

**Ibstock Brick Ltd**  
Leicester Road  
Ibstock  
Leicestershire LE67 6HS

Tel: 01530 261999 Fax: 01530 257457  
e-mail: [enquiries@ibstockbrick.co.uk](mailto:enquiries@ibstockbrick.co.uk)  
website: [www.ibstockbrick.co.uk](http://www.ibstockbrick.co.uk)



**Agrément Certificate**

**17/5474**

Product Sheet 1

## IBSTOCK KEVINGTON NEXUS BRICK FACED MASONRY SUPPORT SYSTEMS

### IBSTOCK KEVINGTON NEXUS BRICK FACED LINTELS

This Agrément Certificate Product Sheet<sup>(1)</sup> relates to Ibstock Kevington Nexus Brick Faced Lintels, comprising a stainless steel profile with a factory-bonded brick slip façade using a specific adhesive, for use in the external leaf of cavity walls of brickwork and/or blockwork masonry construction to provide support to walls above window or door openings.

(1) Hereinafter referred to as 'Certificate'.

#### CERTIFICATION INCLUDES:

- factors relating to compliance with Building Regulations where applicable
- factors relating to additional non-regulatory information where applicable
- independently verified technical specification
- assessment criteria and technical investigations
- design considerations
- installation guidance
- regular surveillance of production
- formal three-yearly review.



#### KEY FACTORS ASSESSED

**Structural performance** — the systems are suitable for use in masonry walls with clear openings of up to 4500 mm (see Tables 1 to 4 and section 6).

**Behaviour in relation to fire** — stainless steel profiles and brick slips are 'non-combustible' in accordance with the national Building Regulations; the adhesive is not classified as 'non-combustible', and the systems' use is restricted in some cases (see section 7).

**Condensation risk** — when the systems are used around opening heads, the risk of local surface condensation will be minimal (see section 9).

**Durability** — provided the systems are designed, installed and used in accordance with this Certificate, they will have a service life of at least 50 years (see section 11).



The BBA has awarded this Certificate to the company named above for the systems described herein. These systems have been assessed by the BBA as being fit for their intended use provided they are installed, used and maintained as set out in this Certificate.

On behalf of the British Board of Agrément

Paul Valentine  
Technical Excellence Director

Claire Curtis-Thomas  
Chief Executive

Date of Second issue: 4 June 2019

Originally certificated on 2 January 2018

*The BBA is a UKAS accredited certification body – Number 113.*

*The schedule of the current scope of accreditation for product certification is available in pdf format via the UKAS link on the BBA website at [www.bbacerts.co.uk](http://www.bbacerts.co.uk)*

*Readers are advised to check the validity and latest issue number of this Agrément Certificate by either referring to the BBA website or contacting the BBA direct.*

*Any photographs are for illustrative purposes only, do not constitute advice and should not be relied upon.*

#### British Board of Agrément

Bucknalls Lane  
Watford  
Herts WD25 9BA

©2019

tel: 01923 665300  
[clientservices@bbacerts.co.uk](mailto:clientservices@bbacerts.co.uk)  
[www.bbacerts.co.uk](http://www.bbacerts.co.uk)

## Regulations

In the opinion of the BBA, Ibstock Kevington Nexus Brick Faced Lintels, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements of the following Building Regulations (the presence of a UK map indicates that the subject is related to the Building Regulations in the region or regions of the UK depicted):



### The Building Regulations 2010 (England and Wales) (as amended)

<b>Requirement:</b>	<b>A1</b>	<b>Loading</b>
Comment:		The systems are acceptable for use as set out in sections 6.2 to 6.6 of this Certificate.
<b>Requirement:</b>	<b>B3(1)</b>	<b>Internal fire spread (structure)</b>
Comment:		In England, the systems can be incorporated in a construction satisfying this Requirement. See sections 7.1 to 7.4 of this Certificate.
<b>Requirement</b>	<b>B4(1)</b>	<b>External fire spread</b>
		The systems can be incorporated in a construction satisfying this Requirement. See sections 7.1 to 7.4 of this Certificate.
<b>Regulation:</b>	<b>7</b>	<b>Materials and workmanship (applicable to Wales only)</b>
<b>Regulation:</b>	<b>7(1)</b>	<b>Materials and workmanship (applicable to England only)</b>
Comment:		The systems are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>7(2)</b>	<b>Materials and workmanship (applicable to England only)</b>
Comment:		The systems are restricted by this Regulation. See sections 7.1, 7.2 and 7.5 of this Certificate.



### The Building (Scotland) Regulations 2004 (as amended)

<b>Regulation:</b>	<b>8(1)</b>	<b>Durability, workmanship and fitness of materials</b>
Comment:		The systems are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>9</b>	<b>Building standards applicable to construction</b>
Standard:	1.1(a)(b)	Structure
Comment:		The systems are acceptable, with reference to clauses 1.1.1 <sup>(1)(2)</sup> and 1.1.2 <sup>(1)(2)</sup> of this Standard. See sections 6.2 to 6.6 of this Certificate.
Standard:	2.7	Spread on external walls
Comment:		The systems can satisfy the requirements of this Standard, with reference to clauses 2.7.1 <sup>(1)(2)</sup> and 2.7.2 <sup>(2)</sup> . See sections 7.1 to 7.4 of this Certificate.
Standard:	7.1(a)	Statement of sustainability
Comment:		The systems can contribute to satisfying the relevant Requirements of Regulation 9, Standards 1 to 6, and therefore will contribute to a construction meeting a bronze level of sustainability as defined in this Standard.
<b>Regulation:</b>	<b>12</b>	<b>Building standards applicable to conversions</b>
Comment:		All comments given for the systems under Regulation 9, Standards 1 to 6, also apply to this Regulation, with reference to clause 0.12.1 <sup>(1)(2)</sup> and Schedule 6 <sup>(1)(2)</sup> .

