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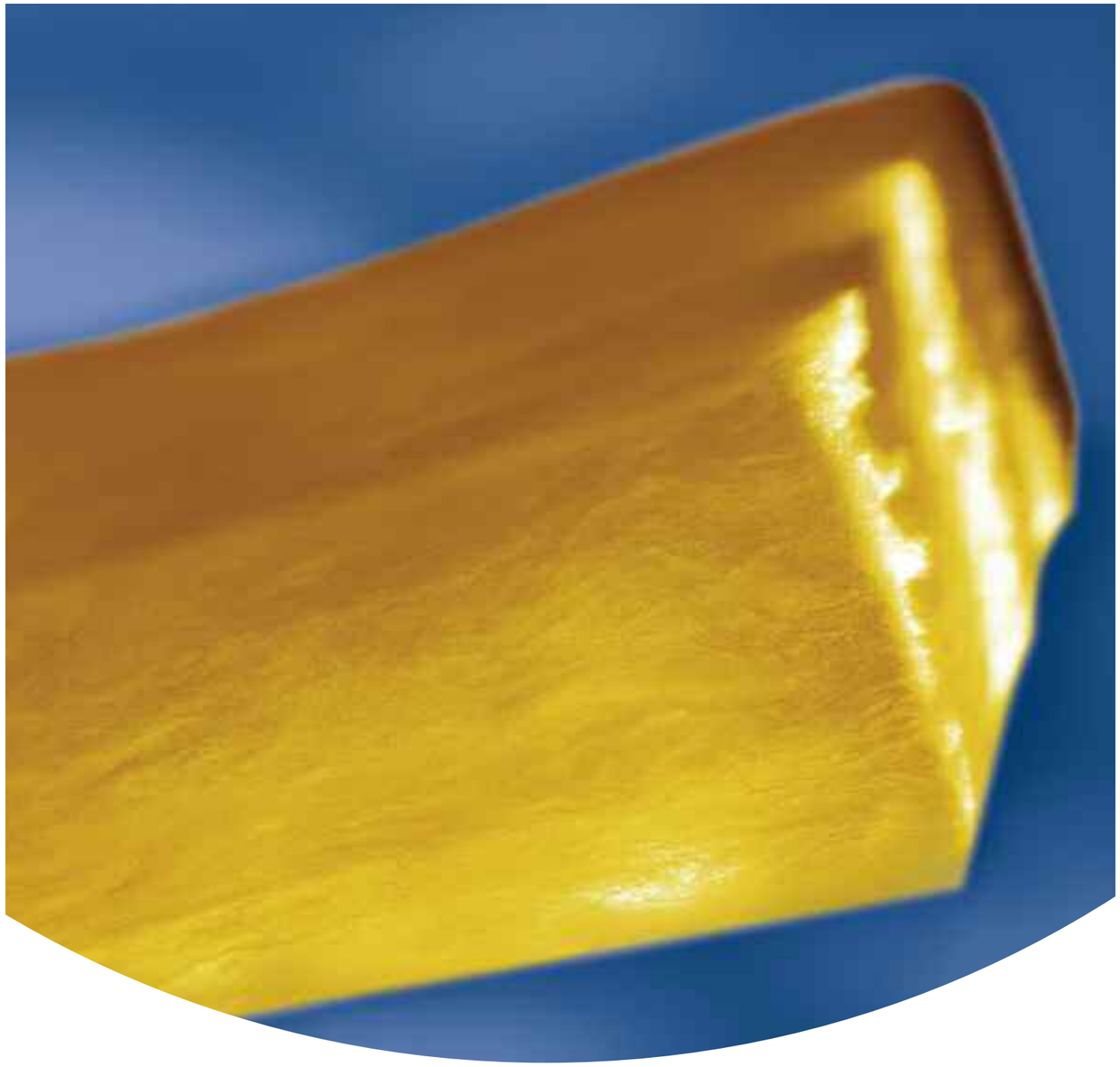


URSA GLASSWOOL
URSA Cavity Batts

Insulation for Masonry Cavity Walls

BROUK-0026-07/15

The Company

As a leading supplier of insulation and insulating systems, **URSA** has succeeded in fully addressing user requirements for thermal and acoustic insulation. Quality products for every application and excellent customer support are the cornerstones of the corporate culture.

URSA is the number two manufacturer of glass wool and extruded polystyrene products in Europe. At 14 production sites, **URSA** has 2,000 employees generating sales revenues of over €500 million.

