



# TECHNICAL DATA SHEET

Azure II™ Bolt Ups & Lintels

**inner strength in construction**  
ACS Stainless Steel Ltd.

**For more information:**

0844 850 0860 | [www.acsstainless.co.uk/azure](http://www.acsstainless.co.uk/azure) | [info@acsstainless.co.uk](mailto:info@acsstainless.co.uk)



- ▶ A1 Non-Combustible
- ▶ BBA Certified
- ▶ Suitable for all Building Heights & Types
- ▶ Accelerated Weather Tested
- ▶ Austenitic Stainless Steel
- ▶ CE Marked
- ▶ 100% Mechanically Fixed
- ▶ Resin-Free System



**LUCIDEON**

Brick Slip Bond Strength, Durability  
and Lintels tested by Lucideon



## Product Summary

The ACS Azure II™ Lintel Range is designed to allow an opening to be created in a single leaf of masonry, typically the external leaf of a cavity wall with an integrated brick slip soffit feature. The brick slip soffit feature is mechanically fixed to the lintel carrier in various bonds to create a brick feature at the soffits of windows or openings to the required visual effect. The system components consist of clay facing bricks, stainless steel and pointing mortar, all of which are classified as A1 non combustible.

## Design & Testing

Both the lintels and the brick slips have been independently tested by Notified and Technical Approval Bodies to evaluate and validate the load capacity, physical performance, and long term durability of all components. The lintels have been designed in line with the requirements of BS EN 845-2 & PD 6697 and tested in line with BS EN 846-9. The brick slips are tested using the guidance of EAD 090062-00-0404 to evaluate the accelerated Freeze/Thaw weather resistance both saturated and dried of the slips mechanically fixed to the stainless steel carrier.

The tests include the evaluation of bond strength and durability of the brick slips fixed to stainless steel where a service life of 60 years can be achieved. The connection strength and impact resistance of the brick slips were tested before and after the accelerated cyclic weather tests to validate the integrity and durability of the system. The tests included:

- ▶ Heat / Rain weathering to EAD 090062-00-0404 – Weathered samples only.
- ▶ Bond Strength testing using EAD 090062-00-0404 As guidance - Control and Weathered samples
- ▶ Impact testing to ISO 7892 - Control and Weathered samples

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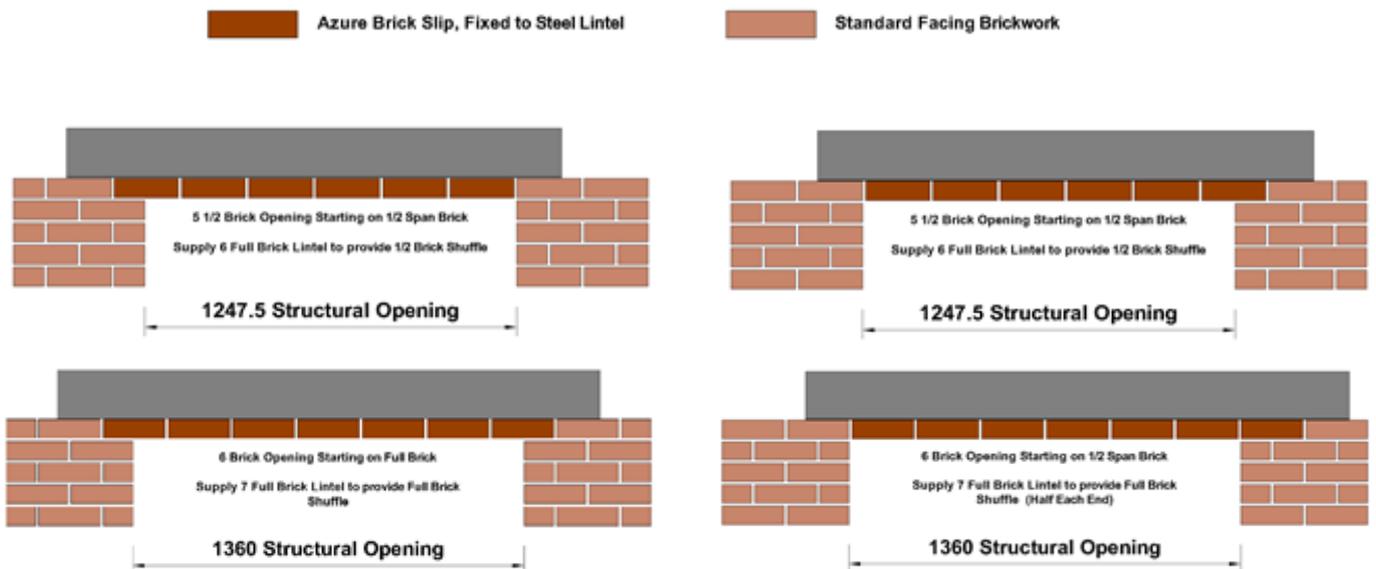
### Bond Types

