable loads

• Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

1) The fastenings has to be calculated for each individual case

FIX-UT Support Bracket

This type of brickwork support bracket is used for brick installation where the support levels are higher than the FIX-UT type support bracket. The support level is in the same level as the fixing point on the wall.

Product Code Description

FIX-UT - 3,5 / 150

Projection (mm)

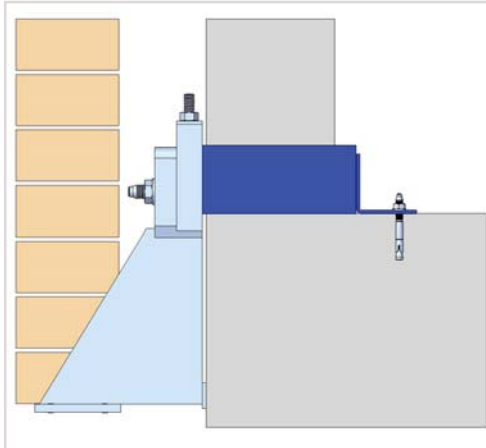
Dead Load (kN)

Type



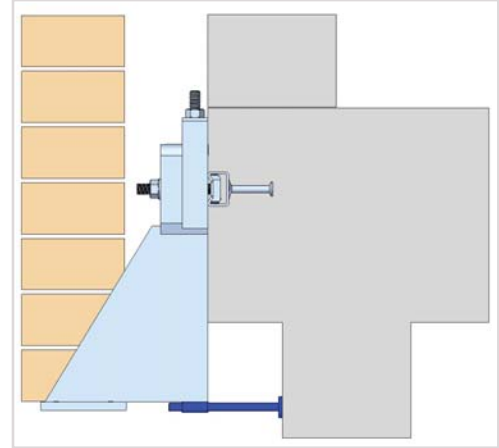
Brickwork Support Brackets - Application Examples

FIX brickwork support brackets can be custom designed to accommodate the special application requirements. Below are some examples of what could be designed and produced to cover the design requirements. Custom design is made in our technical department and project drawings are prepared and submitted for approval.



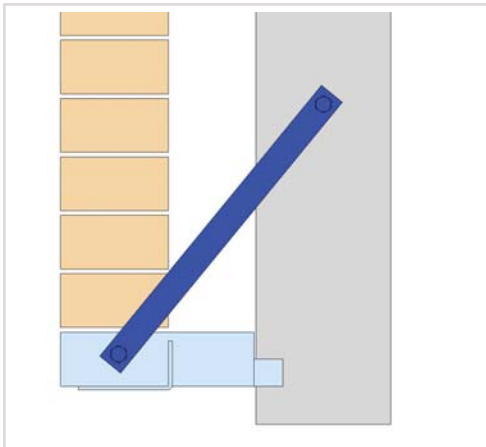
Fixing On Thin Inner Walls

Brackets are bolted on to specially designed elements that allow bolting on to concrete beam upper surface



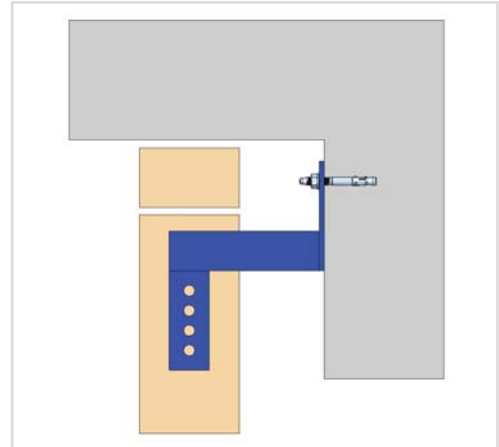
Lateral Adjustability

In circumstances where adjustability of the projection size is required, an adjusting screw is welded on the brackets



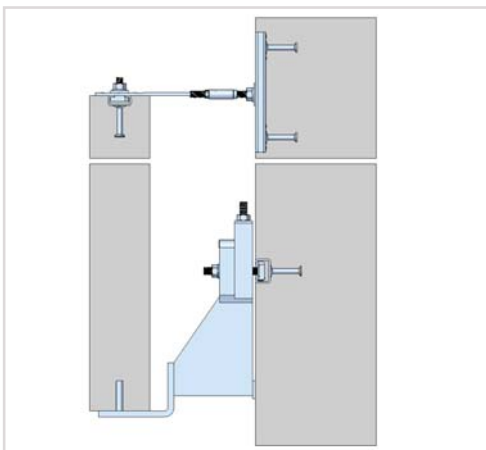
Fixing When Close To Wall Edges

A tie strap can be used for fixing the brackets on the side of the wall



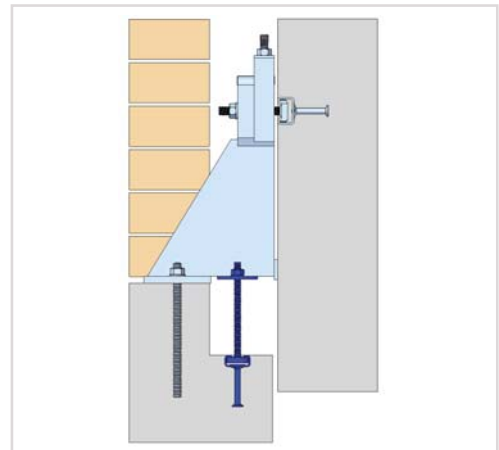
Low Height Brick Work Installation

Special bracket design can be made for installation bricks positioned on edges where there is a low installation height



Fixing Of Prefabricated Components

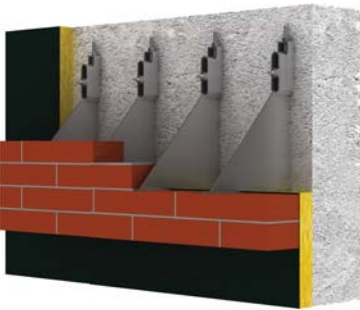
Brackets can be supplied with pins for supporting the prefabricated components. Cast in channels and wall ties can be used for restraining purposes



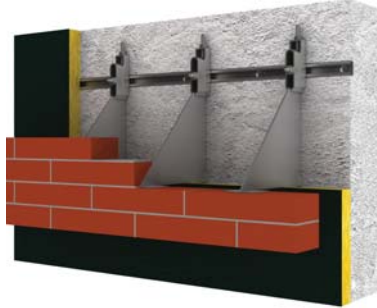
Fixing Of Prefabricated Lintels

Brackets can be supplied with an additional plate where threaded rods can be connected for supporting the load of the prefabricated component

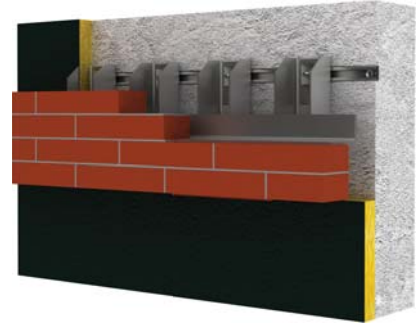
Brickwork Support Systems - Application Examples



- Brickwork facing wall supporting system with **FIX-U** single brackets. Bracket fixing to wall with through bolt.



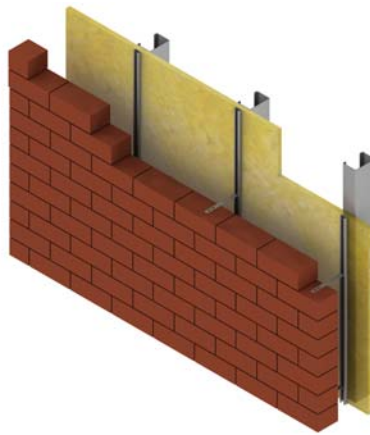
- Brickwork facing wall supporting system with **FIX-U** single brackets. Bracket fixing to wall with cast-in channel.



- Brickwork facing wall supporting system with **HMCS** continuous brickwork supports



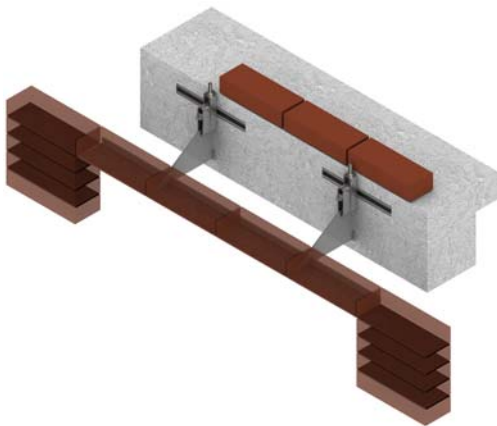
- Brickwork facing wall supporting with **HMS-AW** brickwork support angle



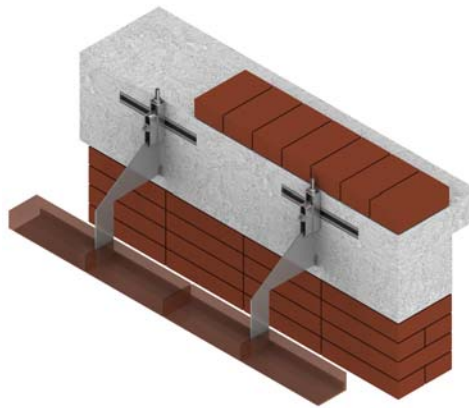
- Brickwork facing walls restraining system with **CMWT** restraint channels & ties



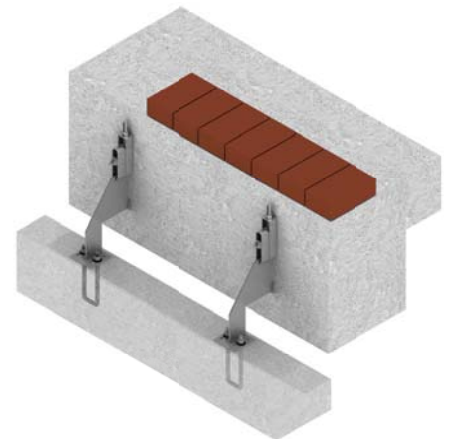
- Brickwork facing walls restraining system with **HMS-AV** restraint channels & ties



- **FIX-P** brickwork support brackets for supporting bricks above openings



- **FIX-PV** brickwork support brackets for supporting bricks above openings

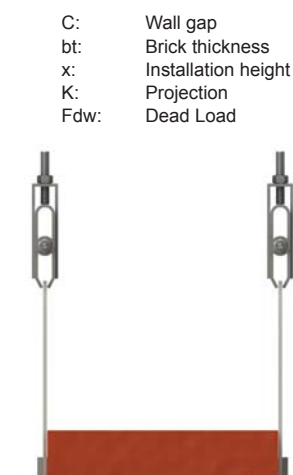
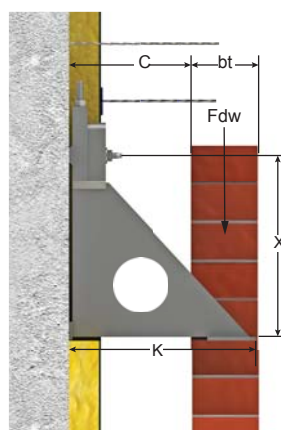


- **FIX-SV** brickwork support brackets for supporting prefabricated components

ISO-FIX Brickwork Support Bracket - Product Details

ISO-FIX Brickwork support brackets is an environmentally friendly product that helps to reduce energy consumptions. With its patented design, it reduces cold bridging significantly. There is a round part that is laser cut on the body which decreases the rate of cold bridge transfer to the wall. Thermal break pads are also used that reduces the cold bridging effect to the walls. The ISO-FIX product features is available for the whole HMS-FIX range.

- Significant reduction in cold bridging with its developed design and use of thermal breaks
- No bending moment on the fixing bolts with the use of FIX adjustable plate
- No point load on the fixing bolts because of the FIX adjustable plate
- Fast installation & adjustability in the vertical axis. One person can easily do the installation



Cavity a (mm)	Load Category 3,5 kN FRd = 4,7 kN		Load Category 7,0 kN FRd = 9,5 kN		Load Category 10,5 kN FRd = 14,2 kN	
	Projection K (mm)	x size (mm)	Projection K (mm)	x size (mm)	Projection K (mm)	x size (mm)
60 ± 15	150	150	150	200	150	250
80 ± 15	170	150	170	200	170	250
100 ± 15	190	150	190	200	190	250
120 ± 15	210	150	210	200	210	250
140 ± 15	230	175	230	250	230	300
160 ± 15	250	175	250	250	250	300
180 ± 15	270	180	270	270	270	320
200 ± 15	290	200	290	290	290	350
220 ± 15	310	220	310	310	310	360
240 ± 15	330	240	330	330	330	380
260 ± 15	350	260	350	350	350	400

Anchor bolt	HB03 M12x135	HB03 M12x135	HB03 M16x145
Cast in channel	HMPR 38/17 with T head bolt M12x70	HMPR 49/30 with T head bolt M16x80	HMPR 54/33 with T head bolt M16x80

ISO-FIX-U Brickwork Support Bracket

This brickwork anchor is designed to reduce cold bridging. There is a laser cut out on the body that reduces the transfer of cold bridging to the substrate. Also thermal break pads are used which are positioned between the bracket and the wall.

Product Code Description

ISO-FIX -U -150 / 3.5

Dead Load (kN)
Projection (mm)
Type

FIX-AP Adjustable Profile - Product Information

The **FIX-AP** adjustable profile is a patented product that is used as a complementary product with the **FIX** brackets.

The adjustable profile enables quick and secure adjustability in the vertical axis. Unlike the traditional set screw, using the adjustable profile offers the installer adjustment the brackets without the need for a second hand assistance.