URSA GLASSWOOL® is manufactured in Spain, France and Belgium, at two sites **URSA** has in Germany, in Slovenia, Hungary and Poland as well as in two Russian plants. Our closely-woven network of sales offices stretches across Europe and Russia. Almost everywhere **URSA** is amongst the market leaders.

In Russia and in a number of other Eastern European countries, we are number one in the glasswool segment. We have also enjoyed a strong position particularly on the growth markets of the new EU partner countries from the very beginning.

URSA Cavity Batts

URSA Cavity Batt is a lightweight, semi rigid glass mineral wool slab treated with silicon based water repellent. It is suitable for use in both fully and partially filled masonry cavity walls up to 25m high.

URSA Cavity Batt 32 has a thermal conductivity of 0.032 W/mK and **URSA Cavity Batt 35** has a thermal conductivity of 0.035 W/mK.

Benefits

Wider choice
URSA Cavity Batt, in a wide range of thicknesses, will assist in meeting the appropriate Building Regulation standard with any form of cavity wall construction.

Quality
Outstanding product quality manufactured to ISO 9001 Quality Systems.

User friendly
Our new generation URSA GEO GLASSWOOL has a 'soft touch' feel making it easier to handle and install whilst still maintaining its excellent mechanical properties.

Environment
Glass wool is manufactured from an abundant, sustainable resource and may utilise up to 80% glass waste.

Global warming potential
URSA Cavity Batts do not use chemical blowing agents and so the Global Warming Potential (GWP) arising from them is zero.

Insulation savings
If a lightweight block is used for the inner leaf construction it is possible to meet the Building Regulation requirement with only 100mm **URSA Cavity Batt**.

Adaptable
One product may be used for both full and partial fill systems.

Full fill systems
Minimal overall wall width and most cost effective for a given U-value. **URSA Cavity Batts** may be used in any exposure zone in buildings up to 25m high.

Partial fill systems
The risk of wind driven rain penetration increases on exposed or coastal locations. The use of a residual 50mm clear cavity means **URSA Cavity Batts** may be used in any exposure zone.

British Board of Agrément approval means that in many instances only a 25mm residual cavity need be maintained. The design data in BBA Certificate 09/4624 should be carefully followed.

Acoustic
URSA Cavity Batts have excellent sound insulation characteristics and enhance the acoustic comfort of the building.

Reduced risk of condensation
Walls fitted with **URSA Cavity Batts** create evenly warm conditions so reducing the risk of condensation.

Effective below DPC
URSA Cavity Batts may be used below the damp-proof course in order to offer a degree of edge insulation to the floor.

Handling
URSA Cavity Batts are lightweight yet tough, resilient and easy to install. They are easily cut using a sharp knife.

Durability
URSA Cavity Batts are rot-proof, durable and maintenance free. They are non-hygroscopic and will not slump in normal use.

All of our products carry the CE Mark to show compliance with the harmonised European Standard BS EN 13162 and are quality assured to ISO 9001.

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE No 09/4624 CE

Design

Full Fill Systems
The use of high efficiency insulation has benefits when achieving high standards of insulation without a great increase in the overall wall thickness. Fully filled cavity wall systems give minimal overall wall width and are the most cost effective solution for a given U-value. The system is satisfactory for use in buildings up to 12m high – between 12m and 25m extra precautions, including continuous cavity trays, are required;

- The maximum height of continuous cavity must not exceed 12m from ground level.
- Above 12m the maximum continuous cavity height should not be greater than 7m.
- The area to be insulated must not be an infill panel.
- The scheme must be assessed for its suitability for fully filling.
- Extra care is needed with both workmanship and site supervision.

Follow the design data and information in BBA Certificate 09/4624.

Partial Fill Systems
When using a partial fill system in buildings up to 12m high a minimum residual cavity width of 25mm may be acceptable depending on the exposure zone. It is important to ensure that the 25mm residual cavity is maintained, kept clean and clear of all debris and obstructions. Above 12m the residual cavity must be 50mm minimum.
To comply with NHBC Standards a 50mm residual cavity must be provided in all cases irrespective of the exposure zone. Follow the design data and information in BBA Certificate 09/4624.