(1) Technical Handbook (Domestic).

(2) Technical Handbook (Non-Domestic).



## The Building Regulations (Northern Ireland) 2012 (as amended)

<b>Regulation:</b>	<b>23(a)(i)</b>	<b>Fitness of materials and workmanship</b>
Comment:	<b>(iii)(b)(i)</b>	The systems are acceptable. See section 11 and the <i>Installation</i> part of this Certificate.
<b>Regulation:</b>	<b>30</b>	<b>Stability</b>
Comment:		The systems are acceptable as set out in sections 6.2 to 6.6 of this Certificate.
<b>Regulation:</b>	<b>35(1)</b>	<b>Internal fire spread - structure</b>
Comment:		The systems can be incorporated in a construction satisfying this Regulation. See sections 7.1 to 7.4 of this Certificate.
<b>Regulation:</b>	<b>36(a)</b>	<b>External fire spread</b>
Comment:		The systems can be incorporated in a construction satisfying this Regulation. See sections 7.1 to 7.4 of this Certificate.

## Construction (Design and Management) Regulations 2015

## Construction (Design and Management) Regulations (Northern Ireland) 2016

Information in this Certificate may assist the client, designer (including Principal Designer) and contractor (including Principal Contractor) to address their obligations under these Regulations.

See section: 3 *Delivery and site handling* (3.3) of this Certificate.

## Additional Information

### NHBC Standards 2019

In the opinion of the BBA, Ibstock Kevington Nexus Brick Faced Lintels, if installed, used and maintained in accordance with this Certificate, can satisfy or contribute to satisfying the relevant requirements in relation to *NHBC Standards*, Chapter 6.1 *External masonry walls*.

## Technical Specification

### 1 Description

1.1 Ibstock Kevington Nexus Brick Faced Lintels are one-piece external wall lintels prefabricated from a stainless steel profile, with a factory-bonded brick slip façade (using a specific adhesive) to suit project requirements (see Figures 1 to 4). They are for use in the external leaf of cavity walls of brickwork and/or blockwork masonry construction to provide support to walls above window or door openings. The internal leaf of the cavity wall will be supported by a separate lintel, which is outside the scope of this Certificate.

1.2 The systems comprise:

#### Steel profiles

- the steel profiles are manufactured from high grade 1.4301 or 1.4401 austenitic stainless steel to BS EN 10088-2 : 2014 based on the design specifications for non-aggressive or aggressive environments respectively, and are produced in four standard profiles as detailed in section 1.2 of this Certificate. Grades 1.4301 and 1.4401 are equivalent to R3 and R1 classifications respectively to PD 6697 : 2010. The steel sections of the lintels are CE marked and manufactured in accordance with BS EN 1090-1 : 2009

#### Adhesive

- Metofix 3-1 is a solvent-free, two-component epoxy adhesive (covered by BBA Certificate 12/4893). A 3 mm thickness is used to bond the stainless steel profiles and brick slips at the factory

**Brick slips**

- Brick slips are 25 mm thick, cut from bricks manufactured in accordance with BS EN 771-1 : 2011 and BS 4729 : 2005.

1.3 The systems are available in four standard profiles: Lintel 65 x 215 mm with Stretcher Bond (see Figure 1), Lintel 140 x 215 mm with Stretcher Bond (see Figure 2), Lintel 215 x 215 mm with Stretcher Bond (see Figure 3), and Lintel 215 x 215 mm with Soldier Bond (see Figure 4). Further details are shown in Tables 1 to 4.