#### Stretcher Bond



#### Shuffle Brick

ACS Azure II™ Stretcher Bond Lintels are typically supplied with a 'Shuffle Brick' arrangement to allow the lintel to be coursed into the facing brickwork regardless of whether the opening starts on a half or full brick. Structural openings are most typically set at divisions of full or half brick dimensions. The illustration below demonstrates how the stretcher bond lintel should be set to accommodate for the various coursing conditions.



### Stretcher Bond

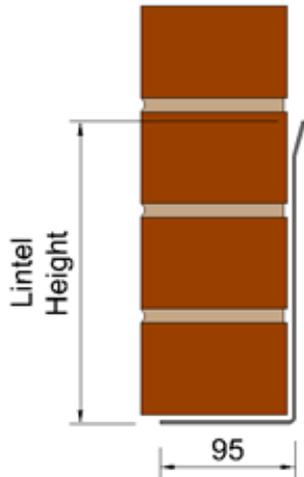


### Header Bond



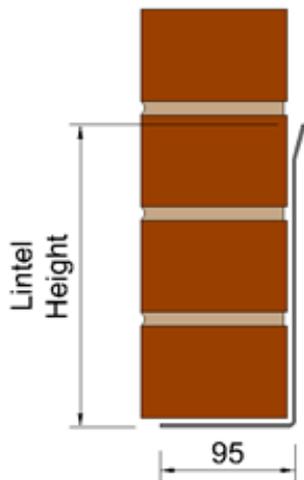
### Safe Working Loads

#### Standard Duty 'L' Section Lintel



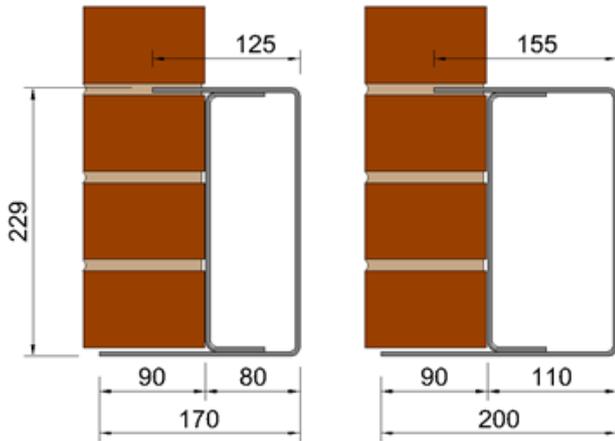
	'L' Section Lintels			
Standard Lengths (mm)	600-1200	1201-1500	1501-2100	2101-3000
Total UDL (kN)	3.40	4.60	6.20	11.50
Lintel Height (mm)	88	131	167	215
Weight / Metre (kg)	2.90	3.58	4.16	7.37

#### Standard Duty 'C' Section Lintel



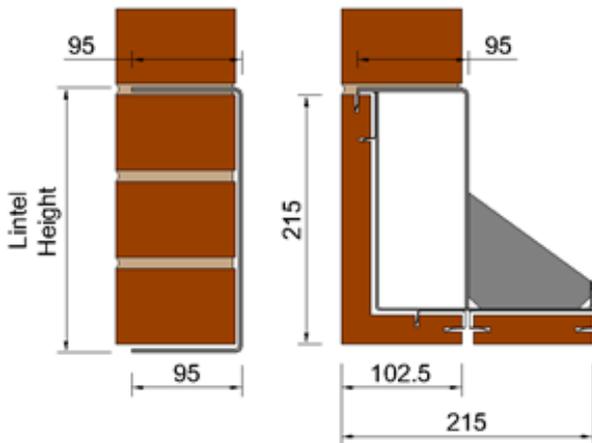
	'C' Section Lintels			
Standard Lengths (mm)	600-1200	1201-1500	1501-2100	2101-3000
Total UDL (kN)	8.60	16.00	16.00	16.00
Lintel Height (mm)	154	229	229	229
Weight / Metre (kg)	4.65	5.85	5.85	8.72
Standard Lengths (mm)	3001-3900	3901-4500		
Total UDL (kN)	20.00	20.00		
Lintel Height (mm)	229	229		
Weight / Metre (kg)	11.49	14.27		

