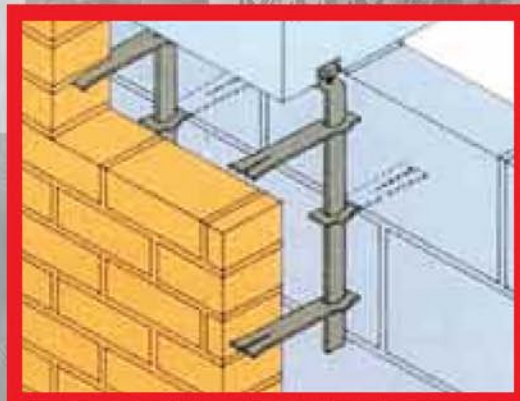
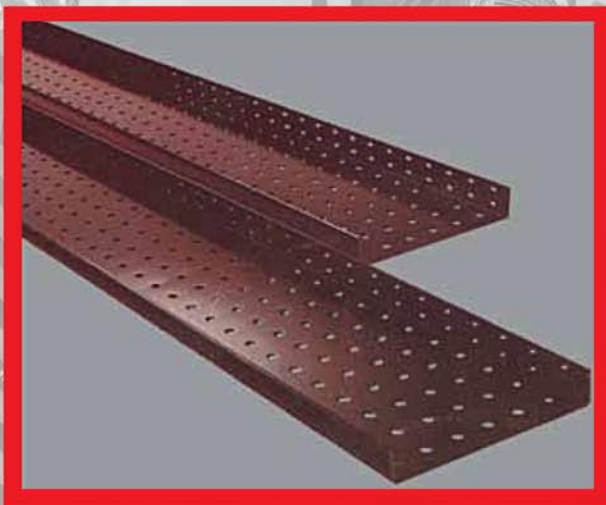
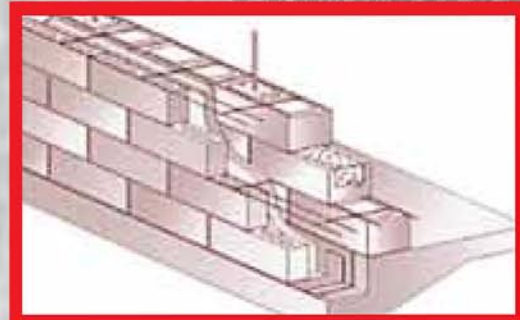
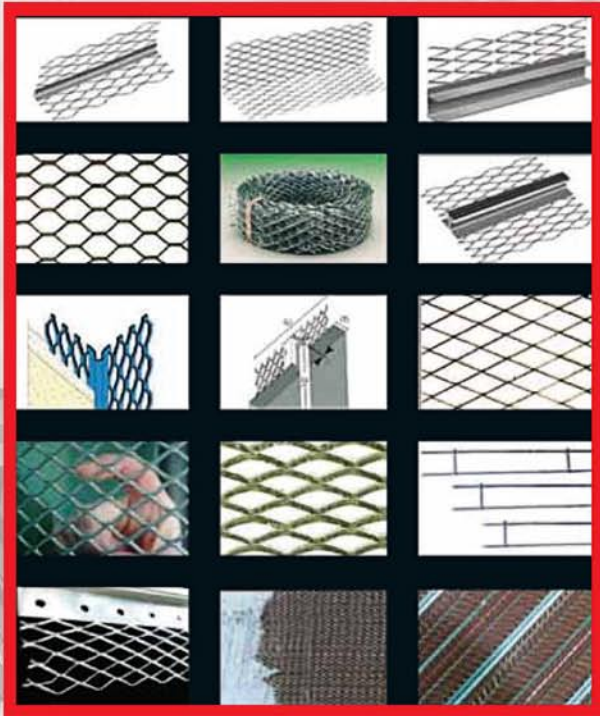


# PLASTERING, STEEL LINTEL & BLOCK WORKS ACCESSORIES



# INTRODUCTION

## Modern Metal Industries Company

Established in 1999 in Jeddah, Kingdom of Saudi Arabia as one of the leading manufacturer companies. Specialized in all types of expanded metal products of different shapes and sizes, and the development and manufacture of galvanized and stainless steel systems and accessories for the building industry.

Blockwork & Plastering Accessories are fabricated to meet specific design requirements in the most economic way and may be ordered as required on site against an agreed schedule . A full technician service is offered by MMICO to assist our customers in the correct selection of standard components and the design of Blockwork and Plastering Accessories to meet their special requirements.

Modern Metal has the ability to take up gigantic projects in the Kindom as well as overseas in GCC Countries and the Middle East. MMICO is a leader in the building products industry and is continually developing and improving existing products, as well as designing new products to meet the requirements of a changing industry.

For more information on our building products and our contacts visit our website [www.mmico-group.com.sa](http://www.mmico-group.com.sa)



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# EXPANDED METAL

- **For Interior applications:**

Galvanized Steel according to BS EN 10337 superseded by BS EN 10346:2009, zinc coated on both sides.

- **For exterior applications and humid environment:**

Austenitic stainless according to BS EN 10088-Mat. No. 1.4301.

## Technical Specifications:

### Metal Beads

Relevant Standards:

- BS EN 13914-2 : 2005 Design, Preparation and Application of External Rendering and Internal Plastering
- BS EN 13658-1 : 2005 Metal Lath and Beads - Definitions, Requirements and Test Methods, Internal Plastering Supersedes BS 1369-1:1987 and BS 6452-1 : 1984
- BS EN 13658-2 : 2005 Metal Lath and Beads - Definitions, Requirements and Test Methods, External Plastering Supersedes BS 1369-2 : 1987 and BS 6452-2 : 1984
- ASTM C841 - Standard Specification for Installation of Interior Lathing and Furring.
- ASTM C847 - Standard Specification for Metal Lath.
- ASTM C1063 - Standard Specification of Lathing and Furring for Portland Cement - based Plaster
- International Building Code, (IBC) Chapter 25
- International Residential Code, (IRC) Chapter 7

### Galvanized Steel:

- BS EN 10346:2009 (formerly BS EN 10142: 1991) coating type: Z180-275 ASTM A 653/ A653M

### Stainless Steel:

- BS EN 10088-2:2005 (Which was directly equivalent to formerly BS 1449: Part 2:1983 in Grade 304 2B FINISH
- ASTM A240/ A240M in Grade 304 2B FINISH

### Expanded Metal Lath & Block Work Expanded Mesh

Relevant Standards:

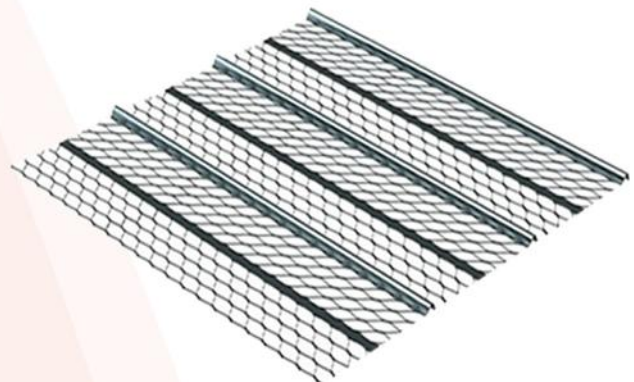
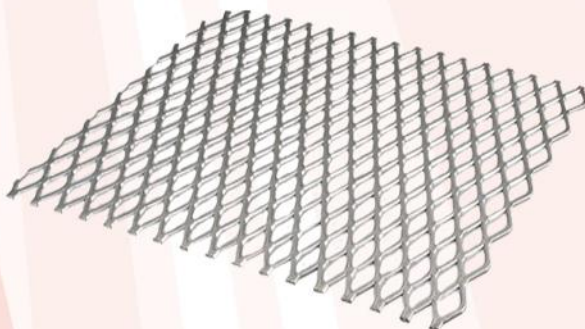
- BS EN 13658-1 & 2:2005 (formerly BS 1369: Part 1: 1987)
- ASTM C 847

### Galvanized Steel:

- BS EN 10346: 2009 (formerly BS EN 10142: 1991) coating type: Z180-275
- ASTM A 653/ A 653 M

### Stainless Steel:

- BS EN 10088-2: 2005, which was directly equivalent to formerly BS 1449: Part 2: 1983 in Grade 304 2B FINISH
- ASTM A240/ A240M in Grade 304 2B FINISH.





## Reinforcement Mesh

Relevant Standards:

- BS EN 845-3: 2003
- ASTM A 951/ A 951 M

### Cold drawn Steel for concrete/ masonry reinforcement

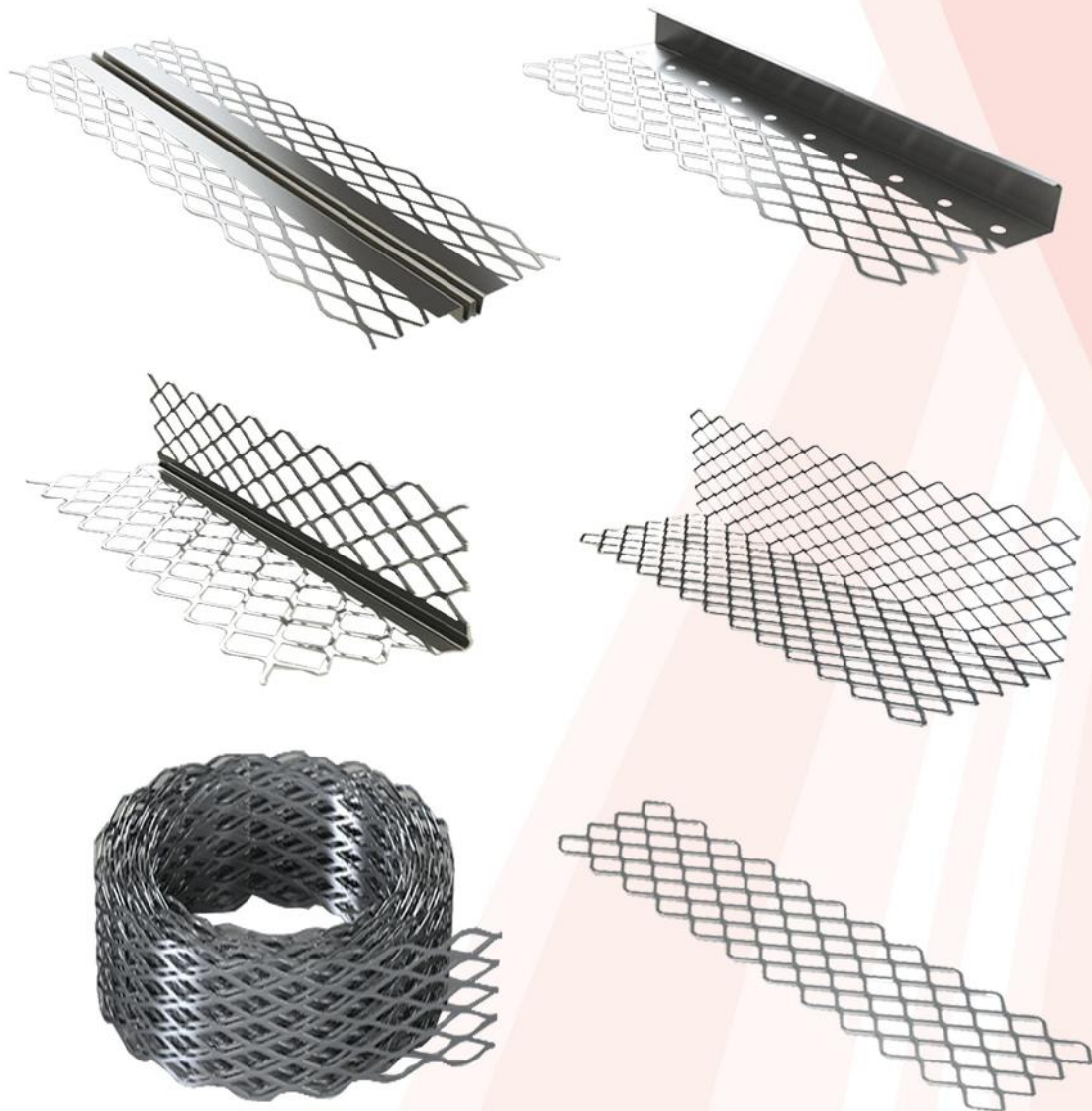
- BS 4482: 2005
- ASTM A 496/ A 496 M, ASTM A 82/ A 82 M

### Pre galvanized steel wire

- BS EN 10244-2:2001 formerly BS 443
- ASTM A 641/ A 641M

### Stainless Steel Wire

- BS EN 10088-2: 2005 (Which was direct equivalent to formerly BS 1554:1990)  
BS 1449: Part 2:1983 in Grade 304 2B FINISH
- ASTM A 1022/ A 1022M

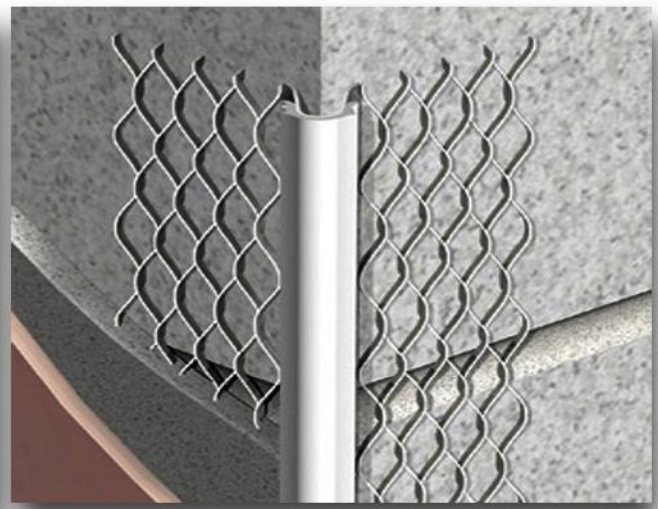
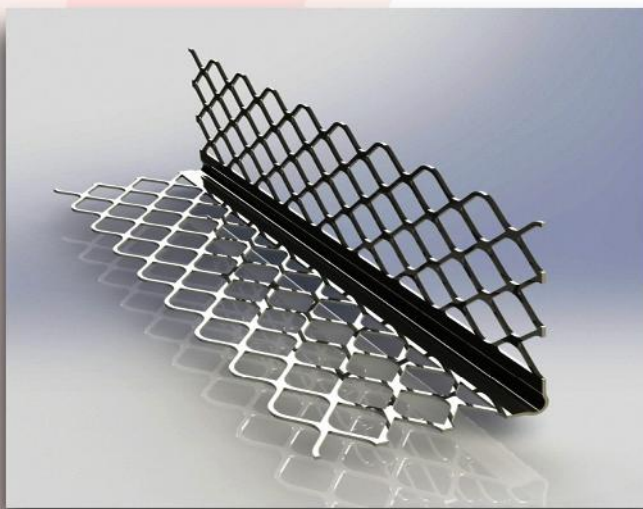


## ANGLE BEAD

Angle beads provide with its solid metal nose a straight corner. Expanded diamond mesh wings allow for keying the plaster right up to the nose of the bead. It is designed to protect the corners.

The Flanges can be easily fixed over irregular, uneven surfaces. Guarantees a perfect bond and provides better effective reinforcement at corners where it is mostly needed.

Angle bead is recommended for a greater corner protection and a precise straight line. Available in galvanized finish for internal use, and in stainless steel for external use.



CODE	LENGTH OF WINGS (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-AB-45-GS	45	Galvanized	2700, 2850, 3000	100 pcs.
MM-AB-50-GS	50	Galvanized	2700, 2850, 3000	100 pcs.
MM-AB-60-GS	60	Galvanized	2700, 2850, 3000	75 pcs.
MM-AB-64-GS	64	Galvanized	2700, 2850, 3000	75 pcs.
MM-AB-70-GS	70	Galvanized	2700, 2850, 3000	75 pcs.
MM-AB-75-GS	75	Galvanized	2700, 2850, 3000	75 pcs.
MM-AB-45-SS	45	Stainless Steel	2700, 2850, 3000	100 pcs.
MM-AB-50-SS	50	Stainless Steel	2700, 2850, 3000	100 pcs.
MM-AB-60-SS	60	Stainless Steel	2700, 2850, 3000	75 pcs.
MM-AB-64-SS	64	Stainless Steel	2700, 2850, 3000	75 pcs.
MM-AB-70-SS	70	Stainless Steel	2700, 2850, 3000	75 pcs.
MM-AB-75-SS	75	Stainless Steel	2700, 2850, 3000	75 pcs.



