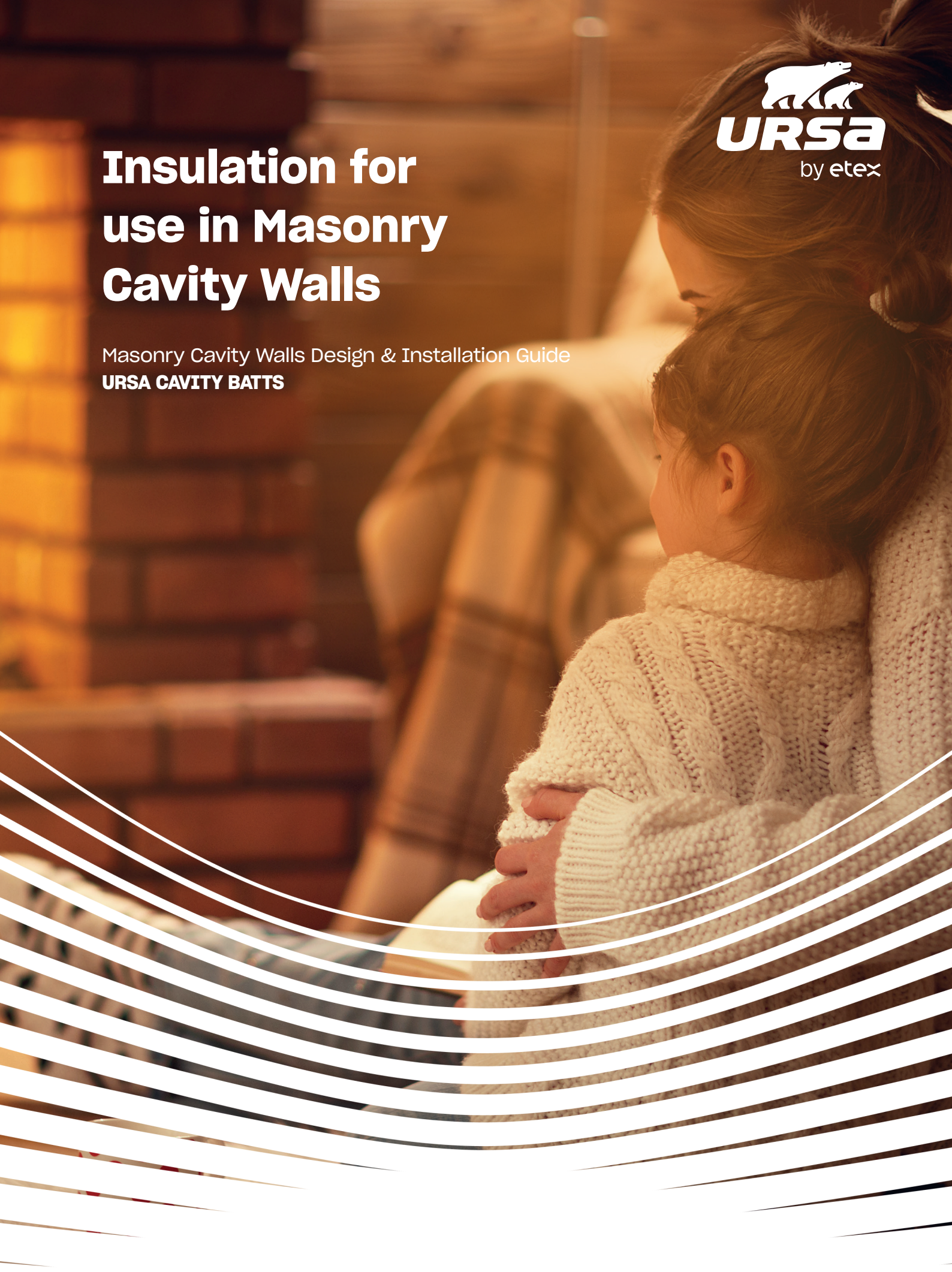


Insulation for use in Masonry Cavity Walls

Masonry Cavity Walls Design & Installation Guide

URSA CAVITY BATTS

URSA. Insulation for a better tomorrow.