Figure 1 – Wall/Floor Junction – Insulation Below Slab

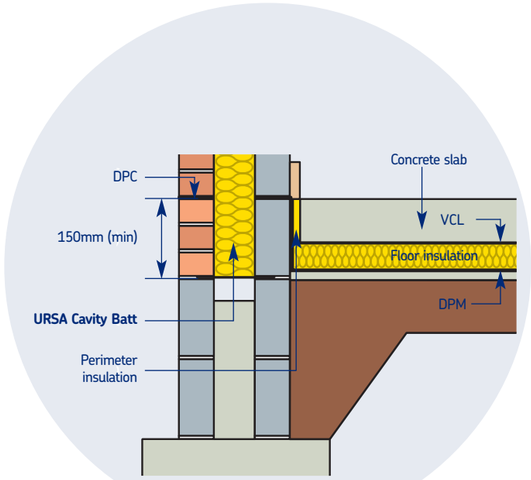


Figure 2 – Wall/Floor Junction – Insulation Above Slab

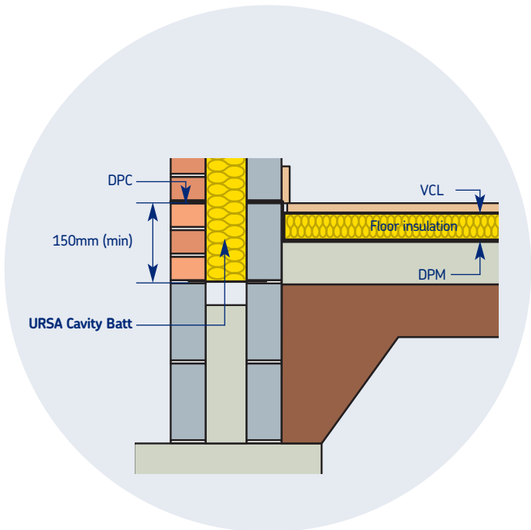


Figure 3 – Wall/Floor Junction – Timber Floor

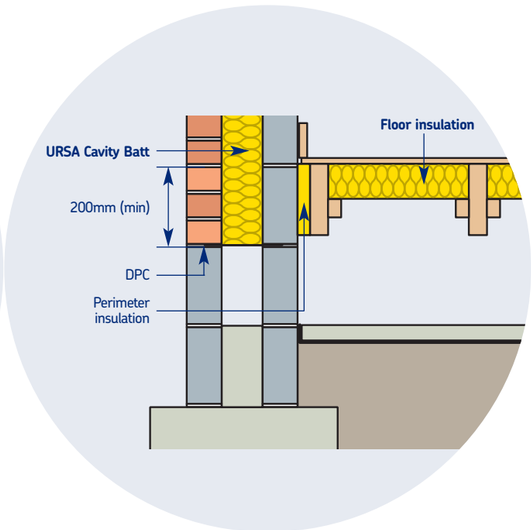


Figure 4 – Window Head Detail

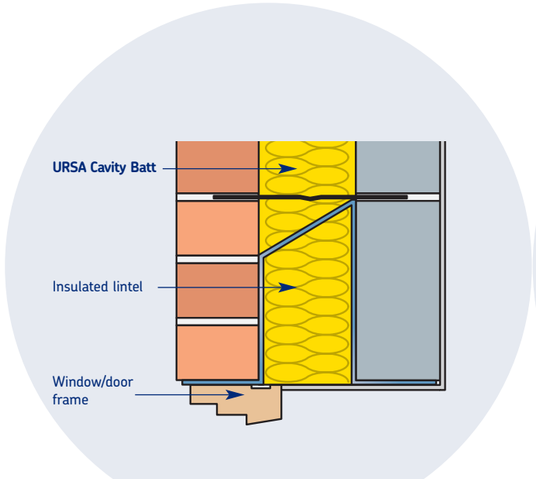
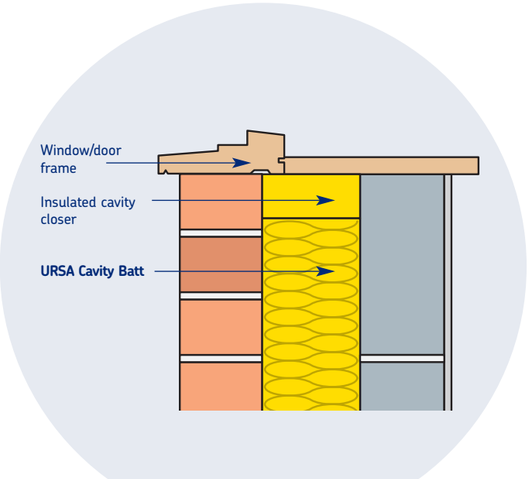


