

# CAVITY WALL

## CW/XH EXTRA HEAVY DUTY

Lintels are manufactured from minimum 4mm thick structural steel plate with a minimum yield strength of 275N/mm<sup>2</sup>.

All lintels are post galvanised to a minimum zinc thickness dictated by building usage and geographical corrosivity ratings (see millennium map and lintel longevity table) to comply with BS 7543 and BS EN ISO 1461.

**DURA GALV 70**

**DURA GALV 100**

**DURA GALV 140**

Minimum 100mm slope height in accordance with NHBC guidelines to present effective dpc and reduce risk associated with mortar bridging across cavity.

Lintel Height  
310mm

Factory fitted profiled polystyrene insulation. CFC Free. For Thermal performance requirements to parts L1 & L2 building regulations.

Inner leaf of lintel section to accept a constant 100mm wide masonry infill for maximum load bearing capacity when subject to high load ratios

Cavity widths to lintel profile are tailored to suit specific wall construction to ensure sectional stability under load and reduced thermal transmittance through wall construction.

**DUPLEX COATING**

Duplex paint system over post galvanised lintel, dictated by building usage and geographical corrosivity ratings (see millennium map and lintel longevity table).

End Bearing  
150mm

PRODUCTS AND INFORMATION CAN BE AMENDED WITHOUT PRIOR CONSENT TO MAINTAIN THE COMPANY POLICY OF CONTINUED IMPROVEMENT

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# CAVITY WALL

## CW/XH EXTRA HEAVY DUTY

### GENERAL TECHNICAL DETAIL, COMPOSITION AND MANUFACTURE

#### GENERAL

**Introduction.** The SUPERLINTEL CW/XH range of lintels, for external cavity wall applications, have a number of outstanding features which contribute to performance and durability characteristics which exceed BSEN 845-2:2003 recommendations.

These Features include:-

- 4mm thick structural steel plate used throughout for rigidity, long life durability and dimensional consistency.
- Optimum protection against corrosion; Lintels are hot-dip galvanised after manufacture.
- Lintels have undergone a testing programme by the Warrington Fire Research Consultancy in accordance with BS 476:Part 20: 1987. The test structure utilised a typical everyday wall construction, with 12mm plaster and skim only, over the inner leaf and blockwork. Full structural integrity was

maintained in excess of 90 minutes.

- End bearings of 150mm as standard for high structural stability.  
*Non-standard end bearings can be supplied to order.*
- Choice from any cavity widths and flange options to enable 'U' values of less than 0.35W/m<sup>2</sup> K to be attained. Lintels are manufactured to suit the precise cavity and inner block widths for maximum load-bearing capacity and to achieve maximum 'U' values in conjunction with wall construction and hence meet requirements of Part 'L' building regulations.
- Mortar keying slots to flanges at bearings.

All lintels are Hot Dip Galvanised after manufacture, tested in compliance with BS EN ISO 1461 for zinc coatings of steel through the controlled inhouse galvanising "DURAGALV" process. Coating thicknesses vary in accordance with the requirements of BS 7543 and local corrosion categories levels.

For "DURAGALV" coatings above 70 microns, i.e: Duragalv 100 and 140, additional controlled processes are employed to ensure the heavier coatings adhere to the "minimum 4mm" specially selected steel plate required to accept these levels of heavy coatings.

To achieve protection for all five corrosion category areas, a further "DUPLEX COATING" paint system is applied to lintels, after galvanising, in the most severe areas of corrosion levels.

#### COMPOSITION AND MANUFACTURE

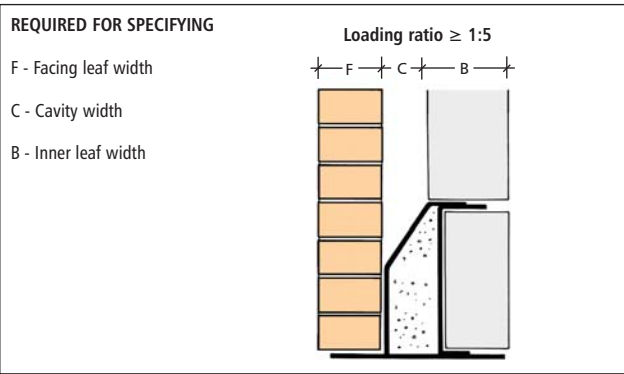
Lintels are manufactured from minimum 4mm thick steel structural plate with a minimum yield strength of 275N/mm<sup>2</sup>.

