Your Fixing Systems Specialist

HAZ METAL

Brickwork Support & Restraint Systems

We provide a wide range of brickwork support and restraint systems and accessories that meet the highest standards of quality, load capacity, and safety. In addition, we guarantee maximum adjustability, flexibility & cost-effectiveness.

Product brochure - HAZ-BR-MS-EN/01.25

Contents

HAZ
Group of Companies
Establishment
www.hazgrp.com

HAZ Metal Fixing Systems is a member of HAZ Group of Companies

HAZ Metal is certified with integrated management systems by TUV SUD for ISO 9001:2008, ISO 14001:2004 & OHSAS 18001:2007

Brickwork support systems - overview

Brickwork support systems are used for the secure and easy installation of a brickwork external facade. The 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. Restraint ties are used along the rest of the cladding height to secure the brickwork facade against wind loads.

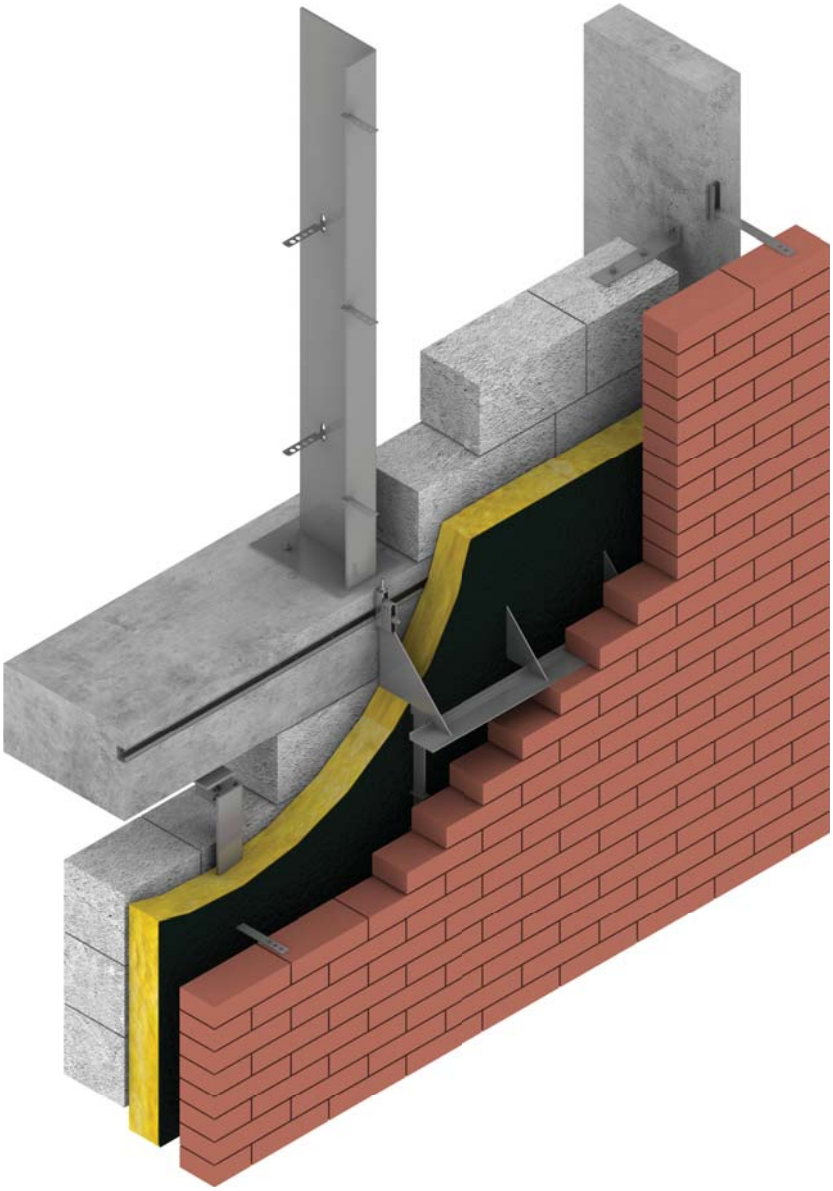
Brickwork support systems provide support for brickwork as non-load bearing external cladding which is attached on the substrate. The relatively thin outer skin of brick wall will not maintain its integrity unless it is properly supported by suitably designed load bearing brackets and restraint ties. 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.

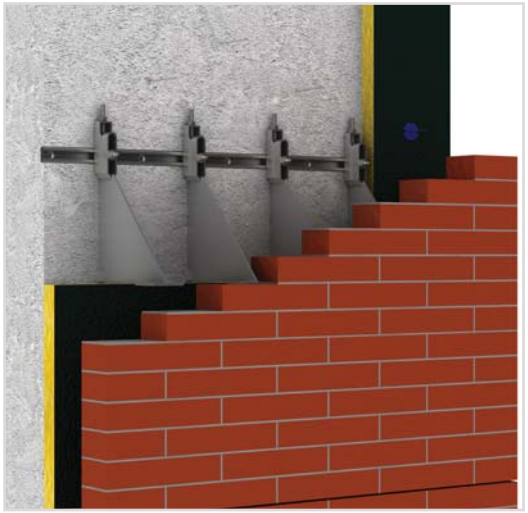
Brickwork support systems are designed to be positioned at beam level and are fixed on to either cast-in channels or on to concrete with expansion or chemical anchor bolts. When fixing is made with cast-in channels, quick installation and horizontal adjustability is achieved which increases the rate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

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

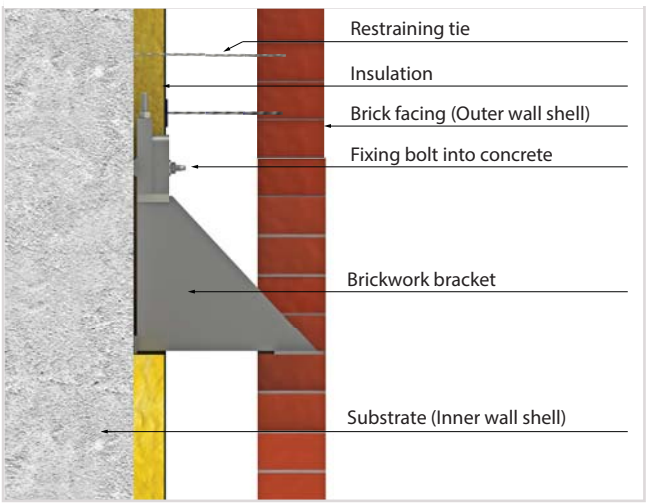
A technical service is available for proposing fixing system after viewing the details of the project. The fixing system elements are available in stainless steel grade 1.4401 (A4) & 1.4301 (A2).

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

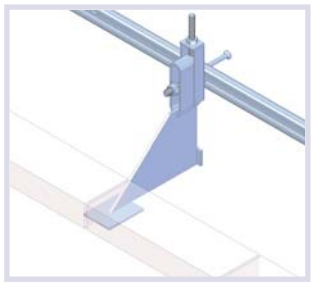




• Perspective picture of brick facing installation with FIX-U brackets.