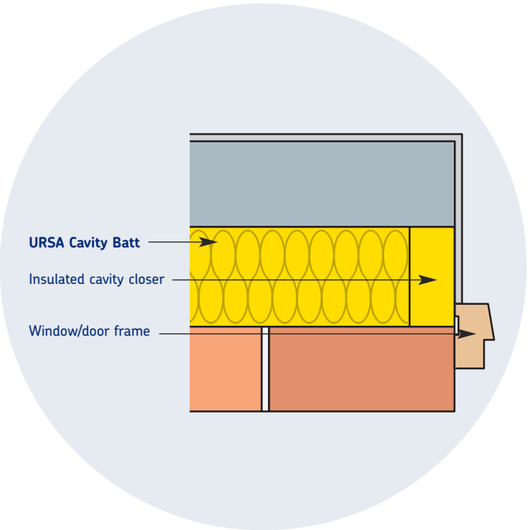
Figure 5 – Sill Detail



Rainwater Penetration
Above door, window and other openings the lintel should be protected by the use of a cavity tray with appropriate stop-ends and weep holes. Projections and discontinuities within the cavity such as changes in wall or insulation thickness or ring beams also require a cavity tray.

Thermal Bridging
With increasing levels of insulation it is vitally important to ensure continuity of the insulation at the junction of elements and around door and window openings.
At the junction of the floor and the wall a vertical section of insulation at the floor edge, the use of lightweight insulating blocks or extended cavity insulation can all help to reduce thermal bridging. (See Figures 1, 2 & 3).
Around door and window openings careful detailing of the cavity wall insulation along with the use of proprietary insulated cavity closers and insulated lintels can help to reduce thermal bridging. (See Figures 4, 5 & 6).

Figure 6 – Jamb Detail



Design

At the eaves ensure the cavity insulation extends to link with the roof insulation. In a cold pitched roof gable the cavity insulation should extend at least 300mm above the ceiling line and should be protected by the use of a cavity tray. At gable walls with warm roof construction the insulation should be continued to the underside of the roof to ensure continuity of the wall and roof insulation.
(See Figures 7, 8, 9 & 10).

The Accredited Construction Details are a series of second tier documents in support of Approved Document L that give further detailed design advice.

Figure 7 – Pitched Roof – Eaves Detail

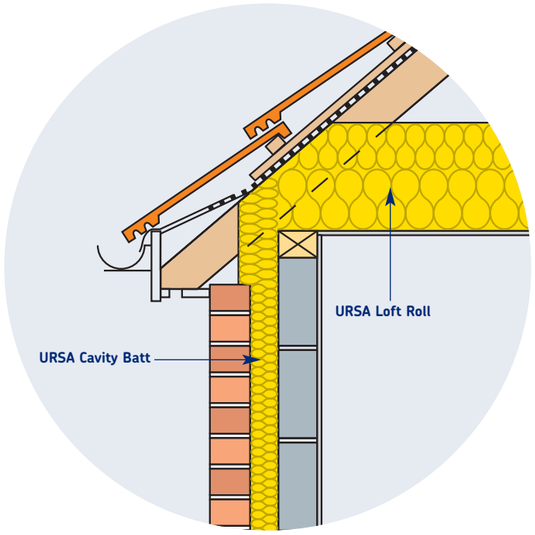
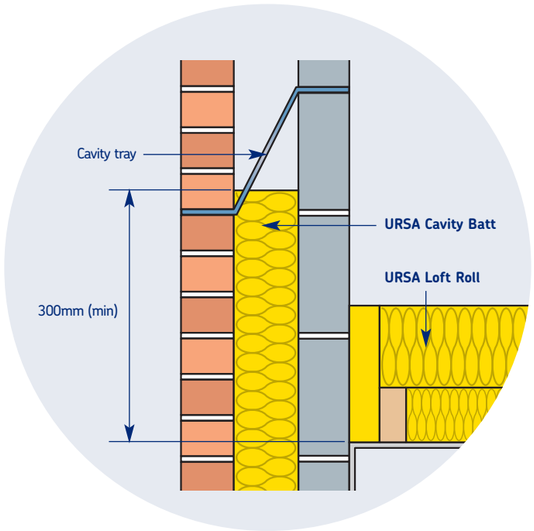


Figure 8 – Cold Pitched Roof – Gable Detail



Workmanship
Studies by the BRE show that most failures of cavity insulation systems are due to poor workmanship and detailing. The following points should be carefully considered:

- Ensure the residual cavity is kept clean and free from mortar droppings and other debris.
- Clean the top edges of the **URSA Cavity Batts** and the wall ties before installing the next row of slabs. The use of a timber cavity board is recommended to help keep this area clean.
- Do not push slabs down into a partially built section of cavity wall as this may dislodge mortar and bridge the cavity.
- Small, cut sections of slab should be installed with the face against the masonry i.e. with the fibres running vertically.
- Carefully cut, rather than tear, the slabs to fit around wall ties and other penetrations that cross the cavity.