*Figure 1 Lintel 65 x 215 mm with Stretcher Bond*

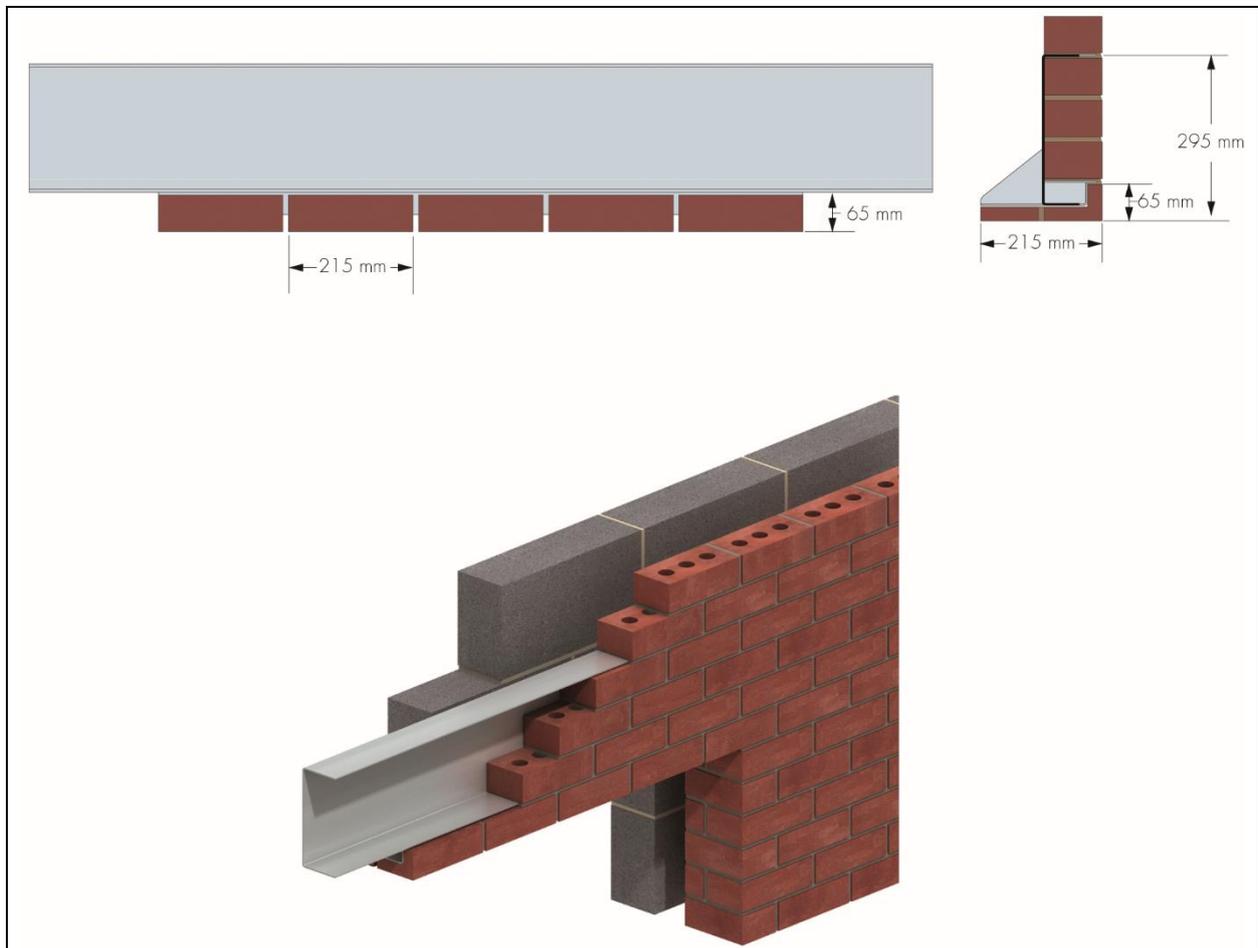


Figure 2 Lintel 140 x 215 mm with Stretcher Bond

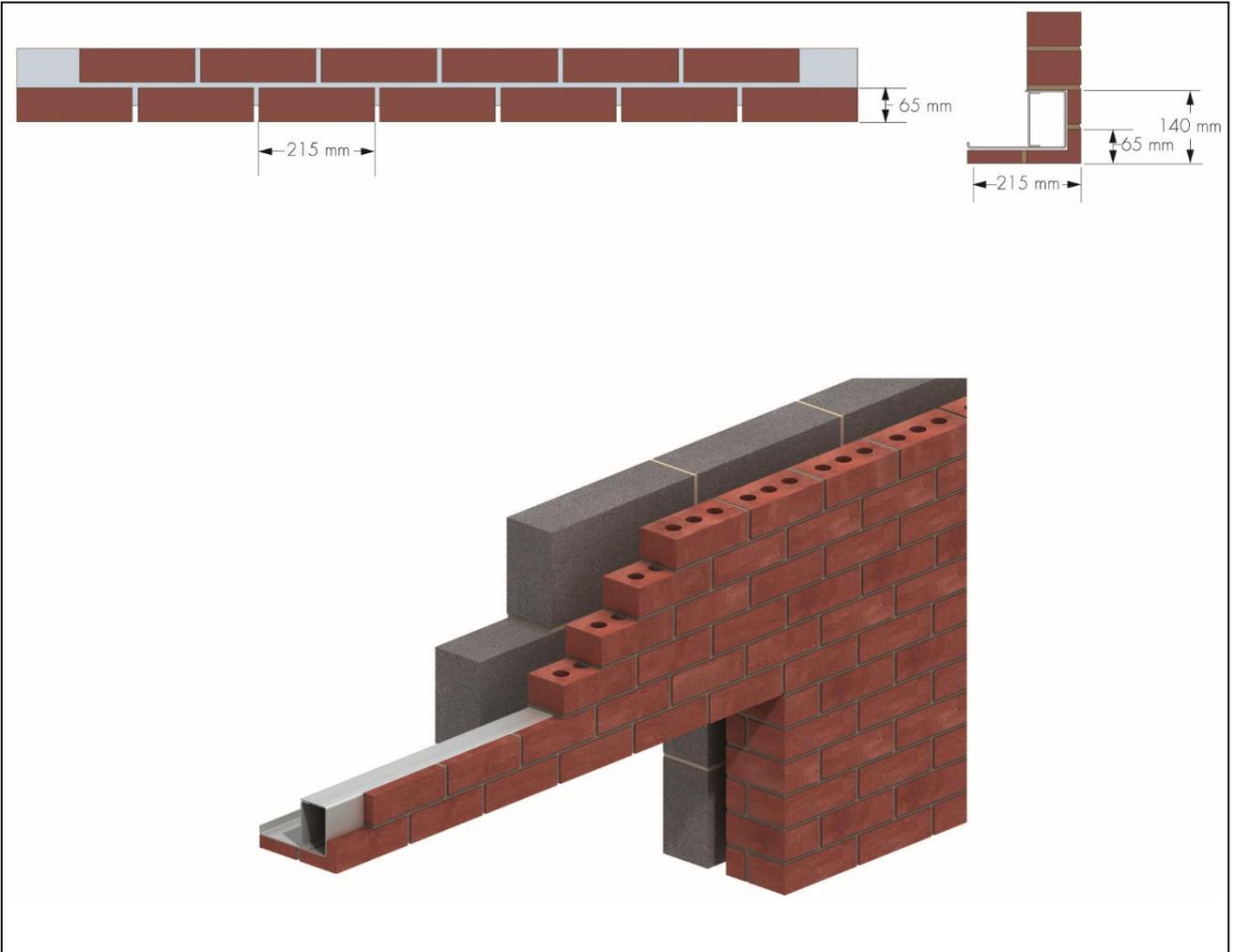


Figure 3 Lintel 215 x 215 mm with Stretcher Bond

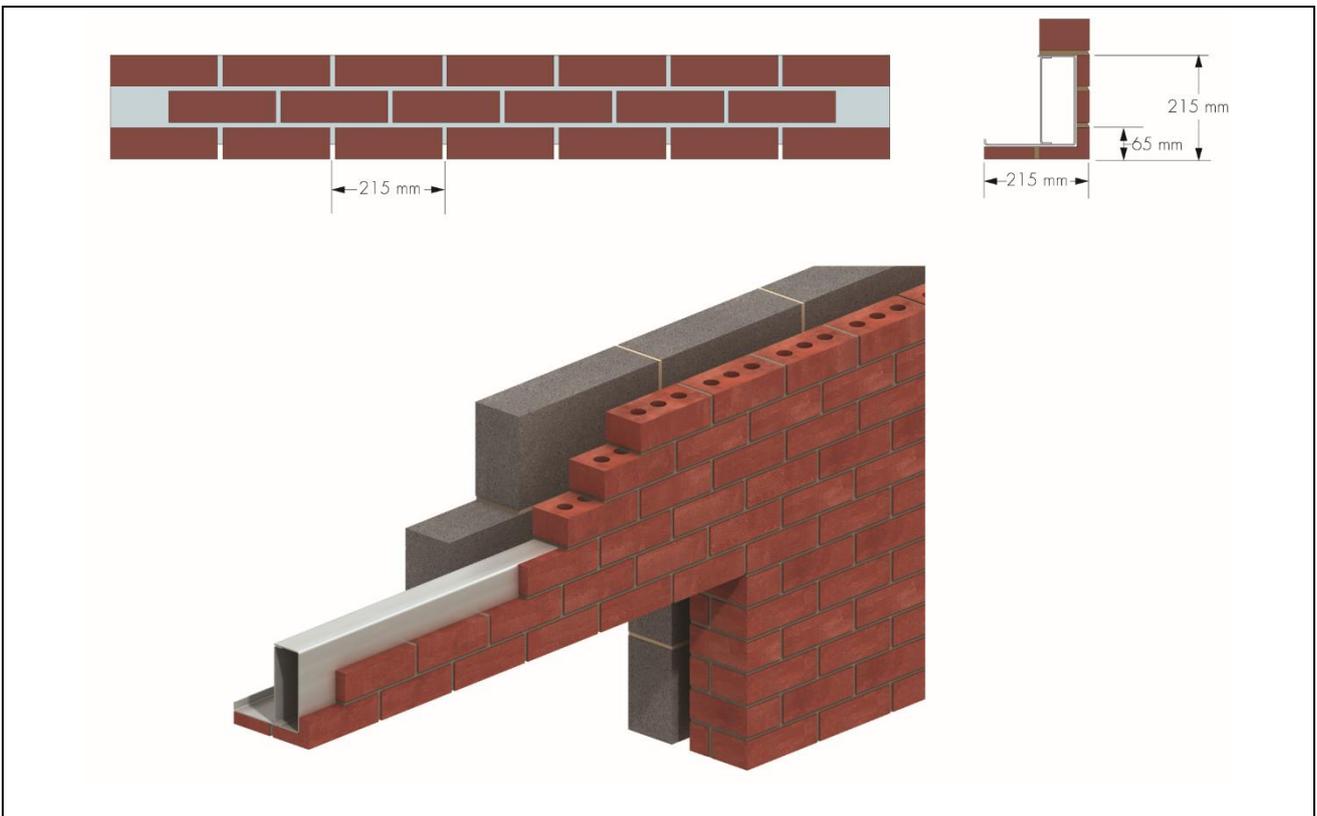


Figure 4 Lintel 215 x 215 mm with Soldier Bond

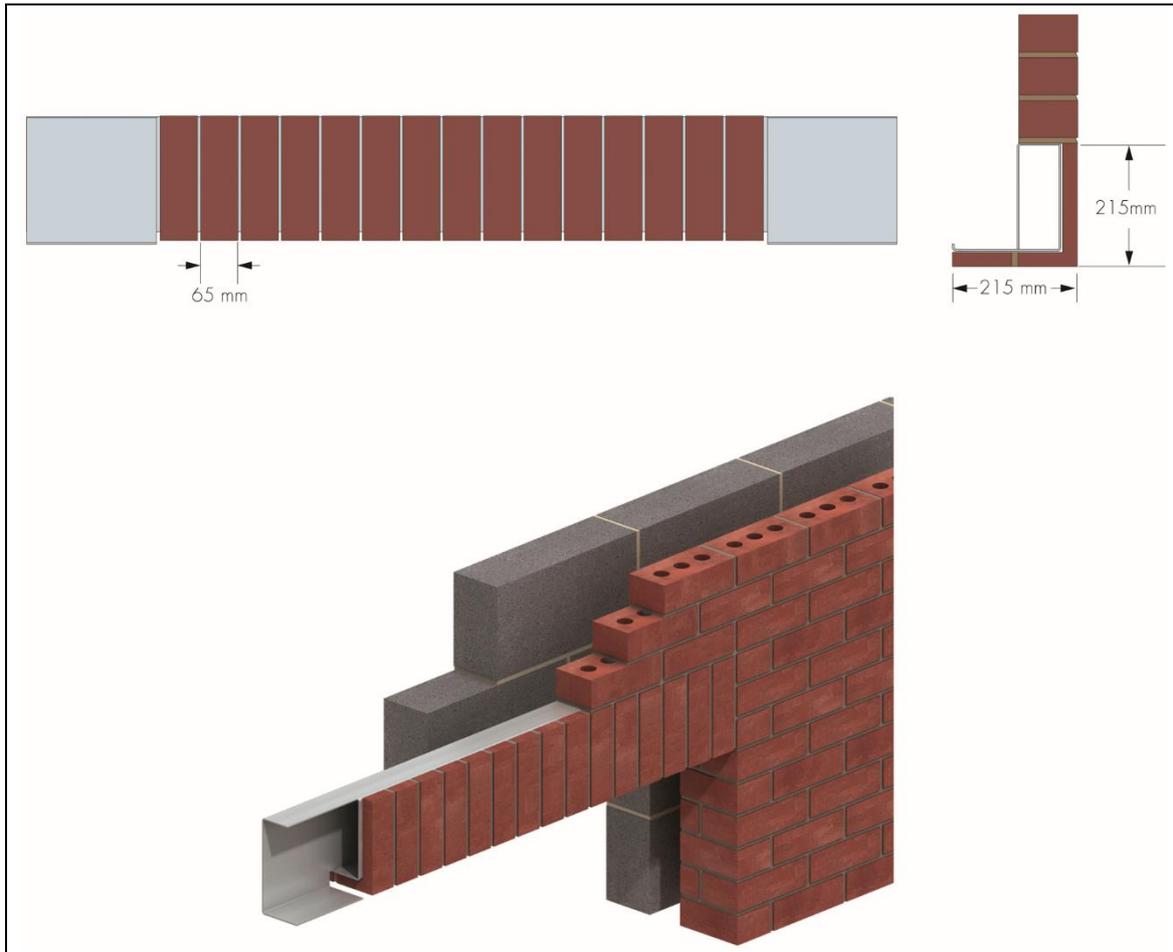


Table 1 Lintel 65 x 215 mm with Stretcher Bond — characteristics and design resistances

Overall length of lintel (mm)	Clear opening (mm)	Height of lintel (mm)	Width of lintel (mm)	Thickness of steel profile (mm)	Mass with brick slip ( $\text{kg}\cdot\text{m}^{-1}$ )	Total uniformly distributed Safe Working Load (kN)
up to 2430	up to 2000	295	215	3	26.78	84.4
2430 to 2930	2000 to 2500	295	215	3	26.78	64.2
2930 to 3430	2500 to 3000	295	215	3	26.78	49.0
3430 to 4430	3000 to 4000	295	215	3	26.78	28.8
4430 to 4930	4000 to 5000	295	215	3	26.78	18.50

Table 2 Lintel 140 x 215 mm with Stretcher Bond — characteristics and design resistances

Overall length of lintel (mm)	Clear opening (mm)	Height of lintel (mm)	Width of lintel (mm)	Thickness of steel profile (mm)	Mass with brick slip ( $\text{kg}\cdot\text{m}^{-1}$ )	Total uniformly distributed Safe Working Load (kN)
up to 1430	up to 1000	140	215	3	13.53	15.0