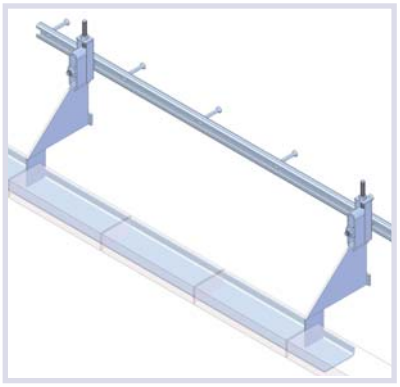


• Section picture of brick facing wall



Brickwork Facade

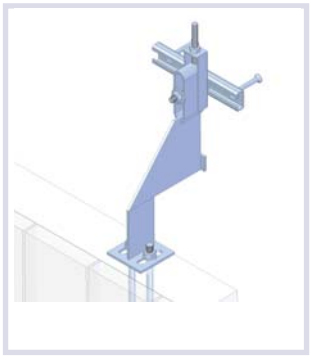
A brickwork facade built with brickwork is formed out of a load bearing inner wall, an insulating layer and an outer wall. The outer wall cannot be used for load bearing purposes nor can it be used for attachments of various components. The outer wall is a design element that satisfies the aesthetics 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.

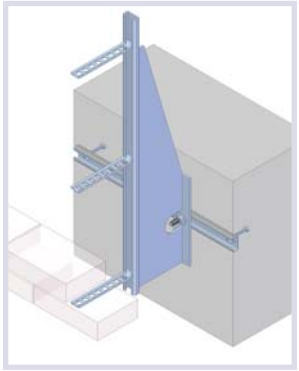


Many product variations are available for these situations, including the fixing of pre-cast brickwork lintels and prefabricated elements.

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 brick works installation, there are three load groups that the brackets can carry. The load categories are 3,5 kN, 7,0 kN, 10,5 kN, 14 kN & 18 kN.

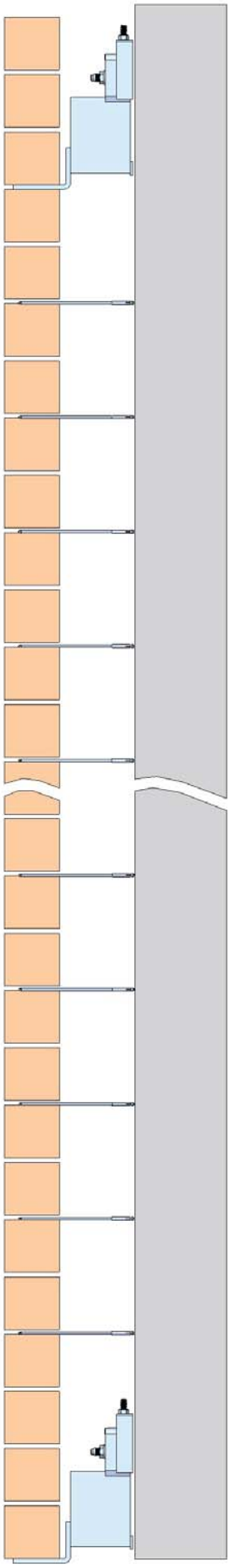


Bespoke design for support brackets are made to cover higher design load capacities to be used at larger cavity sizes.

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

EN Euro code 6 Design of brickwork structures

EN 1996-1 Rules for reinforced and unreinforced brickwork



FIX Brickwork support bracket

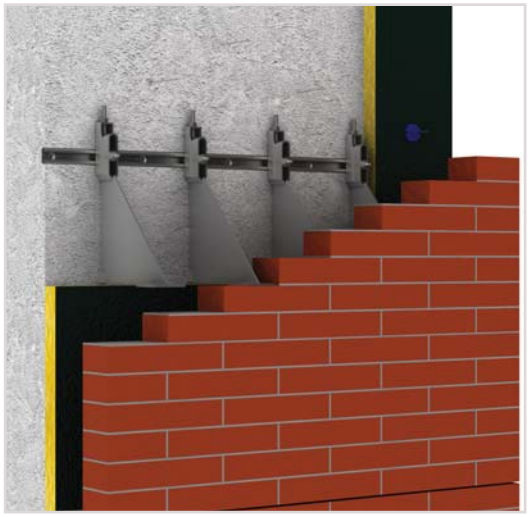
FIX Brickwork support brackets are adjustable and secure brackets that are designed for the easy and quick installation of brick facing walls.

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.

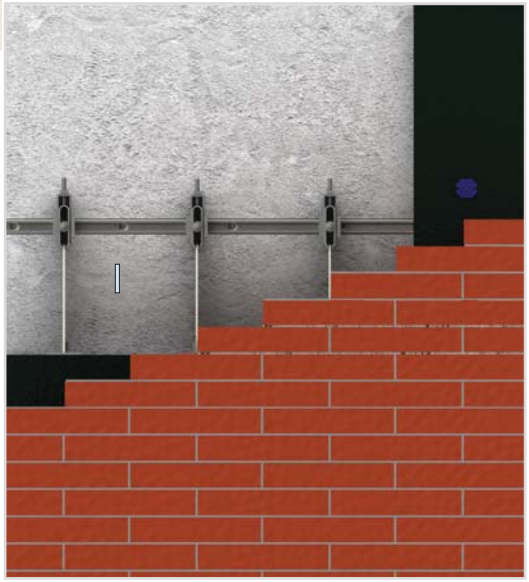
When the FIX brickwork brackets are fixed on to walls, the vertical adjustability of the brackets is made by the set screw and nut. There is an adjustability space of 60 mm.The FIX brickwork anchors are installed either with expansion bolts or T head bolts into channels.

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

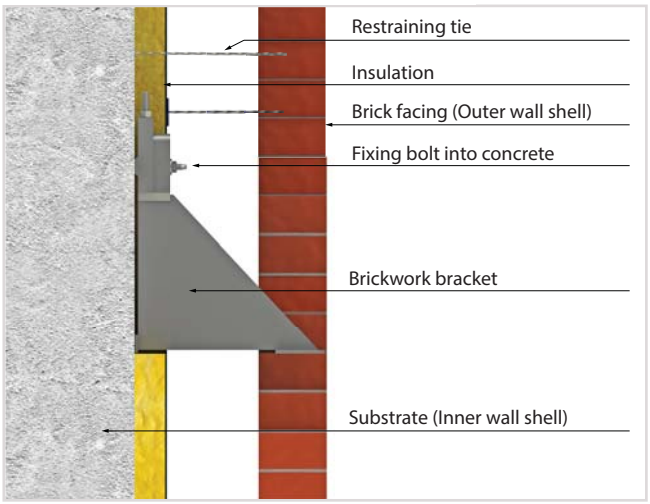
Type Test CE EN 845-1



• 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

HMCS Brickwork continuous support bracket

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 are often used in load categories up to 18 kN and can be used for projection sizes from 130 to 230 mm. However special design can be made to accommodate higher loads and cavity sizes. 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