Fire Performance
URSA Cavity Batts are non-combustible. When used within a masonry cavity wall constructed in accordance with the Building Regulations and BBA Certificate 09/4624 **URSA Cavity Batts** will not prejudice the fire resistance properties of the wall. Cavity barriers are not required but the cavity must be closed at the top of the wall and around any openings.

Figure 9 – Warm Pitched Roof – Eaves Detail

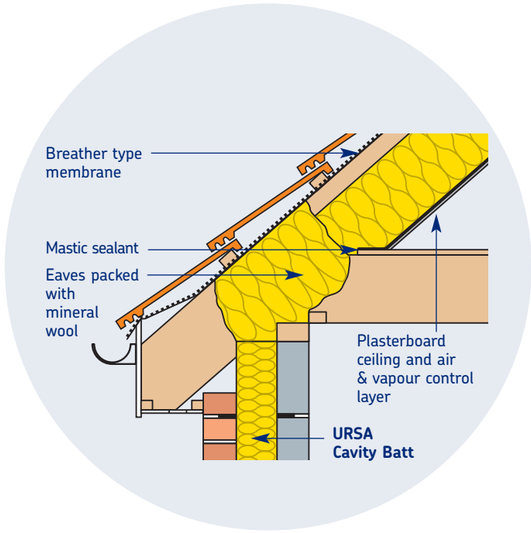
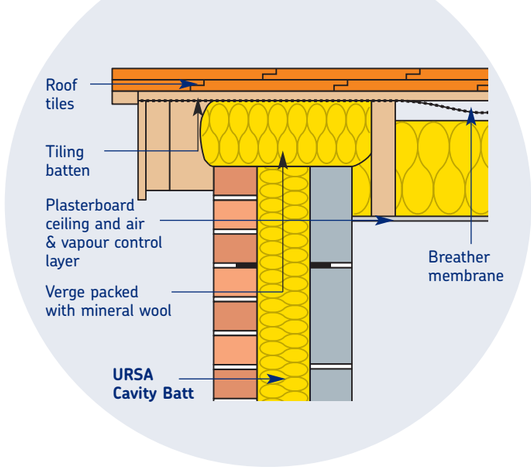


Figure 10 – Warm Pitched Roof – Gable/Verge Detail



Installation

Full Fill Systems (See Figure 11)
The wall may be constructed leading with either leaf. It is good practice however to construct the outer leaf first as this allows the mortar joints on the cavity face to be cleaned and to check that the mortar joints are all fully filled.

The **URSA Cavity Batts** are then installed as the wall is built.

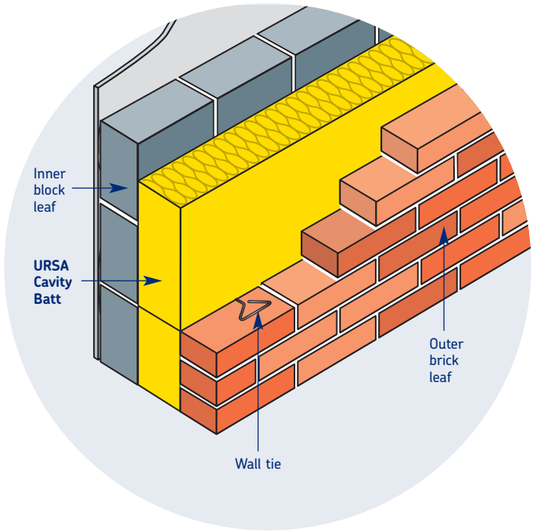
The usual procedure for construction is;

1. The leading leaf of masonry, normally the outer leaf, is built with the first row of wall ties at 600mm centres where the insulation is to begin.
2. The first row of **URSA Cavity Batts**, cut to size if necessary, may begin below the DPC in order to offer edge insulation to the floor.
3. The inner leaf is then built, normally level with the top of the **URSA Cavity Batts**. It is permissible to build the outer leaf one brick higher to secure the next row of slabs – ensure mortar is cleaned from the cavity face.
4. Raise the leading leaf to the level of the next row of wall ties, normally at 450mm vertical centres (maximum 900mm centres horizontally). Ensure that the drip is positioned at the centre of the cavity and that the ties slope down towards the outer leaf. Excess mortar should be cleaned from this leaf before fitting the **URSA Cavity Batts** onto the lower ties.
5. The inner leaf is then built to the level of the top of the slabs and the process repeated.
6. The subsequent rows of slabs should be fitted with vertical joints staggered i.e. brick bond with all joints tightly butted. Slabs with damaged edges or corners should not be used.
7. As work proceeds ensure that the top edge of the **URSA Cavity Batts** is clean and free from mortar droppings. The use of a cavity batten will help to protect the slab edges as the next section is built.
8. Cut sections of slab will be required around openings or at corners. It is essential that these be cut accurately to fill the space they are intended for and are adequately secured. Do not bend the batts around external or internal corners.
9. Ensure that partially completed walls are protected from inclement weather (wind, rain and snow) and at the end of the day's work.