URSA have been specialists in innovative, award-winning insulation since 1959 - and a leading European manufacturer of glass mineral wool for over 50 years.

Our headquarters are in Madrid, Spain, although our business spans more than 40 countries, with 11 production sites and over 1,500 employees. Our team in the UK are dedicated to providing glass mineral wool insulation solutions, whatever the project.

Part of the Etex Group

In 2022 URSA became part of Etex - a global group comprising of 160 facilities across 45 countries and the name behind many other construction product brands in the building materials sector including Superglass, a leading UK glass mineral wool insulation manufacturer. In 2025, the Superglass and URSA brands came together to form Etex UK Insulation Ltd.

URSA TERRA

Developed in 2009, URSA TERRA showcases the latest in glass mineral wool technology. Our distinctive production methods and product formulation define the character of our extensive insulation product range.

URSA CAVITY BATTS are British Board of Agrément (BBA) approved, non-combustible glass mineral wool insulation cavity wall batts, manufactured with a water-repellent additive to resist moisture ingress.

The flexible batts are supplied at 455mm wide to allow friction fitting between standard vertical wall tie spacings, reducing the need for on-site cutting and waste.

Figure 1
Wall/Floor Junction
Insulation Below Slab

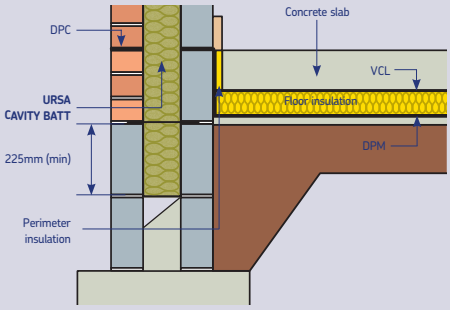


Figure 2
Wall/Floor Junction
Insulation Above Slab

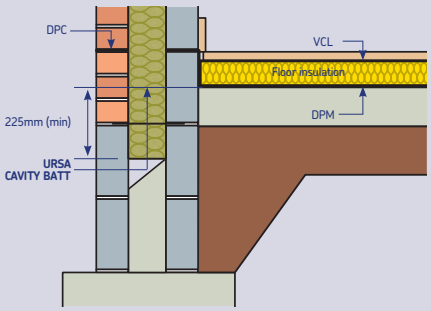
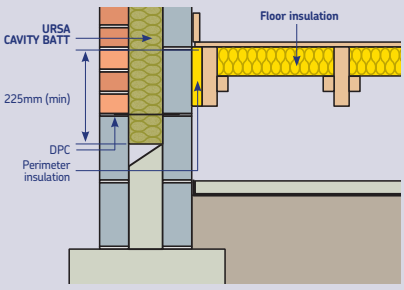


Figure 3
Wall/Floor Junction
Timber Floor



Design - Full Fill Systems

Combining insulation that meets performance criteria without impacting on the overall wall thickness, fully filled cavity wall systems are a proven, effective solution to achieve a given U-value. The system can be used in buildings up to 12m high - between 12m and 25m extra precautions, including continuous cavity trays, are needed:

- 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
- The Certificate holder, in association with the architect, must carry out a detailed programme of assessment of the project including an examination of the quality of installation as work progresses. Above average site supervision is recommended during installation.

URSA CAVITY BATT may be used in buildings above 25m following an assessment of the exposure rating of the wall. Further design and workmanship guidance will be provided in the assessment report.

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

Design - Partial Fill Systems

With partial-fill systems, a minimum 50mm clear cavity must be maintained to allow the product to be used in any UK exposure zone and with no restriction on building height, including over 25m.

NHBC Standards' compliance requires a minimum 50mm residual cavity in all cases irrespective of the UK exposure zones. Follow the design data and information in BBA Certificate 09/4624.