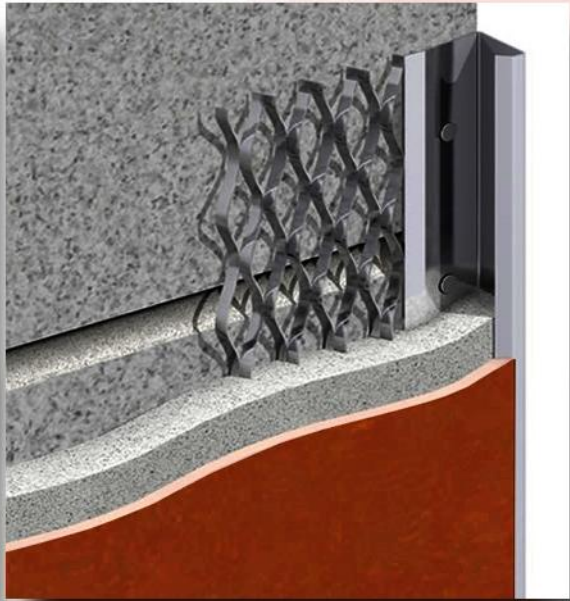
# PLASTERS STOP BEAD

Plaster Stop bead provides a straight accurate line, it is used to reinforce the plaster or render on its edge. Plaster stop bead is designed as a universal stop used at wall ends, door and windows openings to make a neat, flush frame. Plaster stop bead protects the edge from damage and helps corner shrinkage cracks. Plaster stop bead can be used for many different applications and can also be less expensive compared to other construction methods. The beads are designed with a ridge of nail holes to provide easy installation. Plaster stop beads can be used in all types of buildings and construction and all types of cement plastering works. Plaster stop beads help in improving the quality of the building with reference to the abutments of the wall surfaces to other dissimilar surfaces. Plaster stop beads are used between wall surfaces and abutment of doors and windows frames and in places wherever the plaster ends.

**Installation:**

Fixing is very quick and simple, by applying plaster dabs to the walling dabs to the walling at 600mm internals and pressing the plaster stop bead against the dabs or by using galvanized nails for fixing at the same intervals, holding firmly to the side of the wood finish and applying the pre plaster coating, cutting the pre plaster. After the pre plaster is set, apply plaster finish as done in the normal coarse.

For making grooves pattern on external walls plastering, fix stop bead on one side as required. Leveling with timber grounds, apply plaster dabs at required or alternatively use galvanized nails for fixing and apply pre plaster when this bead is set with the pre plastering, fix the second bead into position using timber inserts for the required gap between the two beads leveling and apply pre plaster. When both beads are set, remove timber inserts and complete the plastering as done in normal course.



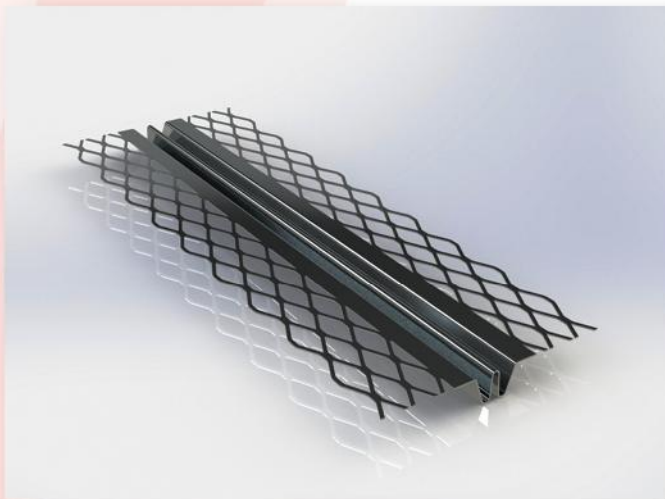
CODE	PLASTER DEPTH (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-PS-10-GS	10	Galvanized	2700, 2850, 2950, 3000	50 pcs.
MM-PS-13-GS	13	Galvanized	2700, 2850, 2950, 3000	50 pcs.
MM-PS-16-GS	16	Galvanized	2700, 2850, 2950, 3000	50 pcs.
MM-PS-19-GS	19	Galvanized	2700, 2850, 2950, 3000	50 pcs.
MM-PS-10-SS	10	Stainless Steel	2700, 2850, 2950, 3000	50 pcs.
MM-PS-13-SS	13	Stainless Steel	2700, 2850, 2950, 3000	50 pcs.
MM-PS-16-SS	16	Stainless Steel	2700, 2850, 2950, 3000	50 pcs.
MM-PS-19-SS	19	Stainless Steel	2700, 2850, 2950, 3000	50 pcs.

## CONTROL JOINT BEAD

Designed to minimized the plaster cracking and to allow movement in the plaster. Control joint bead overcomes movement tolerances in plaster Expansion Control joints provide excellent expansion control for both walls and ceiling and offers positive locking of the stucco to the edge of the joint.

Control Joint bead helps reducing stucco separation at the edge of the joint. They provide for the basic expansion and contraction that can be expected in the stucco membrane, such as initial shrinkage during curing and minor thermal expansion and contraction.

Available in galvanized finish for internal use and in stainless steel for external use.

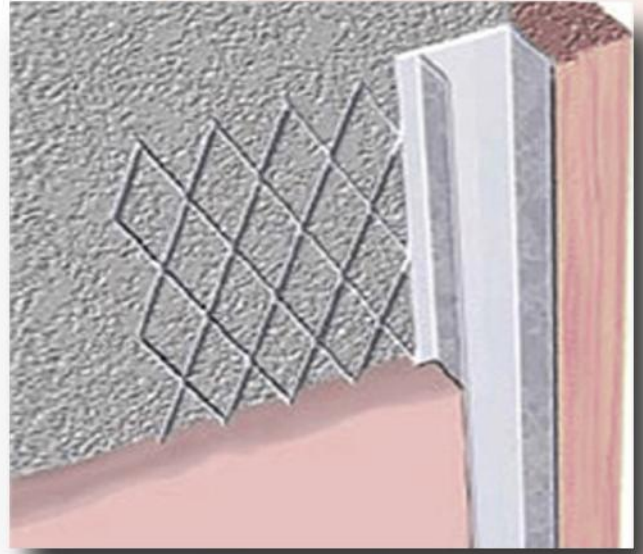
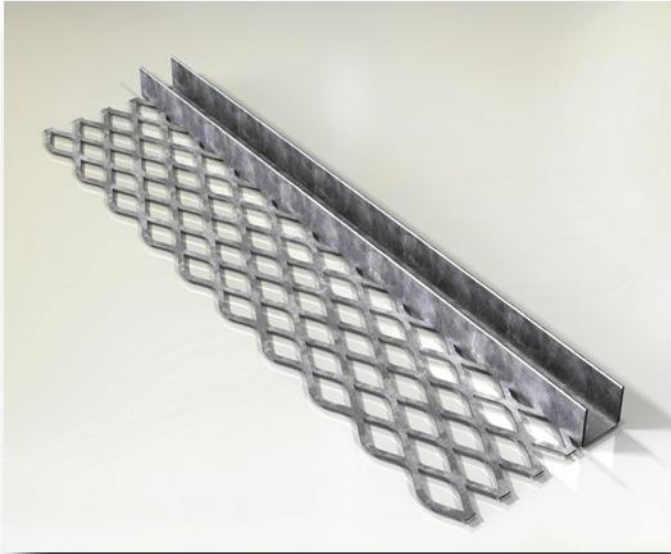


CODE	PLASTER DEPTH (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-CJ-10-GS	10	Galvanized	2700, 2850, 3000	50 pcs.
MM-CJ-13-GS	13	Galvanized	2700, 2850, 3000	50 pcs.
MM-CJ-16-GS	16	Galvanized	2700, 2850, 3000	50 pcs.
MM-CJ-19-GS	19	Galvanized	2700, 2850, 3000	50 pcs.
MM-CJ-10-SS	10	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-CJ-13-SS	13	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-CJ-16-SS	16	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-CJ-19-SS	19	Stainless Steel	2700, 2850, 3000	50 pcs.



## ARCHITRAVE BEAD

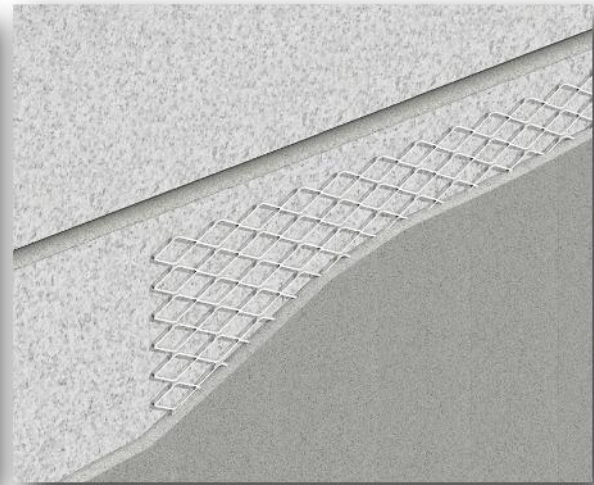
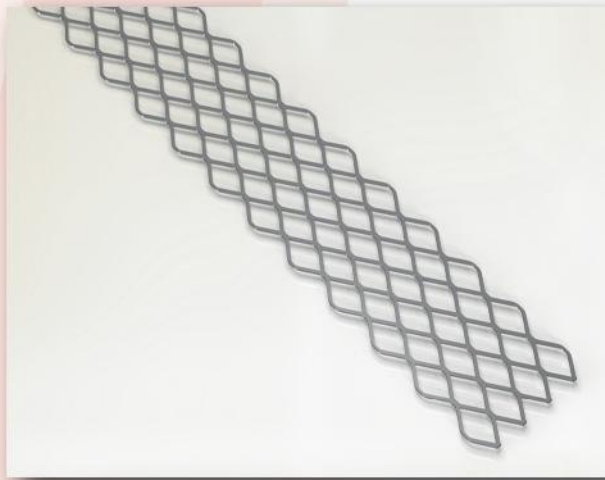
Mainly used for decorative purposes to give a channel gap or a shadow between different wall finishes.



CODE	PLASTER DEPTH (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-ARC-10-GS	10	Galvanized	2700, 2850, 3000	50 pcs.
MM-ARC-13-GS	13	Galvanized	2700, 2850, 3000	50 pcs.
MM-ARC-16-GS	16	Galvanized	2700, 2850, 3000	50 pcs.
MM-ARC-19-GS	19	Galvanized	2700, 2850, 3000	50 pcs.
MM-ARC-10-SS	10	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-ARC-13-SS	13	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-ARC-16-SS	16	Stainless Steel	2700, 2850, 3000	50 pcs.
MM-ARC-19-SS	19	Stainless Steel	2700, 2850, 3000	50 pcs.

## STRIP MESH

Strip Mesh lathes are used along stress lines where cracking is likely. Strip mesh provides reinforcement to the plaster to prevent crack over joints of different materials.

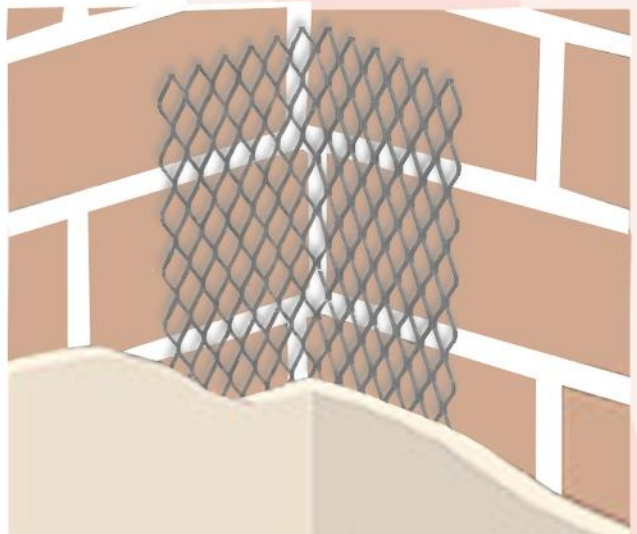
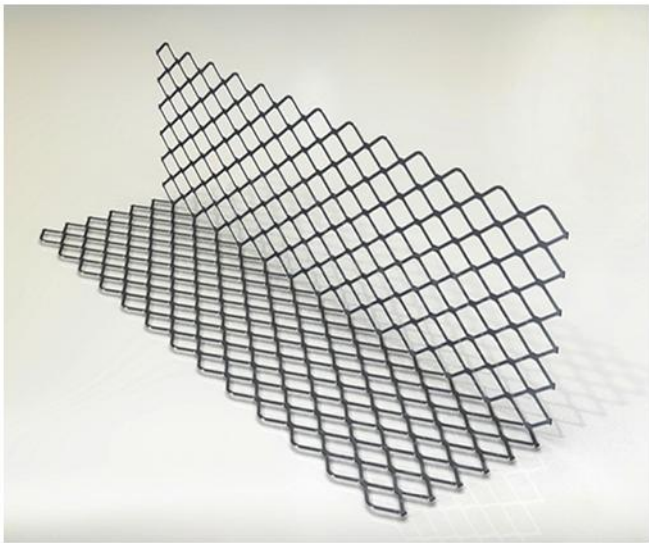


CODE	STRIP MESH WIDTH (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-SM-10-GS	10	Galvanized	2440 / 3000	50 pcs.
MM-SM-15-GS	15	Galvanized	2440 / 3000	50 pcs.
MM-SM-20-GS	20	Galvanized	2440 / 3000	50 pcs.
MM-SM-30-GS	30	Galvanized	2440 / 3000	50 pcs.
MM-SM-40-GS	40	Galvanized	2440 / 3000	50 pcs.
MM-SM-10-SS	10	Stainless Steel	2440 / 3000	50 pcs.
MM-SM-15-SS	15	Stainless Steel	2440 / 3000	50 pcs.
MM-SM-20-SS	20	Stainless Steel	2440 / 3000	50 pcs.
MM-SM-30-SS	30	Stainless Steel	2440 / 3000	50 pcs.
MM-SM-40-SS	40	Stainless Steel	2440 / 3000	50 pcs.



# CORNER MESH

Corner mesh lathes are used to prevent cracking in the plaster and reinforce inside corners..

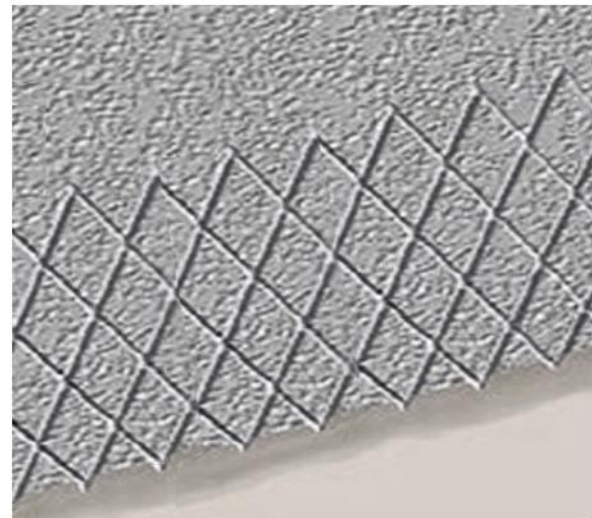
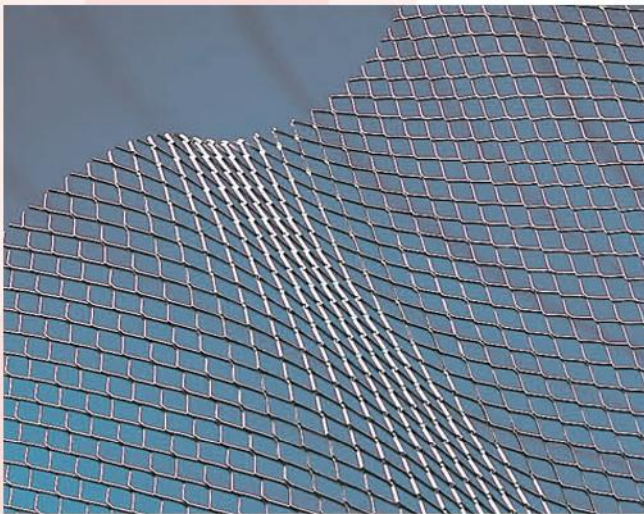


CODE	LENGTH OF WINGS (mm)	MATERIAL	LENGTH (mm)	QTY/ BOX
MM-CM-50-GS	50	Galvanized	2440, 3000	100 pcs.
MM-CM-75-GS	75	Galvanized	2440, 3000	100 pcs.
MM-CM-50-GS	50	Stainless Steel	2440, 3000	100 pcs.
MM-CM-75-GS	75	Stainless Steel	2440, 3000	100 pcs.

## COIL LATH

An easy to fix lath, provides a secure key for plaster and render application as well as offering effective joint and crack reinforcement.

Coil lath is laid between courses in block work and embedded in the mortar jointing. It forms an integral structure of great tensile which is resistant to stresses, vibrations and temperature changes.