### LOADING RATIOS, SECTIONAL DETAIL / PROPERTIES

#### PERFORMANCE

**Mechanics.** Safe working loads for the CW/XH range of lintels are established by testing based upon the non-destructive test procedures for steel lintels as recommended in BSEN 845-2:2003.

Lintel sections accept constant 100mm infill to inner leaf, thus ensuring maximum benefit from section under high load ratios. CW/XH lintels have been tested in accordance with BSEN 845-2:2003 with high inner leaf loadings at load ratios equal to greater than 1:5.

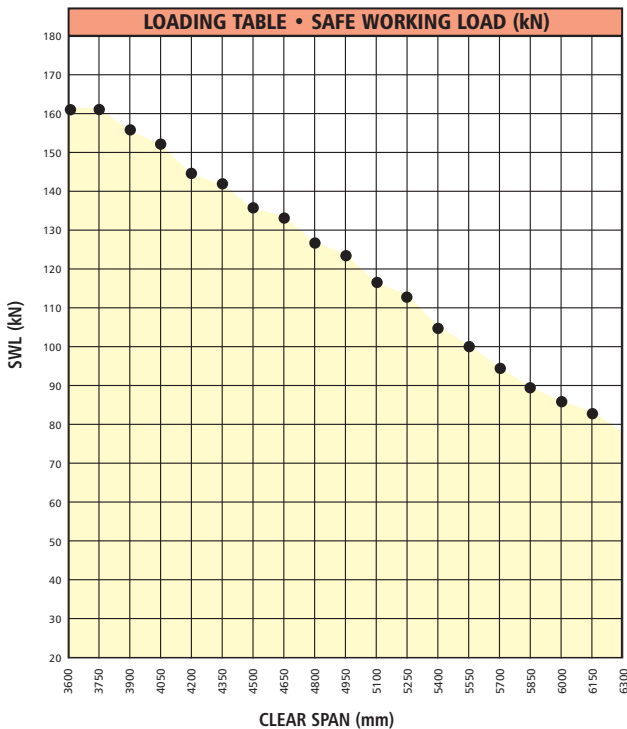


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# CAVITY WALL

## CW/XH EXTRA HEAVY DUTY

### LOADING TABLES



| SWL - LOAD RATIO $\geq$ 1:5 |                   |                |          |
|-----------------------------|-------------------|----------------|----------|
| CLEAR SPAN                  | (min) END BEARING | OVERALL LENGTH | SWL (kN) |
| 3750                        | 150               | 4050           | 161      |
| 3900                        | 150               | 4200           | 156      |
| 4050                        | 150               | 4350           | 151      |
| 4200                        | 150               | 4500           | 145      |
| 4350                        | 150               | 4650           | 141      |
| 4500                        | 150               | 4800           | 136      |
| 4650                        | 150               | 4950           | 132      |
| 4800                        | 150               | 5100           | 128      |
| 4950                        | 150               | 5250           | 124      |
| 5100                        | 150               | 5400           | 118      |
| 5250                        | 150               | 5550           | 111      |
| 5400                        | 150               | 5700           | 105      |
| 5550                        | 150               | 5850           | 100      |
| 5700                        | 150               | 6000           | 95       |
| 5850                        | 150               | 6150           | 90       |
| 6000                        | 150               | 6300           | 86       |
| 6150                        | 150               | 6450           | 82       |