Permitted Deviation in Cavity Width (Full Fill)

URSA Cavity Batt (mm)	Permitted Deviation (mm)
75	75 - 90
85	85 - 100
100	100 - 115
125	125 - 140
150	150 - 170

Figure 11 – URSA Cavity Batt - Full Fill



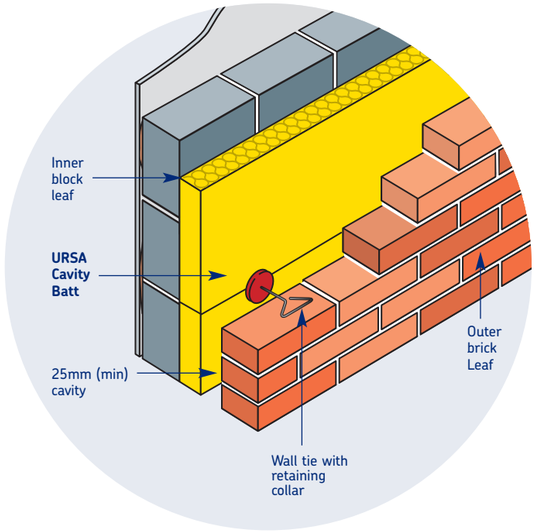
Partial Fill Systems (See Figure 12)
Generally the inner leaf is constructed ahead of the outer leaf with the **URSA Cavity Batts** fastened to the cavity face of the inner leaf using the wall ties or clips. Wall ties with collars are required to hold the slabs in position.

URSA Cavity Batts are 455mm wide to fit the 450mm vertical spacing of the wall ties. The horizontal spacing may vary but should be no more than 900mm to ensure adequate retention of the slabs. Spacing of the wall ties should follow the recommendations given in BS EN 1996, Eurocode 6. To prevent rainwater penetration across the wall a minimum 25mm clear cavity must be maintained at all times. A 50mm clear cavity is inherently safer and is a requirement of NHBC Standards.

The usual procedure for construction is;

1. The inner leaf is built with the first row of wall ties at 600mm centres where the insulation is to begin.
2. The first row of **URSA Cavity Batts**, cut to size if necessary, may begin below the DPC in order to offer edge insulation to the floor.
3. Raise the leading leaf to the level of the next row of wall ties, normally at 450mm vertical centres. Excess mortar should be cleaned from the inner leaf before fitting the slabs onto the lower ties and securing with a retaining collar.
4. The next row of wall ties (and collars) is fitted at maximum 900mm centres to retain the tops of the slabs. Ensure that the drip is positioned at the centre of the residual cavity and that the ties slope down towards the outer leaf.
5. Additional ties may be required for structural stability or to ensure adequate retention of the **URSA Cavity Batts**.
6. The outer leaf is then built to the level of the top of the slabs and the process repeated.
7. The subsequent rows of slabs should be fitted with vertical joints staggered i.e. brick bond with all joints tightly butted. Slabs with damaged edges or corners should not be used.
8. As work proceeds ensure that the top of the slabs and the residual cavity are kept clean and free from mortar droppings or other debris. The use of a cavity batten will help to protect the slab edges and keep the cavity clean as the next section is built.
9. Cut sections of slab will be required around openings or at corners. It is essential that these be cut accurately to fill the space they are intended for and are adequately secured. Do not bend the batts around external or internal corners.
10. Ensure that partially completed walls are protected from inclement weather (wind, rain and snow) and at the end of the day's work.

Figure 12 – URSA Cavity Batt - Partial Fill



Heat Loss Calculations

The normal method of calculating U-values in floors, walls and roofs is the Combined Method (see BS EN ISO 6946) which as well as assessing the thermal bridge effect of mortar joints, timber studs etc also accounts for air gaps in the insulation and mechanical fasteners penetrating the insulation.