CODE	COIL LATH WIDTH (mm)	MATERIAL	LENGTH (M)
MM-CL-10-GS	100	Galvanized	50 / 100
MM-CL-15-GS	150	Galvanized	50 / 100
MM-CL-20-GS	200	Galvanized	50 / 100
MM-CL-30-GS	300	Galvanized	50 / 100
MM-CL-40-GS	400	Galvanized	50 / 100
MM-CL-60-GS	600	Galvanized	50 / 100
MM-CL-100-GS	1000	Galvanized	50 / 100
MM-CL-120-GS	1200	Galvanized	50 / 100
MM-CL-10-SS	100	Stainless Steel	50 / 100
MM-CL-15-SS	150	Stainless Steel	50 / 100
MM-CL-20-SS	200	Stainless Steel	50 / 100
MM-CL-30-SS	300	Stainless Steel	50 / 100
MM-CL-40-SS	400	Stainless Steel	50 / 100
MM-CL-60-SS	600	Stainless Steel	50 / 100
MM-CL-100-SS	1000	Stainless Steel	50 / 100
MM-CL-120-SS	1200	Stainless Steel	50 / 100

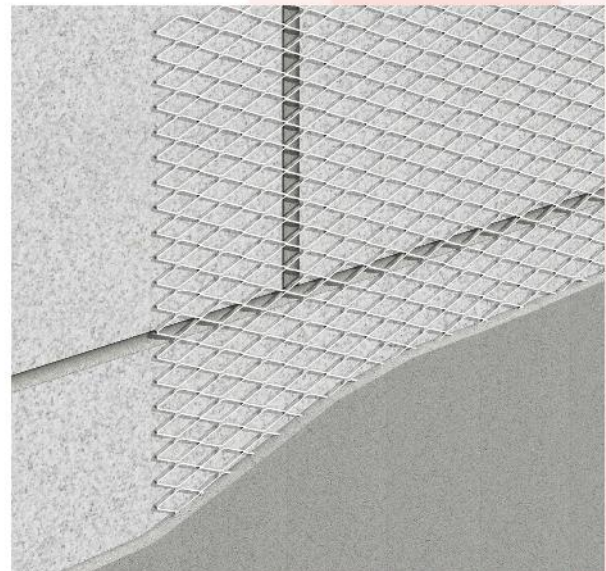
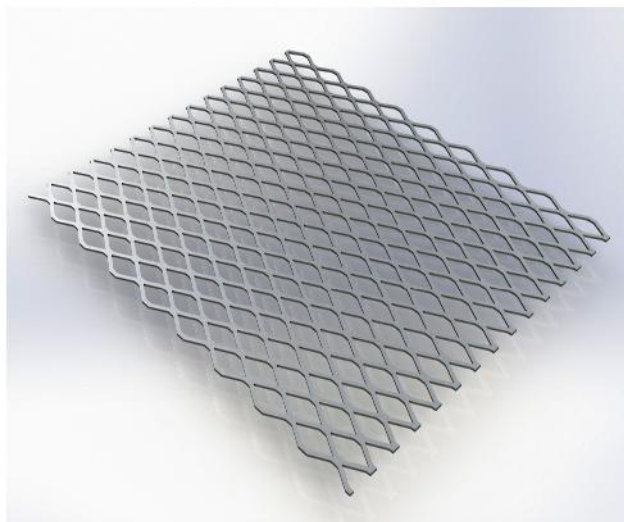


## METAL SHEET LATH

Sheet Lath is produced as a key for plaster when applied on suspended ceiling and wall. Sheet lath is used for encasing street column and beams, assisting in the protection from fire. Sheet lath is used to reinforce plaster between dissimilar areas and at crack-prone areas adjacent to opening.

### References:

- Manufactured in accordance with ASTM C847 (Standard Specification for Expanded Metal Lath)
- Interior installation method as per ASTM C841 (Standard Specification for Installation of interior lathing and furring). or BS EN 13914 Part 2 (design preparation and application of external rendering and internal plastering) ( supersedes BS 5492).
- Exterior installation method as per ASTM C1063 (Standard Specification for installation of Lathing and furring for Portland Cement- Based Plaster) or BS EN 13914 Part 2 (design preparation and application of external rendering and internal plastering) (supersedes BS 5492)



CODE	WEIGHT (kg.m <sup>2</sup> )	MATERIAL	DIMENSION (mm)
MM-SL-64-GS	0.64	Galvanized	2440 x 600
MM-SL-82-GS	0.82	Galvanized	2440 x 600
MM-SL-105-GS	1.05	Galvanized	2440 x 600
MM-SL-122-GS	1.22	Galvanized	2440 x 600
MM-SL-162-GS	1.62	Galvanized	2440 x 600
MM-SL-190-GS	1.90	Galvanized	2440 x 600
MM-SL-0.64-SS	0.64	Stainless Steel	2440 x 600
MM-SL-0.82-SS	0.82	Stainless Steel	2440 x 600
MM-SL-105-SS	1.05	Stainless Steel	2440 x 600
MM-SL-122-SS	1.22	Stainless Steel	2440 x 600
MM-SL-162-SS	1.62	Stainless Steel	2440 x 600
MM-SL-190-SS	1.90	Stainless Steel	2440 x 600



# STEEL LINTELS &

# BLOCK WORKS ACCESSORIES

## Material & Finishes:

- **Hot rolled Steel** S235JR as per EN 10025/ ASTM A-1011 CS Type B (formerly ASTM A569 of ASTM A570)
- **Cold rolled Steel** DC01 as per EN 10130:2006 / ASTM A1008 CS Type B (formerly ASTM A-36) and then:
  - Hot-dip galvanized as per BS EN ISO 1461: 2009 (formerly BS 729) / ASTM A123
  - Electro plated as per EN 12329 / ASTM B633 (Electrodeposited coatings of zinc on iron and steel)
- **Pre-Galvanized Steel** DX51D±Z as per EN 10346: 2009 Z120, Z180 and Z275 (G40, G60 and G90) which supersedes EN 10327 which is a replacement of EN 10142 which in turn supersedes BS 2989 / ASTM A653M zinc coated (hot-dip galvanized) iron and steel CS (commercial) or SS (structural) quality G60 and G90 is available upon special request (formerly ASTM A527M) / ASTM A924 (coating) (formerly A525)
- **Stainless Steel** 1.4301 as per EN 10088 - 2:2005 (formerly BS 1449 Part 2 / ASTM A240M, Grade AISI 304) SS 316 (A4).

## Material Specifications:

- Steel Lintels: manufactured to BS 5977; Part 2:1983 / BS EN 845-2:2003.
- Wall Ties: manufactured to BS EN 845-1:2003 (formerly BS 1234).
- Block Reinforcement Ladder & Truss : manufactured as per ASTM A82 / ASTM A951 / BS 845-3:2003 DIN 488.





## STEEL LINTEL

### Specifications:

MMICO Steel lintels offers an economical, efficient and timely effective solution when compared to ordinary lintels. Manufactured according to BS 845-2:2003, MMICO steel lintels range have safe working loads as detailed in each applicable loading table to ensure the most safe application for installers, taking into account the different in each applicable loading table to ensure the most safe application for installers, taking into account the different loading arrangements which is common to traditional solid wall construction.

### MMICO lintels are made from:

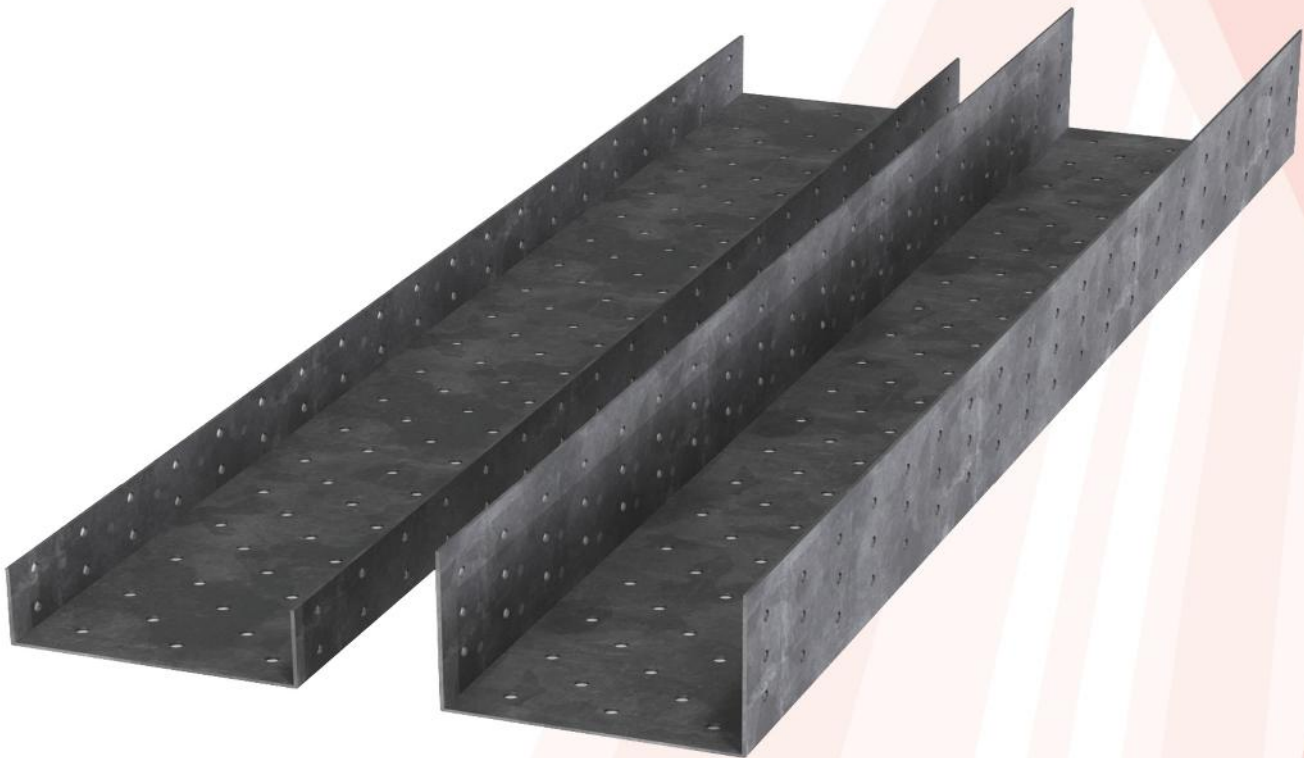
- Pre-galvanized steel complying with BS EN 10143/ ASTM A527 -A653.
- Mild Steel sheel complying with BS 1449: sec 1.1 to 1.5/ ASTM A36.
- Stainless Steel complying with BS 1449: PART 2/ AISI 304, A2/ DIN, material no.1.4301/ EN 10088.

### Finish:

- Steel paint finish.
- Powder Coated Finish.
- Hot-dip galvanized in accordance with BS EN ISO 1461/ ASTM A123.

### Installation:

- 20cm end bearing recommended at each side.



# CHANNEL LINTELS

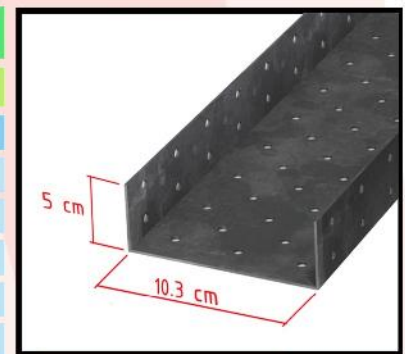
## Section Properties

CODE	TYPE	THICKNESS	MOMENT OF INERTIA (I)	SECTION OF MODULUS (W)
MML-100/50-2.0	MML 100/50	2.0	6.63 cm <sup>4</sup>	1.77 cm <sup>3</sup>
MML-100/50-2.5	MML 100/50	2.5	8.23 cm <sup>4</sup>	2.21 cm <sup>3</sup>
MML-100/50-3.0	MML 100/50	3.0	9.81 cm <sup>4</sup>	2.63 cm <sup>3</sup>
MML-100/50-4.0	MML 100/50	4.0	12.98 cm <sup>4</sup>	3.48 cm <sup>3</sup>
MML-100/75-2.0	MML 100/75	2.0	19.95 cm <sup>4</sup>	3.80 cm <sup>3</sup>
MML-100/75-2.5	MML 100/75	2.5	24.84 cm <sup>4</sup>	4.73 cm <sup>3</sup>
MML-100/75-3.0	MML 100/75	3.0	29.70 cm <sup>4</sup>	5.66 cm <sup>3</sup>
MML-100/75-4.0	MML 100/75	4.0	39.20 cm <sup>4</sup>	7.50 cm <sup>3</sup>
MML-150/50-2.0	MML 150/50	2.0	7.38 cm <sup>4</sup>	1.86 cm <sup>3</sup>
MML-150/50-2.5	MML 150/50	2.5	9.15 cm <sup>4</sup>	2.31 cm <sup>3</sup>
MML-150/50-3.0	MML 150/50	3.0	10.90 cm <sup>4</sup>	2.75 cm <sup>3</sup>
MML-150/50-4.0	MML 150/50	4.0	14.31 cm <sup>4</sup>	3.63 cm <sup>3</sup>
MML-150/75-2.5	MML 150/75	2.5	28.00 cm <sup>4</sup>	5 cm <sup>3</sup>
MML-150/75-3.0	MML 150/75	3.0	33.49 cm <sup>4</sup>	5.98 cm <sup>3</sup>
MML-150/75-4.0	MML 150/75	4.0	44.26 cm <sup>4</sup>	7.92 cm <sup>3</sup>
MML-175/50-2.0	MML 175/50	2.0	7.65 cm <sup>4</sup>	1.88 cm <sup>3</sup>
MML-175/50-2.5	MML 175/50	2.5	9.49 cm <sup>4</sup>	2.34 cm <sup>3</sup>
MML-175/50-3.0	MML 175/50	3.0	11.30 cm <sup>4</sup>	2.79 cm <sup>3</sup>
MML-175/50-4.0	MML 175/50	4.0	14.83 cm <sup>4</sup>	3.69 cm <sup>3</sup>
MML-200/50-2.0	MML 200/50	2.0	7.88 cm <sup>4</sup>	1.91 cm <sup>3</sup>
MML-200/50-2.5	MML 200/50	2.5	9.77 cm <sup>4</sup>	2.37 cm <sup>3</sup>
MML-200/50-3.0	MML 200/50	3.0	11.63 cm <sup>4</sup>	2.83 cm <sup>3</sup>
MML-200/50-4.0	MML 200/50	4.0	15.26 cm <sup>4</sup>	3.73 cm <sup>3</sup>
MML-200/75-2.5	MML 200/75	2.5	30.33 cm <sup>4</sup>	5.17 cm <sup>3</sup>
MML-200/75-3.0	MML 200/75	3.0	36.20 cm <sup>4</sup>	6.19 cm <sup>3</sup>
MML-200/75-4.0	MML 200/75	4.0	47.81 cm <sup>4</sup>	8.19 cm <sup>3</sup>
MML-250/50-2.0	MML 250/50	2.0	8.24 cm <sup>4</sup>	1.94 cm <sup>3</sup>
MML-250/50-2.5	MML 250/50	2.5	10.21 cm <sup>4</sup>	2.41 cm <sup>3</sup>
MML-250/50-3.0	MML 250/50	3.0	12.15 cm <sup>4</sup>	2.88 cm <sup>3</sup>
MML-250/50-4.0	MML 250/50	4.0	15.94 cm <sup>4</sup>	3.79 cm <sup>3</sup>
MML-250/75-2.5	MML 250/75	2.5	32.05 cm <sup>4</sup>	5.29 cm <sup>3</sup>
MML-250/75-3.0	MML 250/75	3.0	38.26 cm <sup>4</sup>	6.33 cm <sup>3</sup>
MML-250/75-4.0	MML 250/75	4.0	55.49 cm <sup>4</sup>	8.37 cm <sup>3</sup>

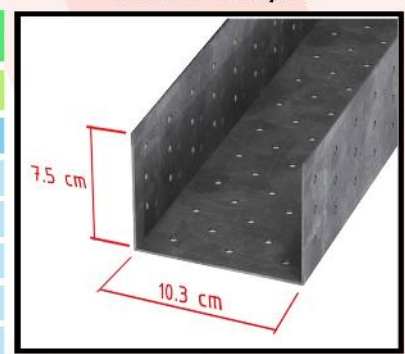


## WORKING LOAD TABLES

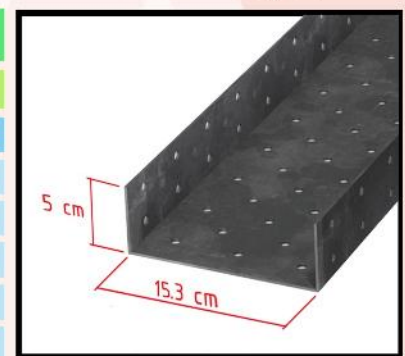
Lintel Code	MML 100/50-2	MML 100/50-2.5	MML 100/50-3	MML 100/50-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.58	1.5	2.79
1.30 - 1.50	0.29	0.55	1.0	1.58
1.60 - 1.80	0.19	0.41	0.70	1.1
1.90 - 2.10	0.13	0.30	0.50	0.88
2.20 - 2.40	0.19	0.22	0.38	0.43