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### SECTIONAL PROPERTIES

| EXAMPLE OF SECTIONAL PROPERTIES |                       |                  |                      |            |                    |                     |                     |
|---------------------------------|-----------------------|------------------|----------------------|------------|--------------------|---------------------|---------------------|
| SECTION REFERENCE               | FACING LEAF WIDTH (F) | CAVITY WIDTH (C) | INNER LEAF WIDTH (B) | WALL WIDTH | LINTEL WEIGHT/M kg | Ixx cm <sup>4</sup> | Zxx cm <sup>3</sup> |
| CW/XH/102/50/100                | 102mm                 | 50               | 100mm                | 252mm      | 37.13              | 5875                | 327                 |
| CW/XH/102/70/100                | 102mm                 | 70               | 100mm                | 272mm      | 39.64              | 6437.9              | 360.60              |
| CW/XH/102/85/100                | 102mm                 | 85               | 100mm                | 287mm      | 40.59              | 6590                | 372                 |
| CW/XH/102/100/100               | 102mm                 | 100              | 100mm                | 302mm      | 40.38              | 7012.4              | 395.15              |
| CW/XH/102/50/140                | 102mm                 | 50               | 140mm                | 292mm      | 39.64              | 6642                | 373                 |
| CW/XH/102/70/140                | 102mm                 | 70               | 140mm                | 312mm      | 40.90              | 7025                | 396                 |
| CW/XH/102/85/140                | 102mm                 | 85               | 140mm                | 327mm      | 41.84              | 7490.3              | 424.03              |
| CW/XH/102/100/140               | 102mm                 | 100              | 140mm                | 342mm      | 42.28              | 7598                | 431                 |

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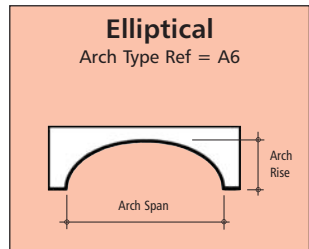
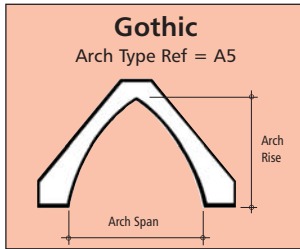
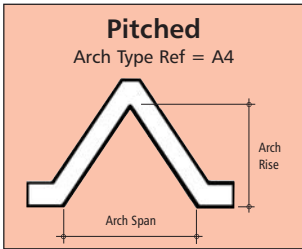
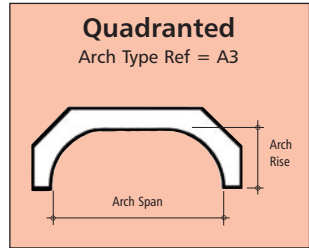
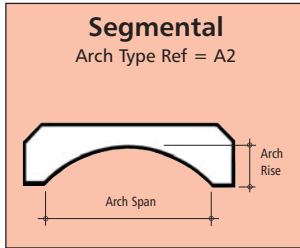
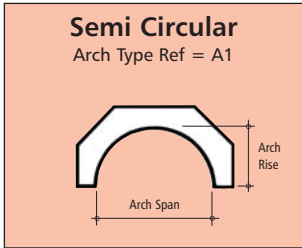
### ARCHED LINTEL TYPES

Arched soffit Superlintels can be designed to suit any of the cavity wall lintel sections. There are 6 standard arch profiles shown, each providing full support to masonry arch shapes as drawn.

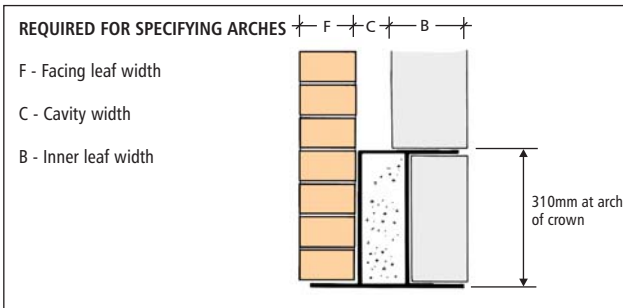
Steel flange thicknesses to lintel soffits are allowed for within a design to ensure continuity of brick coursing to outer leaf, in particular springing points at each end of lintel spans.