Rainwater Penetration

Above doors, windows and other openings the lintel should be protected using cavity trays 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

As the level of insulation is increased, 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 or using lightweight insulating blocks or extended cavity insulation can help to reduce thermal bridging (Figures 1, 2 & 3).

Around door and window openings, careful detailing of the cavity wall insulation along with proprietary insulated cavity closers and lintels can also help reduce thermal bridging (Figures 4, 5 & 6).

Figure 4
Window Head Detail

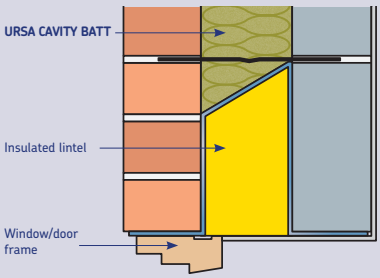


Figure 5
Sill Detail

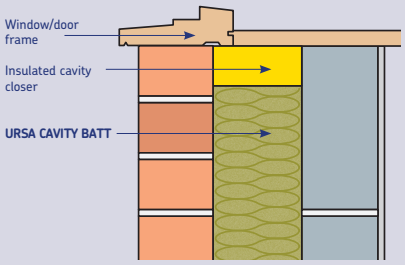
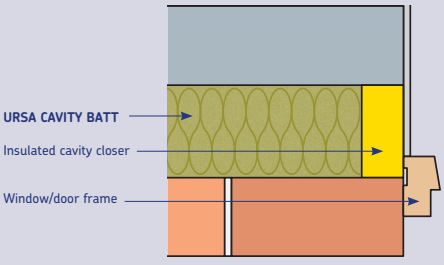


Figure 6
Jamb Detail



Design

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

Workmanship

The following points should be carefully considered:

- Make sure 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 batts down into a partially built section of cavity wall as this may dislodge mortar and bridge the cavity
- Small, cut sections of batts should be installed with the face against the masonry i.e. with the fibres running vertically
- Carefully cut, rather than tear, the batts to fit around wall ties and other penetrations that cross the cavity

Fire Performance

URSA CAVITY BATTS are deemed non-combustible with a fire classification of Euroclass A1 (the highest possible rating) when tested to EN 13501-1:2018 Reaction to Fire.

Using **URSA CAVITY BATTS** will not prejudice the wall's fire resistance properties. In full fill cavity insulation systems, cavity barriers are generally not required provided the wall complies with the relevant sections of the Approved Documents and Technical Guidance on fire safety. Partial fill systems need the top of the cavity closing.