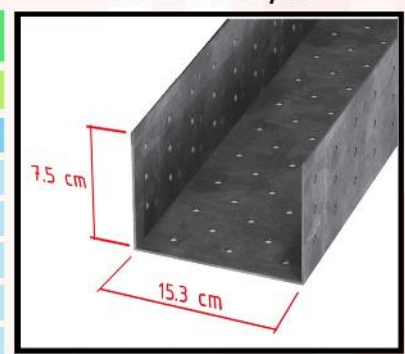
Lintel Code	MML 100/75-2	MML 100/75-2.5	MML 100/75-3	MML 100/75-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	4.53
1.30 - 1.50	0.29	0.55	1.0	2.65
1.60 - 1.80	0.19	0.35	0.70	1.81
1.90 - 2.10	0.13	0.26	0.50	1.34
2.20 - 2.40	0.19	0.19	0.38	1.02



Lintel Code	MML 150/50-2	MML 150/50-2.5	MML 150/50-3	MML 150/50-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	2.93
1.30 - 1.50	0.29	0.55	1.0	1.67
1.60 - 1.80	0.19	0.35	0.70	1.81
1.90 - 2.10	0.13	0.26	0.50	0.78
2.20 - 2.40	0.19	0.19	0.38	0.50



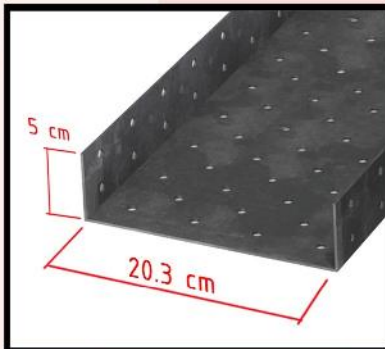
Lintel Code	MML 150/75-2	MML 150/75-2.5	MML 150/75-3	MML 150/75-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	4.62
1.30 - 1.50	0.29	0.55	1.0	2.54
1.60 - 1.80	0.19	0.35	0.70	1.86
1.90 - 2.10	0.13	0.26	0.50	1.40
2.20 - 2.40	0.19	0.19	0.38	1.07



(All Values has to be increased by multiplying by a factor of 1.9 if we do not considering the buckling effect)

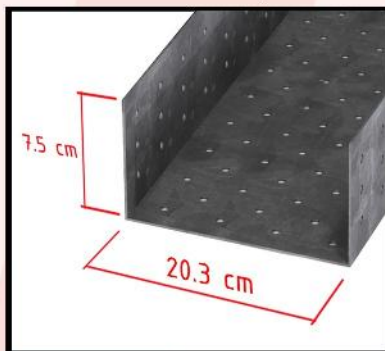
## WORKING LOAD TABLES

### MML-200/50



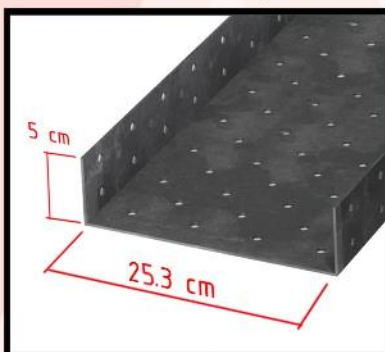
Lintel Code	MML 200/50-2	MML 200/50-2.5	MML 200/50-3	MML 200/50-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	3.02
1.30 - 1.50	0.29	0.55	1.0	1.7
1.60 - 1.80	0.19	0.35	0.70	1.2
1.90 - 2.10	0.13	0.26	0.50	0.83
2.20 - 2.40	0.19	0.19	0.38	0.54

### MML-200/75



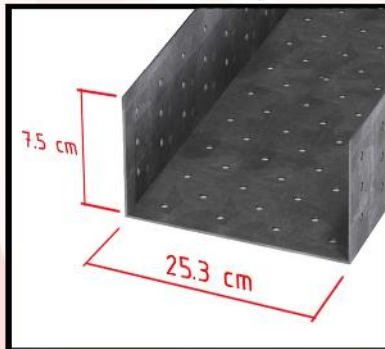
Lintel Code	MML 200/75-2	MML 200/75-2.5	MML 200/75-3	MML 200/75-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	4.68
1.30 - 1.50	0.29	0.55	1.0	2.67
1.60 - 1.80	0.19	0.35	0.70	1.9
1.90 - 2.10	0.13	0.26	0.50	1.34
2.20 - 2.40	0.19	0.19	0.38	1.08

### MML-250/50



Lintel Code	MML 250/50-2	MML 250/50-2.5	MML 250/50-3	MML 250/50-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	4.68
1.30 - 1.50	0.29	0.55	1.0	2.67
1.60 - 1.80	0.19	0.35	0.70	1.90
1.90 - 2.10	0.13	0.26	0.50	1.40
2.20 - 2.40	0.19	0.19	0.38	1.08

### MML-250/75



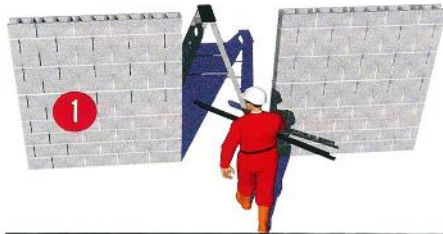
Lintel Code	MML 250/75-2	MML 250/75-2.5	MML 250/75-3	MML 250/75-4
Sheet Thickness	2.0	2.5	3.0	3.5
Length in meters	Uniformly Distributed Loads			
0.90 - 1.20	0.43	0.85	1.5	4.72
1.30 - 1.50	0.29	0.55	1.0	2.69
1.60 - 1.80	0.19	0.35	0.70	1.90
1.90 - 2.10	0.13	0.26	0.50	1.42
2.20 - 2.40	0.19	0.19	0.38	1.09

(All Values has to be increased by multiplying by a factor of 1.9 if we do not considering the buckling effect)



# INSTALLATION

Comparison of installation of a MMICo steel lintel and a conventional concrete cast in-site lintel.



1 One man can carry the lintel



2 Lintel is placed in position



3 Continuation of block work can be carried out immediately



4 Before laying the blocks down on lintel, place a temporary support beneath the lintel to provide support and to prevent deflection. Temporary support can be removed after the mortar sets, (approximately in 3 to 5 hours).



**Total Installation time : 6 minutes**



1 Vertical frame work erected, end secured and horizontal level taken



2 Commencement of lintel form work



3 Continuation of form work



4 Completion of lintel after steel reinforcement and pouring of concrete

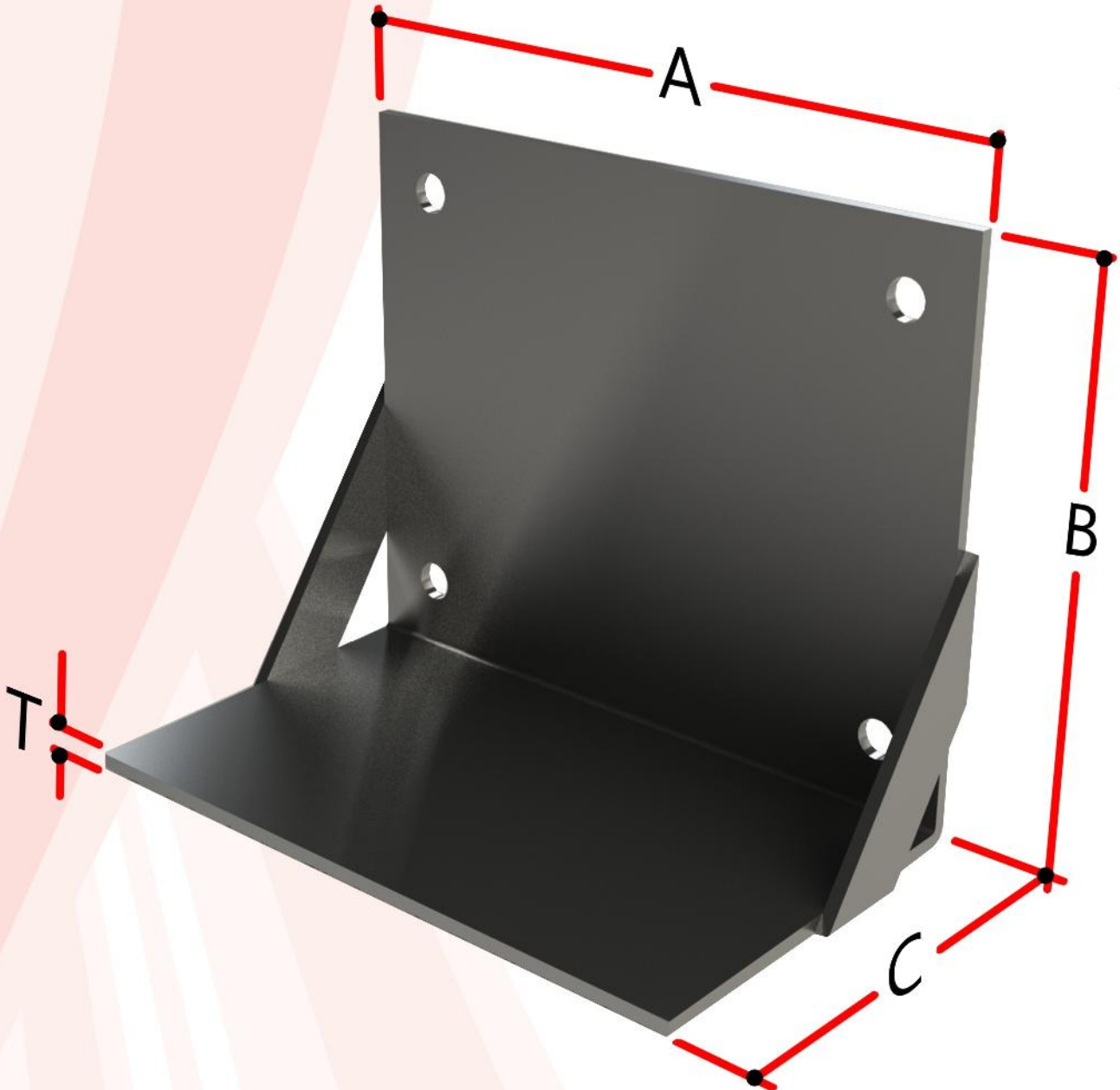


**Total Installation time : 48 minutes**

In the time taken to install just one concrete lintel, eight MMICo lintel could have been installed.

## LINTEL BRACKETS

Brackets are supplied with fixing holes to suit metal expansion anchor sizes as specified below.



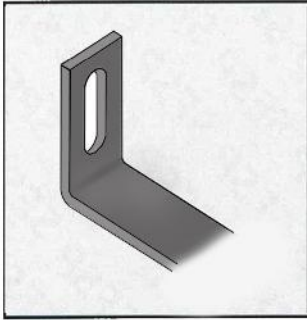
CODE	DIMENSIONS (AxBxC)	THICKNESS (T)	TO SUITE LINTEL TYPE	NUMBER & DIA. OF ANCHORS
MM-LBR-100	100x150x130	5	MML 100	min. 2 - M8 x 80
MM-LBR-150	150x150x130	5	MML 150	min 2 - M8 x 80
MM-LBR-200	200x200x130	6	MML 200	min 2 - M10 x 80
MM-LBR-250	250x200x130	6	MML 250	min 2 - M10 x 80



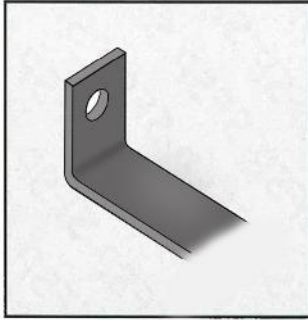
# CRAMPS & TIES

## Head End Options:

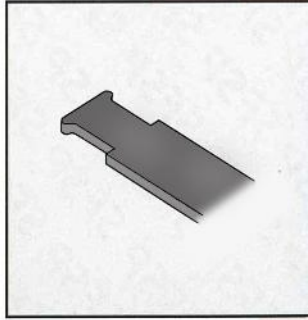
These ends have been manufactured to fit standard channel sections that is preset into concrete or surface fixed to any inner skin or structural ground.



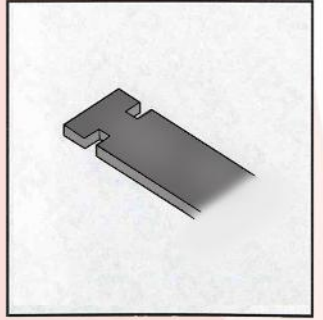
L-Angle Slotted



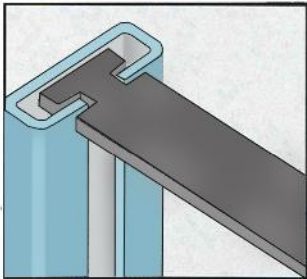
L-Angle Hole



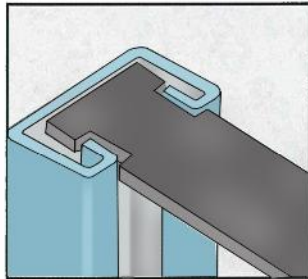
Plain



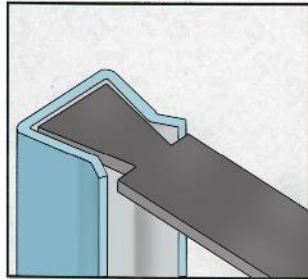
Plain



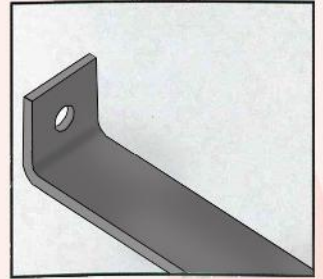
RCH/ SCH Channel



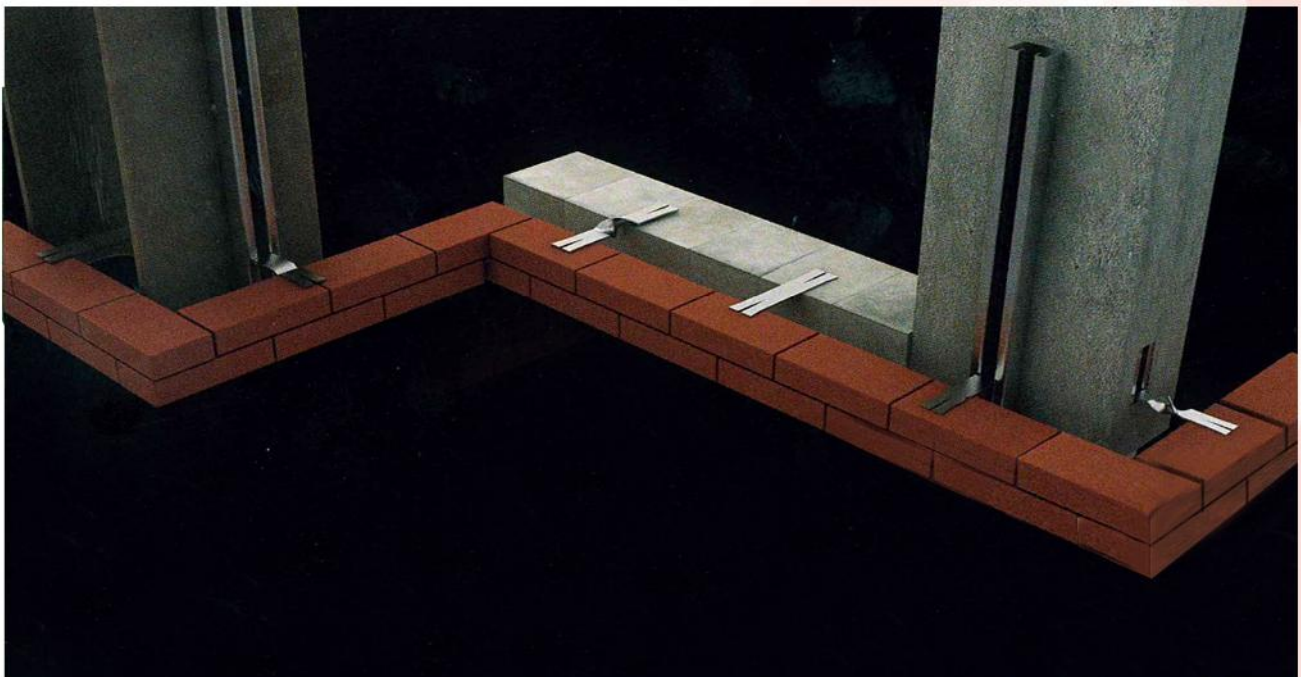
RCH/ SCH Channel



DCH Channel

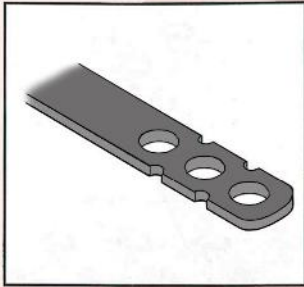


Bolt Screw Fixing

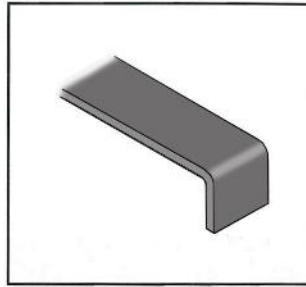


## Tail End Options:

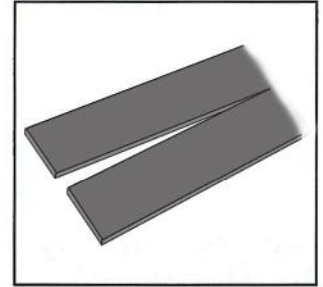
The most common method of anchoring a tie to a slab facing, is by means of a round dowel into a drilled hole, split tangs on the may also be used. For bonding into brickwork the " Fishtailed" end is traditional.