### Extra Heavy Duty 'XHD C2' Section Lintel



	'C2/170'	'C2/200'
<b>Standard Lengths (mm)</b>	<b>4900</b>	<b>4900</b>
Total UDL (kN)	28.00	32.00
Lintel Height (mm)	229	229
Weight / Metre (kg)	23.3	25.22

### Standard 'CS' Section Lintel



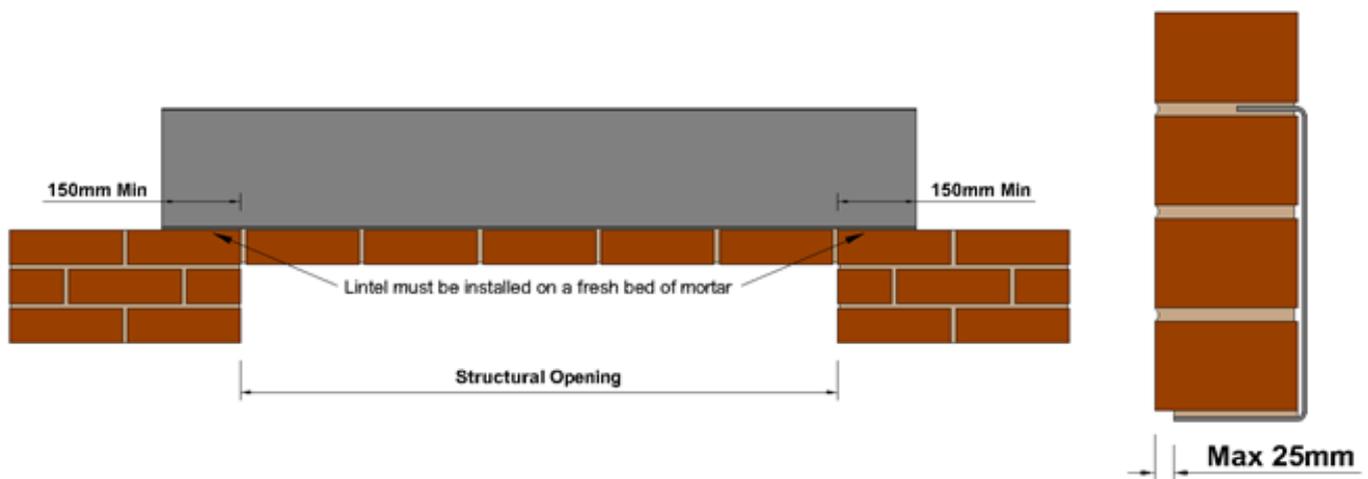
	'CS' Section Lintels	
<b>Standard Lengths (mm)</b>	<b>600-1200</b>	<b>1201-1500</b>
Total UDL (kN)	9.00	9.00
Lintel Height (mm)	229	229
Weight / Metre (kg)	4.65	5.85
<b>Standard Lengths (mm)</b>	<b>1501-2100</b>	<b>2101-3000</b>
Total UDL (kN)	9.00	9.00
Lintel Height (mm)	229	229
Weight / Metre (kg)	5.85	8.72
<b>Standard Lengths (mm)</b>	<b>3001-3900</b>	<b>3901-4500</b>
Total UDL (kN)	8.00	8.00
Lintel Height (mm)	229	229
Weight / Metre (kg)	11.49	14.27

Alternative lintels can be designed to suit specific loading requirements outside of the standard range detailed in the tables above.

### Installation

Prior to installation, the lintel and bricks slips should be examined carefully for any defects or signs of damage. If any damage is present the lintel should not be installed, and ACS should be contacted. The lintel should always be installed onto a bed of fresh mortar at the bearing ends. During the installation and bedding it is important to ensure that the lintel is levelled both along its length and across its width.