Where overall lintel height exceeds 450mm, webs are cropped to allow wall ties to be continued between both outer and inner leaf.

As with flat soffit Superlintels, the lintel section is dictated by wall construction, load and span. Arched forms may dictate minor changes to lintel section as shown. Arched lintels may require a separate damp proof course membrane, supplied by others.



### LOADING RATIOS, SECTIONAL DETAILS OF ARCHES

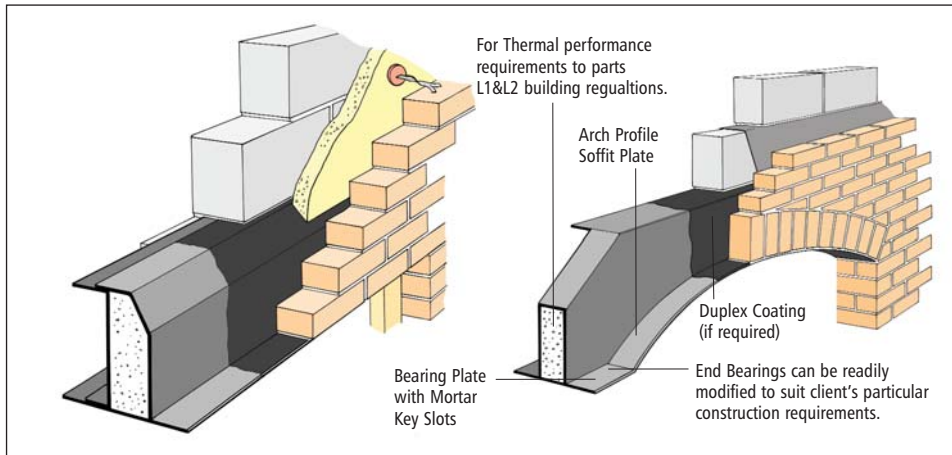


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# CAVITY WALL

## CW/XH EXTRA HEAVY DUTY

### TYPICAL INSTALLATION/CONSTRUCTION DETAILS



### ACCESSORY SUFFIXES

To specify add the following suffixes to the professional specification code

- COL** Corbelled Outer Leaf
- CS** Concealed Soffit detail.
- G** Stepped outer flange (20 mm step unless stated).
- JAF** Moulded arch former.

- JSF** Superarch steel arch former.
- M** Phosphate etch finish to lintel soffit.
- OBLC** Out of Balance Loading Conditions
- SFC** Steel frame connection..

- SS** Stainless steel lintel  
Note: Finish coating suffix code i.e. DG140 (Duragaly 140) is not required when specifying stainless steel.
- U** Metal lathing plaster key.

**COL Accessory**  
Corbelled Outer Leaf

F, C, B required for specifying

Steel lintel support is essential to maintain stability through the height of a cavity wall which includes corbelling to the facework.

**OBLC Accessory**  
Out of Balance Loading Conditions

Steel or concrete framed structures can present an out of balance loading ratio due to a minimal inner leaf loading together with a height of facework to outer leaf. Soft joints to u/side of main beams generate the need for specifically designed lintel sections to address possible torsional shear forces due to the nature of the building construction.

**CS Accessory**  
Concealed Soffit detail

F, C, B required for specifying

Steel lintel support can be combined with concealed soffit undercarriage to present facework to all 3 external sides of soffit.

**SFC Accessory**  
Steel frame connection

Illustration shows one of a large number of solutions where facework is required to pass across an inner column face without brick piers interrupting below lintel soffit (e.g. continual curtain walling).  
Column connections can also be used to resist overturning moments where insufficient bearing resistance can be achieved by conventional build at ends of lintel.