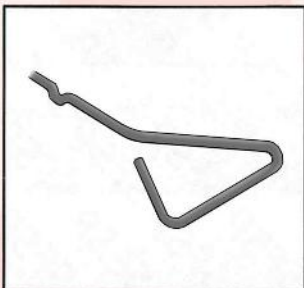
3 Holes



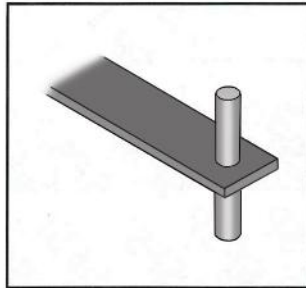
Turned Down



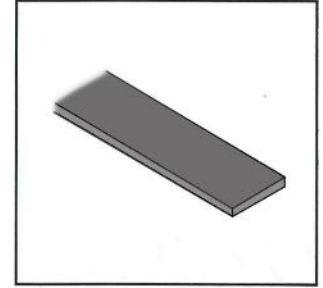
Split Tie



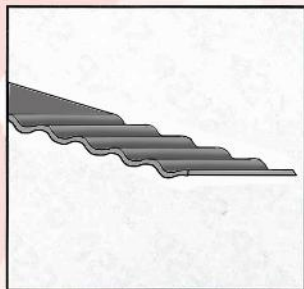
Returned Z



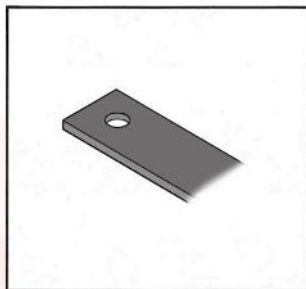
Plain with pin



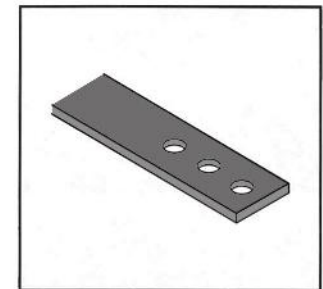
Plain



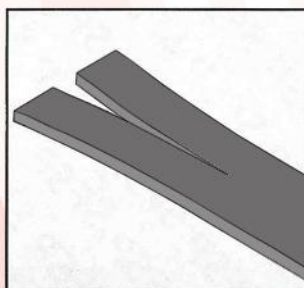
Corrugated



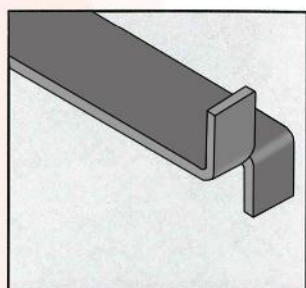
Plain 1 Hole



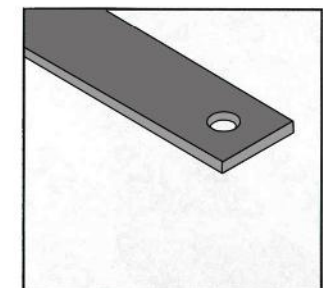
Plain 3 Holes



Fishtailed



Split Tang

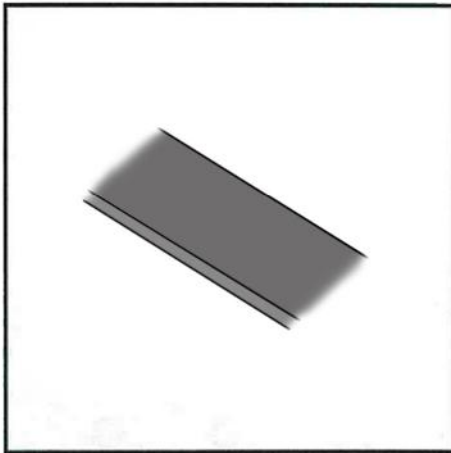


Dowel

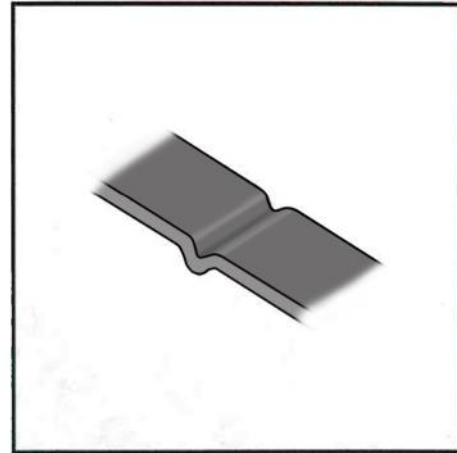


## Shank Options:

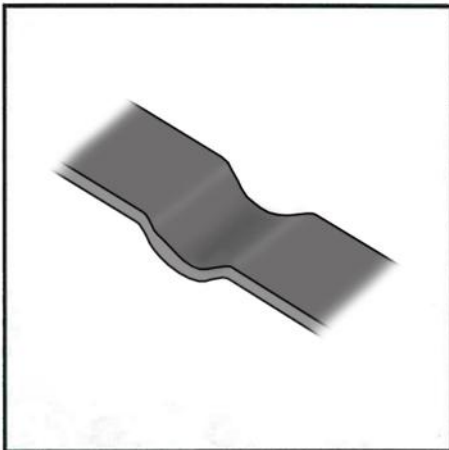
Shanks may be plain or may include a drip to stop the passage of moisture across.



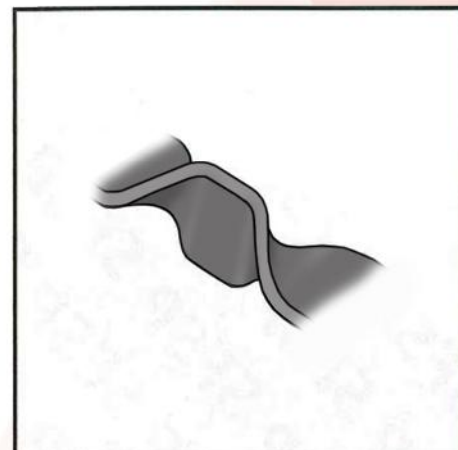
Plain



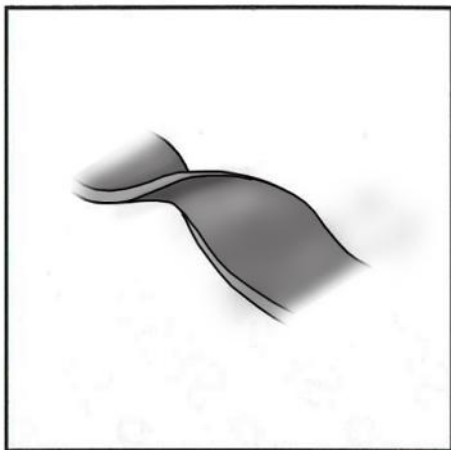
Drip



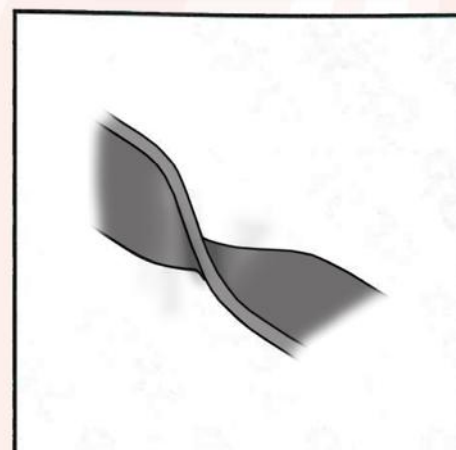
Dimpled



Double Twist



Full Twist



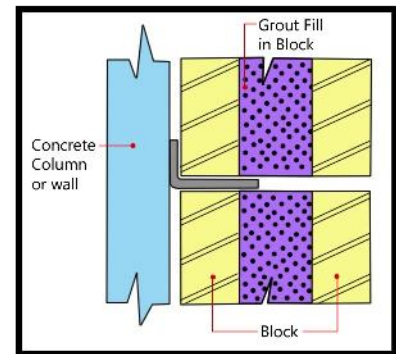
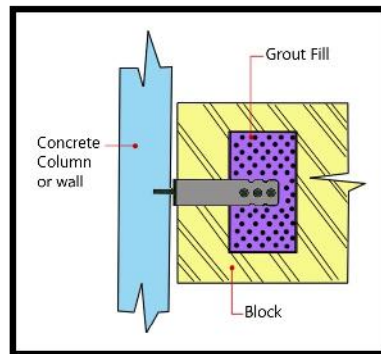
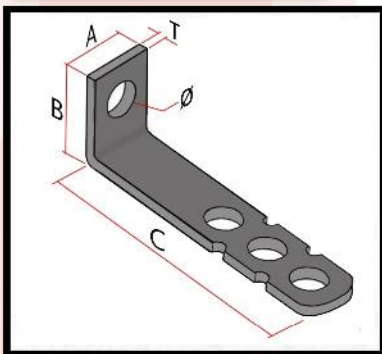
Half Twist

## Frame Cramps and Channel Ties

Frame cramps with a single 7mm diameter hole or an 8mm x 30mm vertical slot can be fixed to concrete, steelwork or masonry. M6 Single Expansion bolts are recommended for fixing to concrete, setscrew or self-drilling screws for steelwork, and suitable plugs and screws for fixing to masonry. Poor substrate will limit the capacity of frame cramps and site treating is advisable in some cases. The performance will also be determined by the position of the fixing. Channel ties fixing to steelwork or concrete at the lowest point of slot will have a safe working load of approximately 1kN. The capacity will reduce as the fixing is moved further away from the bend and greater movement shall be expected than with other wall ties.

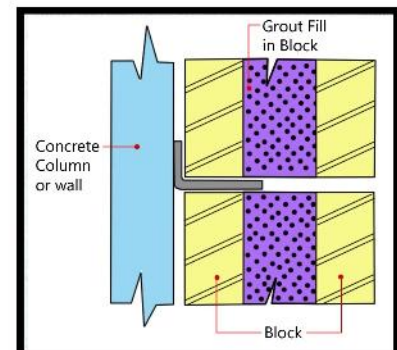
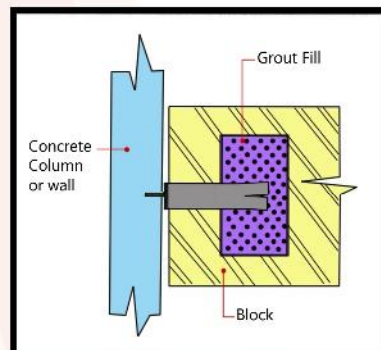
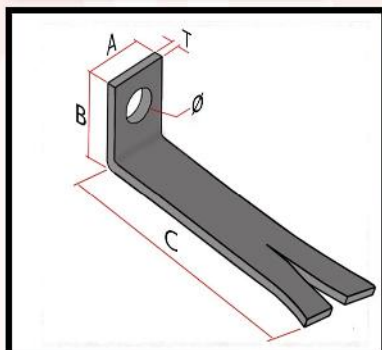
### Block Ties Frame Cramps

#### Three-Hole Block Tie



CODE	DIMENSIONS			THICKNESS (T)	DIAMETER OF HOLE	MATERIAL FINISH
	A	B	C			
BTH 25x30	25	30	75-300	1.5 - 3.0	Ø5-7	G.I. / SS
BTH 30x40	30	40	75-300	1.5 - 3.0	Ø5-7	G.I. / SS

#### Fish Tail

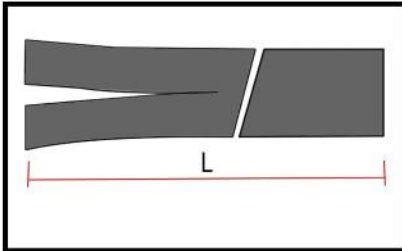


CODE	DIMENSIONS			THICKNESS (T)	DIAMETER OF HOLE	MATERIAL FINISH
	A	B	C			
BTF 25x30	25	30	75-300	1.5 - 3.0	Ø5-7	G.I. / SS
BTF 30x40	30	40	75-300	1.5 - 3.0	Ø5-7	G.I. / SS

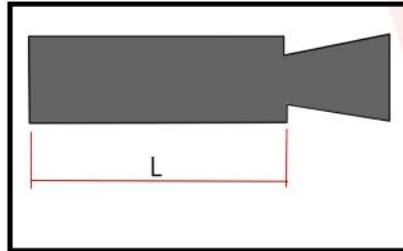


## DOVE TAIL (TWA)

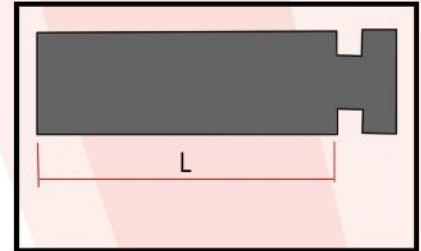
Each tie will consist of a tail element, for attachment to the facing material, a shank element, for attachment to the structure.



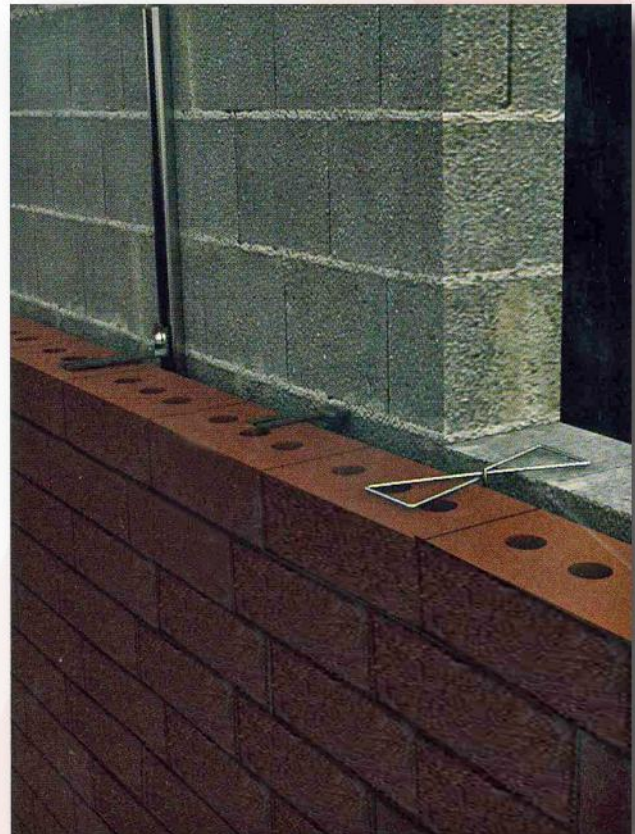
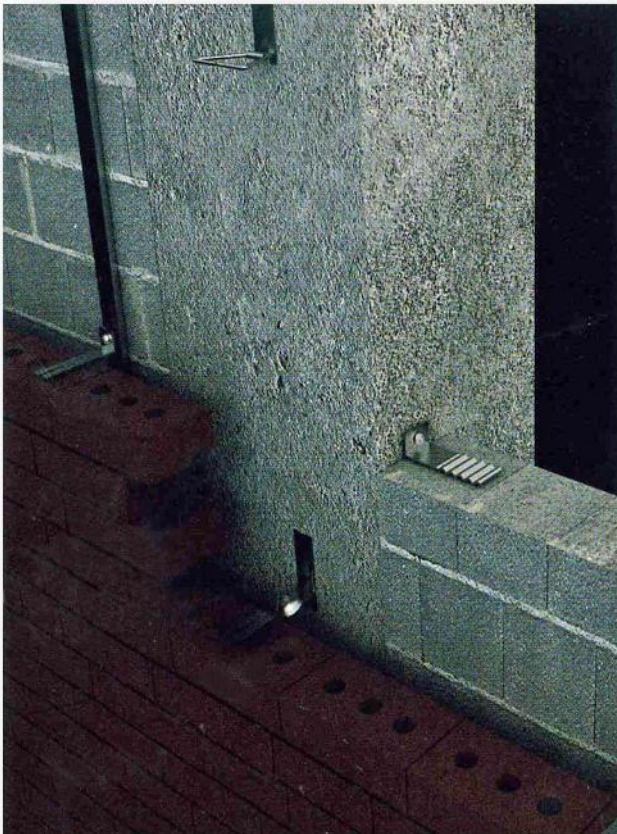
Fish Tail



DCH Channel



CCH Channel





## ADJUSTABLE WALL TIE

Device for connecting a masonry leaf across a cavity to another masonry leaf or to a structural frame to resist tension and compression forces while allowing limited differential movement in the plane of the wall.