A minimum of 150mm end bearing is must be achieved at either end of the lintel unless specified otherwise by ACS. A maximum masonry overhang of 25mm over the front edge of the lintel must also be maintained. The lintel must always bear onto a full brick/block below.



Lintels should always be propped during construction to achieve the safe working load capacities declared in the design tables below. A separate DPC is required above the lintel.

Wall ties should be installed within 300mm of the lintel at a maximum of 450mm centres to ensure that the masonry carried by the lintel is restrained and any potential overturning and deflection is minimised.

The standard Azure II™ lintel range is supplied in a variety of lengths to suit project requirements. Lintels of alternative lengths and load capacities outside of the details provided in the load tables found within this document can be designed and supplied to meet with project specific requirements.

Lintels should be selected to ensure that a minimum of 150mm bearing either side of the opening is always achieved.

In accordance with NHBC requirements, lintels used in external walls should be installed with a separate flexible damp proof course. This should be combined with either stop ends or as an alternative the DPC should extend between 50 and 150mm beyond the end of the lintel bearing.

ACS design and supply an A1 fire rated stainless steel cavity tray, G-Tray.

Please contact the sales department for more details.

### Restrictions

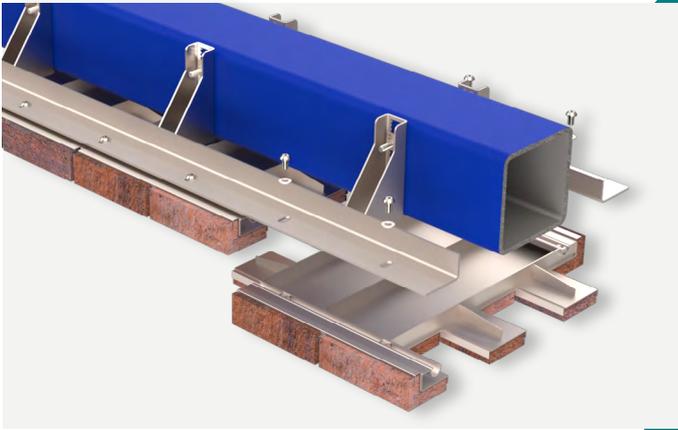
1. Lintels must never be cut to length or modified in any way without prior permission from ACS
2. No more than 1.5 metres of brickwork should be constructed upon the lintel in one day in accordance with PD 6697:2019
3. Where the method for assessing the load carried by lintels is designed in accordance with BS EN 1996-1-1 it is assumed that:
  - A. The masonry is constructed following the recommendations of BS EN 1996-2;
  - B. The height of masonry above the lintel at mid-span is not less than 0.6 times the clear span of the lintel;
  - C. The height of masonry above the supports is not less than 600 mm;
  - D. The masonry is continuous within the area defined by the conditions given in b) and c);
  - E. Where there is a single opening spanned by the lintel, the width of masonry on either side of the opening is not less than 600 mm or 0.2 times the clear span of the lintel whichever is the greater;
  - F. Where there is a series of openings at the level of the opening spanned by the lintel, the length of masonry between the external corner of the wall and the side of the adjacent opening is not less than 600 mm or 0.2 times the longest clear span, whichever is the greater

### Safety

Although every effort is made to remove sharp edges during the manufacture of the product, appropriate personal protective equipment should always be worn when handling and installing masonry support to avoid injury.

### Safety

PD 6697:2019 states that austenitic stainless steel must be used for products in contact with or embedded in an external wall for all buildings exceeding three storeys in a non-aggressive environment. In aggressive environments, such as coastal sites, products in both leaves of an external wall should always be austenitic stainless steel.



- ▶ A1 Non-Combustible
- ▶ BBA Certified
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### Technical Data

ACS Azure II soffit bolt ups are lightweight, brick-faced, prefabricated units that are manufactured offsite and supplied to projects with brick slips mechanically fixed to the stainless steel carrier units. These units can be quickly and easily fixed to the slots provided in ACS masonry support systems to create various hanging brick soffit details. The bricks slips are mechanical fixed to the underside of a stainless steel unit ensuring the system attains an A1 Fire rating. The stainless steel carrier units are designed, welded and fabricated in line with BS EN 1090 and a certified Factory Production Control system and can therefore be CE Marked under the guidance of the Construction Products Regulation.