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### FINISHES

#### How to use the Lintel Longevity Table

1. Locate your site on the Millennium map ( E.g. Leeds - West Yorkshire)
2. Match the corrosion category square colour to the key (Leeds = 3 light blue)
3. From the left hand column clarify required Construction Type / Minimum

4. Read along from 60 years to category 3 (Minimum coating to be specified to comply with standards = Duragalv 100)
5. At the end of the specifying code DG100 needs to be added.

#### Coating suffix specifying codes:

- Duragalv70 = DG70
- Duragalv100 = DG100
- Duragalv140 = DG140
- Duragalv140 + Duplex Coating = DG140DC

| Fabricated mild steel lintel,<br>Hot-Dip Galvanised after manufacture   |                     | LINTEL LONGEVITY TABLE |                      |                      |                      |                       |
|---|---------------------|------------------------|----------------------|----------------------|----------------------|-----------------------|
| Millennium Map corrosion category 1/2/3/4/5, and the minimum coatings to be specified in those areas, to comply with BS 7543 and BS EN 845-2:2003.  |                     |                        |                      |                      |                      |                       |
| See Millennium Map for your site location or visit <a href="http://www.hdg.org.uk/map/index.htm">www.hdg.org.uk/map/index.htm</a>                   |                     | 1                      | 2                    | 3                    | 4                    | 5                     |
| <b>CONSTRUCTION TYPE / MIN LIFE</b><br>Retail, Industrial and General Refurb. Minimum Life to Comply With BS 7543<br><b>= 30 YEARS</b>              | <b>DURA GALV 70</b> | <b>DURA GALV 70</b>    | <b>DURA GALV 70</b>  | <b>DURA GALV 70</b>  | <b>DURA GALV 100</b> | <b>DURA GALV 100</b>  |
| <b>CONSTRUCTION TYPE / MIN LIFE</b><br>Health, Education, New Housing High Quality Refurb. Minimum Life to Comply With BS 7543<br><b>= 60 YEARS</b> | <b>DURA GALV 70</b> | <b>DURA GALV 70</b>    | <b>DURA GALV 100</b> | <b>DURA GALV 140</b> | <b>DURA GALV 140</b> | <b>DUPLEX COATING</b> |
| <b>CONSTRUCTION TYPE / MIN LIFE</b><br>Civic and Other High Quality Buildings. Minimum Life to Comply With BS7543<br><b>= 120 YEARS</b>             | <b>DURA GALV 70</b> | <b>DURA GALV 140</b>   | <b>DURA GALV 140</b> | <b>DURA GALV 140</b> | <b>DURA GALV 140</b> | <b>DUPLEX COATING</b> |

Any lintel profile can be created by our in-house design team with spans ranging from 600mm and rises to suit. Contact our advice team on [techadvice@jonesofoswestry.com](mailto:techadvice@jonesofoswestry.com) for online support and free design service.

### HOW TO SPECIFY

#### PROGRESSIONAL EXAMPLE FOR SPECIFYING

| Ref DESCRIPTION | MAIN PRODUCT CODE |               |                       |                  |                      |          | THESE REQUIRED WHEN SPECIFYING ARCHES |           |                     |                       |
|-----------------|-------------------|---------------|-----------------------|------------------|----------------------|----------|---------------------------------------|-----------|---------------------|-----------------------|
|                 | WALL TYPE         | LOADING       | FACING LEAF WIDTH (F) | CAVITY WIDTH (C) | INNER LEAF WIDTH (B) | SPAN     | ARCH TYPE                             | ARCH RISE | ACCESSORY SUFFIX    | FINISHED COATING      |
| DETAIL          | (CAVITY WALL)     | (EXTRA HEAVY) | (102mm)               | (70mm)           | (140mm)              | (3900mm) | (A2 = SEGMENTAL)                      | (450mm)   | (METAL LATHING KEY) | (SEE LONGEVITY TABLE) |
| PRODUCT Ref     | CW                | XH            | 102                   | 70               | 140                  | 3900     | A2                                    | 450       | U                   | DG100                 |

THE ABOVE EQUALS FULL SPECIFYING CODE OF = CW/XH/102/70/140/3900/A2/450/U/DG100

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