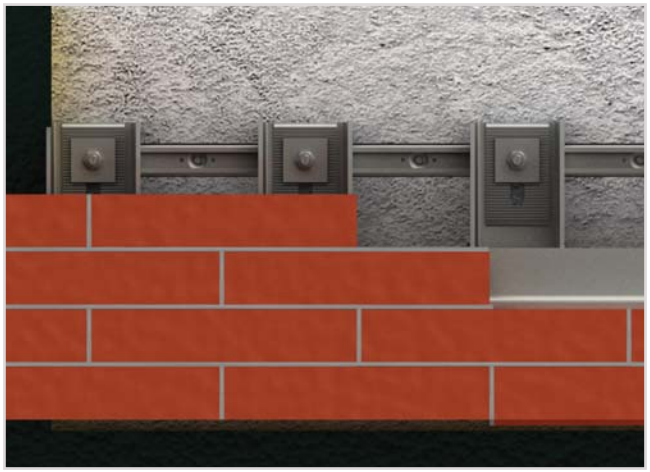
• Perspective picture of brick facing installation with HMCS continuous support

Type 1 Continuous support with 5 welded brackets

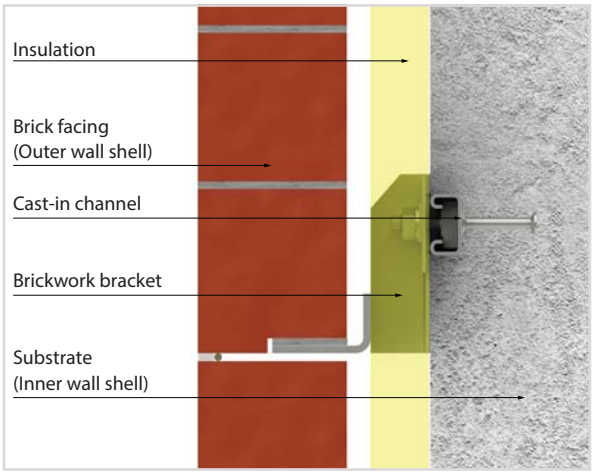
Type 2 Continuous support with 4 welded brackets

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

Support brackets - single brackets

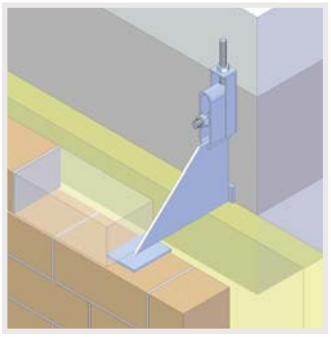
FIX-U Support bracket

• Single bracket with welded support plate.

• This brickwork support bracket is used for independent installation of each brick block

• This bracket is used for closed surface elevation brick cladding.

• The offset level plate height distance can be designed according to the application requirement.

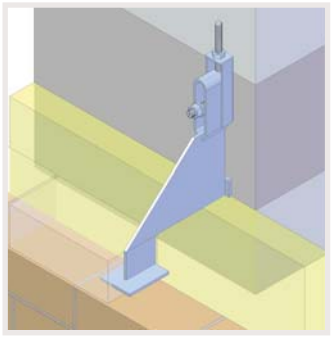


FIX-UV Support bracket

• Single bracket with welded support plate and an offset supporting level plate.

• The offset level plate height distance can be designed according to the support level requirement.

• Used for installing bricks with a lower level support than the fixing level on the substrate.

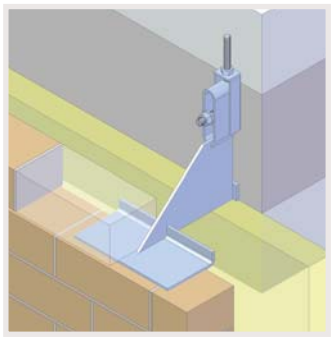


FIX-P Support bracket

• 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.

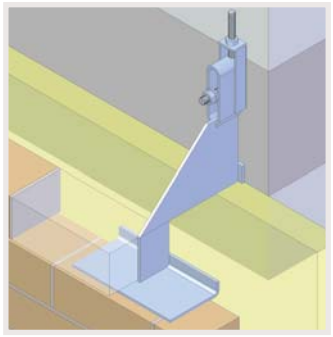


FIX-PV Support bracket

• 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.

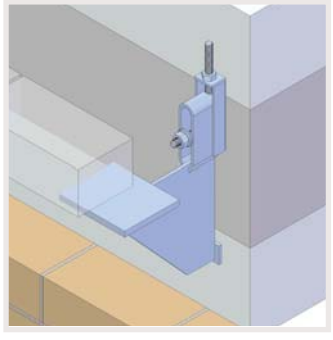
• Preferably used for installing bricks in edge situations, with a lower offset support level than the fixing level on the substrate.



FIX-UT Support bracket

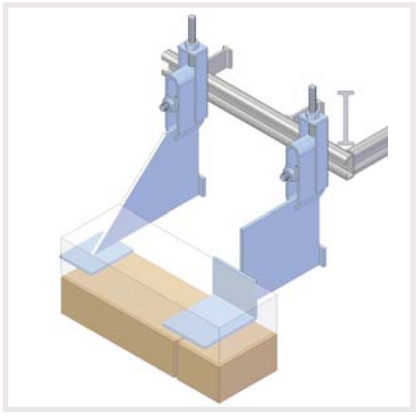
• Single bracket with welded high set support plate.

• Used for installing bricks at higher support level.



Support brackets - single brackets

FIX-W Support Bracket

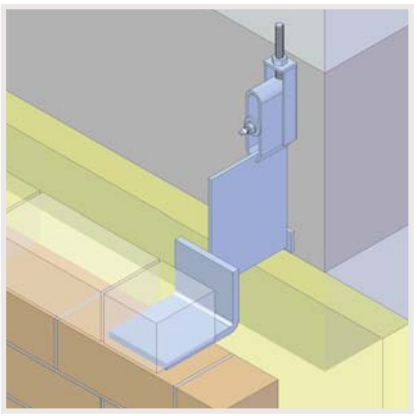


• Single bracket with welded L-shaped support plate.

• 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

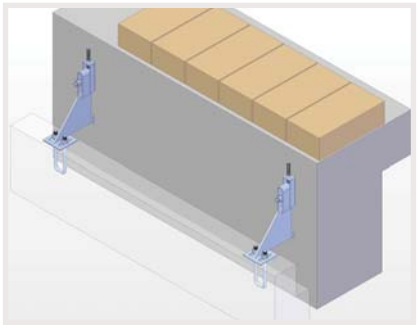


• This support bracket has the same properties as the FIX-W bracket with a higher offset level distance.

• 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.

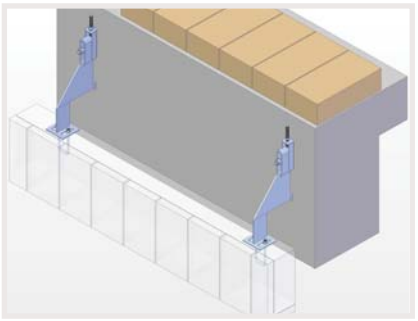
FIX-S Support Bracket



• Single bracket with welded plates with slotted holes.