Wall ties are an important element in the stability of cavity walls. The correct selection, spacing and installation of ties is recommended to avoid damp penetration and cracking of masonry. Wall ties may only be mounted in a horizontal position and in the plane (on level) between the masonry leaves of the cavity wall once the mortar has been applied on the block work, the tie must be embedded in the mortar, cover as well is top with mortar. The tie must be extend in the mortar joints at least 90 mm in the inner leaf and at least 65 mm in the outer leaf.

Wall ties are further sub classified as asymmetrical or symmetrical.

Wall ties is for us in the external walls, suitable for flat sites where basic wind speed is up to 30 m/s.

### Installation of Ties

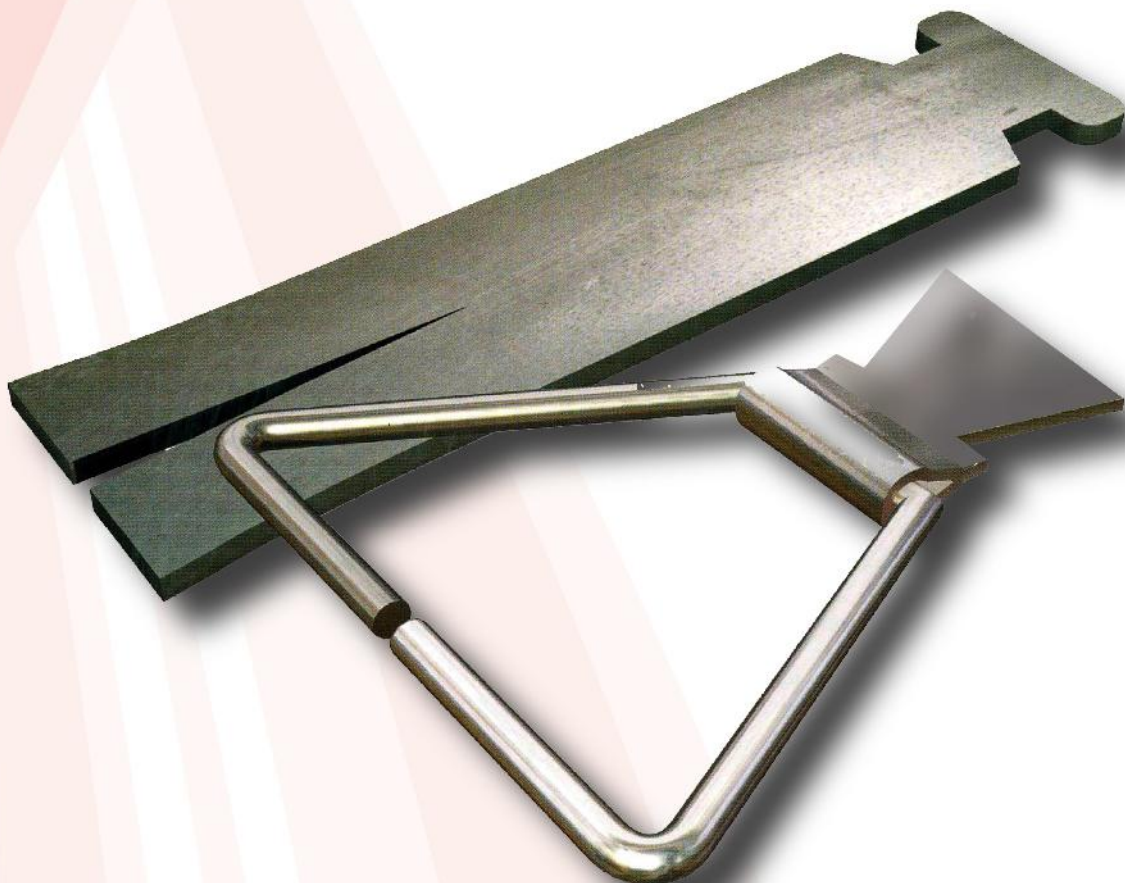
Wall ties shall be pressed down in and surrounded by fresh mortar.

To ensure cavity wall ties are effective at tying the leaves together they should be installed as the inner leaf is constructed not simply pushed into a joint.

Ties should be installed with a slight fall to the outer leaf, never towards the inner leaf as this could provide path for moisture to cross the cavity.

The drip part of the tie should point downwards and be positioned near the Centre of the open cavity.

Installed ties should be clear of mortar droppings to allow the drip to function and prevent water from crossing to the inner leaf of masonry.





## Length of Ties in mm to Suit Cavity

Tie	Reference Code	Description	Section Size (mm)	Cavity				Position of Drip (min) mm
				Length 0-20 (mm)	Length 15-45 (mm)	Length 40-70 (mm)	Length 65-70 (mm)	
	B/P/30	Brick Facing Tie	20 x 2.0 25 x 2.0	75	100	150	200	
	B/D/30	Brick Facing Tie	20 x 2.0 25 x 2.0		100	150	200	20
	B/F/30	Brick Facing Tie	20 x 2.0 25 x 2.0			150	200	30
	B/P/21	Brick Facing Tie	20 x 2.0 25 x 2.0	75	100	150	200	
	B/D/21	Brick Facing Tie	20 x 2.0 25 x 2.0		100	150	200	20
	B/F/21	Brick Facing Tie	20 x 2.0 25 x 2.0		100	150	200	30
	B/P/28	Brick Facing Tie	20 x 2.0 25 x 2.0	75	100	150	200	
	B/P/28	Brick Facing Tie	20 x 2.0 25 x 2.0		100	150	200	20
	B/F/28	Brick Facing Tie	20 x 2.0 25 x 2.0			150	200	30
	B/P/36	Brick Facing Tie	20 x 2.0 25 x 2.0	75	100	150	200	
	B/D/36	Brick Facing Tie	20 x 2.0 25 x 2.0		100	150	200	20

## Length of Ties in mm to Suit Cavity

Tie	Reference Code	Description	Section Size (mm)	Cavity				Position of Drip (min) mm
				Length 0-20 (mm)	Length 15-45 (mm)	Length 40-70 (mm)	Length 65-70 (mm)	
	B/F/36	Brick Facing Tie	20 x 2.0 25 x 2.0			150	200	30
	B/P/50	Brick Facing Tie	30 x 2.0 25 x 2.0	75	100			
	B/D/50	Brick Facing Tie	30 x 2.0 25 x 2.0		100			
	B/F/50	Brick Facing Tie	30 x 2.0 25 x 2.0					
	B/P/99	Cavity Wall Tie	30 x 2.0 25 x 2.0	150	200	250	300	
	B/D/99	Cavity Wall Tie	30 x 2.0 25 x 2.0	150	200	250	300	
	B/F/99	Cavity Wall Tie	30 x 2.0 25 x 2.0	150	200	250	300	
	C/C/30	Corrugated Strip	30 x 2.0 25 x 2.0	150	200	250	300	
	C/C/50	Corrugated Bracket	30 x 2.0 25 x 2.0	75	100	150	200	
	V/W/04	VEE Tie	∅ 4,5,6	75	100	125	150	
	B/T/25	Wall Tie Anchor	30 x 2.0 25 x 2.0	75	100	125	150	
	S/S/15	Cavity Wall Tie	30 x 2.0 25 x 2.0	150	200	250	300	



# CAVITY WALL TIES

## Double Triangle Wall Tie, Butterfly & Three - Hole Wall Tie

### Length of Tie and Embedment

Wall Ties should be of the correct length to ensure they are properly embedded in the masonry. The tie should have a minimum embedment of 50mm in each leaf but also take site tolerances into account for both cavity width and centering of the tie. For this reason, we suggest tie lengths which achieve an embedment of between 62.5mm and 75mm. Recommended lengths to suit various cavity widths are shown for masonry-to-masonry wall ties.

### Dimensional Standards

#### Fixed Dimensions

When Specifying ties certain set or minimum dimensions shall be followed, these are described as fixed dimensions and based on the limitations of material and the production processes.

Where a screw or bolt fixing is to be made a minimum length of 30mm is required.

#### Lengths

Lengths are generally measured to the extremity of the tie.

For ties fitting into channels the specified length is measured to the shoulder of the tie.

#### Wire Ties

A range of cavity wall ties are available manufactured in accordance with BS EN 845-1 which supersedes BS 1243. These are available in stainless steel, pre-galvanized or hot-dip galvanized steel, and to the dimensions shown.

### Installation of ties

Wall ties should be pressed down in, and surrounded by fresh mortar.

To ensure cavity wall ties are effective at tying the leaves together they should be installed as the inner leaf is constructed and to simply pushed into a joint.

Ties should be installed with a slight fall to the outer leaf, never towards the inner leaf as this could provide a path for moisture to cross the cavity.

The drip part of the tie should point downwards and be positioned near the centre of the open cavity.

Installed ties should be clear of mortar droppings to allow the drip to function and prevent water from crossing to the inner leaf of masonry.



Double Triangle

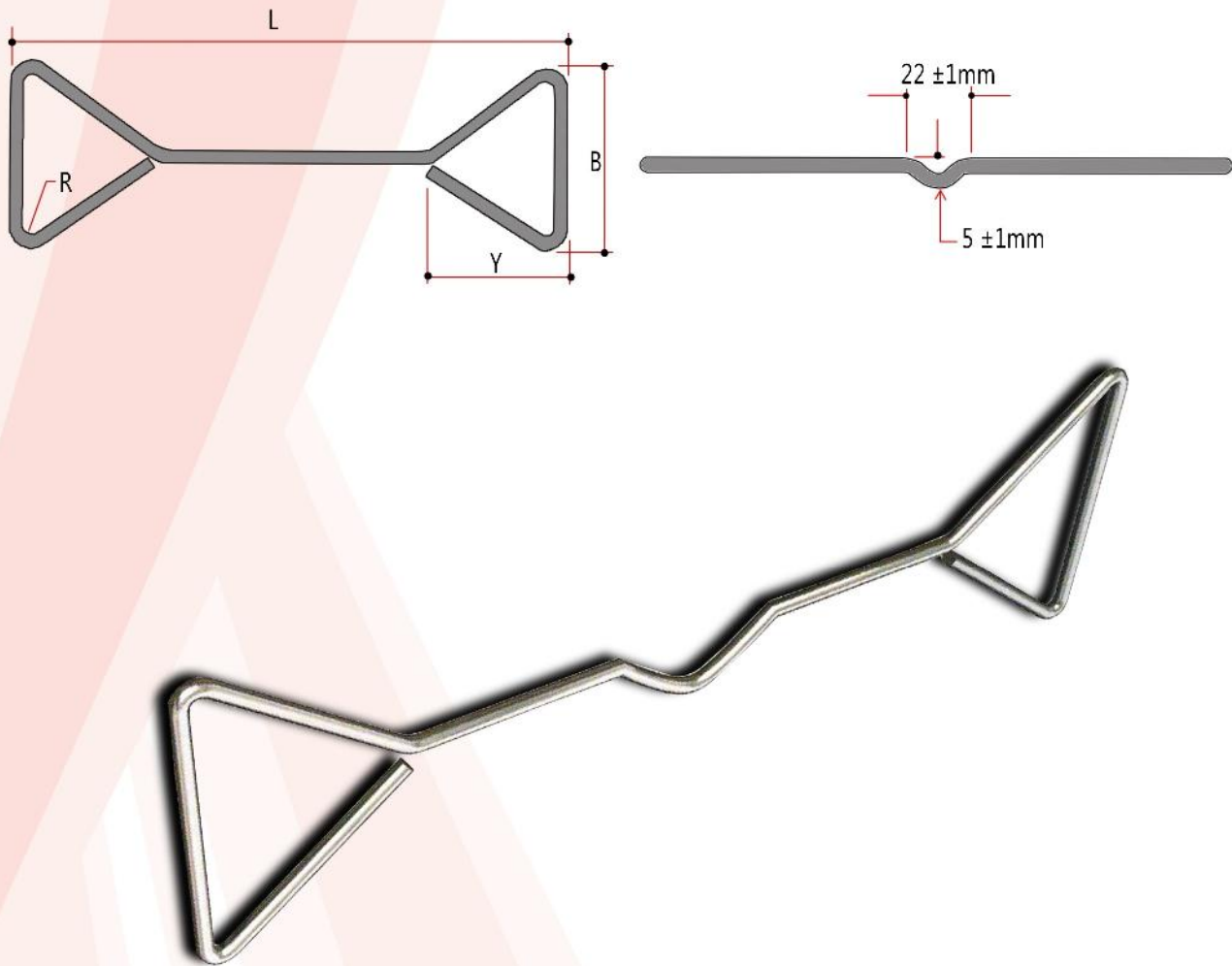


Butterfly

# Double Triangle Wall Tie

## Wire Ties

A range of cavity wall ties are available manufactured in accordance with BS 123:1978. These are available in stainless steel, pre-galvanized or hot-dip galvanized steel, and to the dimensions shown.

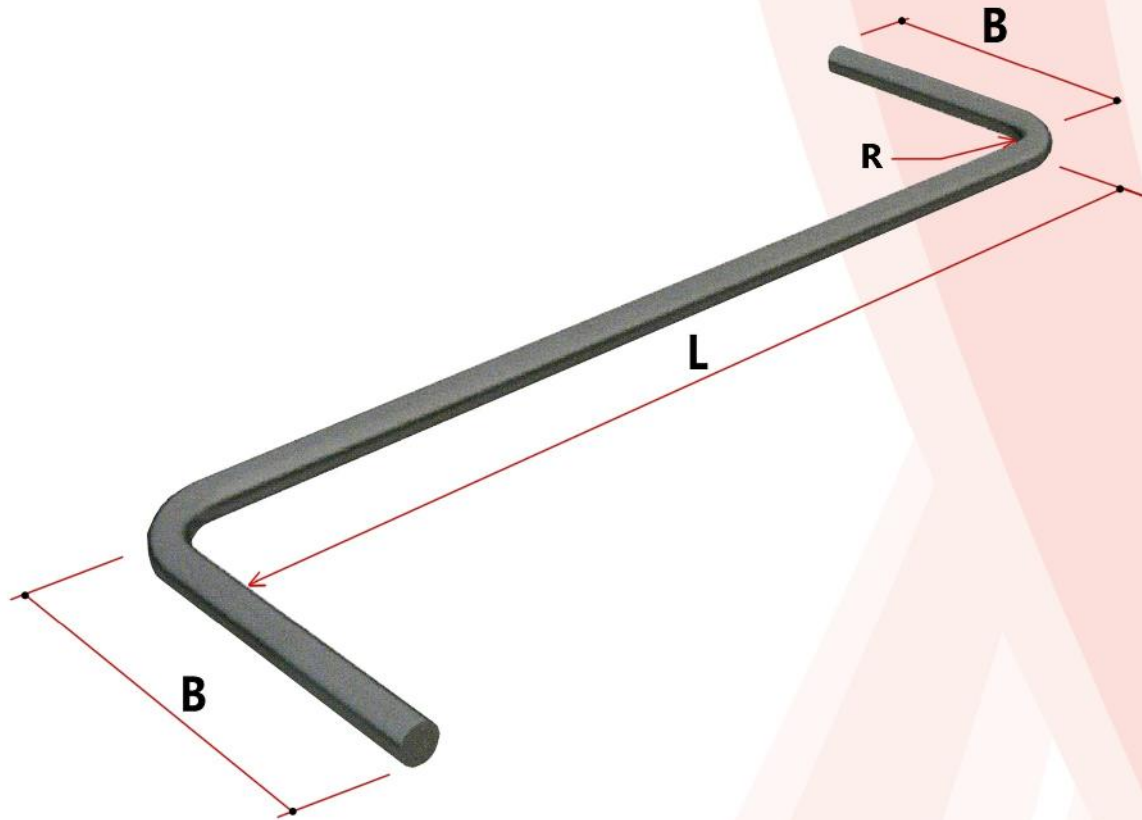


Code	Minimum tensile strength of material	Dimensions and permissible deviations				
		Wire Diameter	Length	B	R (min)	Y
DTW15	370 N/mm <sup>2</sup>	4.0 ± 0.08 mm	150	65 ± 5 mm	13mm	50 ± 5
DTW20	370 N/mm <sup>2</sup>	4.0 ± 0.08 mm	200	65 ± 5 mm	13mm	50 ± 5
DTW25	460 N/mm <sup>2</sup>	4.5 ± 0.08 mm	250	65 ± 5 mm	13mm	50 ± 5
DTW30	460 N/mm <sup>2</sup>	4.5 ± 0.08 mm	300	65 ± 5 mm	13mm	50 ± 5



## Z- Type Wire Tie

"Z" Wire Tie is used for tying masonry to masonry (Composite Wall Only)  
 - Not used in walls with air space and or insulation.  
 -Diameter = 4mm, 5mm.