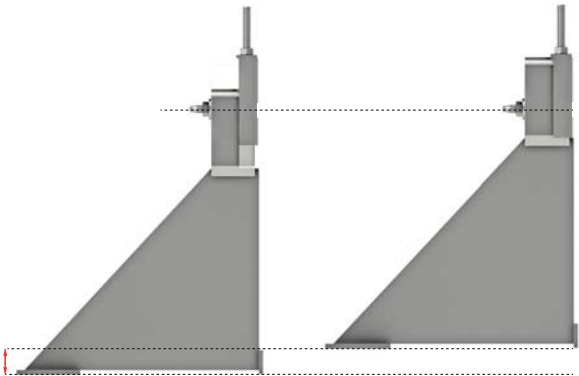
The primary advantage of the adjustable profile is that it eliminates offset moment loads on the bolts, therefore the requirement for bending moment testing on bolts is not necessary.

FIX-AP Adjustable Profile



- Adjustability of the bracket is made by the adjustable profile and the threaded bar that is fixed on the profile with a nut. The bar is inserted in the tabbed hole on the upper part of the bracket.

60 mm
adjustability



FIX Brickwork Support Bracket - Product Range

The **FIX** brackets are available for the complete range of the **FIX** Brickwork support brackets. The patented special adjustable profile is compatible with all the **FIX** type brackets. The adjustable profile and a threaded rod is used instead of a set screw and nut in order to regulate the vertical adjustment.

FIX-U



FIX-UV



FIX-P



FIX-PV



FIX-S



FIX-SV



FIX-W



FIX-UT



FIX-F



FIX-FV



HMCS Brickwork Continuous Support - Introduction

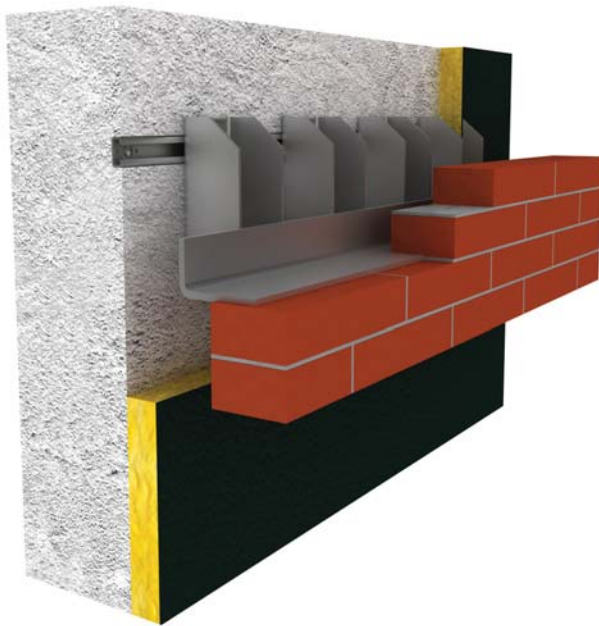
The **HMCS** brickwork continuous supports consists of a series of U brackets with welded angles. There are welded milled shims on the U brackets that enable secure positioning in the vertical axis, after adjustment.

These brackets can be used in load categories up to 14 kN and can be used for projection sizes from 130 to 230 mm. Vertical adjustability is possible up to 25 mm and adjustability of the projection size is made up to 10 mm provided full height shims are used. The **HMCS** brickwork brackets can be designed and manufactured in a wide range of shapes and dimensions to suit the requirements of the project.

The **HMCS** continues brickwork supports are available in 1,5 metres and can be manufactured with either 3, 4 or 5 U brackets, depending on the load specifications. These products are available in stainless steel 1.4301 (AISI 304) and 1.4401 (AISI 316)



HMCS Brickwork Continuous Support

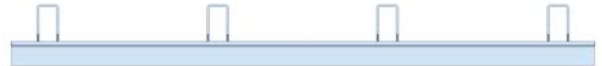


- Perspective picture of brick facing installation with **HMCS** continuous support

Type 1 Continuous support with 5 welded brackets



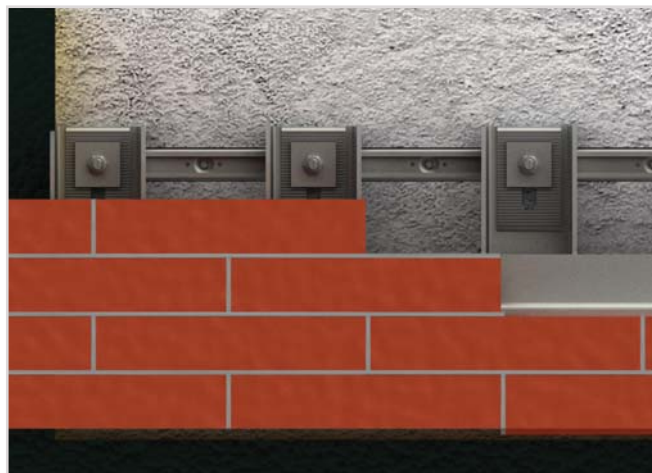
Type 2 Continuous support with 4 welded brackets



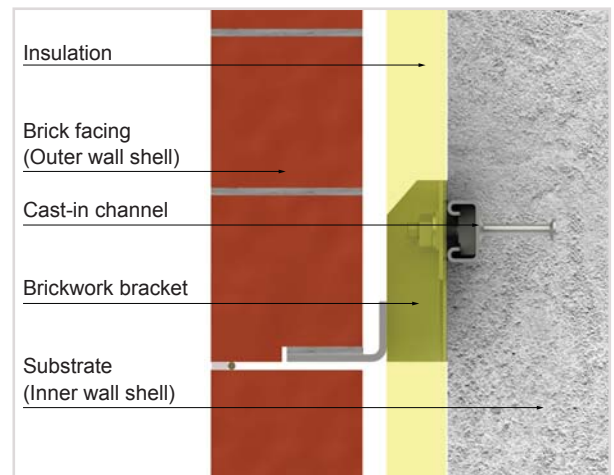
Type 3 Continuous support with 3 welded brackets



- available up to 1,5 metres with 3 different bracket spacings.

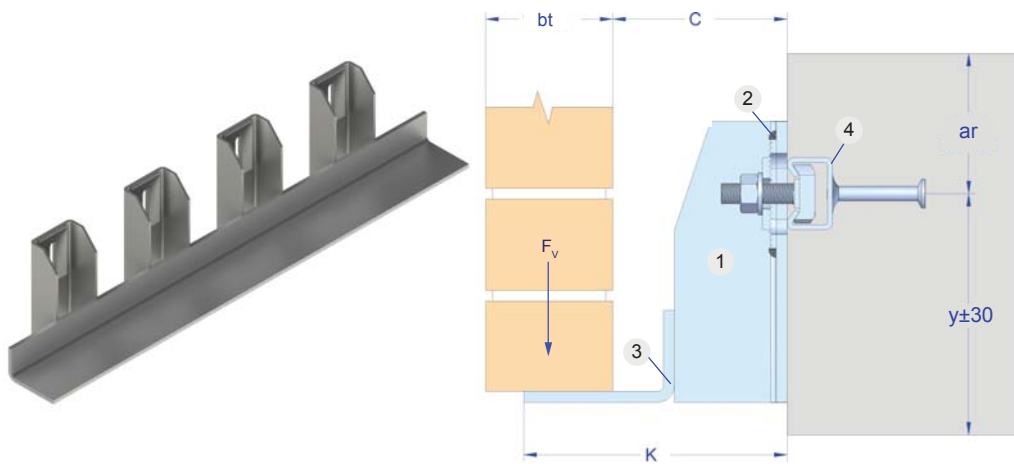


- Elevation picture of brick facing installation with **HMCS** supports



- Section picture of brick facing wall

HMCS Brickwork Continues Support Bracket - Product Details



Support set elements:

- 1 - U Shaped bracket with vertical slot hole
- 2 - Welded serrated washer
- 3 - Welded support plate
- 4 - Cast-in channel for attachments

Product Code	Technical Details						
	Projection	Dead Load	Cavity	Bolt Height	Bolt Size	Bolt Spacing	Cast-in Channel
	K (mm)	Fdw (kN)	C (mm)	X (mm)	E.b. (mm)	SC	CI (mm)
HMCS-130/3.5	130	3.50	60	115	M10x90	460	28/15
HMCS-150/3.5	150		80				
HMCS-170/3.5	170		100				38/17
HMCS-190/3.5	190		120				
HMCS-210/3.5	210		140				
HMCS-230/3.5	230		160				
HMCS-130/7	130	7.00	60	115	M12x110	370	38/17
HMCS-150/7	150		80				
HMCS-170/7	170		100				40/25
HMCS-190/7	190		120				
HMCS-210/7	210		140				
HMCS-230/7	230		160				
HMCS-130/10.5	130	10.50	60	135	M12x110	400	40/25
HMCS-150/10.5	150		80				
HMCS-170/10.5	170		100				49/30
HMCS-190/10.5	190		120				
HMCS-210/10.5	210		140				
HMCS-230/10.5	230		160				
HMCS-130/14	130	14.00	60	150	M16x130	350	49/30
HMCS-150/14	150		80				
HMCS-170/14	170		100				
HMCS-190/14	190		120				
HMCS-210/14	210		140				
HMCS-230/14	230		160				
HMCS-130/18	130	18.00	60	150	M16x130	300	49/30
HMCS-150/18	150		80				
HMCS-170/18	170		100				
HMCS-190/18	190		120				
HMCS-210/18	210		140				
HMCS-230/18	230		160				

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

HMCS Brickwork Continuous Support

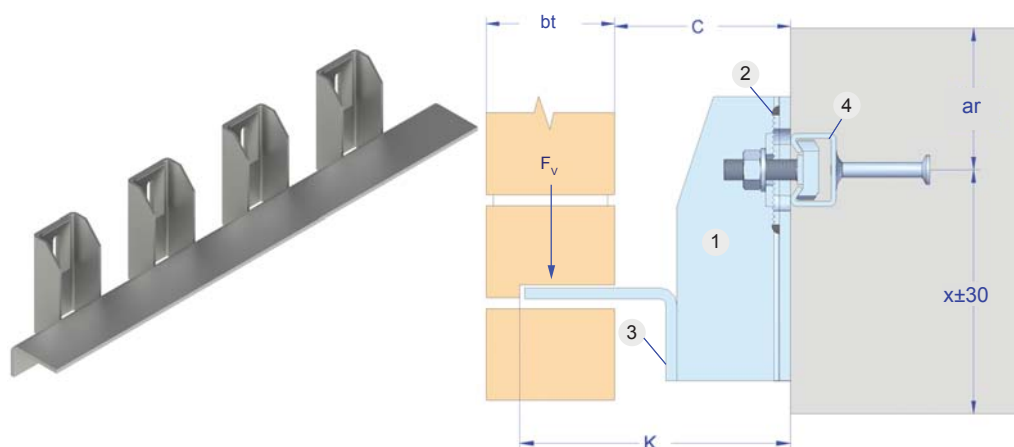
The continuous supports are available in 1.5 metres as a standard length and can be specially designed to meet the application requirements. Adjustability in the vertical axis is made with milled serrated washers and a maximum of 10 mm lateral adjustability possible with full height shims

Product Code Description

HMCS - 130 / 3.5 - 1500

- HMCS - Type
- 130 - Projection (mm)
- 3.5 - Dead Load (kN)
- 1500 - Length

HMCS-UT Brickwork Continues Support Bracket - Product Details



Support set elements:

- 1 - U Shaped bracket with vertical slot hole
- 2 - Welded serrated washer
- 3 - Welded support plate
- 4 - Cast-in channel for attachments

Product Code	Technical Details						
	Projection	Dead Load	Cavity	Bolt Height	Bolt Size	Bolt Spacing	Cast-in Channel
	K (mm)	Fdw (kN)	C (mm)	X (mm)	E.b. (mm)	SC	CI (mm)
HMCS-UT-130/3.5	130	3.50	60	115	M10x90	460	28/15
HMCS-UT-150/3.5	150		80				
HMCS-UT-170/3.5	170		100				38/17
HMCS-UT-190/3.5	190		120				
HMCS-UT-210/3.5	210		140				
HMCS-UT-230/3.5	230		160				
HMCS-UT-130/7	130	7.00	60	115	M12x110	370	38/17
HMCS-UT-150/7	150		80				
HMCS-UT-170/7	170		100				40/25
HMCS-UT-190/7	190		120				
HMCS-UT-210/7	210		140				
HMCS-UT-230/7	230		160				
HMCS-UT-130/10.5	130	10.50	60	135	M12x110	400	40/25
HMCS-UT-150/10.5	150		80				
HMCS-UT-170/10.5	170		100				49/30
HMCS-UT-190/10.5	190		120				
HMCS-UT-210/10.5	210		140				
HMCS-UT-230/10.5	230		160				
HMCS-UT-130/14	130	14.00	60	150	M16x130	350	49/30
HMCS-UT-150/14	150		80				
HMCS-UT-170/14	170		100				
HMCS-UT-190/14	190		120				
HMCS-UT-210/14	210		140				
HMCS-UT-230/14	230		160				
HMCS-UT-130/18	130	18.00	60	150	M16x130	300	49/30
HMCS-UT-150/18	150		80				
HMCS-UT-170/18	170		100				
HMCS-UT-190/18	190		120				
HMCS-UT-210/18	210		140				
HMCS-UT-230/18	230		160				

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

HMCS-UT Brickwork Continuous Support

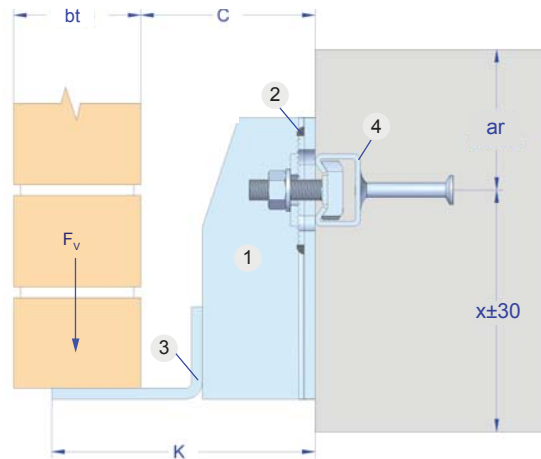
The continuous brickwork support is similar to the HMCS-UT brickwork continues support however the welded angle support is positioned upside down. This raises the support level of the brickwork installation. This can be manufactured according to the requirements of the application.