Compliance with the Building Regulations is shown by limiting the overall CO_2 emissions from the building – this gives considerable design flexibility but there are no specific U-values, except the worst allowable, that must be achieved.

In new build a U-value of 0.22 W/m²K or better will help ensure compliance. In extensions a U-value of 0.28 W/m²K is required and in refurbishment work 0.30 W/m²K is required. The Building Regulations (Scotland) require a U-value of 0.22 W/m²K or better. The Building Regulations (Wales) require a U-value better than 0.21 W/m²K in new dwellings.

URSA Cavity Batt 32 Full Fill
Typical Construction, Full Fill;
103mm brick
URSA Cavity Batt 32 (0.032 W/mK).
100mm block (density and thermal properties as shown).
12.5mm plasterboard on dabs.
Wall ties with a thermal conductivity of 17.0 W/mK and cross sectional area of 12.5mm².

Block Density (kg/m³)	Block λ-value (W/mK)	U-Value (W/m²K)				
		75mm	85mm	100mm	125mm	150mm
450	0.11	0.28	0.26	0.23	0.19	0.17
600	0.16	0.30	0.27	0.24	0.20	0.18
800	0.19	0.30	0.28	0.25	0.21	0.18
1000	0.34	0.32	0.29	0.26	0.21	0.18
1200	0.44	0.33	0.30	0.26	0.22	0.19
1400	0.57	0.33	0.30	0.26	0.22	0.19
1600	0.99	0.34	0.31	0.27	0.22	0.19
1800	1.13	0.34	0.31	0.27	0.22	0.19
2000	1.33	0.34	0.31	0.27	0.22	0.19
2200	1.59	0.35	0.31	0.27	0.22	0.19
2400	1.93	0.35	0.31	0.27	0.22	0.19

URSA Cavity Batt 32 Partial Fill
Typical Construction, Partial Fill;
103mm brick
25mm (minimum) clear cavity.
URSA Cavity Batt 32 (0.032 W/mK).
100mm block (density and thermal properties as shown).
12.5mm plasterboard on dabs.
Wall ties with a thermal conductivity of 17.0 W/mK and cross sectional area of 12.5mm².

Block Density (kg/m³)	Block λ-value (W/mK)	U-Value (W/m²K)				
		75mm	85mm	100mm	125mm	150mm
450	0.11	0.27	0.25	0.22	0.19	0.16
600	0.16	0.28	0.26	0.23	0.20	0.17
800	0.19	0.29	0.26	0.24	0.20	0.17
1000	0.34	0.30	0.28	0.25	0.21	0.18
1200	0.44	0.31	0.28	0.25	0.21	0.18
1400	0.57	0.31	0.29	0.25	0.21	0.18
1600	0.99	0.32	0.29	0.26	0.21	0.18
1800	1.13	0.32	0.29	0.26	0.21	0.18
2000	1.33	0.32	0.29	0.26	0.22	0.18
2200	1.59	0.33	0.30	0.26	0.22	0.18
2400	1.93	0.33	0.30	0.26	0.22	0.18

Heat Loss Calculations

URSA Cavity Batt 35 Full Fill
Typical Construction, Full Fill;
103mm brick
URSA Cavity Batt 35 (0.035 W/mK).
100mm block (density and thermal properties as shown).
12.5mm plasterboard on dabs.
Wall ties with a thermal conductivity of 17.0 W/mK and cross sectional area of 12.5mm².

Block Density (kg/m³)	Block λ-value (W/mK)	U-Value (W/m²K)				
		75mm	85mm	100mm	125mm	150mm
450	0.11	0.30	0.27	0.25	0.21	0.18
600	0.16	0.32	0.29	0.26	0.22	0.19
800	0.19	0.32	0.30	0.26	0.22	0.19
1000	0.34	0.34	0.31	0.28	0.23	0.20
1200	0.44	0.35	0.32	0.28	0.23	0.20
1400	0.57	0.36	0.32	0.28	0.24	0.20
1600	0.99	0.37	0.33	0.29	0.24	0.21
1800	1.13	0.37	0.33	0.29	0.24	0.21
2000	1.33	0.37	0.33	0.29	0.24	0.21
2200	1.59	0.37	0.34	0.29	0.24	0.21
2400	1.93	0.37	0.34	0.29	0.24	0.21

URSA Cavity Batt 35 Partial Fill
Typical Construction, Partial Fill;
103mm brick
25mm (minimum) clear cavity.
URSA Cavity Batt 35 (0.035 W/mK)
100mm block (density and thermal properties as shown)
12.5mm plasterboard on dabs.
Wall ties with a thermal conductivity of 17 W/mK and cross sectional area of 12.5mm².