Figure 7
Pitched Roof
Eaves Detail

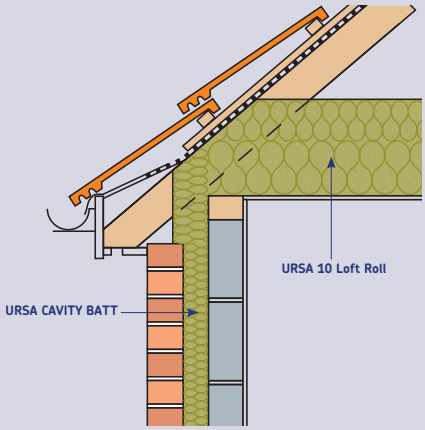


Figure 8
Cold Pitched Roof
Gable Detail

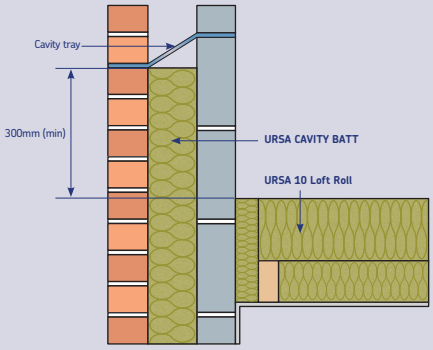


Figure 9
Warm Pitched Roof
Eaves Detail

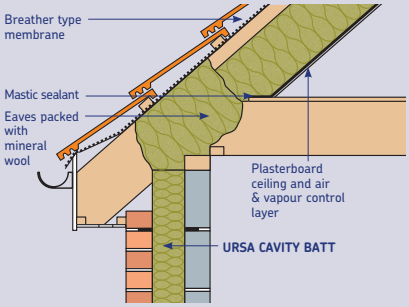
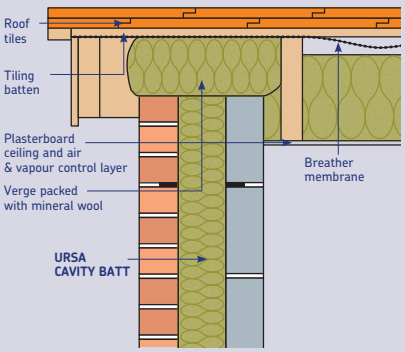


Figure 10
Warm Pitched Roof
Gable/Verge Detail



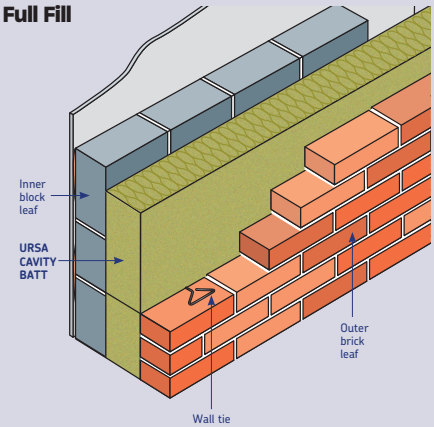
Installation – Full Fill Systems

The wall may be constructed leading with either leaf, but it's good practice to construct the outer leaf first as this allows the mortar joints on the cavity face to be cleaned and checked that they're fully filled. The **URSA CAVITY BATTS** are then installed as the wall is built.

The standard procedure is:

1. The leading leaf of masonry, ideally 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 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 batts, but make sure 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 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. **URSA CAVITY BATTS** may be installed in two or more layers if required. Stagger the joints in each layer to ensure the best thermal performance.
6. The inner leaf is then built to the level of the top of the batts and the process repeated.
7. The subsequent rows of batts should be fitted with vertical joints staggered i.e. brick bond with all joints tightly butted. Batts with damaged edges or corners should not be used.
8. As work proceeds make sure the top edge of the **URSA CAVITY BATTS** is clean and free from mortar droppings. Using a cavity batten will help protect the batts edges as the next section is built.
9. Cut sections of batts will be needed around openings or at corners. It's essential that these are cut accurately to fill the space they're intended for and are adequately secured. Do not bend the batts around external or internal corners.
10. When stopping work due to adverse weather conditions or partially completed walls should be protected from inclement weather (e.g. wind, rain or snow) and covered at the end of the day's work or when stopping work due to adverse weather conditions. This is essential to ensure the product does not get wet or damaged.

Figure 11
URSA CAVITY BATT
Full Fill



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
175	175 – 195
200	200 – 220

Installation - Partial Fill Systems

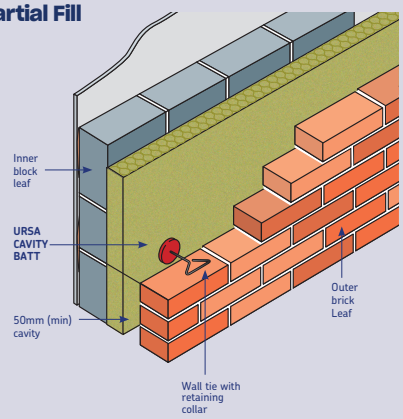
Generally the inner leaf is constructed ahead of the outer leaf with the **URSA CAVITY BATTS** fastened to the cavity face of the inner leaf using the wall ties with collars or clips to hold the slabs in position.