Product Code Description

HMCS-UT - 130 / 3.5 - 1500

└─ Length
 └─ Dead Load (kN)
 └─ Projection (mm)
 └─ Type

HMS-SB Brickwork Support Bracket - Product Details



Support set elements:

- 1 - U Shaped bracket with vertical slot hole
- 2 - Welded serrated washer
- 3 - Welded support plate
- 4 - Cast-in channel for attachments

Product Code	Technical Details						
	Projection	Dead Load	Cavity	Bolt Height	Bolt Size	Bolt Spacing	Cast-in Channel
	K (mm)	Fdw (kN)	C (mm)	X (mm)	E.b. (mm)	SC	CI (mm)
HMCS-SB-130/3.5	130	3.50	60	115	M10x90	460	28/15
HMCS-SB-150/3.5	150		80				
HMCS-SB-170/3.5	170		100				38/17
HMCS-SB-190/3.5	190		120				
HMCS-SB-210/3.5	210		140				
HMCS-SB-230/3.5	230		160				
HMCS-SB-130/7	130	7.00	60	115	M12x110	370	38/17
HMCS-SB-150/7	150		80				
HMCS-SB-170/7	170		100				40/25
HMCS-SB-190/7	190		120				
HMCS-SB-210/7	210		140				
HMCS-SB-230/7	230		160				
HMCS-SB-130/10.5	130	10.50	60	135	M12x110	400	40/25
HMCS-SB-150/10.5	150		80				
HMCS-SB-170/10.5	170		100				49/30
HMCS-SB-190/10.5	190		120				
HMCS-SB-210/10.5	210		140				
HMCS-SB-230/10.5	230		160				
HMCS-SB-130/14	130	14.00	60	150	M16x130	350	49/30
HMCS-SB-150/14	150		80				
HMCS-SB-170/14	170		100				
HMCS-SB-190/14	190		120				
HMCS-SB-210/14	210		140				
HMCS-SB-230/14	230		160				
HMCS-SB-130/18	130	18.00	60	150	M16x130	300	49/30
HMCS-SB-150/18	150		80				
HMCS-SB-170/18	170		100				
HMCS-SB-190/18	190		120				
HMCS-SB-210/18	210		140				
HMCS-SB-230/18	230		160				

• Material : Stainless Steel 1.4301 (AISI 304-A2) & 1.4401 (AISI 316-A4) • Load capacities refer to fixings in concrete $\geq$ C20/25 • Loads stated are allowable loads
 • Other sizes are available for production upon request • Bolts and channels are provided separately • Structural calculation reports are available upon order

HMCS-SB Brickwork Support Bracket

The brickwork support bracket is an angle with a single bracket that is used for the installation of bricks and stone blocks on tot straight and curves walls. This masonry support can be supplied with welded pins and an angle with various degress used for installling stone blocks from the rear surface.

Product Code Description

HMCS-SB - 130 / 3.5

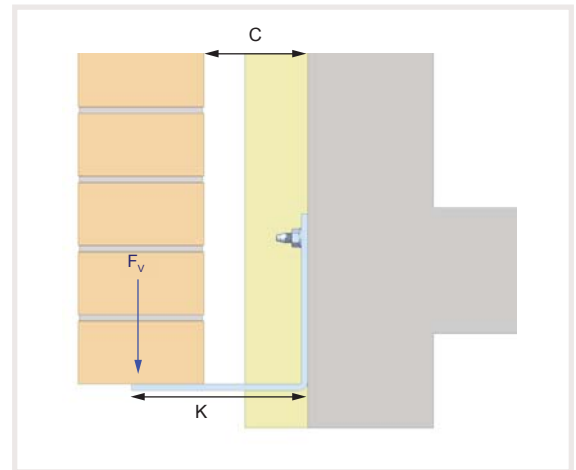
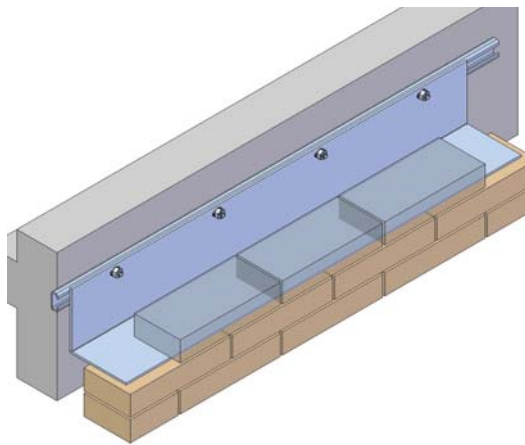
Dead Load (kN)
 Projection (mm)
 Type

HMS-AW Continuous Angled Supports - Product Details

HMS Angled supports are simple fixing systems used for supporting brickwork walls. These anchors do not have vertical adjustability, and horizontal adjustment can be made through the slotted holes drilled at each 25 cm. The use of these types of systems are preferred if the air layer and insulation need to be fully covered. These anchors can be fixed on concrete walls either with cast in channels, expansion bolts or chemical anchor bolts. Available in stainless steel grade 1.4301 (AISI 304) & 1.4401 (AISI 316), they can be produced in any length up to 3 metres according to the desired application.

HMS-AW Continuous Angled Support

- Used for small cavity space between 20 and 40mm
- Bricks can be positioned in desired position
- Projection sizes of 110 and 130 mm
- Load capacity up to 3.2 kN



Product Code	Technical Details								
	Projection	Allow.Load Capacity	Cavity	Bolt Height	Angle Size	Expansion Bolt Size	Bolt Spacing	Cast-in Channel	Angle Max Length
	K (mm)	Fdw (kN)	C (mm)	X (mm)	(mm)	E.b. (mm)	SC	CI (mm)	L (mm)
HMS-AW-110/1.2	110	1.20	0-20	84	4x110/110	M10x90	250	38/17	3000
HMS-AW-110/2.1	110	2.10	0-20	83	5x110/110				
HMS-AW-110/3.2	110	3.20	0-20	82	6x110/110				
HMS-AW-130/1.2	130	1.20	20-40	104	4x110/110	M10x90	250	38/17	3000
HMS-AW-130/2.1	130	2.10	20-40	103	5x110/110				
HMS-AW-130/3.2	130	3.20	20-40	102	6x110/110				

- Load capacities refer to fixings in concrete $\geq$ C20/25
- Material : Stainless Steel 1.4301 (A2) & 1.4401 (A4)
- Expansion bolts and cast-in channels are provided separately
- Structural calculation reports are available upon order

HMS-AW Continuous Angle Support

Continuous angle supports are supplied in standard 3 metre lengths. Special lengths can be manufactured according to application details

Product Code Description

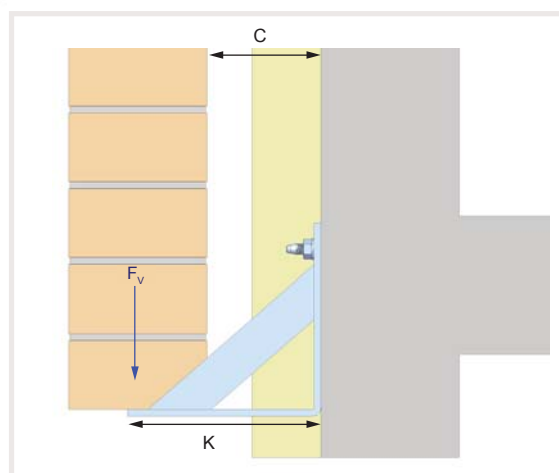
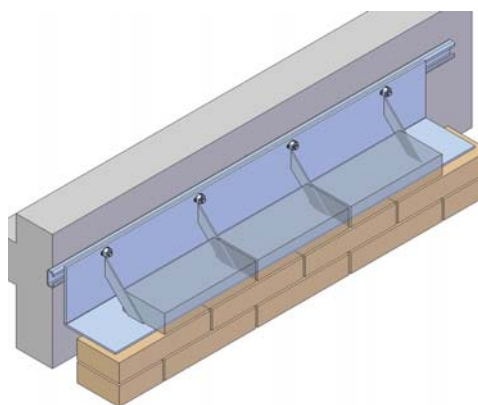
HMS-AW -110 / 1.2

- Type
- Projection (mm)
- Load Capacity (kN)

HMS-AWS Continuous Angle Supports - Product Details

HMS-AWS Continuous Angle Support

- Used for cavity spaces between 40 and 240mm
- Welded support plates for loading at high projections
- Projection sizes of 130 to 330 mm
- Load capacity up to 3.2 kN



Product Code	Technical Details								
	Projection	Dead Load	Cavity	Bolt Height	Angle Size	Bolt Size	Bolt Spacing	Cast-in Channel	max Length
	K (mm)	F _{dw} (kN)	C (mm)	X (mm)	(mm)	E.b. (mm)	SC	CI (mm)	L (mm)
HMS-AWS-130/1.5	130	1.50	40	105	4x110/110	M10x90	250	38/17	3000
HMS-AWS-130/3.2		3.20		103	5x110/110				
HMS-AWS-150/1.5	150	1.50	60	125	4x110/110	M10x90	250	38/17	3000
HMS-AWS-150/3.2		3.20		123	5x110/110				
HMS-AWS-170/1.5	170	1.50	80	145	4x110/110	M10x90	250	38/17	3000
HMS-AWS-170/3.2		3.20		143	5x110/110				
HMS-AWS-190/1.5	190	1.50	100	165	4x110/110	M10x90	250	38/17	3000
HMS-AWS-190/3.2		3.20		163	5x110/110				
HMS-AWS-210/1.5	210	1.50	120	185	4x110/110	M10x90	250	38/17	3000
HMS-AWS-210/3.2		3.20		183	5x110/110				
HMS-AWS-230/1.5	230	1.50	140	205	4x110/110	M10x90	250	38/17	3000
HMS-AWS-230/3.2		3.20		203	5x110/110				
HMS-AWS-250/1.5	250	1.50	160	84	4x110/110	M10x90	250	38/17	3000
HMS-AWS-250/3.2		3.20		83	5x110/110				
HMS-AWS-270/1.5	270	1.50	180	84	4x110/110	M10x90	250	38/17	3000
HMS-AWS-270/3.2		3.20		83	5x110/110				
HMS-AWS-290/1.5	290	1.50	200	84	4x110/110	M10x90	250	38/17	3000
HMS-AWS-290/3.2		3.20		83	5x110/110				
HMS-AWS-310/1.5	310	1.50	220	84	4x110/110	M10x90	250	38/17	3000
HMS-AWS-310/3.2		3.20		83	5x110/110				
HMS-AWS-330/1.5	330	1.50	240	84	4x110/110	M10x90	250	38/17	3000
HMS-AWS-330/3.2		3.20		83	5x110/110				

- Load capacities refer to fixings in concrete $\geq$ C20/25
- Material : Stainless Steel 1.4301 (A2) & 1.4401 (A4)

- Expansion bolts and cast-in channels are provided separately
- Structural calculation reports are available upon order

HMS-AWS Continuous Angle Support

Continuous angle supports with welded belts are supplied in standard 3 metre lengths. Special lengths can be manufactured according to application details

Product Code Description

HMS-AWS -150 / 1.5

Load capacity (kN)

Projection (mm)

Type

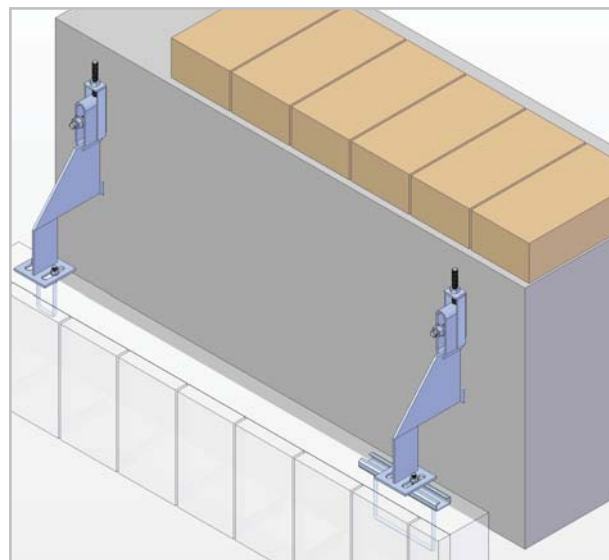
HMS-ES & GS Prefabricated Component Inserts - Product Details

The **HMS-ES** and **HMS-GS** inserts are used for the suspension of prefabricated components. The prefabricated components are fitted with these inserts and are then fixed on to the brickwork support anchor type **HMS-S**.

The inserts are supplied with accessories such as T bolts and / or nuts and washers for fastening on to brickwork support anchors. available in stainless steel grade 1.4301 & 1.4401.

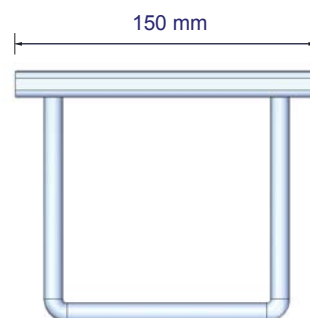
The inserts are designed to carry the loads that are carried by the standard HMS brickwork support anchors. The available load categories are 3.5 kN, 7.0 kN and 10.5 kN.

The structural analysis of the prefabricated component must be made by the prefabrication manufacturer or the structural engineer at the job site, in order to meet the required load performance.