Cavity width (mm)	Wall Tie Length
50 - 75	200 mm
76 - 100	225 mm
101 - 125	250 mm
126 - 150	275 mm

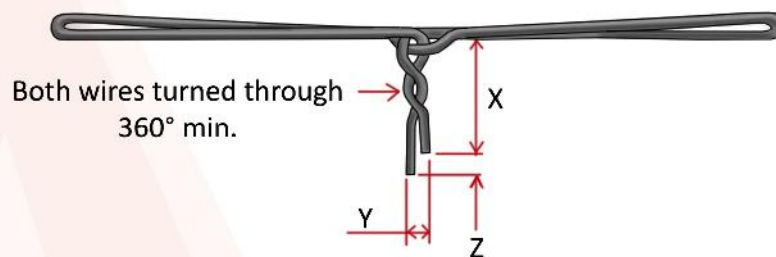
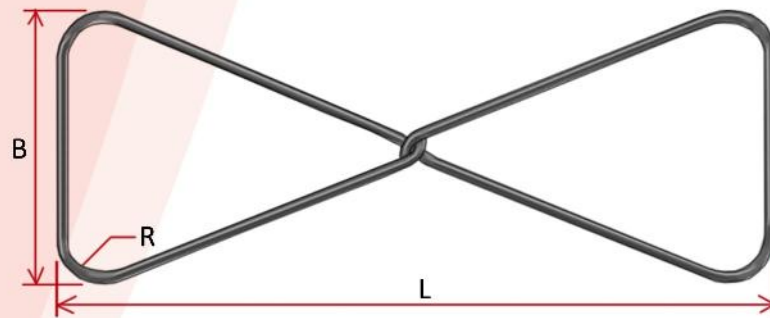
\* Other sizes can be manufactured upon request.

Code	Minimum tensile strength of material	Dimensions and permissible deviations				
		Wire Diameter	Length	B	R (min)	Y
DTW15	370 N/mm <sup>2</sup>	4.5 ± 0.08 mm	150	65 ± 5 mm	13mm	50 ± 5
DTW20	280 N/mm <sup>2</sup>	4.5 ± 0.08 mm	200	65 ± 5 mm	13mm	50 ± 5
DTW25	530 N/mm <sup>2</sup>	4.0 ± 0.08 mm	250	65 ± 5 mm	13mm	50 ± 5
DTW30	460 N/mm <sup>2</sup>	4.0 ± 0.08 mm	300	65 ± 5 mm	13mm	50 ± 5

# Butterfly Wall Tie

## Wire Ties

A range of cavity wall ties are available manufactured in accordance with BS 845-1:2003. These are available in stainless steel, pre-galvanized or hot-dip galvanized steel, and to the dimensions shown.



Code	Minimum tensile strength of material	Dimensions and permissible deviations				
		Wire Diameter	Length	B	R (min)	Y
BF15	370 N/mm <sup>2</sup>	4.0 ± 0.08 mm	150	65 ± 5 mm	13mm	50 ± 5
BF20	370 N/mm <sup>2</sup>	4.0 ± 0.08 mm	200	65 ± 5 mm	13mm	50 ± 5
BF25	460 N/mm <sup>2</sup>	4.5 ± 0.08 mm	250	65 ± 5 mm	13mm	50 ± 5
BF30	460 N/mm <sup>2</sup>	4.5 ± 0.08 mm	300	65 ± 5 mm	13mm	50 ± 5

Other sizes can be manufactured upon request.



# Cavity Wall Tie Information

## Z- Type Wire Tie

To comply with: DIN 053, at least 5 pieces of cavity wall ties should be used per square meter in accordance with DIN 17440, material of SS 1.4401 or SS 1.4571.

Three additional wall ties are required for the edges of building.

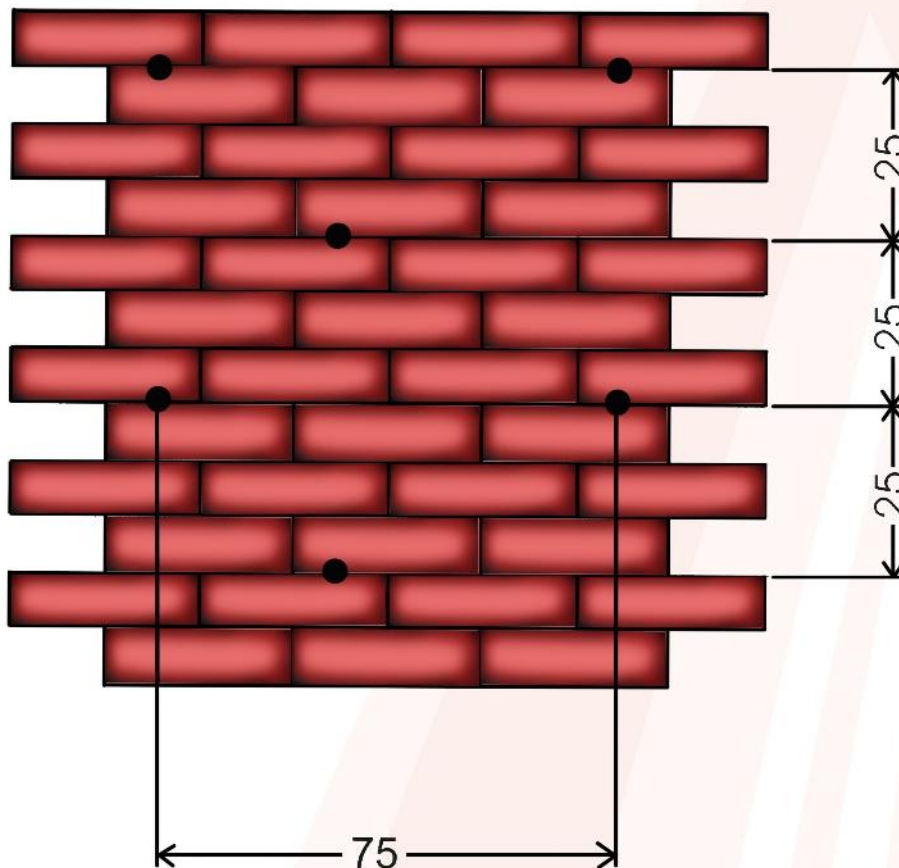
The distance between the ties should be maximum 500 mm vertically, and not more than 750 mm horizontally. The Thickness of the wire tie depends on the height of the building and on the size of the wall cavity.

The minimum thickness is 3 mm. For walls that are higher than 12m above ground level or where the gaps between the walls are more than 70 mm to 120 mm, a minimum of 5 wall ties with diameter of 4 mm are to be inserted.

If the gaps between the walls are more than 120 to 150 mmm, a minimum of 7 wall ties with diameters of 4 mm or 5 wall ties with diameters of 5 mm are to be inserted.

The length of the wall tie should be measured in such a way that the anchor is embedded 50 mm into the masonry and a further 25 mm is bent round.

The thickness of the cavity and the thickness of the insulating material shall be added.



## Arrangement of Additional Tie Cramps

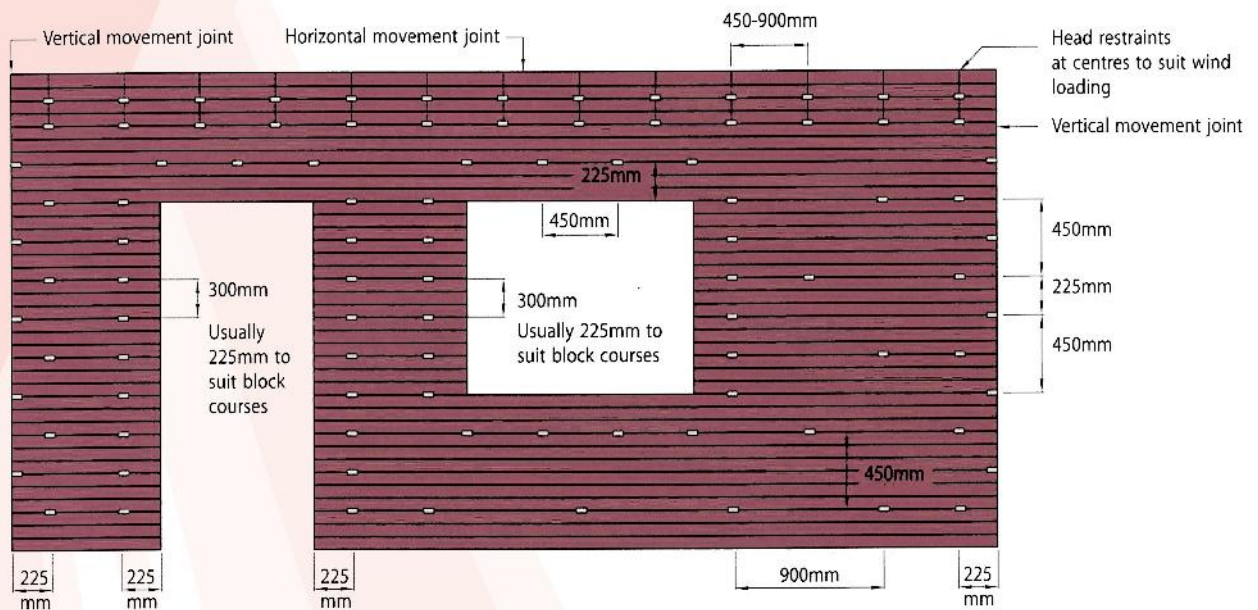
For walls in which both leaves are 90 mm or thicker, ties should be used at not less than 2.5 per square meter (900 mm horizontal and 450 mm vertical centers). This spacing may be varied by building regulations.

Ties should be evenly distributed over the wall area, except around openings, and should be preferable staggers.

At vertical edges of an opening, unbounded edges, and vertical expansion joints, additional ties should be used. Such ties should be located at 300 mm vertical centers, positioned not more than 225 mm from the edge.

3 pieces wall ties per meter, additional ties should be installed.

- At edge (corner)
- Along expansion joints
- At opening
- At the upper end





# CEILING TYPE

## Adjustable Head Restraint (AHR)

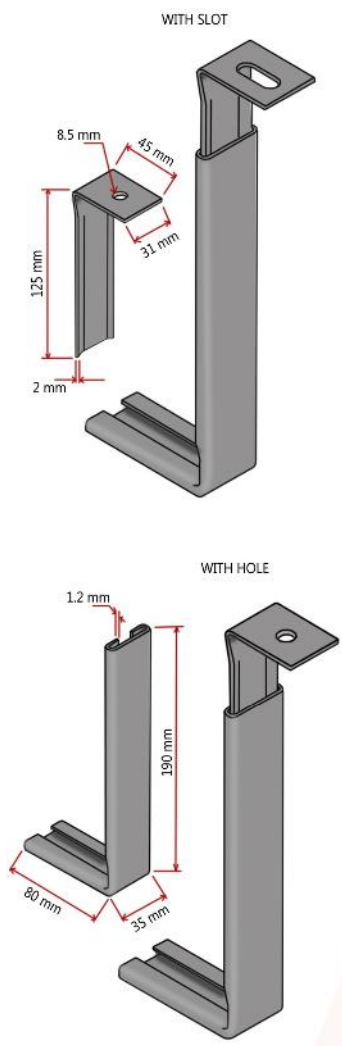
### Head Restraint

Head Restraints provide the necessary restraint to the top of masonry walls. They allow for vertical movement to accommodate shrinkage or thermal movement of the wall or structural frame, while restraining wind loads.

### Internal Head Restraint

The Internal Head is used for restraining the top of internal walls or the top of the inner leaf of a cavity wall. The opening at the front of the channel stem is sealed to prevent mortar ingress and to ensure that vertical movement can take place between the block work and the structure. The base of the stem must be built within a bed joint with the center of the stem. The maximum joint between the top of the block work and the underside of the frame is not normally greater than 25 mm.

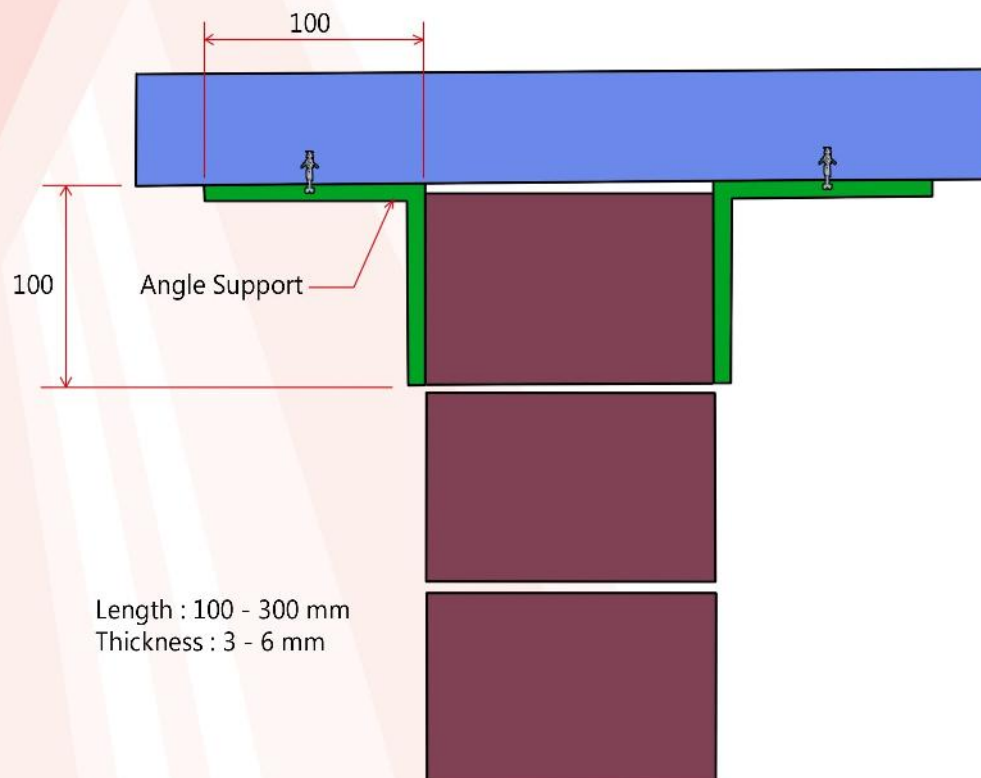
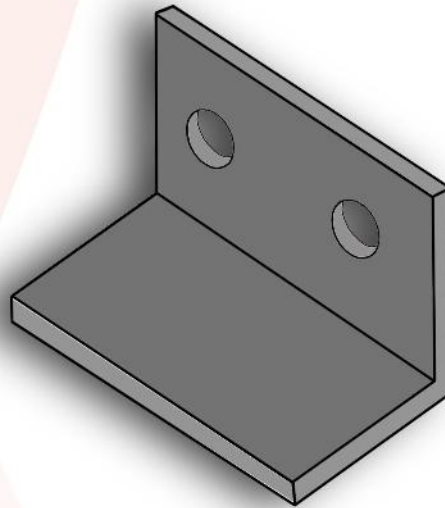
The standard of the head restraint will suit a 25 mm high block and can resist a load of 1.5kN\*. Where the gap at the top increases from 25 mm to 50 mm, the working load is reduced from 1.5 kN to 1.0 kN.



## Partition Top Angle (PTA)

### Angle Support

- Partition Top Angle prevents a horizontal movement of the masonry wall.
- Supports the horizontal force on top of the block work due to human impact or wind pressure.
- To be fixed on both sides of the wall.
- To be fixed with 2x M6 Screw with plastic anchor.
- Provides support while preventing a solid connection between the wall and the ceiling.





## Partition Top Rod Anchors (PTRA)

Partition Top Anchors have been developed to provide lateral shear resistance at the upper limit of masonry walls. They permit vertical deflection of the slab above, without transferring compressive loads to the masonry wall below. Partition Top Anchors are suitable for construction using steel.

Partition Top Anchors Tube with expansion filler is placed over rod anchor, which has been attached to concrete or steel by any of the method illustrated.