• This bracket is used for supporting pre-cast 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.

HMCS Single Support Bracket

• Single U shaped bracket with welded L-shaped support plate.

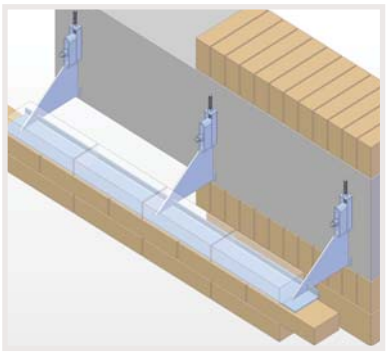
• This brickwork support bracket is used for independent installation of each brick unit.

• The u shaped components and the welded L shaped support plate can be designed according to application details.

Support brackets - continuous support brackets

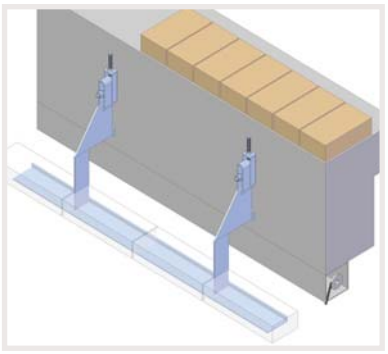
FIX-F Support bracket

- 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



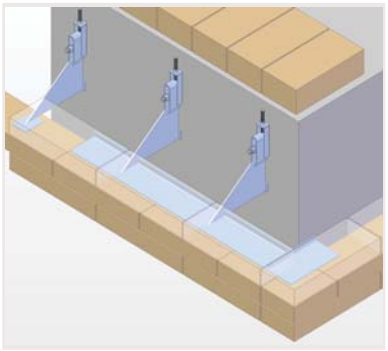
FIX-FV Support bracket

- 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



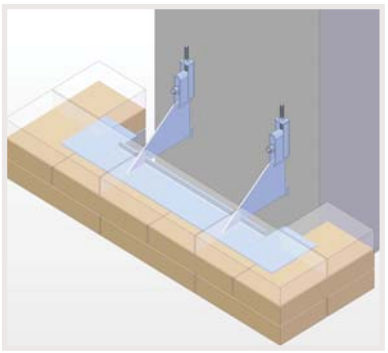
FIX-FSC Support bracket

- 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



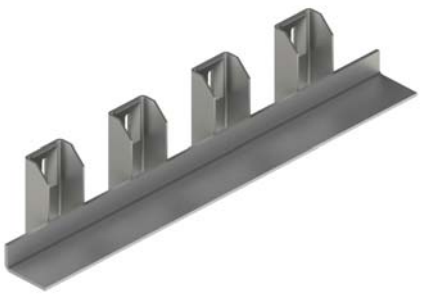
FIX-FDC Support bracket

- 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



HMCS Support bracket

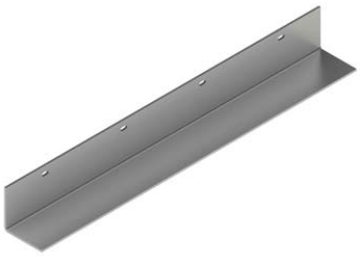
- These brackets are continuous supporting angles with a welded corner part at both ends of the angle
- This support bracket is used to allow easy and secure installation of bricks on to columns

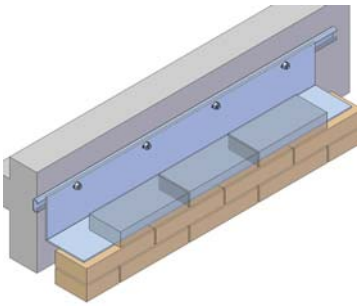


Shelf angle support brackets & accessories

HMS-AW Continuous angle support

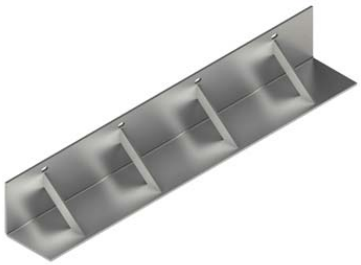
- Used for small cavity space between 20 mm and 40 mm
- Bricks can be positioned in desired position
- Projection sizes of 110 mm and 130 mm
- Load capacity up to 3.2 kN

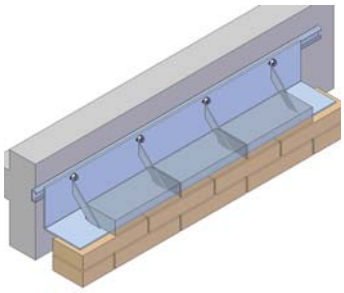




HMS-AWS Continuous angle support

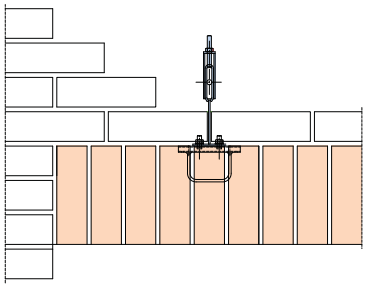
- Used for cavity spaces between 40 mm and 240 mm
- Welded support plates for loading at high projections
- Projection sizes of 130 mm to 330 mm
- Load capacity up to 3.2 kN





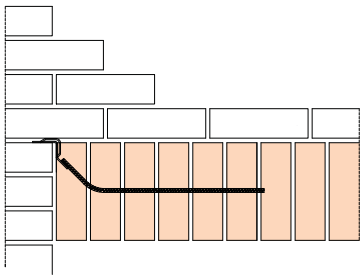
HMS-ES & GS Prefabricated component Inserts

- Used for the suspension of prefabricated components
- Fixed on to FIX-S brackets with t head bolls or hex nuts
- Available load categories are 3.5 kN, 7.0 kN and 10.5 kN



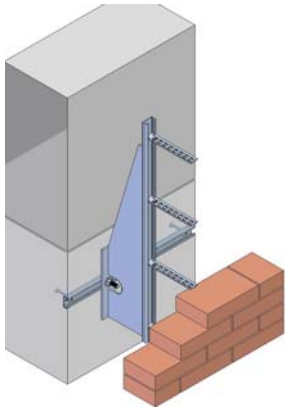
HM-SW Pre-cast lintel bracket

- Used for the support of lintel components on to standing outer walls
- Bricks can be positioned in desired position
- Load capacity up to 6.8 kn



HMS-AV Restraint channel

- Used for cavity space between 80 mm and 145 mm
- HWT 28 type ties are used to fit in to channel
- For restraining against wind loads

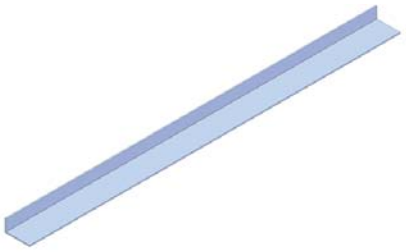


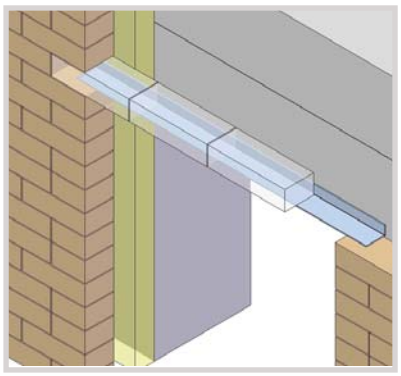
HMLS- Lintel support angles

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 1.4301 - AISI 304 and 1.4401 - AISI 316.