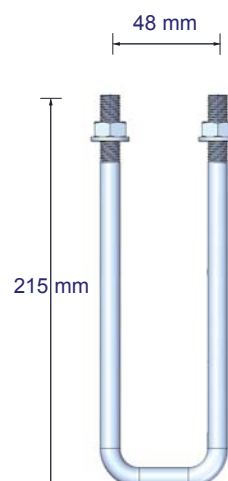
HMS-ES Channel Insert

Product Code	Technical Details	
	Dead Load	Accessories
	Fdw (kN)	
HMS-ES-3.5	3.5	2x T bolt M10x40 2x DIN 9021 washer M10
HMS-ES-7.0	7.0	2x DIN 934 nut M10
HMS-ES-10.5	10.5	2x T bolt M12x50 2x DIN 9021 washer M12 2x DIN 934 nut M12



HMS-GS Loop Insert

Product Code	Technical Details	
	Dead Load	Accessories
	Fdw (kN)	
HMS-GS-3.5	3.5	2x DIN 9021 washer M8 2x DIN 934 nut M8
HMS-GS-7.0	7.0	
HMS-GS-10.5	10.5	2x DIN 9021 washer M10 2x DIN 934 nut M10



HMS Prefabricated Component Inserts

Concrete inserts are supplied in standard types and sizes as shown on the tables above. Special design can also be made to suit application requirements

Product Code Description

HMS-GS - 3.5

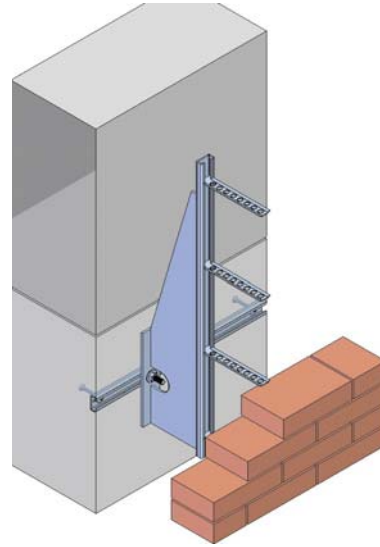
Dead Load (kN)

Type

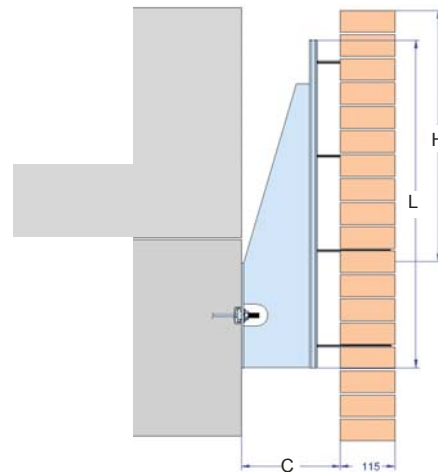
HMS-AV Special Restraint Channel - Product Details

Flat reinforced concrete roof tops can deform due to the effects of weather, thermal and mechanical loading. For this reason, reinforced concrete flat roofs are supported on sliding bearings on the lower walls. Brickwork wall claddings in front of these walls will not be able to absorb the deformations caused in the structure without being damaged. Brickwork walls that extend right up to the roof must not be connected on to the roof side walls.

A special restraint channel is the solution to this problem. A 28/15 channel that is welded with plates that are designed to be fixed on the load bearing beams with two connections can be used to restrain the brick walls. HWT-M wall ties are used to restrain the brick wall and can be positioned anywhere along the length of the channels.



HMS-AV Special Restraint Channel



Product Code	Technical Details				
	Cavity	Length	Useful Height	Wall Tie Quantity	Wall Tie Types
	C (mm)	L (mm)	H (mm)	(pcs)	
HMS-AV-600-80	80	600	440-550	3	HWT-M-28-85
HMS-AV-600-90	90				HWT-M-28-120
HMS-AV-600-145	145				HWT-M-28-180
HMS-AV-850-80	80	850	650-800	4	HWT-M-28-85
HMS-AV-850-90	90				HWT-M-28-120
HMS-AV-850-145	145				HWT-M-28-180
HMS-AV-1100-80	80	1100	900-1000	5	HWT-M-28-85
HMS-AV-1100-90	90				HWT-M-28-120
HMS-AV-1100-145	145				HWT-M-28-180

HMS-AV Special Restraint Channel

This restraint channel is fixed on the concrete wall with cast in channels or expansion bolts. The offset size of the special channel is 75 mm. There are other sizes available upon request.

Product Code Description

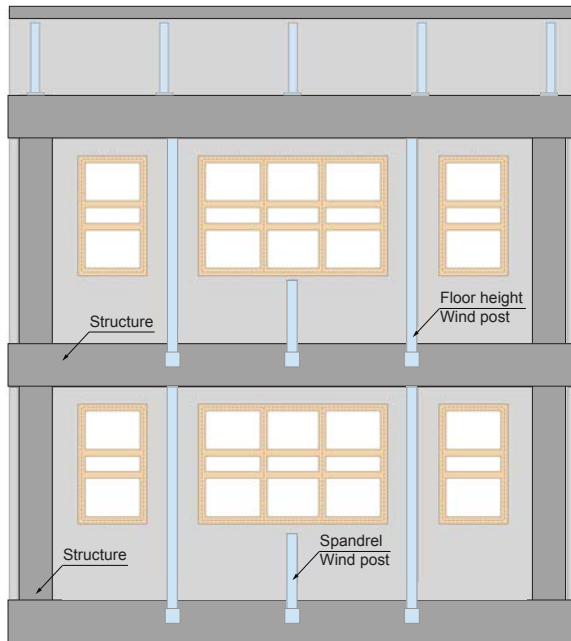
HMS -AV -600 / 80

— Cavity (min. mm)
— Useful height (mm)
— Type

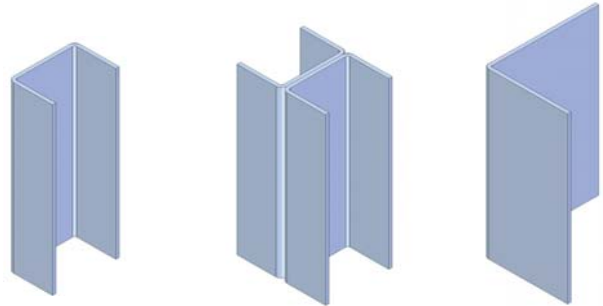
HWP Brickwork Windposts - Introduction

HWP Windposts are used in combination with suitable wall ties, to restrain brickwork walls against wind pressure and suction. The windposts are made from specially designed channels that have welded plates with slotted holes in order to be easily and securely fixed on to the reinforced concrete beams.

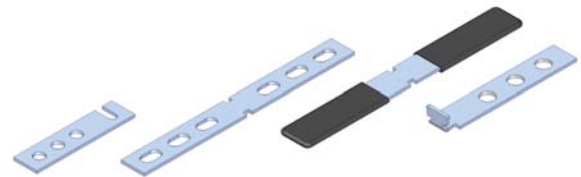
The windposts can be specially designed and manufactured suitable to withstand the wind loads on the project. The span distances of the channels may be arranged according to the structural integrity and the restrictions of the construction. Structural analysis must be made in view of these limitations. Applications and load requirements can be specifically designed and structural analyses prepared according to the specifications of the project.



Windpost Channel Section Types

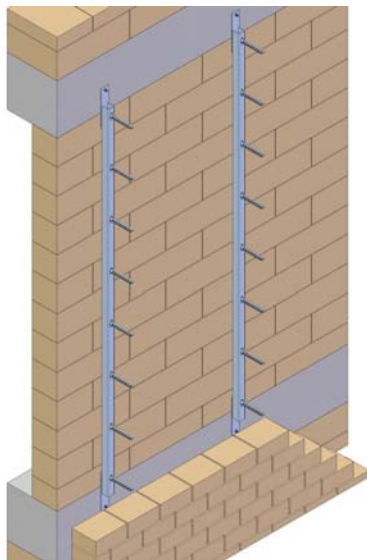


Windpost Restraining Tie Types



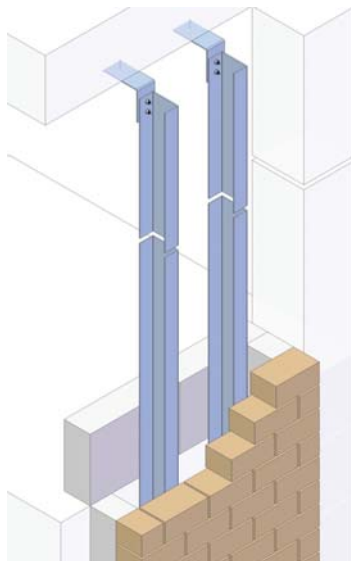
- Building Elevation with windpost positions

HWP-I Windpost System



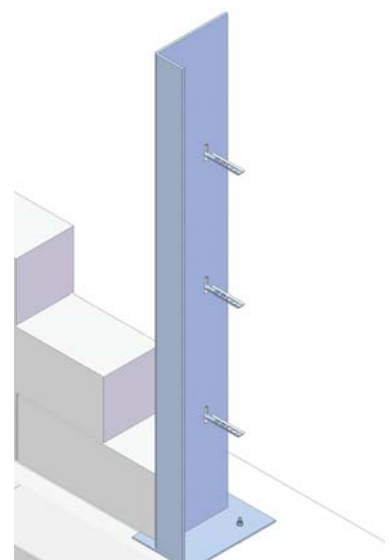
The **HWP-U** Windpost system is used for restraining the outer shell brick facing walls. The windpost channels have welded plates on both ends with slotted holes by which they can be fastened on to concrete beams at floor levels with bolts.

HWP-E Windpost System



The **HWP-E** Windpost system is used for restraining the outer and inner shell brick facing walls. The windpost channels can be fixed on the beam ceiling and ground by L type brackets which will be fastened to the channels with hex bolts.

HWP-L Windpost System

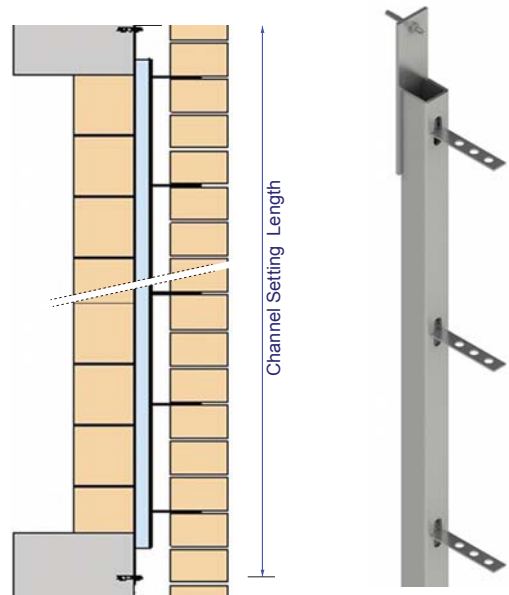
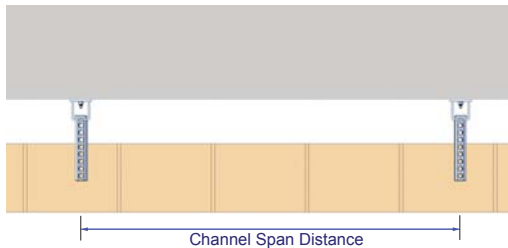


The **HWPS-L** Windpost system is used for restraining the block work constructed in the inner wall. The channels are positioned in between the block work to take the lateral loads. Outer wall brick facing can also be restrained to these channels.

HWP Brickwork Windpost Channels - Product Information

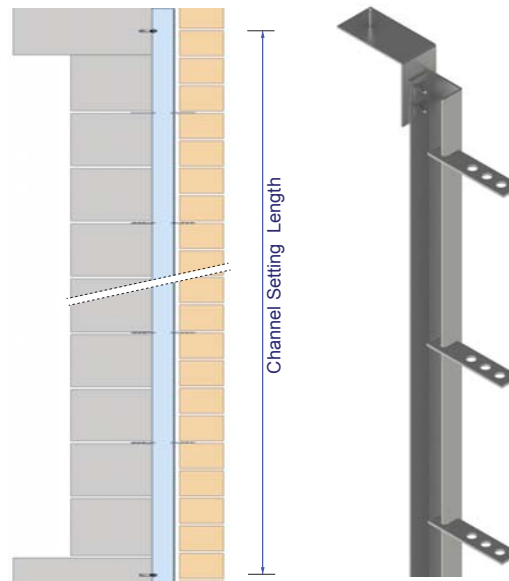
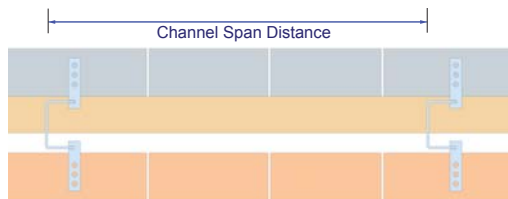
HMS-U Windpost Channel

- Channels span between floor beams and are fixed to the concrete load bearing beams with expansion bolts. Can also be installed on to cast in channels
- Corresponding wall ties are used to restrain the outer brick facing wall on to the channels. The wall ties slide through the slotted hole on the channels and lock after a 90 degree twist
- Designed wind loads are taken into consideration to determine the dimensions of the channels. Can be used for cavities between 70 - 205 mm