1430 to 1930	1000 to 1500	140	215	4	17.24	22.5
1930 to 2430	1500 to 2000	140	215	4	17.24	12.0
2430 to 2930	2000 to 2500	140	215	4	17.24	7.5

**Table 3 Lintel 215 x 215 mm with Stretcher Bond — characteristics and design resistances**

Overall length of lintel (mm)	Clear opening (mm)	Height of lintel (mm)	Width of lintel (mm)	Thickness of steel profile (mm)	Mass with brick slip ( $\text{kg}\cdot\text{m}^{-1}$ )	Total uniformly distributed Safe Working Load (kN)
up to 3430	up to 3000	215	215	8	43.97	39.0
3430 to 3930	3000 to 3500	215	215	8	43.97	28.0
3930 to 4430	3500 to 4000	215	215	8	43.97	20.0
4430 to 4930	4000 to 4500	215	215	8	43.97	13.5

**Table 4 Lintel 215 x 215 mm with Soldier Bond — characteristics and design resistances**

Overall length of lintel (mm)	Clear opening (mm)	Height of lintel (mm)	Width of lintel (mm)	Thickness of steel profile (mm)	Mass with brick slip ( $\text{kg}\cdot\text{m}^{-1}$ )	Total uniformly distributed Safe Working Load (kN)
up to 1430	up to 1000	215	215	3	16.47	15.0
1430 to 1930	1000 to 1500	215	215	4	21.69	22.5
1930 to 2430	1500 to 2000	215	215	6	32.29	30.0
2430 to 2930	2000 to 2500	215	215	8	43.06	37.5
2930 to 3430	2500 to 3000	215	215	8	43.06	39.0
3430 to 3930	3000 to 3500	215	215	8	43.06	28.0
3930 to 4430	3500 to 4000	215	215	8	43.06	20.0
4430 to 4930	4000 to 4500	215	215	8	43.06	13.5

## 2 Manufacture

2.1 The stainless steel elements of the lintel range are manufactured sheet material which is folded and formed in the factory. The profiles are fabricated by welding.

2.2 The brick slips are cut from bricks and fixed to the lintel profile (with the specified adhesive – see section 1.1) at the manufacturing site.

2.3 As part of the assessment and ongoing surveillance of product quality, the BBA has:

- agreed with the manufacturer the quality control procedures and product testing to be undertaken
- assessed and agreed the quality control operated over batches of incoming materials
- monitored the production process and verified that it is in accordance with the documented process
- evaluated the process for management of nonconformities
- checked that equipment has been properly tested and calibrated
- undertaken to carry out the above measures on a regular basis through a surveillance process, to verify that the specifications and quality control operated by the manufacturer are being maintained.

2.4 The management system of Ibstock Brick Ltd has been assessed and registered as meeting the requirements of BS EN ISO 14001 : 2004 by Lucideon (Certificate 24494).