HMLS-E Lintel Support Angle

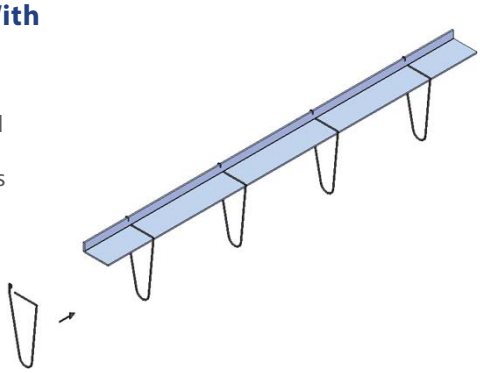
- Exposed fixing with L angles are used for mounting bricks on top
- Can be placed on side wall as well as in between brickwork support brackets
- Minimum bearing on the wall surface is 95 mm
- Angle length available up to 2.2 metres and Max span of opening is 2.10 metres

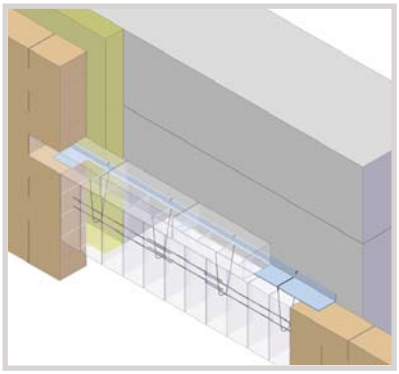




HMLS-C Lintel Support Angle With Hoops

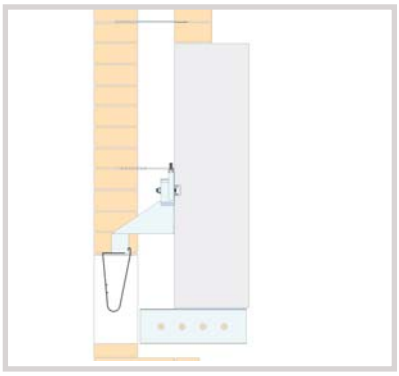
- Concealed fixing where the L angles are used in combination with suspension hoops to support bricks lintel using reinforcement bars
- When determining the loads both the over laying and underlying bricks must be taken into consideration
- Brick Lintel must be supported with scaffolding during fixing.





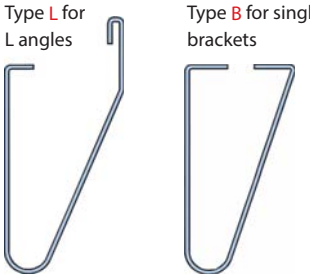
FIX-FV Lintel Support With Hoops

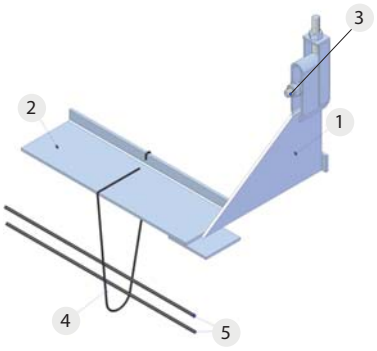
- Concealed fixing where the hoops are used in combination with HMS-FV support brackets to support underlying bricks
- Angle length available up to 1.5 metres and load capacity up to 10.5 kN



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
- Standard diameter is 4 and is available in different shapes and sizes to fit the application





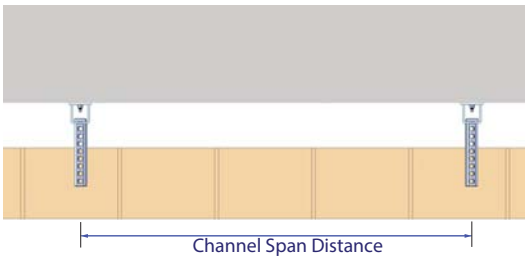
1. FIX-U Bracket 2. HMLS Angle 3. attachment to wall

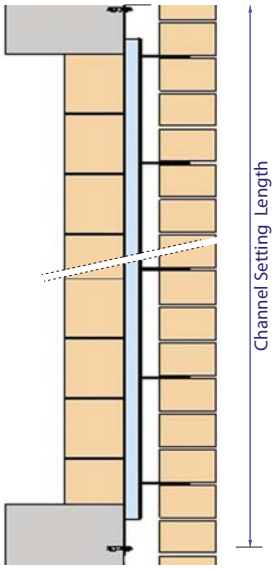
4. HMS-HK Hoop 5. Reinforcement bars

HWP- Wind post channels

HWP-I Wind post Channel

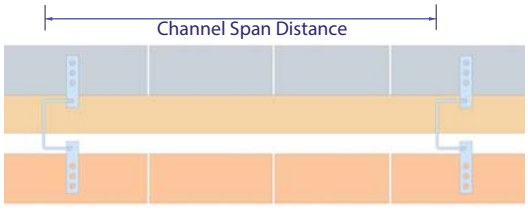
- Channels span between floor beams and are fixed to the concrete load bearing beams with expansion bolts. Can also be installed on to cast in channels
- Corresponding wall ties are used to restrain the outer brick facing wall on to the channels. The wall ties slide through the slotted hole on the channels 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