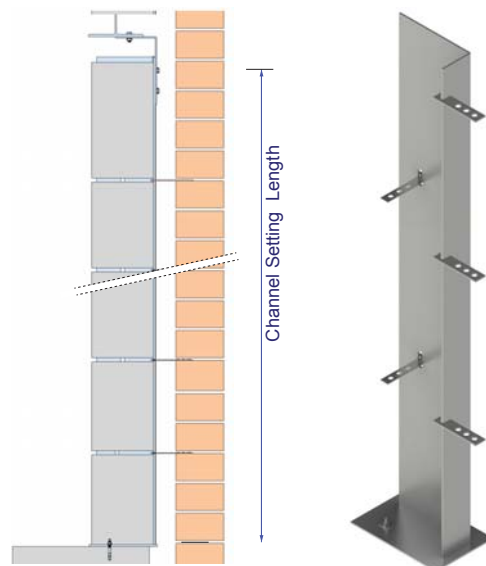
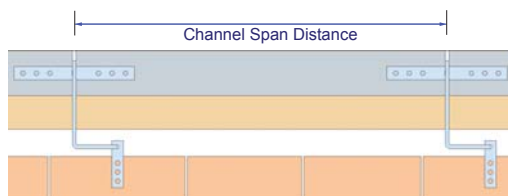
HMS-E Windpost Channel

- Channels span between floor beams and are fixed on to concrete beams with expansion bolts
- Corresponding wall ties with a loop are hooked on the channel lips for restraining the walls. The slotted hole version can also be manufactured to suit normal wall ties
- L angles are manufactured from 4 and 5 mm thick plates. Channels are manufactured on a project basis and any dimension is possible



HMS-I Windpost Channel

- Channels are manufactured with welded plates at the ends of the channels. The channels are fixed on to the beam flooring with expansion bolts.
- Corresponding wall ties with a loop are hooked on the channel lips for restraining the walls. The slotted hole version can also be manufactured to suit the normal wall ties
- Channels are manufactured on a project basis and any dimension is possible

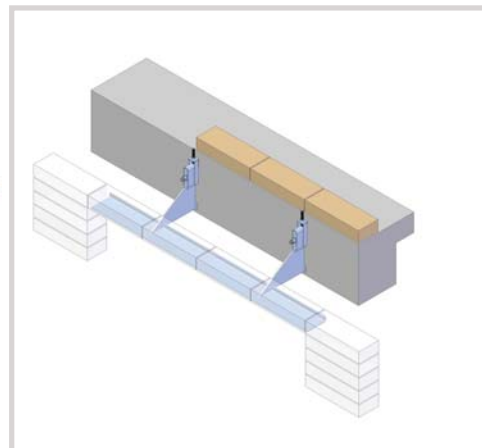
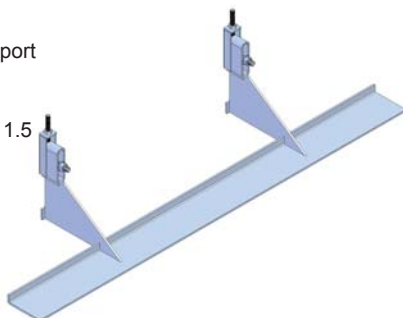


HMLS Brickwork Lintel Supports - Product Information

The **HMLS** Brickwork lintel supports are used for supporting brick structures above openings. The lintel supports can be designed and manufactured to suit a wide range of loadings and application circumstances. The majority of the lintel supports are specially designed and manufactured. Allowable loads are determined by structural calculations and local testing if required. **HMLS** Brickwork lintel supports are produced in stainless steel AISI 304 and AISI 316.

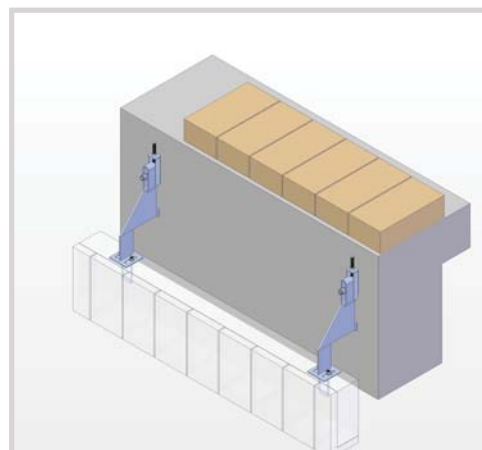
FIX-F Brickwork Support Bracket For Lintel Support

- Exposed fixing with HMS-F brickwork support brackets
- Welded support angles with lengths up to 1.5 metres available
- Load capacities of up to 10.5 kN



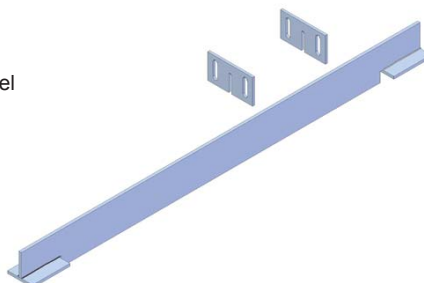
FIX-SV Brickwork Support Bracket For Lintel Support

- Concealed fixing where HMS-SV brackets are used for prefabricated Lintel component
- U type inserts or cast in channels are cast in the component and are fixed on the slot holes of the brickwork support
- Structural analysis of the prefabricated component must be made by the manufacture



HMLS-T Lintel Support

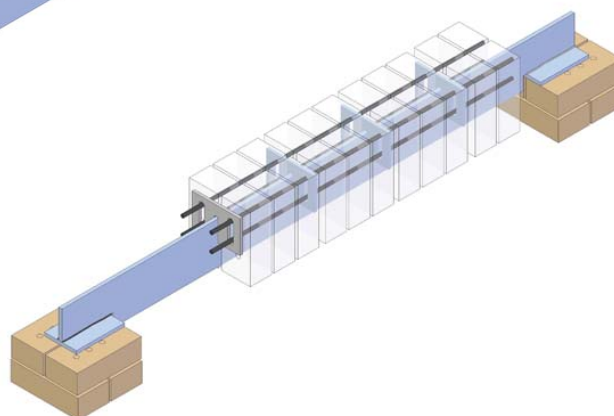
- Concealed fixing where custom designed steel component used in combination with slotted holed plates to support bricks with reinforcement bars
- Minimum bearing of steel component on the wall surface is 150 mm
- Can be custom designed to fit various application requirements



Apex Arch



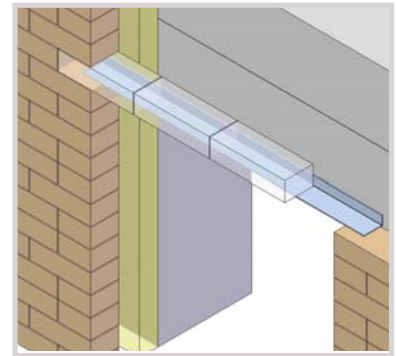
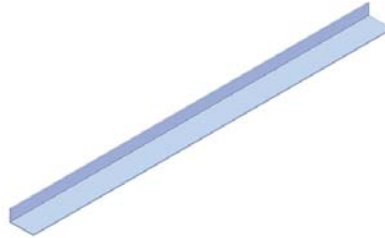
Semi Circular Arch



HMLS Brickwork Lintel Supports - Product Information

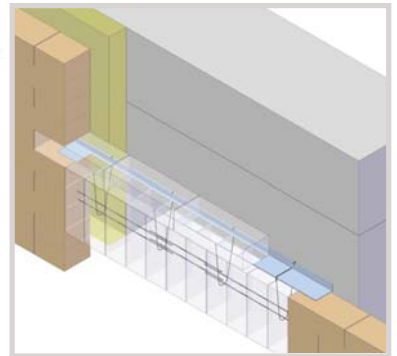
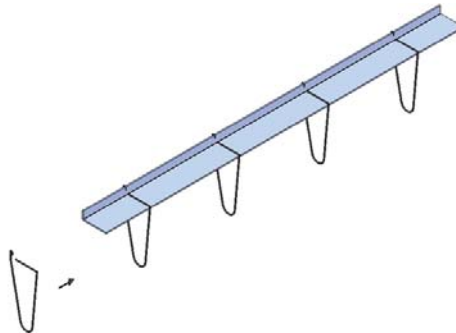
HMLS-E Lintel Support Angle

- Exposed fixing with L angles are used for mounting bricks on top
- Can be placed on side wall as well as in between brickwork support brackets
- Minimum bearing on the wall surface is 95 mm
- Angle length available up to 2.2 metres and Max span of opening is 2.10 metres



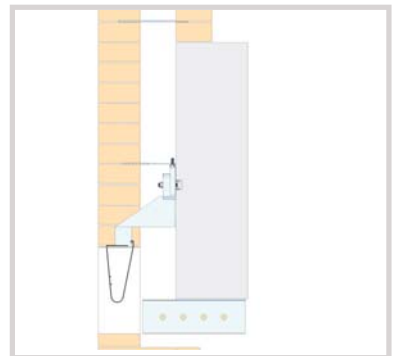
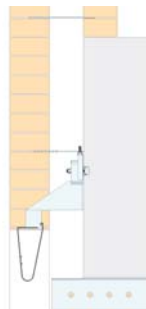
HMLS-C Lintel Support Angle With Hoops

- Concealed fixing where the L angles are used in combination with suspension hoops to support bricks lintel using reinforcement bars
- When determining the loads both the over laying and underlaying bricks must be taken into consideration
- Brick Lintel must be supported with scaffolding during fixing.



FIX-FV Lintel Support With Hoops

- Concealed fixing where the hoops are used in combination with HMS-FV support brackets to support underlaying bricks
- Angle length available up to 1.5 metres and load capacity up to 10.5 kN



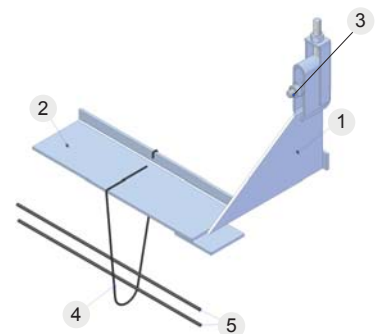
HMLS-HK Hoops For Lintel Suspension

- Hoops are special wires designed to fit support plates on the brackets or angles for the suspension of lintels
- Standart diameter os 4 and is available in different shapes and sizes to fit the application

Type L for L angles



Type B for single brackets

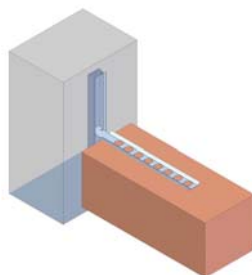


1. FIX-U Bracket
2. HMLS Angle
3. attachment to wall
4. HMS-HK Hoop
5. Reinforcement bars

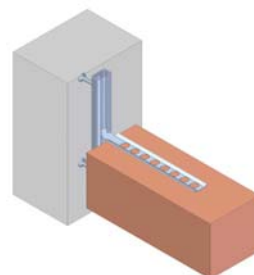
HMP Brickwork Wall Tie Channels - Product Details

Brickwork wall tie channels and suitable wall ties are used in combination for restraining outer skin brickwork walls. This system ensures the durable and reliable connection of the brickwork wall easily and efficiently. The wall ties can be positioned anywhere along the length of the channel. Fixing is done by inserting the wall ties in to the slot of the channel and then turning them 90 degrees to effectively locking the wall tie in to the channel. There are different types of channels available that can be cast in and also surface mounted.

HMPR-25/15 Cast In Channel

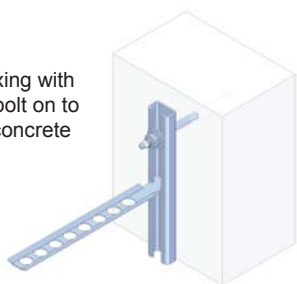


HMPR-28/15 & 38/17 Cast In Channel

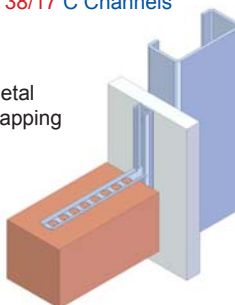


HMP-28/15 & 38/17 C Channels

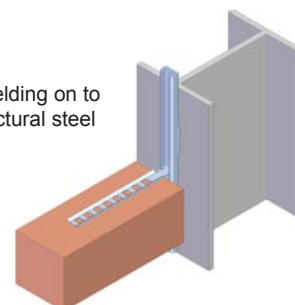
- Surface fixing with expansion bolt on to reinforced concrete walls

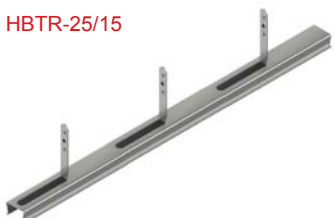


- Fixing on to metal studs with self tapping screws



- Welding on to structural steel



Product Code		Technical Details		
		Section Size	Allowable Pull Out Load At Distance Of 250 Mm	Wall Tie Type
		(mm)	all F (kN)	
 HBTR-25/15  HMPR-28/15 & HMPR-38/17  HMPB-38/17	HBTR-25/15 Cast In Channel	25/15	1.2	HWT-M-28
	HMPR-28/15 Cast In Channel	28/15	3.0	
	HMPB-28/15 Surface Channel	28/15	3.0	
	HMPR-38/17 Cast In Channel	38/17	4.5	HWT-M-38
	HMPB-38/17 Surface Channel	38/17	4.5	

HMP Brickwork Wall Tie Channels

Wall Tie Channels are supplied in 3 and 6 metre lengths as standard. Special lengths can be cut according to project requirements. Channels are available in stainless steel and galvanized steel.

Product Code Description

HMPR - 28/15 -1500

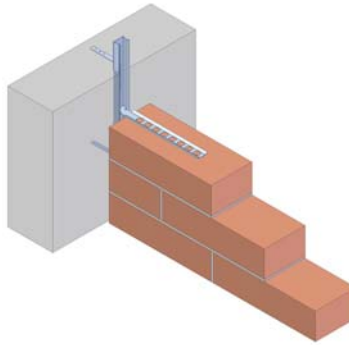
Length
Section
Type

HWT-M Brickwork Wall Ties

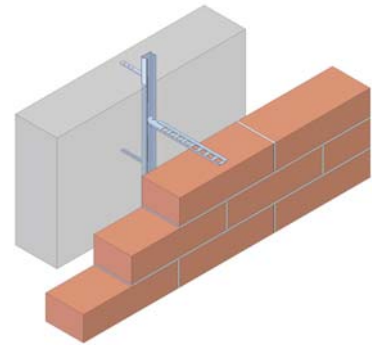
The **HWT-M** Brickwork wall ties are used in combination with channels for restraining brickwork walls. The wall ties are inserted anywhere along the channel and pressed into the bearing joint mortar of the work at recommended distances.