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 for adequate retention of the batts. Spacing of wall ties should follow the recommendations given in BS EN 1996, Eurocode 6. To prevent rainwater penetration across the wall, a minimum 50mm clear cavity must be maintained at all times - it's not only inherently safer but also a requirement of NHBC Standards.

The standard procedure 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 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 batts onto the lower ties and securing with a retaining collar.
4. **URSA CAVITY BATTS** may be installed in two or more layers if required. Stagger the joints in each layer to ensure the best thermal performance.
5. The next row of wall ties (and collars) is fitted at maximum 900mm centres to retain the tops of the batts. Ensure that the drip is positioned at the centre of the residual cavity and that the ties slope down towards the outer leaf.
6. Additional ties may be required for structural stability or to ensure adequate retention of the **URSA CAVITY BATTS**.
7. The outer leaf is then built to the level of the top of the batts and the process repeated.
8. The subsequent rows of batts should be fitted with vertical joints staggered i.e. brick bond with all joints tightly butted. Batts with damaged edges or corners should not be used.
9. As work proceeds make sure the top of the batts and the residual cavity are kept clean and free from mortar droppings or other debris. Using a cavity batten will help protect the batt edges and keep the cavity clean as the next section is built.
10. Cut sections of batt will be needed around openings or at corners. It's essential these are cut accurately to fill the space they're intended for and adequately secured. Do not bend the batts around external or internal corners.
11. When stopping work due to adverse weather conditions or partially completed walls should be protected from inclement weather (e.g. wind, rain or snow) and covered at the end of the day's work or when stopping work due to adverse weather conditions. This is essential to ensure the product does not get wet or damaged.

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 and so on, 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 with no specific U-values, except the worst allowable, that must be achieved.

Brick & Block - Full Fill

Typical Construction - Full Fill

- 103mm brick
- **URSA CAVITY BATTS**
- 100mm block (density and thermal properties as shown)
- 12.5mm plasterboard on dabs and skim
- Wall ties with a thermal conductivity of 17.0 W/mK and cross-sectional area of 12.5mm^2

Outer Leaf - Brick	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)
Inner leaf - Blocks	100mm Dense (1.13 W/mK)	100mm Medium dense (0.45 W/mK)	100mm Lightweight Aggregate (0.28 W/mK)	100mm High Strength Aircrete (0.19 W/mK)	100mm Standard Aircrete (0.15 W/mK)	100mm Lightweight Aircrete (0.11 W/mK)
100mm URSA CAVITY BATT 32	0.27	0.26	0.25	0.25	0.24	0.23
125mm URSA CAVITY BATT 32	0.22	0.22	0.21	0.21	0.20	0.19
150mm URSA CAVITY BATT 32	0.19	0.19	0.18	0.18	0.17	0.17
175mm URSA CAVITY BATT 32	0.17	0.16	0.16	0.16	0.15	0.15
200mm URSA CAVITY BATT 32	0.15	0.14	0.14	0.14	0.14	0.13
100mm URSA CAVITY BATT 35	0.29	0.28	0.27	0.26	0.26	0.25
125mm URSA CAVITY BATT 35	0.24	0.23	0.23	0.22	0.22	0.21
150mm URSA CAVITY BATT 35	0.21	0.20	0.20	0.19	0.19	0.18
175mm URSA CAVITY BATT 35 (100+75mm)	0.18	0.18	0.17	0.17	0.16	0.16
200mm URSA CAVITY BATT 35 (2x100mm)	0.16	0.16	0.15	0.15	0.15	0.14

For any U-Value calculations for alternative construction build-ups, please contact our Technical Team on technicalursa.uk@etexgroup.com

Brick & Block - Partial Fill with 50mm residual cavity

Typical Construction - Partial Fill

- 103mm brick
- 50mm residual cavity
- **URSA CAVITY BATTS**
- 100mm block (density and thermal properties as shown)
- 12.5mm plasterboard on dabs and skim
- Wall ties with a thermal conductivity of 17.0 W/mK and cross-sectional area of 12.5mm^2