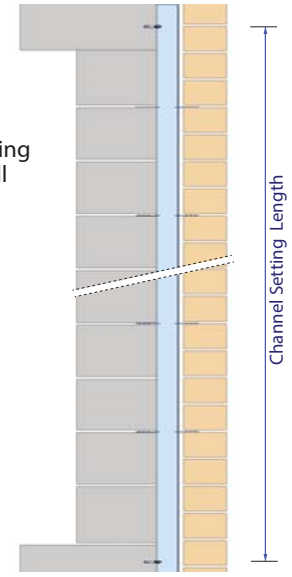


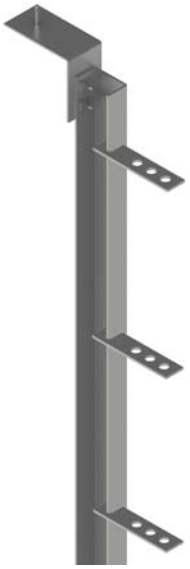


HWP-E Wind post Channel

- 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

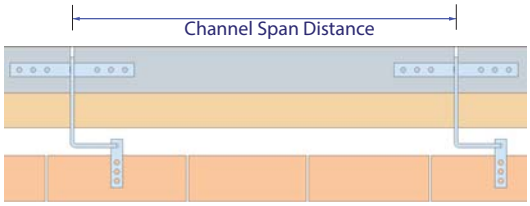


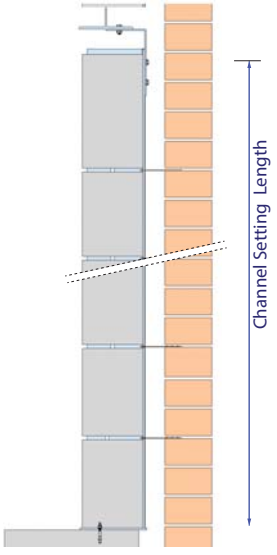




HWP-L Wind post Channel

- 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

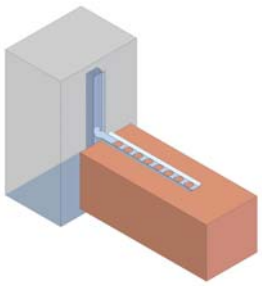




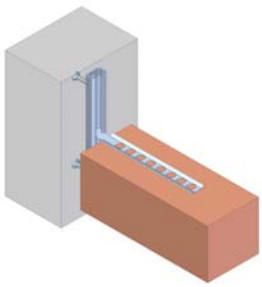
HMP Brickwork restraint channels

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 Anchor Channel

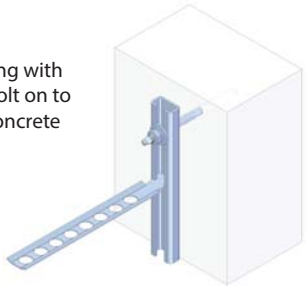


HMPR-28/15 & 38/17 Anchor Channel

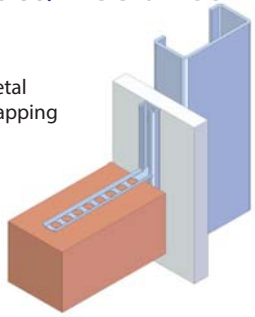


HMP-28/15 & 38/17 C Channels

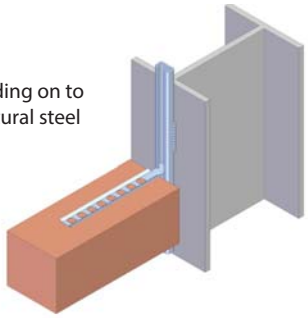
• Surface fixing with expansion bolt on to reinforced concrete walls



• Fixing on to metal studs with self tapping screws



• Welding on to structural steel

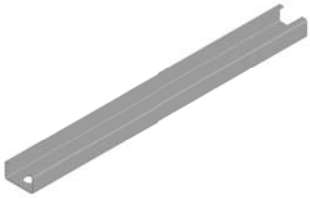


HBTR-25/15

HMPR-28/15 & HMPR-38/17

HMPB-28/15& 38/17

HMP-25/14

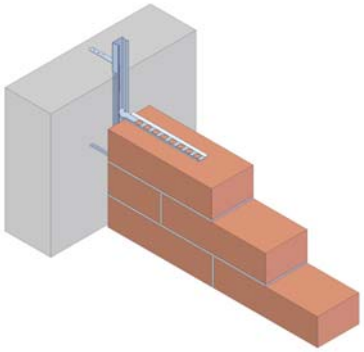


HWT Brickwork channel ties

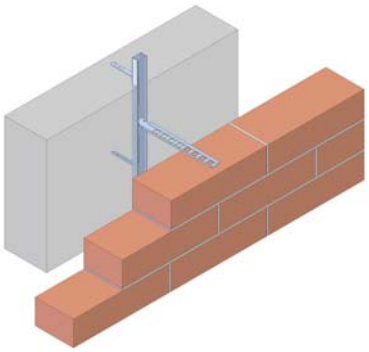
The HWT-M Brickwork wall ties are used in combination with channels for restraining brickwork walls. The wall ties are inserted any where along the channel and pressed into the bearing joint mortar of the work at recommended distances.

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 facade to reinforced concrete walls.

HWT-MS

HWT-ML

HWT-25

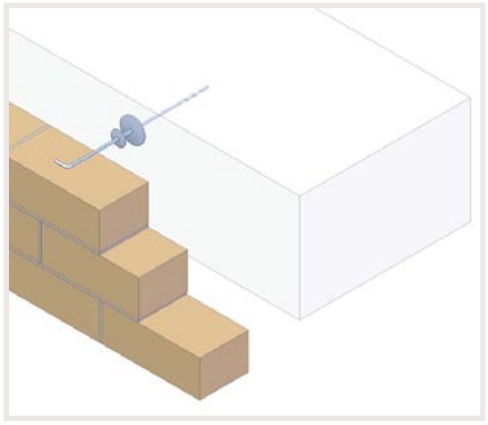
HWT-28

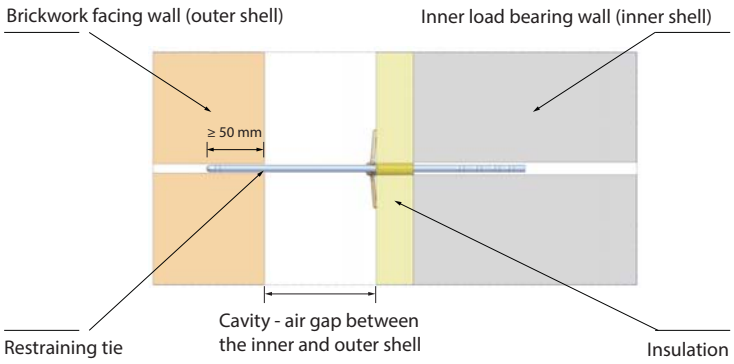
HRST Restraining tie

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.

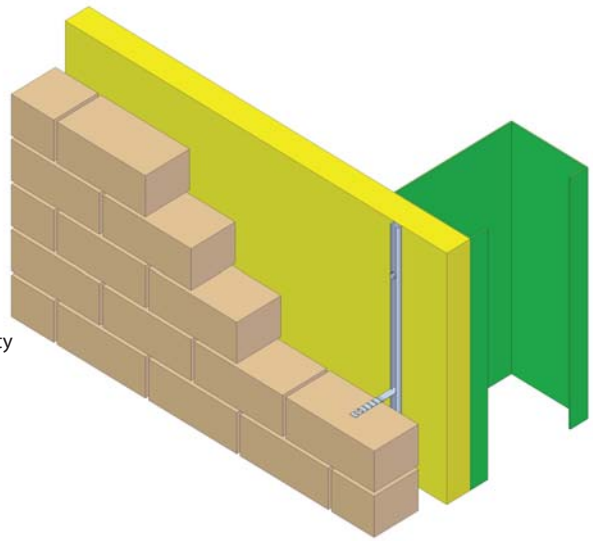
HRST-C Restraining Tie

HRST-M Restraining Tie



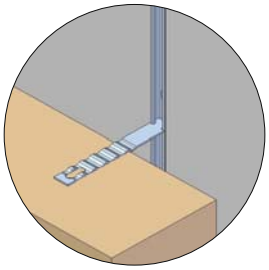


CWMT Brickwork corrugated channel ties

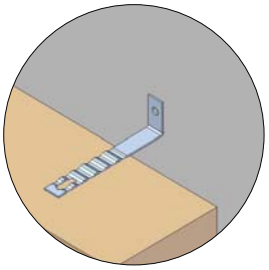


- Corrugated channel tie provides multiple drips to prevent moisture bridging cavity
- Provides lateral restraint for wind pressure & suction on brick work without transferring loads on to insulation
- Fixed on to 38/17 cast-in or surface fixed channels
- Positioning any where along the length of the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