The type of wall ties varies according to the corresponding channel type of 28/15 or 38/17 and in the overall length of the wall tie.

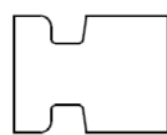
The **HWT-M** wall ties can be used to connect brick walls and outer shell brick facing on to reinforced concrete walls.



• Connection of brick walls to reinforced concrete walls.



• Connection of outer brick facing facades to reinforced concrete walls.

Product Code		Technical Details					
		Length	Size	Corresponding Channels	Wall Tie Head		
		L (mm)	txw (mm)				
HWT-MS 	HWT-MS 28-85	85	2x26	HMPR-25/15	 Suitable for 25/15 & 28/15 channel		
	HWT-MS 28-120	120		HMPR-28/15			
	HWT-MS 28-180	180		HMPB-28/15			
	HWT-MS 38-85	85	2x30	HMPR-38/15			
	HWT-MS 38-120	120		HMPB-38/15			
	HWT-MS 38-180	180					
	HWT-ML 	HWT-ML 28-85	85	2x26		HMPR-25/15	 Suitable for 38/17 channel
		HWT-ML 28-120	120			HMPR-28/15	
		HWT-ML 28-180	180			HMPB-28/15	
HWT-ML 38-85		85	2x30	HMPR-38/15			
HWT-ML 38-120		120		HMPB-38/15			
HWT-ML 38-180		180					
HWT-MT 		HWT-MT 28-85	85	2x26	HMPR-25/15		
		HWT-MT 28-120	120		HMPR-28/15		
		HWT-MT 28-180	180		HMPB-28/15		
	HWT-MT 38-85	85	2x30	HMPR-38/15			
	HWT-MT 38-120	120		HMPB-38/15			
	HWT-MT 38-180	180					

HWT Wall Ties

This brickwork support bracket has a single welded plate used for independent installation of each brick block. This bracket is used for closed surface elevation brick cladding.

Product Code Description

HWT - M - 28 - 85

Length
Channel Type
Type

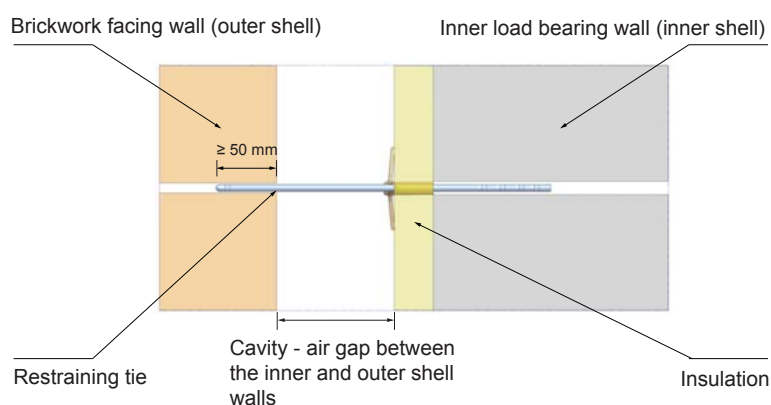
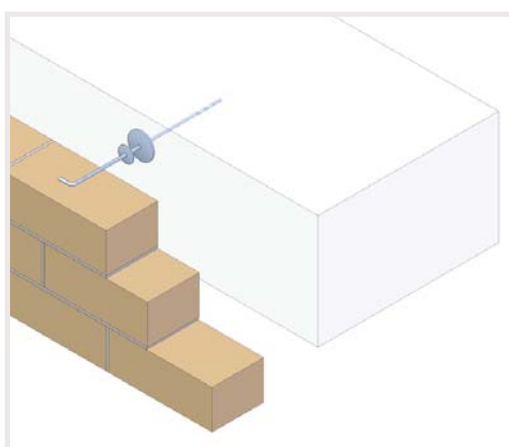
HRST Restraining Tie - Product Details

Brickwork walls are constructed of an outer shell which is thin and must be restrained against buckling. The wind loads must also be transferred on to the load bearing walls. Depending on the material used to construct the inner load bearing wall, suitable restraining ties are used in restraining the outer shell brickwork walls on to inner load bearing walls. **HRST** restraining ties can be securely and reliably used to restrain the brickwork walls against horizontal loads. These ties are made out of round steel and have wavy forms for embedding into mortar joints. There are two versions that are used for brickwork load bearing walls and concrete load bearing walls.

HRST-C Restraining Tie



HRST-M Restraining Tie



Product Code		Technical Details				
		Length	Cavity	Diameter	Application Area	
					Internal Wall	External Wall
		(mm)	(mm)	(mm)		
	HRST-M-225-4	225	up to 100	4.0	Brickwork wall	Brickwork Wall
	HRST-M-250-4	250	up to 125	4.0		
	HRST-M-275-4	275	up to 150	4.0		
	HRST-M-300-4	300	up to 175	4.0		
	HRST-M-340-4	340	up to 215	4.0		
	HRST-C-160-4	160	up to 25	4.0	Concrete B15	Brickwork Wall
	HRST-C-180-4	180	up to 45	4.0		
	HRST-C-210-4	210	up to 75	4.0		
	HRST-C-250-4	250	up to 115	4.0		
	HRST-C-275-4	275	up to 140	4.0		
	HRST-C-300-4	300	up to 165	4.0		
	HRST-C-320-4	320	up to 185	4.0		
	HRST-C-350-4	350	up to 200	4.0		

HRST Restraining Ties

The restraining ties are used for restraining the brick facing outer shell walls against wind pressure and suction

Product Code Description

HRST -M -250 - 4

- Diameter
- Length (mm)
- Type

CWMT Brickwork Corrugated Wall Ties - Product Information

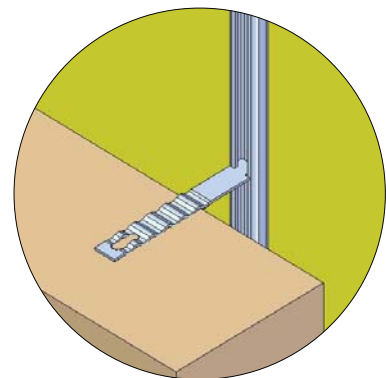
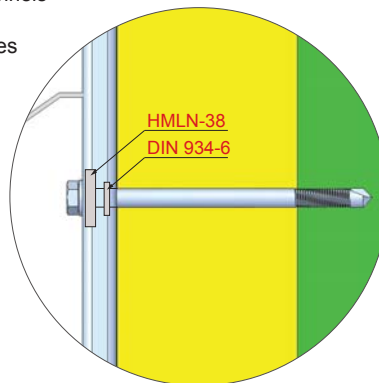
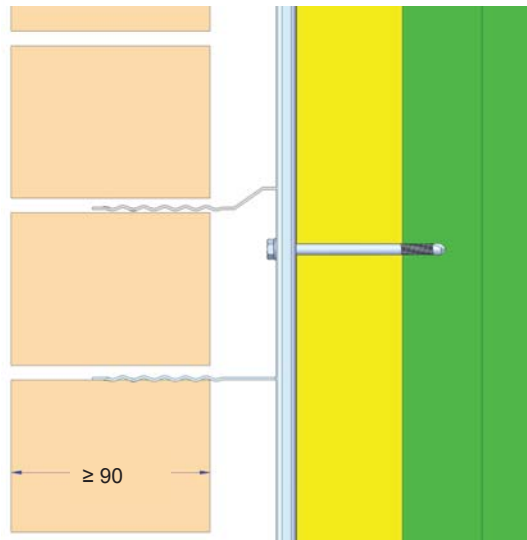
CWMT-D Brickwork Wall Tie



- Corrugated tie provides multiple drips to prevent moisture bridging cavity
- Provides lateral restraint for wind pressure & suction on brick work without transferring loads on to insulation
- Fixed on to 38/17 cast-in or surface fixed channels
- Positioning anywhere along the length of the channels
- Available in lengths between 75 and 250 mm
- Tensile loading is 0.7 kN per 600 mm screw centres

Product Code	Length
CMWT-D-75	75
CMWT-D-100	100
CMWT-D-125	125
CMWT-D-150	150
CMWT-D-200	200
CMWT-D-225	225
CMWT-D-250	250

CWMT-D wall ties fixed on surface mounted C channels

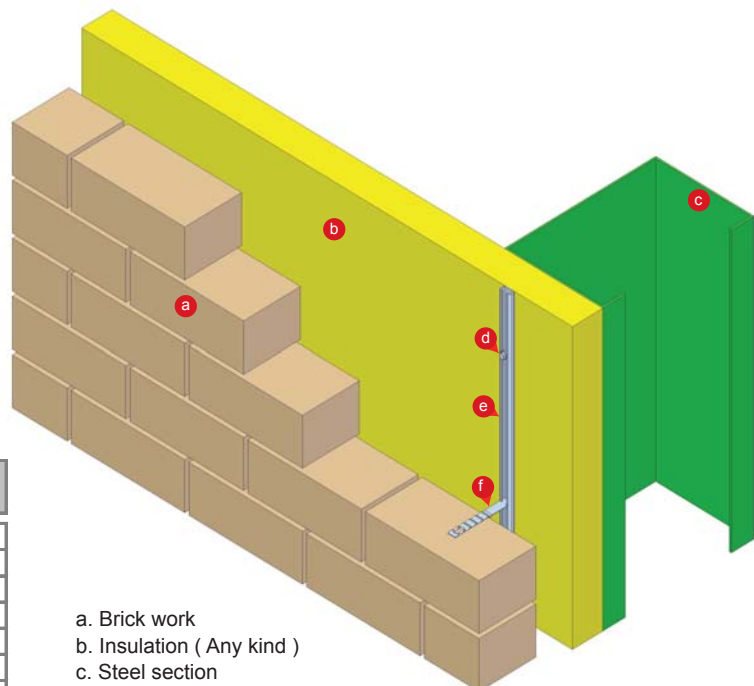


HJT Self Tabbing Screw



- Self tapping screws with drill adaptor used for quick and easy fixing of surface channels on to metal studs

Product Code	Dimensions	Description	Insulation Thickness
For steel sections 1.5-6 mm thickness			
HJT-3-70	5.5x70	Un-washed	20-50
HJT-3-90	5.5x90		40-70
HJT-3-110	5.5x110		60-90
HJT3-130	5.5x130		80-110
For steel sections 1.5-6 mm thickness			
HJT2-120	6x120	Washed	55-105
HJT2-140	6x140		75-125
HJT2-160	6x160		95-145



- a. Brick work
- b. Insulation (Any kind)
- c. Steel section
- d. HJT Self tabbing screws
- e. HMPD-38/17 Surface channel
- f. CWMT-D Corrugated wall tie



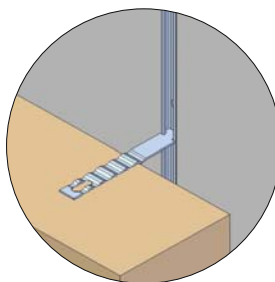
HRST Restraining Tie - Product Details

CWMT-C Brickwork Wall Tie

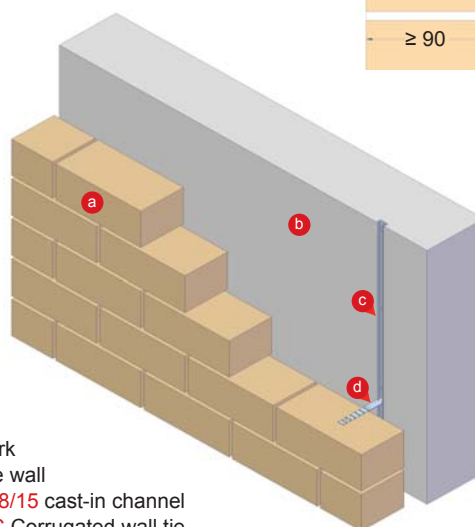
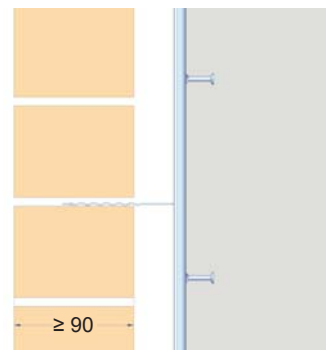


- Fixed on to 38/17 cast-in or surface fixed channels
- Positioning any where along the length of the channels
- Available in lengths between 75 and 250 mm
- Tensile loading is 1.0 kN

Product Code	Length
CMWT-C-75	75
CMWT-C-100	100
CMWT-C-125	125
CMWT-C-150	150
CMWT-C-200	200
CMWT-C-225	225
CMWT-C-250	250

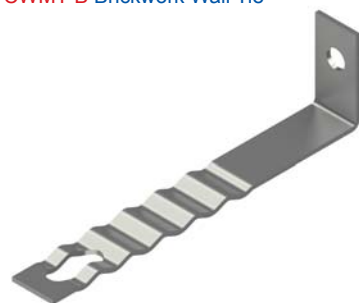


CWMT-D wall ties fixed on cast in channels



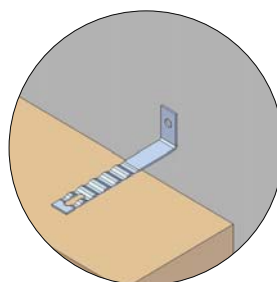
- a. Brick work
 b. Concrete wall
 c. **HMPR-28/15** cast-in channel
 d. **CMWT-C** Corrugated wall tie