Outer Leaf - Brick	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)	102.5mm (0.77 W/mK)
Inner leaf - Blocks	100mm Dense (1.13 W/mK)	100mm Medium dense (0.45 W/mK)	100mm Lightweight Aggregate (0.28 W/mK)	100mm High Strength Aircrete (0.19 W/mK)	100mm Standard Aircrete (0.15 W/mK)	100mm Lightweight Aircrete (0.11 W/mK)
100mm URSA CAVITY BATT 32	0.26	0.25	0.24	0.23	0.23	0.22
125mm URSA CAVITY BATT 32	0.21	0.21	0.20	0.20	0.19	0.19
150mm URSA CAVITY BATT 32	0.18	0.18	0.18	0.17	0.17	0.16
175mm URSA CAVITY BATT 32	0.16	0.16	0.15	0.15	0.15	0.15
200mm URSA CAVITY BATT 32	0.14	0.14	0.14	0.14	0.13	0.13
100mm URSA CAVITY BATT 35	0.28	0.27	0.26	0.25	0.24	0.23
125mm URSA CAVITY BATT 35	0.23	0.22	0.22	0.21	0.21	0.20
150mm URSA CAVITY BATT 35	0.20	0.19	0.19	0.18	0.18	0.18
175mm URSA CAVITY BATT 35 (100+75mm)	0.17	0.17	0.17	0.16	0.16	0.16
200mm URSA CAVITY BATT 35 (2x100mm)	0.15	0.15	0.15	0.15	0.14	0.14

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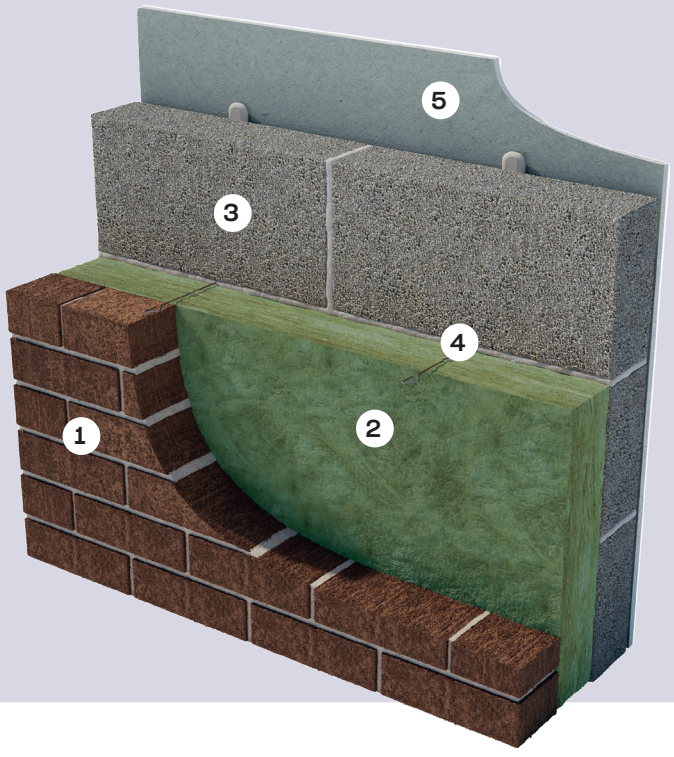

Brick & Block

1. Outer brick leaf
2. **URSA CAVITY BATTS**
3. Inner block leaf
4. Wall ties
5. Plasterboard

Heat Loss Calculations

Block & Block - Full Fill

Typical Construction - Full Fill

- 100mm Dense block (1.13 Wm/k) and render
- **URSA CAVITY BATTS**
- 100mm block (density and thermal properties as shown)
- 12.5mm plasterboard on dabs and skim
- Wall ties with a thermal conductivity of 17.0 W/mK and cross-sectional area of 12.5mm^2