### Materials:

ASTM A 1008 ( cold-rolled)

ASTM A 1011 (hot-rolled)

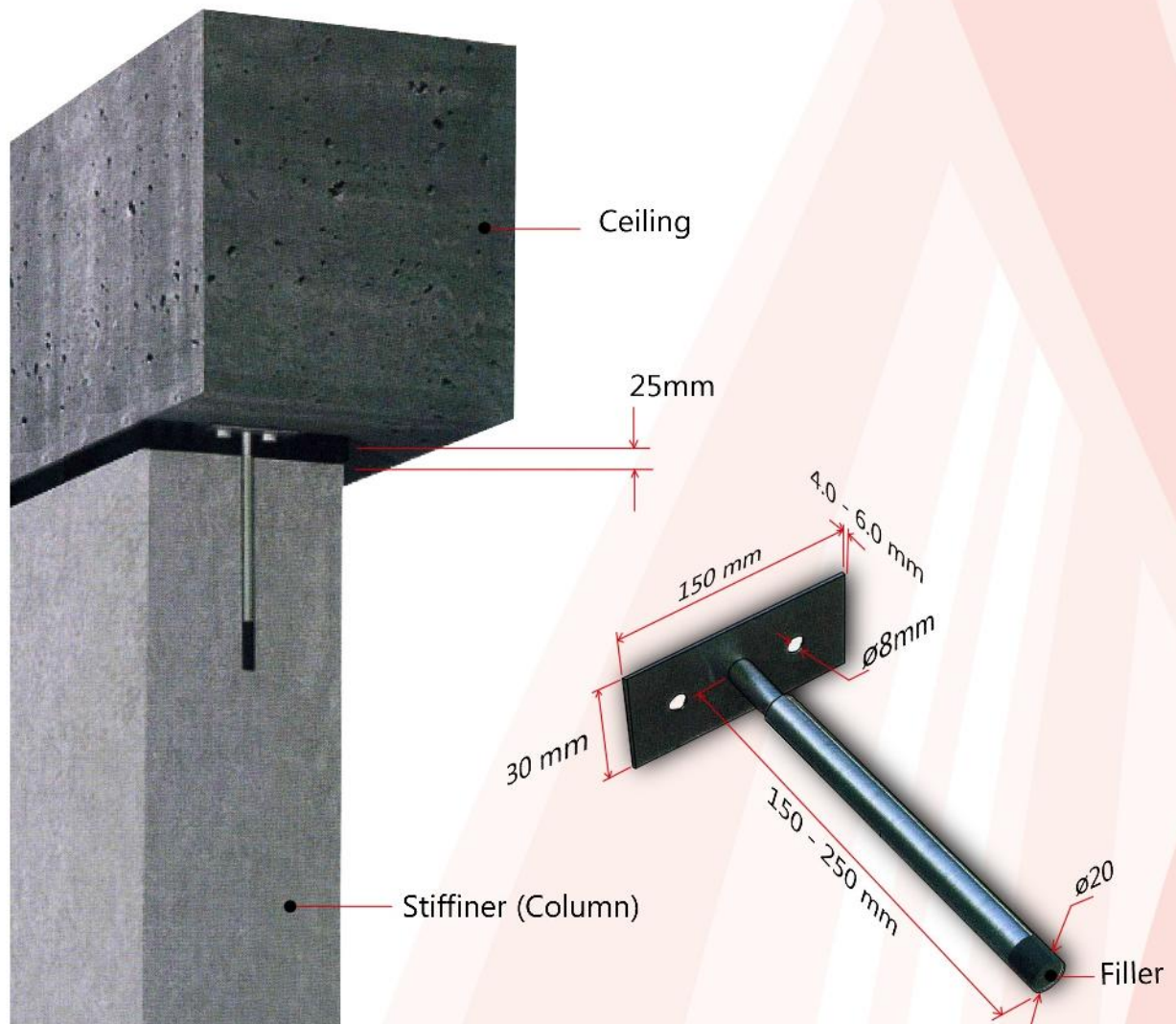
### Finishes:

Hot Dip Galvanized - ASTM A153

ROD

Hot-Dip Galvanized

Plastic Tube : Manufactured from UPVC according to ASTM D542 and D696, D257

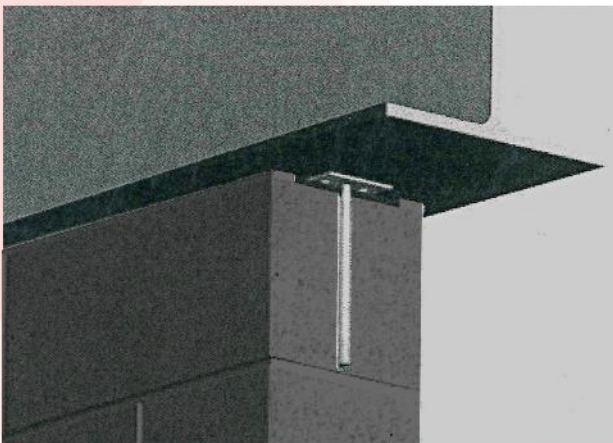
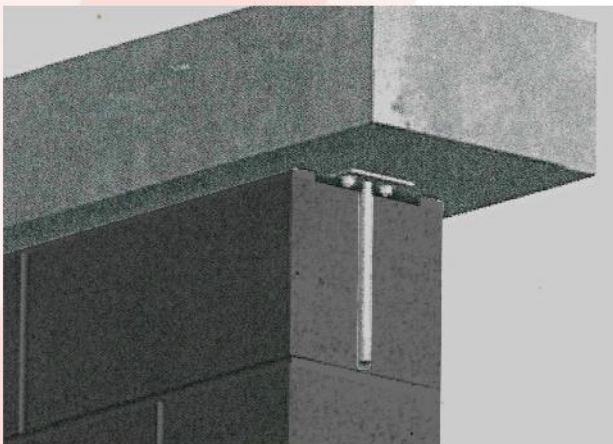


Partition Top Anchors have been developed to provide lateral shear resistance at the upper limit of masonry walls.

They permit vertical deflection of the slab above, without transferring compressive loads to the masonry wall below.

PTA are suitable for construction using steel or concrete.

PTA Tube with expansion filler is placed over rod anchor, which has been attached to concrete or steel by any of the methods illustrated.



#### Finishes:

Sheet Metal:

Hot-dip Galvanized - ASTM A153/ A153M-B2 class B (sheet metal ties and anchors hot-dip galvanized after fabrication)

Sheet Metal (Stainless Steel):

ASTM A167 - AISI Type 304 Stainless Steel (Sheet metal ties and anchors) (Type 316 available on special order)

Rod:

Hot-dip Galvanized - ASTM A153/ A153M-B2 Stainless

Steel Type 304 - ASTM A582/ A582 MPTA Tube:

Manufactured from Clear Butyrate.

Dimensions:

- Rod 9.5mm, Length 150mm (other diameters and gauges available upon request)

- Plate 50 x 75 mm thickness 2.5 mm





# BLOCK REINFORCEMENT

## Specifications:

MMICO reinforcement truss type are manufactured by resistance welding of ASTM A82 cold drawn wire deformed at predetermined centers conforming to BS 4483:2005.

## Description:

MMICO ladder and truss types are used for the reinforcement of brick and block masonry to give improved tensile strength to walls subjected to lateral loading e.g. wind and seismic. MMICO block reinforcement reduces the risk of cracking either at stress concentration around opening. They can also be beneficial in reducing the effects of vibration and differential movement. The longitudinal steel wires are flattened to ensure good mortar cover, even when lapped or used with wall ties.

## Dimensions:

- Hot-dip Galvanized:
  - Main Wire diameter : 4.0 - 4.8 mm
  - Rung and diagonal wire diameter : 4.0 to 4.8mm
  - Rung spacing: 400mm
- Stainless Steel AISI 304
  - Main Wire diameter : 4.0 - 4.8 mm
  - Rung and diagonal wire diameter : 4.0 to 4.8mm
  - Rung spacing: 400mm

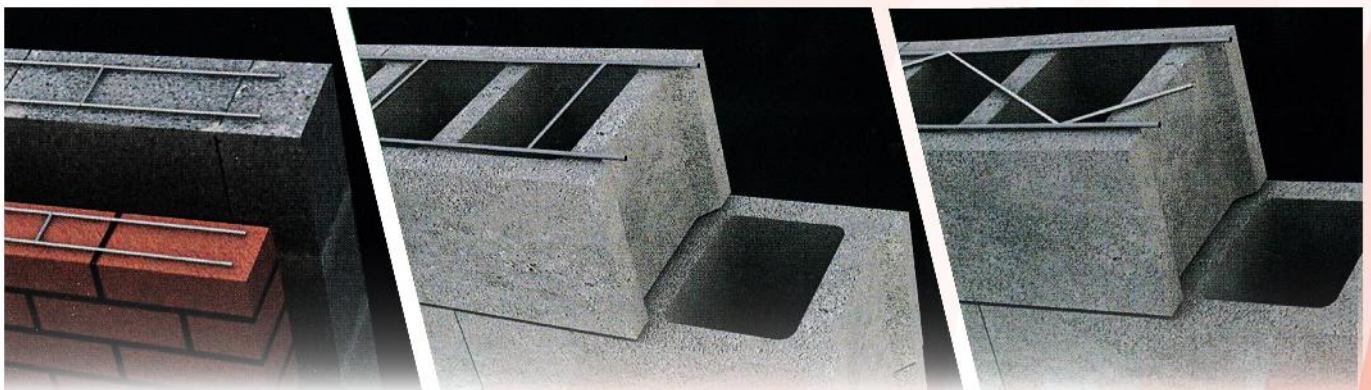
## The Production of cold reduced steel wires complies to BS 4483:2005 and ASTM A951 / A951M - 11 Standard Specification for Steel Wire for Masonry Joint Reinforcement

- a. Mechanical Properties
  - Specified characteristic strength: 460 N/mm<sup>2</sup> (Mpa)
  - Tensile strength min 510 N/ mm<sup>2</sup> (Mpa)
- b. Chemical composition of Steel
  - Carbon C max. 0.25% sulphur S: max 0.06%
  - Carbon equivalent value Ceq: max. 0.4% Ceq = C+Mn/6 + (Cr + V + Mo)/ 5 + (Cu xNi) /15

MMICo Block Ladder (Ladder Type and Truss Type) are continuous lengths of joints reinforcement that are embedded into the horizontal joints of masonry walls.

Block reinforcement offers the following benefits:

- increase lateral flexural strength.
- Reduces cracking that can arise from thermal stresses.
- Bonds exterior and interior masonry together in composite or cavity walls.
- Bonds masonry at intersecting walls and corners.
- Increases performances of masonry wall under various stresses.





## Ladder Type

Code	Width (mm)	Wall Width (mm)	Length (mm)	Material
MM-LR-050-HD 3.0	50	100	3000	Hot Dip Galvanized
MM-LR-100-HD 3.0	100	150	3000	Hot Dip Galvanized
MM-LR-150-HD 3.0	150	200	3000	Hot Dip Galvanized
MM-LR-200-HD 3.0	200	250	3000	Hot Dip Galvanized
MM-LR-250-HD 3.0	250	300	3000	Hot Dip Galvanized
MM-LR-050-SS 3.0	50	100	3000	Stainless Steel
MM-LR-100-SS 3.0	100	150	3000	Stainless Steel
MM-LR-150-SS 3.0	150	200	3000	Stainless Steel
MM-LR-200-SS 3.0	200	250	3000	Stainless Steel
MM-LR-250-SS 3.0	250	300	3000	Stainless Steel





## Trust Type

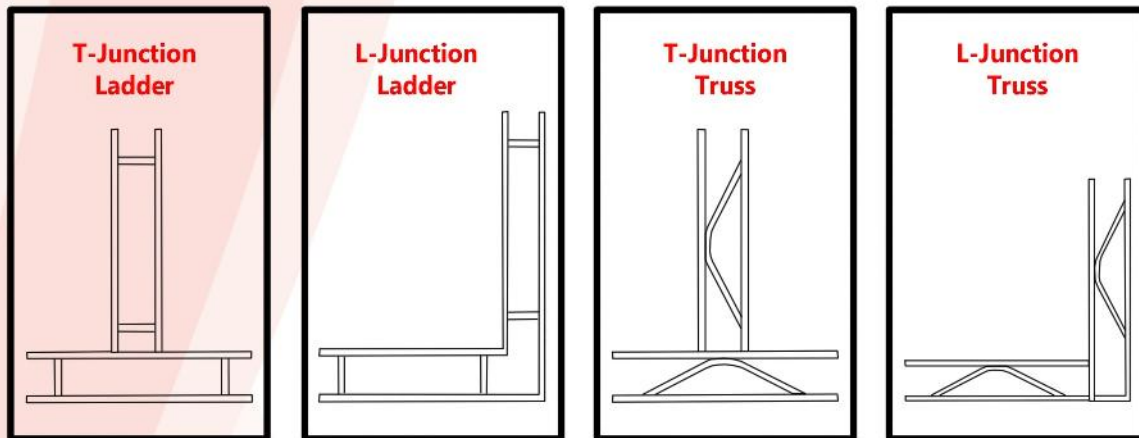
Code	Width (mm)	Wall Width (mm)	Length (mm)	Material
MM-TR-050-HD 3.0	50	100	3000	Hot Dip Galvanized
MM-TR-100-HD 3.0	100	150	3000	Hot Dip Galvanized
MM-TR-150-HD 3.0	150	200	3000	Hot Dip Galvanized
MM-TR-200-HD 3.0	200	250	3000	Hot Dip Galvanized
MM-TR-250-HD 3.0	250	300	3000	Hot Dip Galvanized
MM-TR-050-SS 3.0	50	100	3000	Stainless Steel
MM-TR-100-SS 3.0	100	150	3000	Stainless Steel
MM-TR-150-SS 3.0	150	200	3000	Stainless Steel
MM-TR-200-SS 3.0	200	250	3000	Stainless Steel
MM-TR-250-SS 3.0	250	300	3000	Stainless Steel





# Accessories

Bends, Tee-branches, and Intersections can be manufactured upon request.  
Corner units provide continuity of reinforcement this can be cut and bent on-site.



## T-Junction

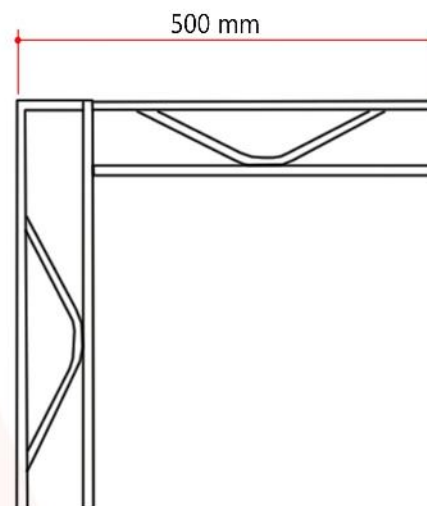
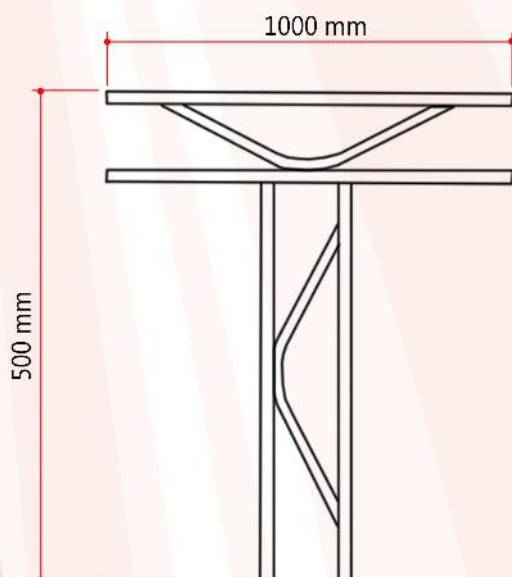
Code	Width (mm)	Wall Width (mm)	Finish
MM-TJ-TR-050	050	100	HDG / SS
MM-TJ-TR-100	100	150	HDG / SS
MM-TJ-TR-150	150	200	HDG / SS
MM-TJ-TR-200	200	250	HDG / SS
MM-TJ-TR-250	250	300	HDG / SS

\* Other sizes available upon request.

## L-Junction

Code	Width (mm)	Wall Width (mm)	Finish
MM-LJ-TR-050	050	100	HDG / SS
MM-LJ-TR-100	100	150	HDG / SS
MM-LJ-TR-150	150	200	HDG / SS
MM-LJ-TR-200	200	250	HDG / SS
MM-LJ-TR-250	250	300	HDG / SS

\* Other sizes available upon request.





## Pullout Box

The GI Pullout Box is supplied in retainer boxes made from galvanized sheet steel, for the reliable transmission of shear forces. The GO Pull Box, designed to ensure the exact distance between rods, in which the holes are made slightly bigger than the rod diameter.



Material Used:	Galvanized Sheet
Length:	1.2M/ 2.44M/ 3M
Width:	100mm - 400mm
Hole Diameter:	100mm - 25mm
Material Thickness:	0.4mm - 1.5mm

\* Other sizes and Material can be manufactured upon request.