## 3 Delivery and site handling

3.1 The lintels are delivered to site or to builders' merchants in specified lengths, each carrying a label bearing the Certificate holder's name. The BBA logo incorporating the number of this Certificate is marked on each lintel.

3.2 Reasonable care must be taken during unloading and storage of lintels, to avoid impact and abrasion, or damage in any way, to their surface or integrity.

3.3 The lintels can generally be handled manually, except for the longer span lintels which incorporate lifting lugs for mechanical handling equipment. Protective gloves should be worn when handling the products.

3.4 The lintels must be stored off the ground on well-drained, puddle-free hardstanding. The lintels are delivered on pallets and must not be stacked.

## Assessment and Technical Investigations

The following is a summary of the assessment and technical investigations carried out on Ibstock Kevington Nexus Brick Faced Lintels.

### Design Considerations

#### 4 Use

4.1 Ibstock Kevington Nexus Brick Faced Lintels are satisfactory for use in the external leaf of cavity walls of brickwork and/or blockwork masonry construction to provide support to walls above windows or door openings.

4.2 Designers, planners, contractors and/or installers must ensure that the installation of the lintels is in accordance with the Certificate holder's instructions and the information given in this Certificate.

4.3 As with any form of cavity wall construction where buildings need to comply with *NHBC Standards 2019*, specifiers should observe the requirements of these Standards and include cavity trays with stop ends.

4.4 In Scotland and Northern Ireland, a separate cavity tray must be used. In Exposure Category 'very severe' the following applies:

- in Scotland, all lintels should have a damp-proof course (dpc) built into the inner leaf
- in Scotland, Northern Ireland and areas of 'very severe' exposure to driving-rain, the upstand part of the dpc should be returned into the inner leaf of masonry.

#### 5 Practicability of installation

The systems are designed to be installed by a competent general builder, or a contractor, experienced with these types of systems.

#### 6 Structural performance

6.1 Ibstock Kevington Nexus Brick Faced Lintels have adequate strength and stiffness to sustain the maximum Safe Working Load (SWL)<sup>(1)</sup> given in Tables 1 to 4, subject to the following conditions:

- size of standard masonry units and clear span must not be exceeded
- no requirements for composite action with, or restraint by, adjacent elements of construction including the supported masonry should be considered. The specified loads<sup>(1)</sup> given are related to simply supported lintels laterally and torsionally unrestrained
- where part of the loading is applied as concentrated loads, each concentrated load must be spread over a length of lintel of not less than 200 mm. In such cases, a case-specific design by an appropriately qualified individual must be done.

(1) For definition of SWL refer to BS EN 845-2 : 2013.



6.2 Total uniformly distributed SWL for different spans (clear opening) are shown in Tables 1 to 4. The loads have been derived from tests supported by guidance in accordance with BS EN 845-2 : 2013 and with calculations in accordance with BS EN 1993-1-1 : 2005, BS EN 1993-1-3 : 2006, BS EN 1993-1-4 : 2006 and BS EN 1993-1-5 : 2006, and their UK National Annexes, and PD 6697 : 2010. In order to obtain the SWL values given in Table 1 to 4, the following modes of failure have been considered:

- flexural resistance
- shear resistance
- maximum deflection limited to span/500
- lateral-torsional buckling resistance
- local buckling resistance
- shear buckling resistance
- bearing resistance.

6.3 The following limitations apply:

- the load is from the external leaf only; a separate lintel is used to support inner leaf loads
- the end support bearing length should be a minimum of 215 mm.

6.4 The supporting masonry must be checked for bearing stresses. In addition to the requirements specifically referred to in this Certificate, brickwork or blockwork structures in which the lintels are incorporated must be designed and constructed in accordance with BS EN 1996-1-1 : 2005 and BS EN 1996-1-2 : 2005, and their UK National Annexes, PD 6697 : 2010 and the following technical specifications of the national Building Regulations, as appropriate:

**England and Wales** — Approved Document A1/2, Part C, Section 1

**Scotland** — Section 1, Small Building Guide

**Northern Ireland** — Technical Booklet D *Structure*, Section 3.

6.5 The load-span data shown in Tables 1 to 4 are valid up to the maximum SWLs and corresponding clear spans given. For other loading conditions, or spans outside this range, the Certificate holder should be consulted for further advice.

6.6 To avoid excessive eccentricities of loading, the lintels must only be used with standard masonry units, that is bricks or blocks with 100 to 102.5 mm widths.

6.7 Guidance on the assessment of loads on lintels in masonry is given in BS EN 845-2 : 2013 and PD 6697 : 2010. If arch action introduced in these Standards is considered, the lintels must be designed by an appropriately qualified design engineer, and the design resistances in Tables 1 to 4 will not be applicable.

## 7 Behaviour in relation to fire



7.1 Stainless steel profiles and brick slips are non-combustible and classified as Class A1 in accordance with the national Building Regulations.

7.2 Metolux Metofix 3-1 adhesive is not classified as non-combustible or of limited combustibility.

7.3 Lintels were tested utilising heating conditions in accordance with BS EN 1363-1 : 2012 and no debonding was recorded for 120 minutes. Designers should refer to the EXOVA Warrington fire Test Report 399669, available from the Certificate holder.

7.4 The construction described in section 7.3 is not subject to any restriction on proximity to boundaries and height, when incorporated in a construction that satisfies the requirements of BS EN 1996-1-2 : 2002 and the national Building Regulations, except those described in section 7.5 of this Certificate.



7.5 The systems should not be used on buildings in England that have a storey at least 18 m above ground level and contain: one or more dwellings, an institution, a room for residential purposes (excluding any room in a hostel, hotel or boarding house), student accommodation, care homes, sheltered housing, hospitals or dormitories in boarding schools.