Outer Leaf - Block	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)
Inner leaf - Blocks	100mm Dense (1.13 W/mK)	100mm Medium dense (0.45 W/mK)	100mm Lightweight Aggregate (0.28 W/mK)	100mm High Strength Aircrete (0.19 W/mK)	100mm Standard Aircrete (0.15 W/mK)	100mm Lightweight Aircrete (0.11 W/mK)
100mm URSA CAVITY BATT 32	0.27	0.26	0.25	0.25	0.24	0.23
125mm URSA CAVITY BATT 32	0.22	0.22	0.21	0.21	0.20	0.20
150mm URSA CAVITY BATT 32	0.19	0.19	0.18	0.18	0.17	0.17
175mm URSA CAVITY BATT 32	0.17	0.16	0.16	0.16	0.15	0.15
200mm URSA CAVITY BATT 32	0.15	0.14	0.14	0.14	0.14	0.13
100mm URSA CAVITY BATT 35	0.29	0.28	0.27	0.26	0.26	0.25
125mm URSA CAVITY BATT 35	0.24	0.23	0.23	0.22	0.22	0.21
150mm URSA CAVITY BATT 35	0.21	0.20	0.20	0.19	0.19	0.18
175mm URSA CAVITY BATT 35 (100+75mm)	0.18	0.18	0.17	0.17	0.17	0.16
200mm URSA CAVITY BATT 35 (2x100mm)	0.16	0.16	0.15	0.15	0.15	0.14

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Block & Block – Partial Fill with 50mm residual cavity

Typical Construction - Partial Fill

- 100mm Dense block (1.13 Wm/k) and render
- 50mm residual cavity
- **URSA CAVITY BATTS**
- 100mm block (density and thermal properties as shown)
- 12.5mm plasterboard on dabs and skim
- Wall ties with a thermal conductivity of 17.0 W/mK and cross-sectional area of 12.5mm^2

Outer Leaf - Block	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)	100mm Dense (1.13 W/mK)
Inner leaf - Blocks	100mm Dense (1.13 W/mK)	100mm Medium dense (0.45 W/mK)	100mm Lightweight Aggregate (0.28 W/mK)	100mm High Strength Aircrete (0.19 W/mK)	100mm Standard Aircrete (0.15 W/mK)	100mm Lightweight Aircrete (0.11 W/mK)
100mm URSA CAVITY BATT 32	0.26	0.25	0.24	0.24	0.23	0.22
125mm URSA CAVITY BATT 32	0.22	0.21	0.20	0.20	0.20	0.19
150mm URSA CAVITY BATT 32	0.18	0.18	0.18	0.17	0.17	0.16
175mm URSA CAVITY BATT 32	0.16	0.16	0.16	0.15	0.15	0.15
200mm URSA CAVITY BATT 32	0.14	0.14	0.14	0.14	0.13	0.13
100mm URSA CAVITY BATT 35	0.28	0.27	0.26	0.25	0.25	0.24
125mm URSA CAVITY BATT 35	0.23	0.23	0.22	0.21	0.21	0.20
150mm URSA CAVITY BATT 35	0.20	0.19	0.19	0.19	0.18	0.18
175mm URSA CAVITY BATT 35 (100+75mm)	0.17	0.17	0.17	0.16	0.16	0.16
200mm URSA CAVITY BATT 35 (2x100mm)	0.15	0.15	0.15	0.15	0.14	0.14