Block Density (kg/m³)	Block λ-value (W/mK)	U-Value (W/m²K)				
		75mm	85mm	100mm	125mm	150mm
450	0.11	0.28	0.26	0.23	0.20	0.18
600	0.16	0.30	0.28	0.25	0.21	0.18
800	0.19	0.31	0.28	0.25	0.21	0.18
1000	0.34	0.32	0.30	0.26	0.22	0.19
1200	0.44	0.33	0.30	0.27	0.22	0.19
1400	0.57	0.34	0.31	0.27	0.23	0.20
1600	0.99	0.34	0.31	0.28	0.23	0.20
1800	1.13	0.35	0.31	0.28	0.23	0.20
2000	1.33	0.35	0.32	0.28	0.23	0.20
2200	1.59	0.35	0.32	0.28	0.23	0.20
2400	1.93	0.35	0.32	0.28	0.23	0.20

Technical Details

Specification Clause
Full Fill Systems
The full fill cavity wall insulation shall be ..... mm thick **URSA Cavity Batt 32/35**, semi rigid glass fibre batt. Insulation to be installed as work proceeds in accordance with URSA UK Ltd instructions and the requirements of BBA Certificate No. 09/4624.

Partial Fill Systems
The partial fill cavity wall insulation shall be ..... mm thick **URSA Cavity Batt 32/35**, semi rigid glass fibre batt. Insulation to be installed as work proceeds in accordance with URSA UK Ltd instructions and the requirements of BBA Certificate No. 09/4624.

Thermal Conductivity
Declared thermal conductivity of **URSA Cavity Batt 32** is 0.032 W/mK.
Declared thermal conductivity of **URSA Cavity Batt 35** is 0.035 W/mK.
Declared thermal conductivity tested to BS EN 13162.

Density
Nominal density of **URSA Cavity Batt 32** is 29 kg/m^3.
Nominal density of **URSA Cavity Batt 35** is 18.5 kg/m^3.

Reaction to Fire
Euroclass A1 to BS EN 13501-1.

Moisture Vapour Transmission
URSA Cavity Batts have minimal resistance to the passage of water vapour thus allowing the wall to breathe. A practical value for the moisture vapour resistivity is 5 MNs/gm.

Specific Heat Capacity
The specific heat capacity is 0.84 kJ/kgK.

Designation Code
MW – EN 13162 – T4 – DS(70,-) – WS.

URSA Cavity Batts

Dimensions		
Thickness (mm)	**Length (mm)**	**Width (mm)**
75, 85, 100, 125 & 150	1200	455

Environmental Information
BRE Green Guide
All URSA GLASSWOOL products achieve the best possible 'A+' rating under the BRE Green Guide.

Durability
When correctly installed, URSA GLASSWOOL products are maintenance free and have an indefinite life at least equal to that of the building.

Storage
URSA GLASSWOOL products are supplied wrapped in polythene to provide short-term protection. On site the slabs should be stored clear of the ground, on a clean level surface and preferably under cover to protect them from prolonged exposure to moisture or mechanical damage.

Chemical Compatibility
URSA GLASSWOOL products are compatible with all common construction materials, alkalis, dilute acids, mineral oil and petrol. Products that have been in contact with harsh solvents, acids or saturated with water should not be used.

Health and Safety
URSA GLASSWOOL products are inherently safe to handle. During cutting or handling any dust generated is of nuisance value only; the wearing of dust masks, gloves and long sleeved clothing is recommended. Large scale machining should be connected to a dust extraction system.
A comprehensive Health and Safety data sheet is available from URSA UK Ltd upon request.

Availability
URSA Cavity Batts are available nationally through insulation distributors and builders merchants.

References
Agrément Certificate No. 09/4624.
The Building Regulations and supporting documents.
Thermal Insulation: avoiding risks (2002).
Accredited Construction Details and Accredited Construction Details (Scotland).
CIBSE Guide A3 – Thermal Properties of Buildings and Components.
BS EN 845 Specification for Ancillary Components for Masonry. Ties, Tension Straps, Hangers & Brackets.
BS 5250 Code of Practice for Control of Condensation in Buildings.
BS EN 13914 Design, Preparation and Application of External Rendering and Internal Plastering.
BS EN 1996, Eurocode 6; Design of Masonry Structures.
BS 8000 Workmanship on Building Sites. Part 3 Code of Practice for Masonry.
BRE Digests, Information Papers and Good Building Guides.