### Design & Testing

Both the carrier and the brick slips have been independently tested by Notified and Technical Approval Bodies to evaluate and validate the physical performance and long term durability of all components.

The brick slips are tested using the guidance of EAD 090062-00-0404 to evaluate the accelerated Freeze/Thaw weather resistance both saturated and dried of the slips mechanically fixed to the stainless steel carrier. The tests include the evaluation of bond strength and durability of the brick slips fixed to stainless steel where a service life of 60 years can be achieved. The connection strength and impact resistance of the brick slips were tested before and after the accelerated cyclic weather tests to validate the integrity and durability of the system.

The tests included:

- ▶ Heat / Rain weathering to EAD 090062-00-0404 (Weathered samples only)
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### Setting Out / Size Tolerance

Bricks are manufactured to declared dimensional tolerances which acknowledge and take into account the characteristics of both the raw material and the manufacturing process.

The table below sets out these declared dimensional tolerances:



Dimensional Tolerance T1		
WIDTH	THICKNESS	HEIGHT
209mm to 221mm	90mm to 107mm	62mm to 68mm
Dimensional Tolerance T2		
WIDTH	THICKNESS	HEIGHT
211mm to 219mm	100mm to 105mm	63mm to 67mm

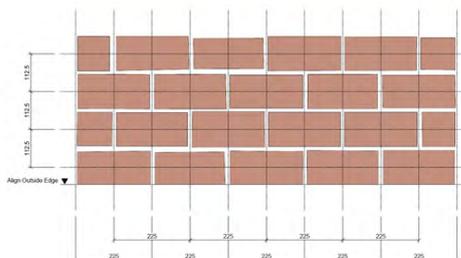
Before the installation and fixing of the Azure II™ soffits commences, it is advisable to dry lay the units in the required bond pattern. This dry lay should be set out to brickwork co-ordinating sizes. Tolerance is accommodated in the 10mm gap between the two units. This tolerance gap should be used to ensure that the units are gauged with the facing brickwork and ensure that they are seamlessly blended once the facing brickwork is completed.

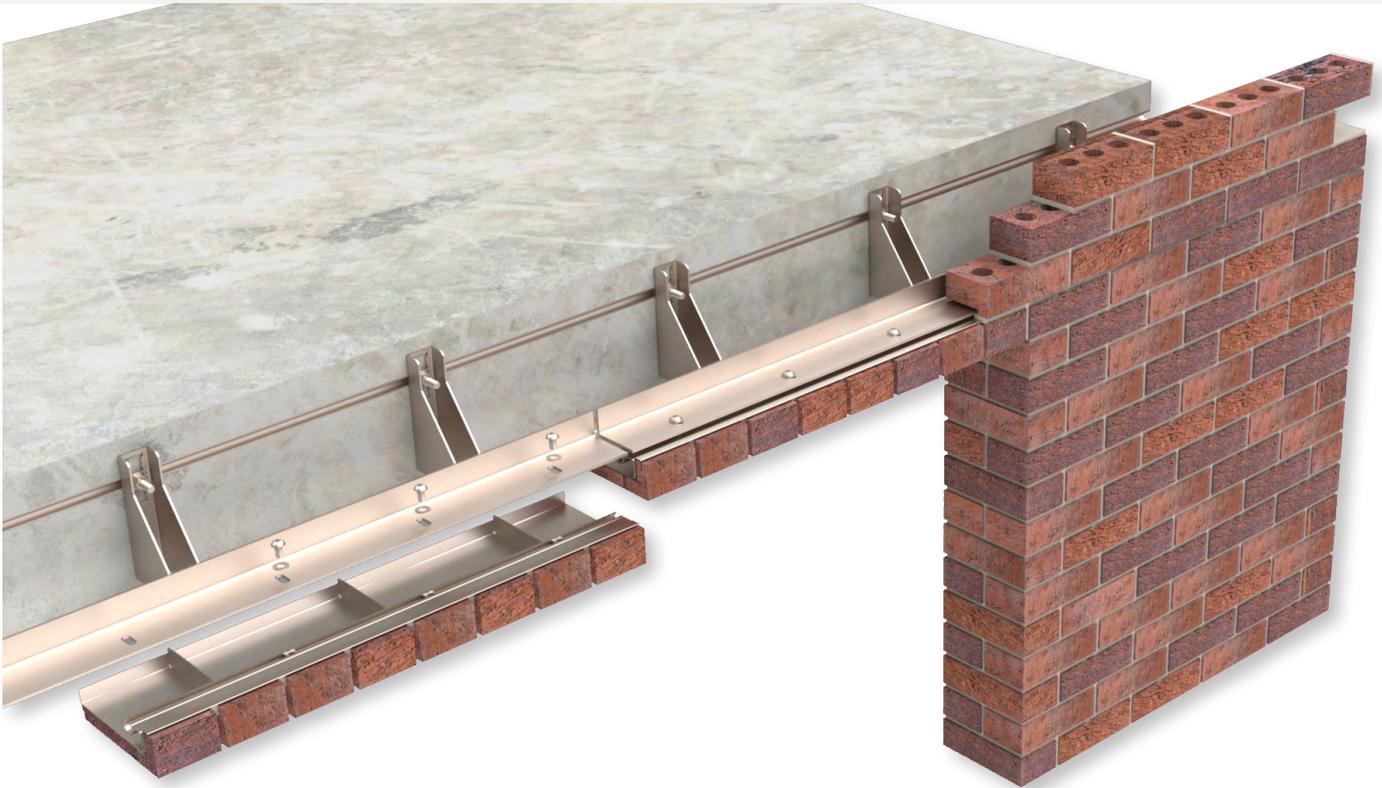
Time taken to set out the units appropriately at this stage will help to avoid setting out errors as work proceeds.