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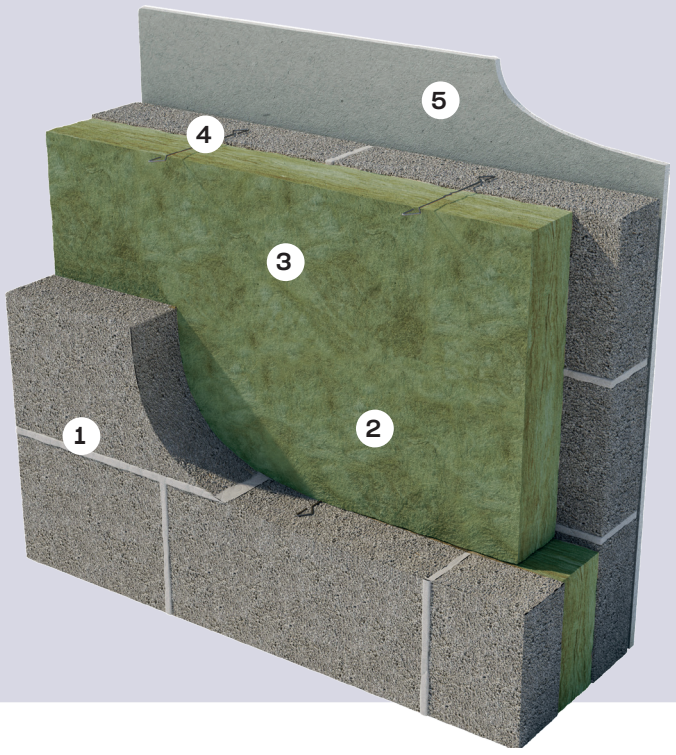
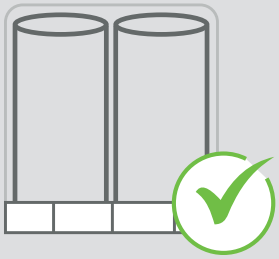


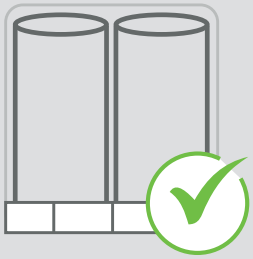
Block & Block

1. Outer brick leaf
2. **URSA CAVITY BATTS**
3. Inner block leaf
4. Wall ties
5. Plasterboard

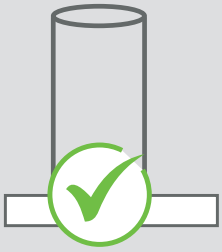
How to store our insulation



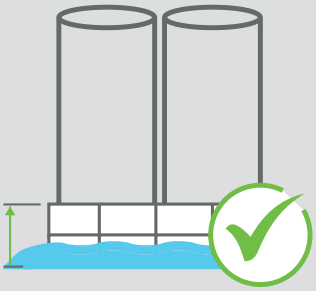
Keep the product covered and fully wrapped on a pallet until required.



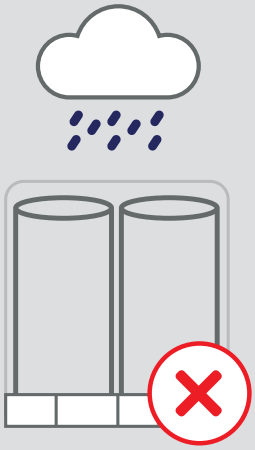
A pallet that is wrapped and has an undamaged hood can be stored outside when indoor space is unavailable, provided it is kept off the ground and protected from the elements. This should only be for short-term storage and not in severe weather conditions.



Once the plastic hood has been removed keep all of the product inside and off the ground away from the elements.



Product should be kept elevated on a pallet at all times to avoid sitting water.



Product can become wet and damaged when exposed to the elements.

Loose product is extremely likely to have water damage when left in the rain rendering your stock unfit for sale.

Please note: This guide is suitable for all URSA roll, slab and batt products. We do not recommend that URSA pallets are double stacked.

Etex UK Insulation Limited. Thistle Industrial Estate, Kerse Road, Stirling, Scotland FK7 7QQ

Technical:
T. **0808 1645 134**
E. **technicalursa.uk@etexgroup.com**

Customer Services:
T. **01786 451170**
E. **customerservice.stirling@etexgroup.com**

Social:
/showcase/ursa-uk-ireland
/ursainsulation

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