## 8 Thermal performance

8.1 Typical example details containing the systems, based on the construction details shown in Figures 1 to 4, were analysed numerically to determine their likely hygrothermal performance.

8.2 If designed appropriately, exposed floor junctions with insulated lintels will adequately limit excessive heat loss and allow use of the following psi values in carbon emission rate calculations (see Table 5). Detailed guidance in this respect and on limiting heat loss by air infiltration can be found in the documents referred to in section 9.2.

**Table 5 Typical  $\psi$  value for Ibstock Kevington Nexus Brick Faced Lintels**

Lintel product	Example $\Psi$ value <sup>(1)(2)(3)</sup> ( $W \cdot m^{-1} \cdot K^{-1}$ )	Approved $\Psi$ value <sup>(4)</sup> ( $W \cdot m^{-1} \cdot K^{-1}$ )	Default $\Psi$ value <sup>(5)</sup> ( $W \cdot m^{-1} \cdot K^{-1}$ )
65 x 215 mm with stretcher bond	0.047		
140 x 215 mm with stretcher bond	0.041	0.3	1.0
215 x 215 mm with soldier/stretcher bond	0.046		

(1) Assumes 50 mm window frame which overlaps the cavity by 37.5 mm. Wall construction: 102.5 mm brickwork ( $\lambda = 0.77 W \cdot m^{-1} \cdot K^{-1}$ ), 50 mm vented cavity [see footnote (2)] PIR [see footnotes (2) and (3)] insulation ( $\lambda = 0.023 W \cdot m^{-1} \cdot K^{-1}$ ), 100 mm blockwork ( $\lambda = 0.11 W \cdot m^{-1} \cdot K^{-1}$ ), 15 mm plaster ( $\lambda = 0.57 W \cdot m^{-1} \cdot K^{-1}$ ).

(2) 150 mm cavity width, comprising 50 mm vented cavity adjacent ( $R = 0.183 m^2 \cdot K \cdot W^{-1}$ ), 100 mm PIR insulation.

(3) Internal lintel assumed to be 100 x 220 mm dense concrete with 2% reinforcement,  $\lambda = 2.5 W \cdot m^{-1} \cdot K^{-1}$ .

(4) Approved value may be claimed when the gauge of the steel lintel is less than or equal to 3 mm and there is a 30 mm overlap of the window frame over the cavity.

(5) Where a junction detail has not been calculated in accordance with BS EN ISO 10211 : 2017 and BRE Report BR 497 : 2007, and the construction deviates from the case described in footnote (4), the default value from this Table must be used.

8.3 For other junction details, the linear thermal transmittance and temperature factor should be calculated in accordance with BS EN ISO 10211 : 2017, following the guidance in BRE Report BR 497 : 2007.

## 9 Condensation risk

9.1 The construction described in section 8.1 will achieve a surface temperature factor,  $f_{Rsi}$ , in excess of 0.90, which can be compared to the critical temperature factors,  $f_{CRsi}$ , in BRE Information Paper IP 1/06 for the relevant building type. The risk of surface condensation is low when the  $f_{Rsi}$  is equal to, or greater than, the  $f_{CRsi}$ . For other constructions, the  $f_{Rsi}$  must be established by numerical modelling (see section 8.3).

9.2 Further guidance on limiting the risk of surface condensation can be found in:

**England and Wales** — *Limiting thermal bridging and air leakage: Robust construction details for dwellings and similar buildings* or Accredited Construction Details (version 1.0)

**Scotland** — Accredited Construction Details (Scotland)

**Northern Ireland** — Accredited Construction Details (version 1.0).

9.3 Under normal domestic conditions, the level of interstitial condensation associated with the systems will be low and the risk of any resultant damage minimal.

## 10 Maintenance

The lintels do not require maintenance. If the brick finish becomes damaged or stained, the advice of the Certificate holder should be sought.

## 11 Durability



11.1 Provided that Ibstock Kevington Nexus Brick Faced Lintels are designed, installed and used in accordance with this Certificate, they will have a service life of at least 50 years.

11.2 The brick slips will have an equivalent durability to the bricks from which they were cut (see section 1.2).

## 12 Reuse and recyclability

12.1 The stainless steel and steel components can be recycled.

12.2 The brick slips contain fired clay which can be recycled.

### 13 General

13.1 Masonry should be laid on a full mortar bed and all perpendicular joints fully filled. The mortar must be allowed to cure before applying floor or roof loads.

13.2 In accordance with the Certificate holder's recommendations, lintels must be suitably propped during construction using a central prop. A board should be used between lintel and prop to protect the finished surface and spread the load evenly.

13.3 Lintels must be installed with at least 215 mm end bearing, and be fully bedded on mortar. Lintels must be level along length and width.

13.4 A dpc or cavity tray must be installed above the lintel over all openings in external cavity walls.

13.5 Weep-holes should be provided in the outer leaf above the lintels to drain moisture from the cavity. A minimum of two weep-holes should be provided per lintel. For fair-faced masonry, weep-holes should be provided at centres not greater than 450 mm.

13.6 Precautions must be taken to prevent mortar dropping through the cavity onto the lintels and obstructing the weep-holes.

13.7 Brick slips should be pointed using the same mortar as the rest of the brickwork, but only after removal of the temporary propping and after the full load has been applied to the lintel. Pointing lintel soffits should be conducted using a pointing gun. Pointing should not take place in wet weather or in temperatures below 3°C.

## Technical Investigations

### 14 Tests

Tests were carried out on the products, and the results assessed to determine:

- load-deflection characteristic
- bond strength after accelerated ageing
- integrity of the bond at maximum design deflection
- Fire performance.