The setting out of the Azure II™ bolt ups should be done in much the same way as the hand laid facing brickwork, in which the co-ordinating sizes should normally be 225mm for width, 75mm for height and 112.5mm for thickness. Tolerance in the bricks is accommodated within the mortar joints in bonded slips as it is in the hand laid bricks. Generally bricks should be centred on one another as per the brickwork setting out diagram below. Bricks are manufactured to declared dimensional tolerances which acknowledge and take into account the characteristics of both the raw material and the manufacturing process.

Brick edges should be aligned at the end of a stretch of brick work,

i.e. Face/soffit edge, column corners, junctions with glazing, balcony corners and expansion joints





### Installation

ACS Azure II™ Bolt Up Units are designed to be used in conjunction with ACS Masonry Support Systems. Slots are provided in the masonry support horizontal shelf angle to allow the fixings to be installed through the angle and into the Azure Square Nuts located within the integrated ACS Curve Channel in the Azure II™ System.



3mm GRP Horseshoe Shim



ACS 31/21 Curve Channel



Azure Button Head & Square Nut

The Azure II™ units can therefore be adjusted in three directions to accommodate site tolerances, allowing the brick line and level to be set and course in seamlessly with the facing brickwork.

It is recommended that a string line is used to ensure that the line and level of the soffit system is achieved and maintained. Vertical adjustment and the minor adjustments in discrepancies in the level between units is achieved by adding or removing up to 10mm of shims between the top of the soffit unit and underside of the slotted support



Lateral adjustments and gauging between coursing is achieved by sliding the unit left and right. The square nut allows the unlimited finite adjustments.

Adjustments in the face line of the soffit units are accommodated by the slots in the support angle which provides up to +/- 14mm of adjustment.