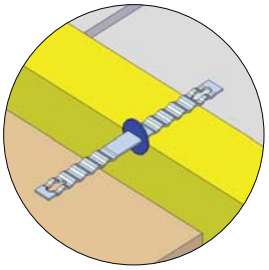
CWMT-C Brickwork Channel Tie



CWMT-B Brickwork Wall Tie



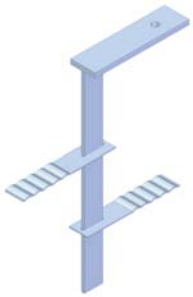
CWMT-A Brickwork Cavity Tie

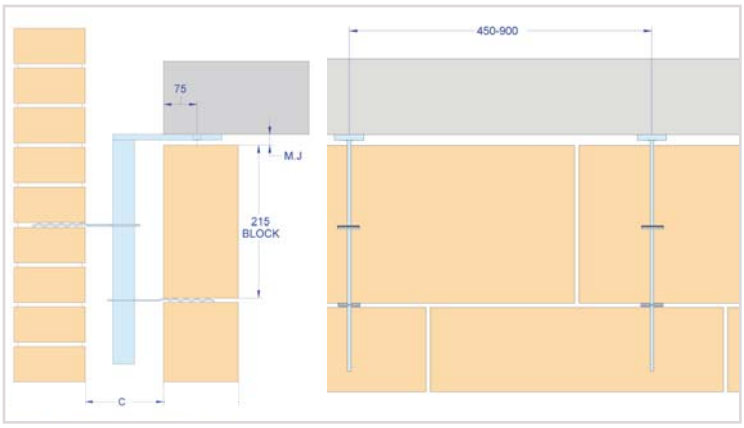


HMHR Brickwork head restraints

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.

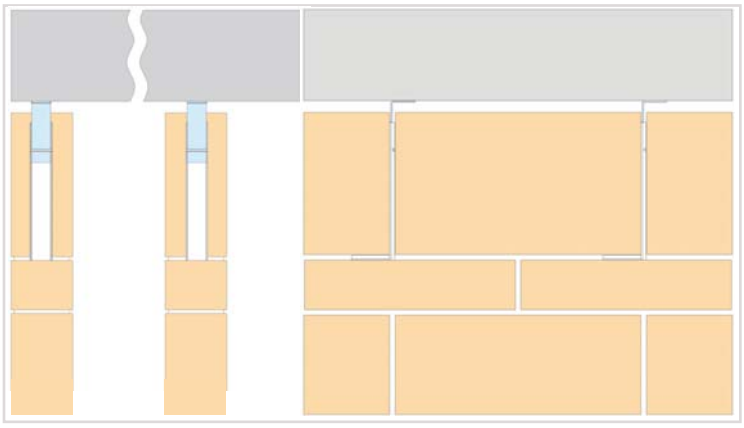
HMHR-C Cavity Head Restraint





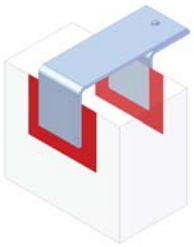
- Corrugated ties prevent dripping and reduces moisture bridging cavity
- Provide lateral restraint for inner and outer wall brick walls
- Service load is 1 kN
- Available in stainless steel and galvanized steel
- Movement joint maximum 25 mm
- Other sizes are available to order

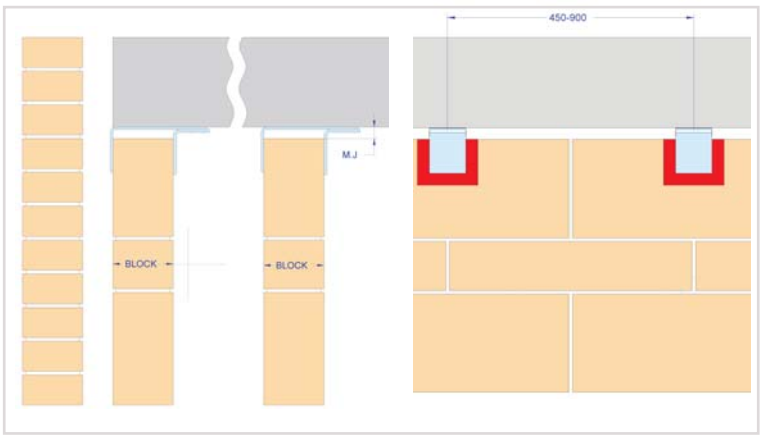
HMHR-H Hidden Head Restraint



- Hidden head restraint used for areas where aesthetics are a consideration
- Provides vertical tolerance and differential movement with a de-bonding 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

HMHR-E Exposed Head Restraint



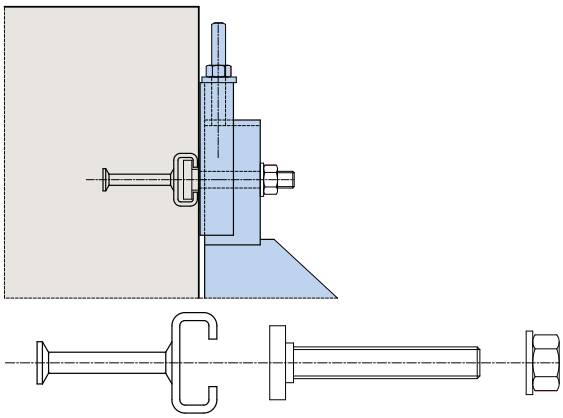


- Exposed head restraint for inner wall
- Provides vertical tolerance and differential movement with a de-bonding isolation pad
- Vertical joint must be mortar filled

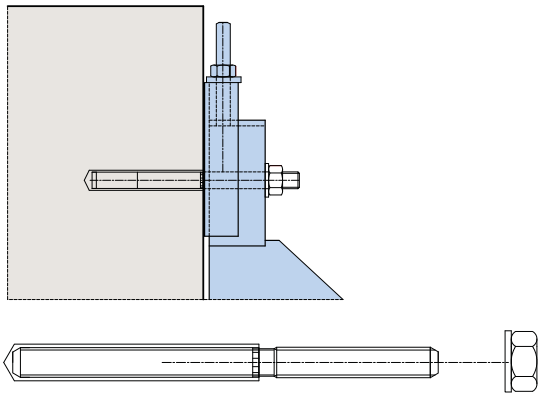
Support bracket connections methods

There are different methods to be used in for fixing the brickwork brackets on to concrete. Below are the types of fixing to concrete which is available in HAZ Metals product range. Anchor channels and anchor bolts can be selected from HAZ Metal product range from the related product catalogues. Each connection must be verified by calculation to choose the correct connection type and size.