### 15 Investigations

15.1 An assessment was made of data relating to:

- calculations to establish load-span Table for lintels
- calculations to establish minimum temperature factors and the  $\Psi$  values of typical constructions incorporating the products, undertaken to BRE Information Paper IP 1/06
- durability
- practicability of installation.

15.2 The manufacturing process was evaluated, including the methods adopted for quality control, and details were obtained of the quality and composition of the materials used.

## Bibliography

- BRE Information Paper IP 1/06 *Assessing the effects of thermal bridging at junctions and around openings*
- BRE Report BR 497 : 2007 *Conventions for calculating linear thermal transmittance and temperature factors*
- BS 4729 : 2005 + A1 : 2016 *Clay bricks of special shapes and sizes — Recommendations*
- BS EN 771-1 : 2011 + A1 : 2015 *Specification for masonry units — Clay masonry units*
- BS EN 845-2 : 2013 + A1 : 2016 *Specification for ancillary components for masonry — Lintels*
- BS EN 1090-1 : 2009 + A1 : 2011 *Execution of steel structures and aluminium structures — Requirements for conformity assessment of structural components*
- BS EN 1363-1 : 2012 *Fire resistance tests — General requirements*
- BS EN 1993-1-1 : 2005 + A1 : 2014 *Eurocode 3. Design of steel structures — General rules and rules for buildings*  
NA + A1 : 2014 to BS EN 1993-1-1 : 2005 + A1 : 14 *UK National Annex to Eurocode 3 — Design of steel structures. General rules and rules for buildings*
- BS EN 1993-1-3 : 2006 *Eurocode 3. Design of steel structures — General rules — Supplementary rules for cold-formed members and sheeting*  
NA to BS EN 1993-1-3 : 2006 *UK National Annex to Eurocode 3 — Design of steel structures. General rules. Supplementary rules for cold-formed members and sheeting*
- BS EN 1993-1-4 : 2006+A1:2015 *Eurocode 3. Design of steel structures — General rules — Supplementary rules for stainless steels*  
NA + A1 : 15 to BS EN 1993-1-4 : 2006 + A1 : 2015 *UK National Annex to Eurocode 3: Design of steel structures — General rules — Supplementary rules for stainless steels*
- BS EN 1993-1-5 : 2006 + A1 : 2017 *Eurocode 3. Design of steel structures. Plated structural elements*  
NA + A1 : 2016 to BS EN 1993-1-5 : 2006 + A1 : 2017 *UK National Annex to Eurocode 3 — Design of steel structures — Plated structural elements*
- BS EN 1996-1-1 : 2005 + A1 : 2012 *Eurocode 6: Design of masonry structures — General rules for reinforced and unreinforced masonry structures*  
NA to BS EN 1996-1-1 : 2005 + A1 : 2012 *UK National Annex to Eurocode 6: Design of masonry structures — General rules for reinforced and unreinforced masonry structures*
- BS EN 1996-1-2 : 2005 *Eurocode 6: Design of masonry structures — General rules — Structural fire design*  
NA to BS EN 1996-1-2 : 2005 *UK National Annex to Eurocode 6: Design of masonry structures — General rules — Structural fire design*
- BS EN 10088-2 : 2014 *Stainless steels. Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*
- BS EN ISO 10211 : 2017 *Thermal bridges in building construction — Heat flows and surface temperatures — Detailed calculations*
- BS EN ISO 14001 : 2004 *Environmental management systems — Requirements with guidance for use*
- PD 6697 : 2010 *Recommendations for the design of masonry structures to BS EN 1996-1-1 and BS EN 1996-2*

### 16 Conditions

#### 16.1 This Certificate:

- relates only to the product/system that is named and described on the front page
- is issued only to the company, firm, organisation or person named on the front page – no other company, firm, organisation or person may hold or claim this Certificate has been issued to them
- is valid only within the UK
- has to be read, considered and used as a whole document – it may be misleading and will be incomplete to be selective
- is copyright of the BBA
- is subject to English Law.

16.2 Publications, documents, specifications, legislation, regulations, standards and the like referenced in this Certificate are those that were current and/or deemed relevant by the BBA at the date of issue or reissue of this Certificate.

16.3 This Certificate will remain valid for an unlimited period provided that the product/system and its manufacture and/or fabrication, including all related and relevant parts and processes thereof:

- are maintained at or above the levels which have been assessed and found to be satisfactory by the BBA
- continue to be checked as and when deemed appropriate by the BBA under arrangements that it will determine
- are reviewed by the BBA as and when it considers appropriate.

16.4 The BBA has used due skill, care and diligence in preparing this Certificate, but no warranty is provided.

16.5 In issuing this Certificate the BBA is not responsible and is excluded from any liability to any company, firm, organisation or person, for any matters arising directly or indirectly from:

- the presence or absence of any patent, intellectual property or similar rights subsisting in the product/system or any other product/system
- the right of the Certificate holder to manufacture, supply, install, maintain or market the product/system
- actual installations of the product/system, including their nature, design, methods, performance, workmanship and maintenance
- any works and constructions in which the product/system is installed, including their nature, design, methods, performance, workmanship and maintenance
- any loss or damage, including personal injury, howsoever caused by the product/system, including its manufacture, supply, installation, use, maintenance and removal
- any claims by the manufacturer relating to CE marking.

16.6 Any information relating to the manufacture, supply, installation, use, maintenance and removal of this product/system which is contained or referred to in this Certificate is the minimum required to be met when the product/system is manufactured, supplied, installed, used, maintained and removed. It does not purport in any way to restate the requirements of the Health and Safety at Work etc. Act 1974, or of any other statutory, common law or other duty which may exist at the date of issue or reissue of this Certificate; nor is conformity with such information to be taken as satisfying the requirements of the 1974 Act or of any statutory, common law or other duty of care.