CWMT-B Brickwork Wall Tie

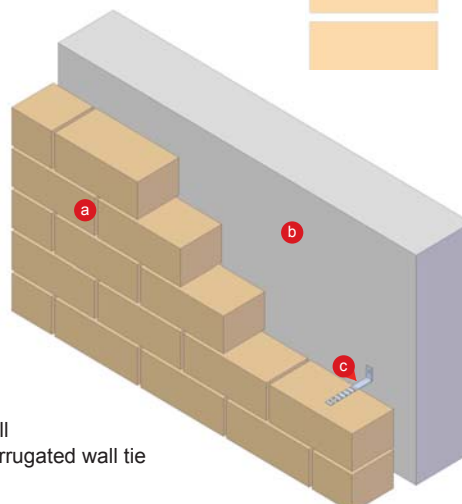
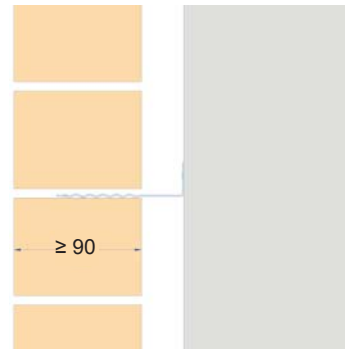


- Fixed on to concrete and brickwork walls with facade plugs
- Can be riveted or welded on to structural steel as well
- Available in lengths between 75 and 250 mm
- Tensile loading is 1.0 kN

Product Code	Length
CMWT-B-75	75
CMWT-B-100	100
CMWT-B-125	125
CMWT-B-150	150
CMWT-B-200	200
CMWT-B-225	225
CMWT-B-250	250



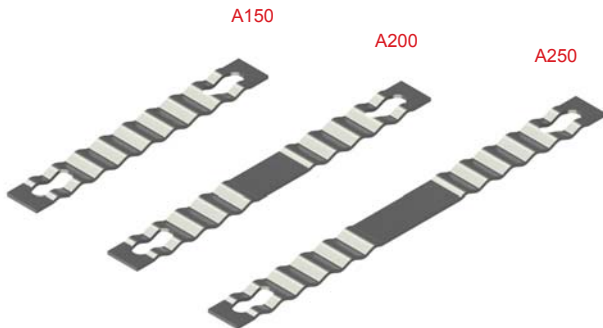
CWMT-B wall ties fixed on cast in channels



- a. Brick work
 b. Concrete wall
 c. **CMWT-B** Corrugated wall tie

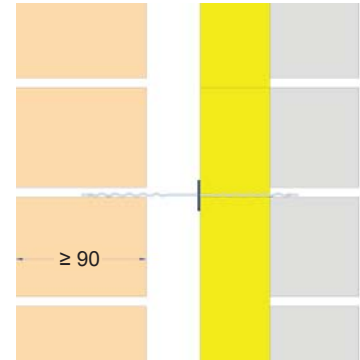
CWMT Brickwork Corrugated Cavity Wall Ties - Product Information

CWMT-A Brickwork Wall Tie



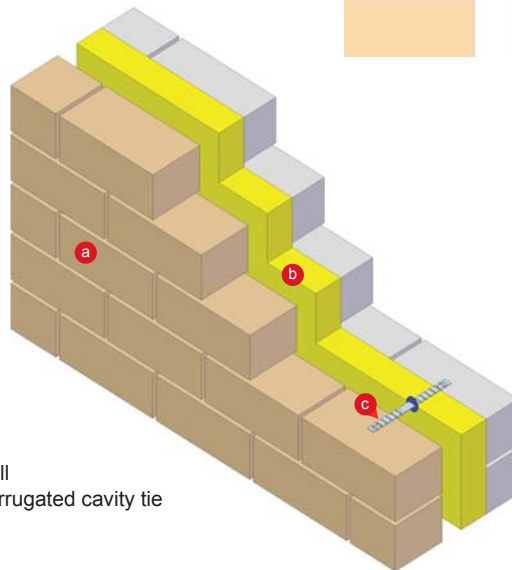
- Fixed on to both inner and outer shell walls with mortar
- Quick and easy to install
- Available in 150 , 200 and 250 mm
- Can be supplied in stainless steel and galvanized steel

CWMT-A wall ties connected between inner and outer shell walls



Product Code	Length
CMWT-A-150	150
CMWT-A-200	200
CMWT-A-250	250

- a. Brick work
b. Concrete wall
c. **CWMT-A** Corrugated cavity tie



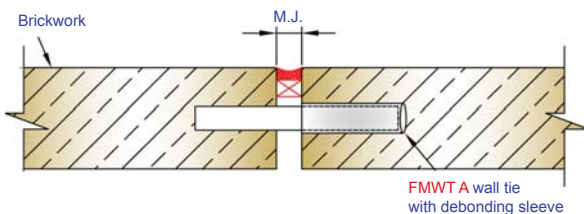
FMWT Brickwork Wall Ties For Expansion Joints - Product Information

FMWT Brickwork Wall Ties For Expansion Joints

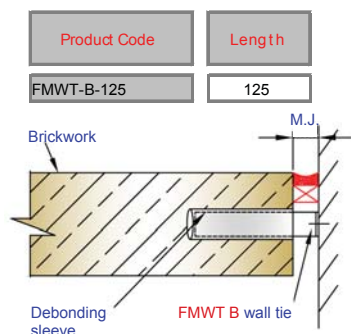
- Wall ties supplied with debonding sleeves
- Used on expansion joints where the the debonding sleeves allow movement
- Available to fit the range of the CWMT wall ties



Product Code	Length
FMWT-A-225	225



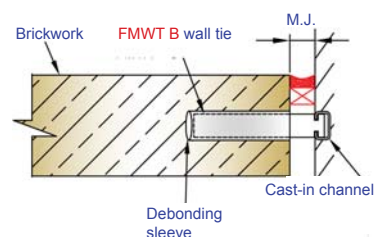
FMWT B Wall Tie



Product Code	Length
FMWT-B-125	125



FMWT C Wall Tie

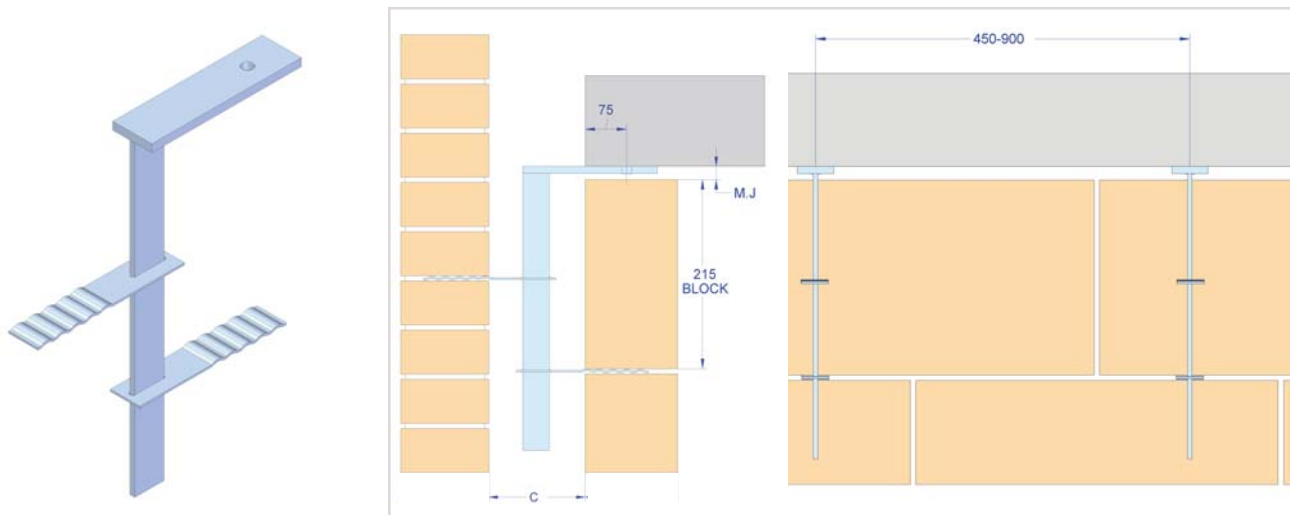


Product Code	Length
FMWT-C-28-125	125
FMWT-C-38-125	125

HMHR Brickwork Head Restraints - Product Information

HMHR Brickwork head restraints are specifically designed parts for restraining brickwork below horizontal soft joints by attaching the brickwork to the structure without restricting differential movement. These items are available in stainless steel AISI 304 and AISI 316.

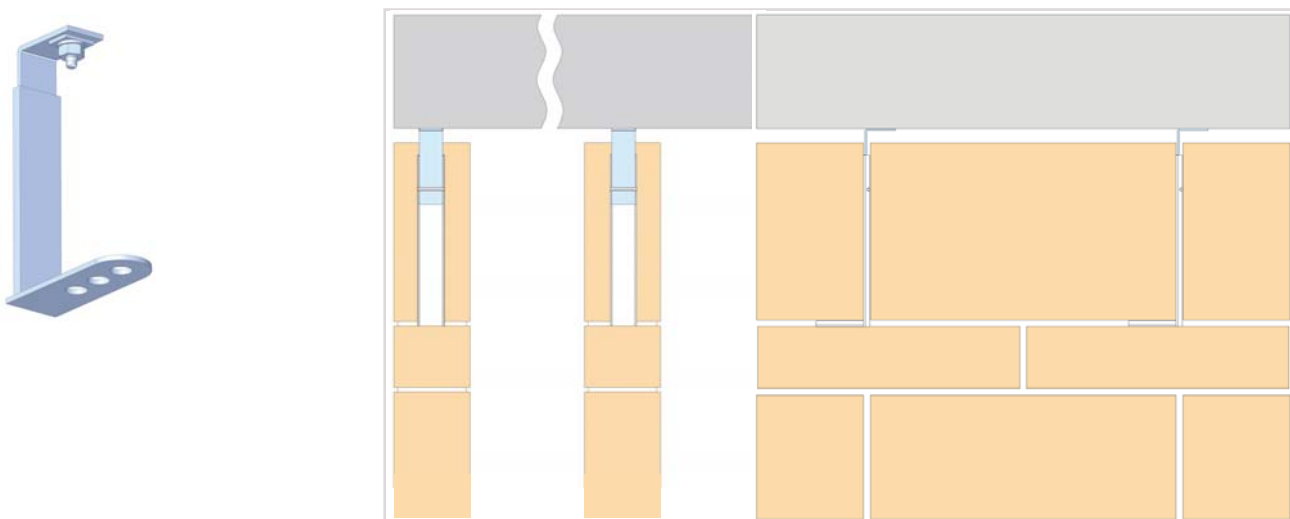
HMHR-C Cavity Head Restraint



- Corrugated ties prevent dripping and reduces moisture bridging cavity
- Provide lateral restraint for inner and outer wall brick facing
- Service load is 1 kN
- Available in stainless steel and galvanized steel
- Movement joint maximum 25 mm
- Other sizes are available to order

Product Code	Cavity
HMHR-C-75	75
HMHR-C-125	125
HMHR-C-175	175
HMHR-C-225	225

HMHR-H Hidden Head Restraint

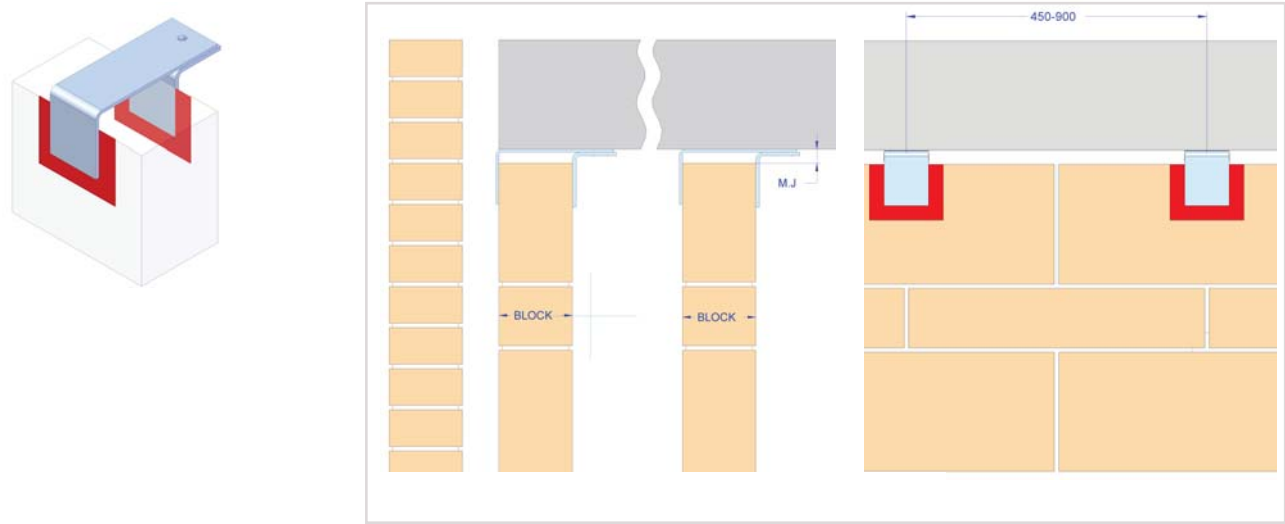


- Hidden head restraint used for areas where aesthetics are a consideration
- Provides vertical tolerance and differential movement with a debonding sleeve
- Vertical joint must be mortar filled
- Available in stainless steel and galvanized steel
- Movement joint maximum 25 mm
- Other sizes are available to order