### Installation Procedure

1. Using the ACS soffit layout drawings provided, carefully dry lay the soffit units to check the setting out. Avoid laying the soffit units directly onto the scaffold boards or ground. Where possible use the foam or styrene board packaging supplied on the the pallet when delivered or similar. Check the units are free from any significant damage which should be rectified before fixing the units wherever possible.
2. Set a string line that corresponds to the transition edge between the face and soffit checking the line and level against a known datum or to the facing brickwork adjacent to the soffit opening.
3. Install the square nuts into the ends of the channel and position them generally corresponding to the slots in the masonry support angle. Always ensure at least two fixings are installed in each length of channel.
4. Lift the soffit unit into position to the underside of the masonry support angle. It is often helpful to use hand clamps to locate and hold the soffit unit whilst installing the screws. Care should be taken not to damage the brick slips whilst handling and clamping the units into place.
5. Once positioned use the M12 x 20mm Button Head Screws with a Form B Washer to fix down through the slots in the angle into the square nuts that are located in the channel. At this stage only hand-tighten the screws.
6. Release the hand clamps and then adjust the line level and gauging of the soffit unit to the string line and required coursing. Use a spirit level to continually check the level. Shims should be used to ensure that any gaps between the underside of the shelf angle and top of the soffit system are sufficiently packed before tightening.
7. Finally check the soffit front to back using the spirit level. Use packing shims where necessary to level the soffit front to back.
8. Once the units are set and shimmed as appropriate, a calibrated torque wrench with an 8.00mm hexagon socket should be used to torque the screw up to a minimum of 15 and a maximum of 25Nm. Once the brickwork is installed above the screw cannot rotate or lift and the square nut cannot turn in the channel so the torque setting is mainly just to ensure that the soffit unit is firmly clamped to the underside of the shelf angle.
9. Continue to install the subsequent units following steps 1 to 7, always referring to the layout drawings provided and checking the line, level, gauge and coursing.
10. Any issues identified with the soffit units should be rectified at this stage prior to building the masonry support off the shelf angle above.

### Required Tools



Hand Clamp



Spirit Level



Calibrated  
Torque Wrench



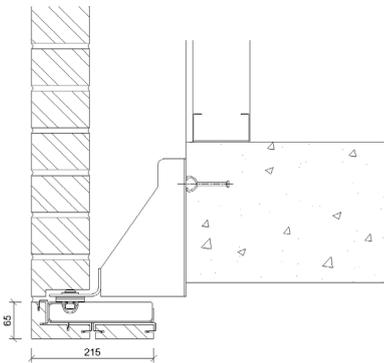
String Line



800mm Hex Bit

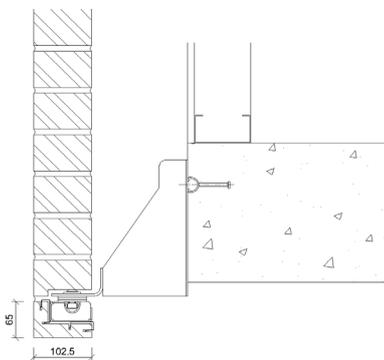
### 215 x 65mm Stretcher Bond Soffit Bolt Up Unit

Courses in with facing brickwork and provides continuity with the stretcher/running bond pattern as it returns to the soffit on the underside of the reveal or return. Adjacent soffit units are designed to interlock together, providing seamless continuity of the brick bond once pointed.



### 102.5 x 65mm Stretcher Bond Soffit Bolt Up Unit

Courses in with facing brickwork and providing continuity with the stretcher/running bond pattern as it returns to the soffit on the underside of the reveal or return. Adjacent soffit units are designed to abut with a nominal 10mm joint providing seamless continuity between the face/soffit once pointed.



### 215 x 65mm Header Bond Soffit Bolt Up Unit

Provides a header detail at openings, returns and reveals to create a feature or detail to differentiate between the facing brickwork, normally a stretcher/running bond pattern. Adjacent soffit units are designed to abut with a nominal 10mm joint providing a seamless face/soffit effect once pointed.



### 102.5 x 215mm Soldier Bond Soffit Bolt Up Unit

Provides a soldier course detail at openings, returns and reveals to create a feature or detail to differentiate between the facing brickwork, normally a stretcher/running bond pattern. Adjacent soffit units are designed to abut with a nominal 10mm joint providing a seamless face/soffit effect once pointed.



### 215 x 102.5mm Rowlock Soffit Bolt Up Unit

Provides a header/rowlock course detail at openings, returns and reveals to create a feature or detail to differentiate between the facing brickwork, commonly a stretcher/running bond pattern. Adjacent soffit units are designed to abut with a nominal 10mm joint providing a seamless face/soffit effect once pointed.



### 665 x 65mm Stretcher Bond Special Soffit Bolt Up Unit

Courses in with facing brickwork and provides continuity with the stretcher/running bond pattern as it returns into the soffit on the underside of a masonry down-stand or beam. Adjacent soffit units are designed to interlock together, providing seamless continuity between the face/soffit once pointed. Special soffit units can be designed and fabricated to achieve almost any brick bond pattern to create soffits features and details of any size and layout.