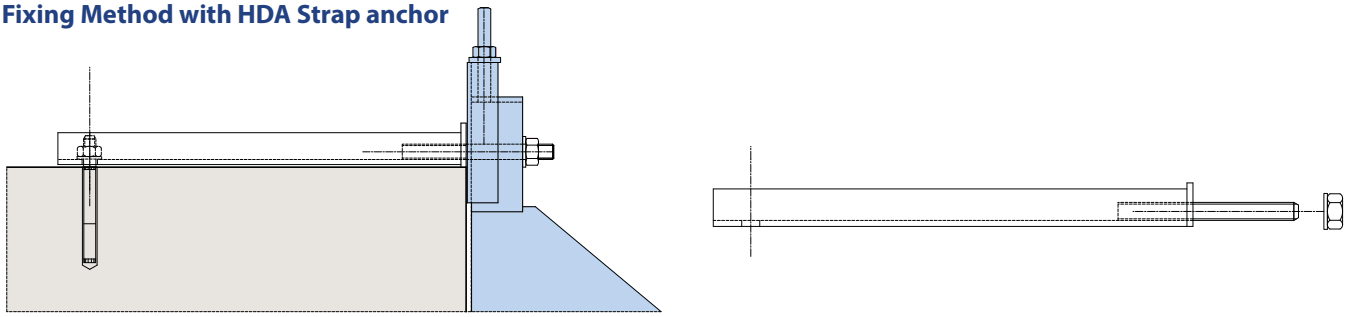
Fixing Method with HMPR Anchor channels



Fixing Method with HB Anchor bolts



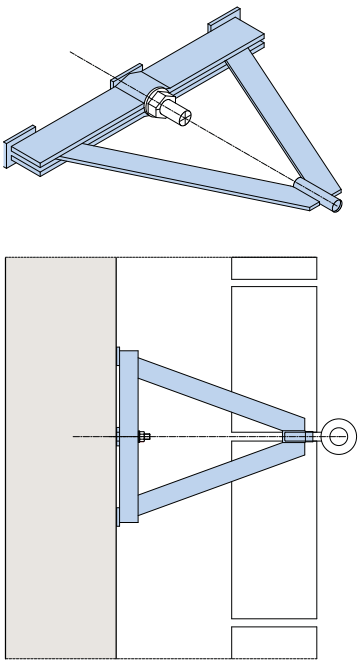
Fixing Method with HDA Strap anchor



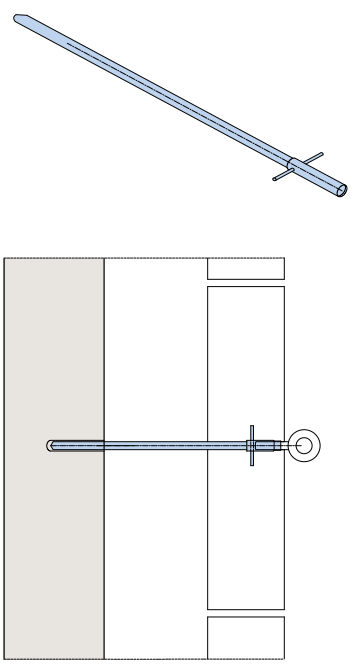
HM Scaffolding Anchors

Brickwork façades require maintenance through out its service life, for cleaning and also for reparations works after possible damages. The HM Scaffolding anchors offers the solution for easy and secure connections of the scaffolding to the façades. The scaffolding anchors are fastened to the inner load bearing walls and extends out of the open joints so that the scaffolding can be fixed on to them.

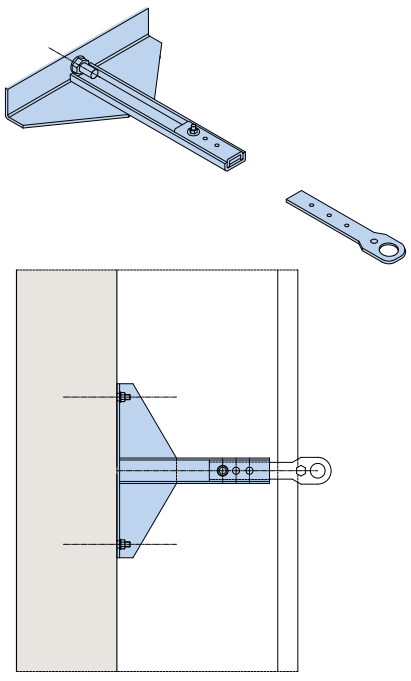
HM-GA -Q Scaffolding Anchor



HM-GA -Z Scaffolding Anchor



HM-GA -H Scaffolding Anchor



HAZ Metal Product range offers a wide range of products and solutions. HAZ Design department designs and proposes to most suitable Brickwork support systems for the project requirement. Bespoke system solutions for special applications can also be designed upon request.

This catalogue includes the standardized products for the brickwork systems. Additional types and sizes of products are available to offer.

More details can be found about brickwork support systems in our technical product catalogue which can be downloaded at www.hazmetal.com.

Brickwork technical catalogue is downloadable
downloadable at www.hazmetal.com

FIX-U
Support Bracket

- Adjustable and easy to install brackets
- Projection sizes up to 350 mm
- Load capacity of up to 10.5 kN
- Fixing to concrete with anchor bolts and anchor channels

HMCS
Continuous Support

- Continuous masonry supports
- Projection sizes up to 230 mm
- Load capacity of up to 18.0 kN
- Fixing to concrete with anchor bolts and anchor channels

HMS-AW
Restraint Channel

- Restraint channel for cladding on roof tops
- Cavities of up to 145 mm
- Suitable for use with wall ties
- Quick and easy fixing

FIX-S
Support Bracket

- Installation of prefabricated units
- For use over window and door openings
- Load capacity of up to 10.5 kN
- Prefabricated connections can be made with anchor channels and U inserts

Shopping Centre Camp - Lintfort

Bosmos office flats Switzerland

Bäckerbreitergang Hamburg

HAZ Metal San. ve Tic. A.Ş.
Güzelçay Mah. Şehit Er Ali Çıracı Cad.
No: 10 İskenderun
Türkiye
Telefon: 0 326 626 20 45
info@hazmetal.com
www.hazmetal.com

HAZ Metal Deutschland GmbH
Alfred-Zippe-Straße 1
D-97877 Wertheim
Germany
Telefon: +49 (0) 93 42 - 93 59 - 0
info@haz.eu
www.haz.eu

HAZ Metal Fixing Systems UK LTD.
154 Great North Road Hatfield
Hertfordshire AL9 5JN
Tel: +44 1707 260 180
info@hazmetal.co.uk
www.hazmetal.co.uk

Version: 01.25