Product Code	Cavity
HMHR-H-75	75
HMHR-H-125	125
HMHR-H-175	175
HMHR-H-225	225

HMHR Brickwork Head Restraints - Product Information

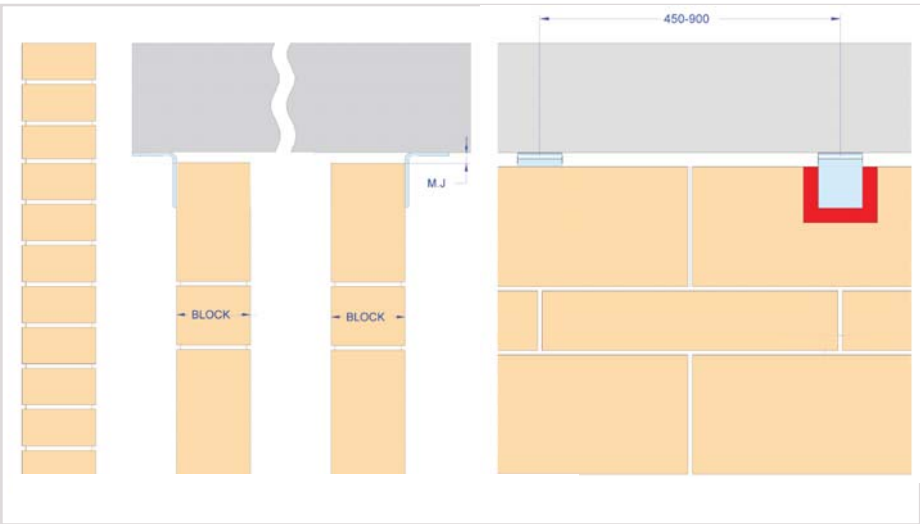
HMHR-E Exposed Head Restraint



- Exposed head restraint for inner wall
- Provides vertical tolerance and differential movement with a debonding sleeve
- Vertical joint must be mortar filled

Product Code	Cavity
HMHR-E-75	75
HMHR-E-125	125
HMHR-E-175	175
HMHR-E-225	225

HMHR-E Exposed Head Restraint



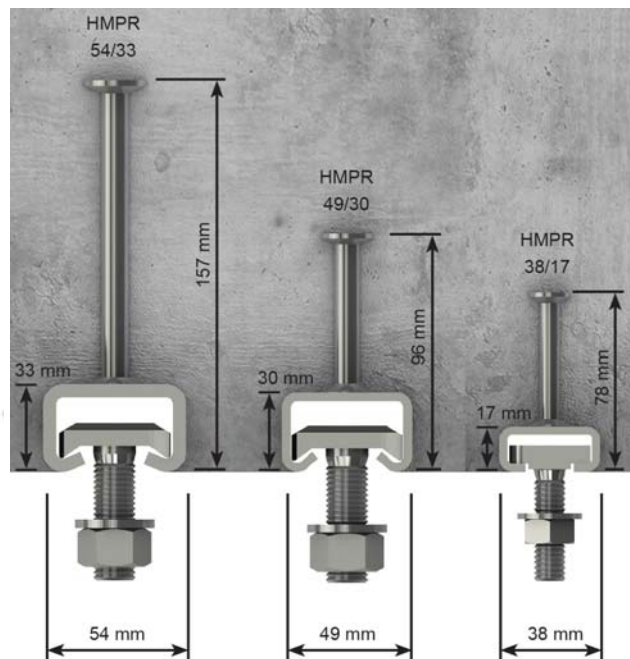
- Exposed head restraint for inner wall
- Provides vertical tolerance and differential movement with a debonding sleeve
- Vertical joint must be mortar filled

Product Code	Cavity
HMHR-E-75	75
HMHR-E-125	125
HMHR-E-175	175
HMHR-E-225	225

HMPR Cast-in Channels - Product Details

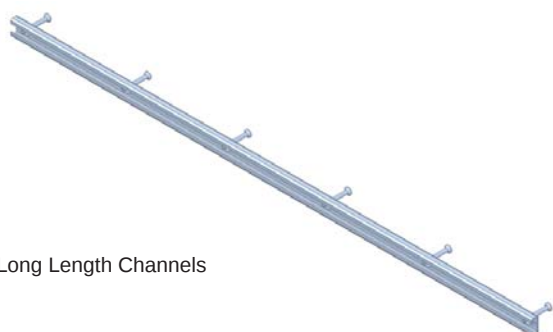
HMPR cast in channels with swaged studs are available for connections in to concrete. The **HMPR** cast in channels have been tested and hold a DIBt technical sales approval with number Z-21-4-1887.

Brickwork facing walls are installed easily on to **HMPR** cast in channels with **HTB** T head bolts. A continuous cast in channel on the wall provides high adjustability and enables quick and easy installation.

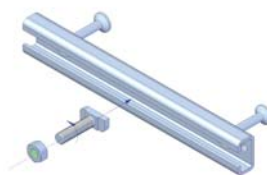


HMS Brickwork Support Load Category	Technical Details							
	HMPR Cast In Channel			HTB T Bolt			Edge Spacing	
	Product Code	Load Capacity Vrd=Nrd (kN)	Channel Flexure Mrd,s,flex (Nm)	Product Code	Bolt Size (mm)	Torque Load (Nm)	min ar	min ae
3,5	HMPR-38/17	12.22	651	HTB-38-12/80	M12x80	25	75	50
7,0	HMPR-49/30	25.00	1600	HTB-50-12/100	M12x100	25	130	130
10,5	HMPR-54/33	36.67	2696	HTB-50-16/100	M16x100	60	165	175

- Load capacities refer to DIBt technical approval
- Material : Stainless Steel 1.4301 (A2) & 1.4401 (A4) and galvanized steel
- Structural calculation reports are available upon order



* Long Length Channels



* Short Length Channels

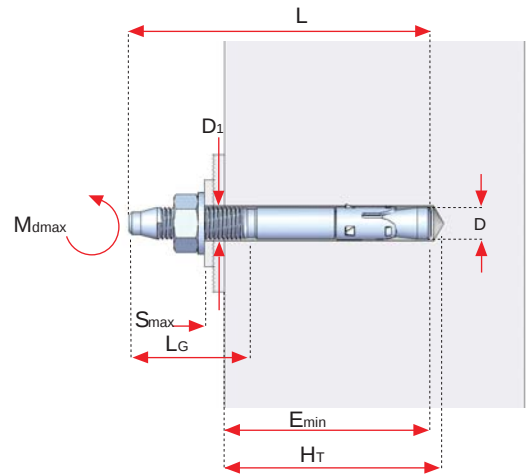


* Corner Channels

HB07 Through Bolts & HB07 Chemical Anchor Bolts - Product Details

HB03 Expansion bolts and **HB07** chemical anchor bolts are used for post fixing of brickwork support brackets on to concrete load bearing structures. The required anchor bolt sizes for the brickwork brackets are M10 for load category 3.5 kN , M12 for load category 7.0 kN and M16 for load category 10.5 kN.

HBZ Through Bolt



Product Code	Technical Details										
	Bolt Size	Drill Hole Diameter	Drill Length	Min Embedment	Max Fixture Thickness	Fixture Hole Diameter	Max Torque	Bolt Length	Thread Length	Tensile Load	Shear Load
	(mm)	D (mm)	Ht (mm)	Emin (mm)	Smax (mm)	D1 (mm)	Mdmax (Nm)	(mm)	(mm)	(kN)	(kN)
HBZ-10/130	M10x130	10	70	65	57	11	25	130	65	6.47	9.70
HBZ-12/145	M12x145	12	95	80	50	13	40	145	40	9.64	12.40
HBZ-16/165	M16x165	16	115	90	50	17	100	165	45	15.62	18.20

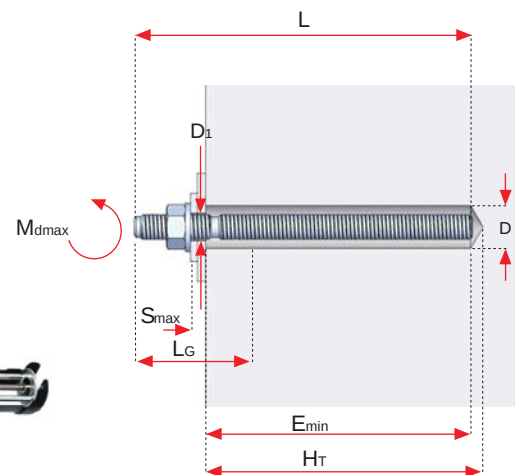
HB07 Chemical Anchor Bolt



Epoxy acralyte



Injection gun



Product Code	Technical Details										
	Bolt Size	Drill Hole Diameter	Drill Length	Min Embedment	Max fixture thickness	Fixture Hole Diameter	Max. Torque	Bolt Length	Thread Length	Tensile Load	Shear Load
	(mm)	D (mm)	Ht (mm)	Emin (mm)	max (mm)	D1 (mm)	Mdmax (Nm)	(mm)	(mm)	(kN)	(kN)
HB07-10/130	M10x130	12	92	90	21	11	15	130	30	9,15	7,17
HB07-12/160	M12x160	14	115	110	28	13	25	160	40	13,52	10,00
HB07-16/190	M16x190	18	130	125	38	17	60	190	52,5	16,50	18,58

- Load capacities refer to tests made in an approved testing laboratory
- Material : Stainless Steel 1.4301 (A2) & 1.4401 (A4) and galvanized steel
- Please refer to Haz Metal Anchor bolts catalogue for detailed information

References

Project: Shopping Centre Camp

Location: Lintfort, Germany

Cladding area: 1.800 sqm



Project: Finance Tax office

Location: Solingen, Germany

Cladding area: 1.300 sqm



Project: Vista dalla piazza,

Location: Balzano, Italy

Cladding area: 1.800 sqm



Project: Bäckerbreitengang

Location: Hamburg, Germany

Cladding area: 800 sqm



Project: Pier 6,

Location: Bremerhaven, Germany

Cladding area: 1.000 sqm



Project: Bach private housing

Location: Switzerland

Cladding area: 300 sqm



References

Project: Bosmos office flats

Location: Switzerland

Cladding area: 2.250 sqm



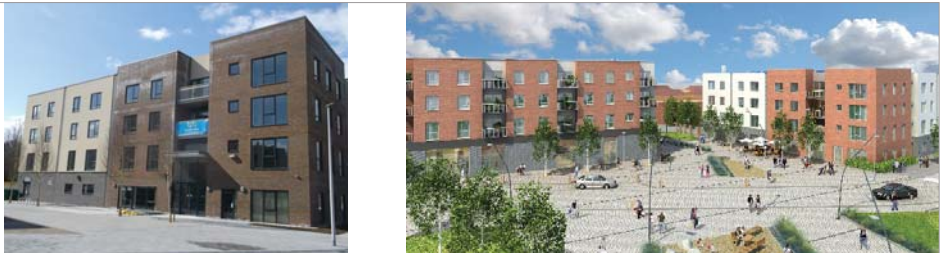
Project: Wardalls Grove

Location: United Kingdom



Project: Rochester Riverside

Location: United Kingdom



Project: Rublevo Housing project

Location: Moscow, Russia



Project: Rochester Riverside

Location: United Kingdom



Project: Sabanci University

Location: Istanbul, Turkey





HAZ PAZARLAMA İÇ & DIŞ TİC. A.Ş.
Sarıkanarya Sok. Ece Apt. No. 8/1
Kozyatağı Mah. 34742 Kadıköy
İstanbul, TÜRKİYE
Tel : +90 (0) 216 410 72 26
Fax : +90 (0) 216 410 71 41
www.hazpazarlama.com
hazpazarlama@hazgrp.com

HAZ INTERNATIONAL LTD.
154 Great North Road Hatfield
Herts. AL9 5JN England
Tel : +44 (0) 1707 - 260 180
Fax : +44 (0) 1707 - 260 190
www.hazuk.co.uk
haz@hazuk.co.uk

HAZ EGYPT LTD
Villa no.29-Third Floor.St.no.270
New Maadi, Cairo, Egypt
Tel : +20 (2) 27038223
Fax : +20 (2) 27038223
www.hazeg.com
info@hazeg.com

HAZ METAL SANAYİ VE TİCARET A.Ş.
Şehit Er Çıracı Caddesi No. 10
Akçay Sanayi Bölgesi 31200 İskenderun
Hatay, TÜRKİYE
Tel : +90 (0) 326 626 20 50
Fax : +90 (0) 326 626 20 45
www.hazmetal.com
info@hazmetal.com

HAZ MARBLE INDUSTRY & TRADE LLC
First Gulf Building Corniche Street
2nd Floor, Flat No. 202 P.O. Box 5721
Abu Dhabi, United Arab Emirates
Tel : +971 (0) 2 622 07 00
Fax : +971 (0) 2 622 17 00
www.hazuae.ae
hazuae@hazmarbleuae.ae

HAZ MARBLE QATAR WLL
P.O.BOX 31296 C-Ring road
Doha, Qatar
Tel : +974 (0) 467 26 49
Fax : +974 (0) 467 47 49
www.hazqatar.com
hazdoha@hazqatar.com

HAZ METAL DEUTSCHLAND GmbH
Leonhard Karl Strasse 29
97877 Wertheim, Germany
Tel : +49 (0) 9342 93590
Fax : +49 (0) 9342 935929
www.hazmetal.de
info@hazmetal.de

HAZ ASIA PACIFIC PTE LTD
Blk 22 Woodlands Link #01-65
Singapore 738734
Tel: +65 6853 7681
Fax: +65 6752 9582
www.hazapac.com
info@hazapac.com

HAZ RUS LTD
117036, Ul, Profsoyuznaya Dom 3 (office 531)
Moscow, Russian Federation
Tel : +7 (495) 781 39 95
: +7 (926) 672 31 84
info@hazrus.ru
www.hazrus.ru



Always at the forefront of fixing technology, HAZ METAL has earned a reputation as the leaders in fixing systems innovation and is regarded as the one to follow. HAZ METAL fixing systems of today become the standard of tomorrow.

HAZ METAL combines the very latest international technology with its own research and development team to establish a technical excellence within the industry. HAZ METAL readily embraces the responsibility of a major producer and shares its expertise with problem solving solutions.