

STEICO universal dry

Wood fibre insulation sheathing board for pitched roofs and walls



- Thermal conductivity of 0.043 W/mK
- Tongue and groove edges fix to adjoining components
- Water vapour diffusion resistance (μ) of 3
- Easy to cut and install compared to some other commonly used insulants
- Ideal for new build or refurbishment



Product details

Applications

STEICO universal dry can be used in the following applications:

- sarking board for roof pitches $\geq 14^\circ$
- timber frame masonry warm wall.

The product

STEICO universal dry is a wood fibre insulation sarking and sheathing board. Product Standard BS EN 13171: 2012 + A1: 2015 Thermal insulation products for buildings. Factory made wood fibre (WF) products.

Standard & approvals

STEICO universal dry is manufactured under a management system certified to DIN EN ISO 9001: 2015 (Quality management systems) and DIN EN ISO 14001: 2015 (Environmental management systems).

Standard dimensions

STEICO universal dry is available in the following standard size(s):

Nominal dimension		Availability
Length	(mm)	1,880
Width	(mm)	600
Insulant thickness	(mm)	Refer to local distributor or Kingspan Insulation price list for current stock and non-stock sizes.

Water vapour diffusion resistance

STEICO universal dry achieves a water vapour diffusion resistance (μ) of 3 in accordance with BS EN 12086: 2013 (Thermal insulating products for building applications. Determination of water vapour transmission properties).

Airflow resistance

STEICO universal dry has a declared level of airflow resistance of ≥ 100 (kPa *s) / m² to ISO 9053-2: 2020 (Acoustics. Determination of airflow resistance - Alternating airflow method).

Weight

STEICO universal dry has an approximate weight of 7.20 kg/m² at a thickness of 40 mm and 10.80 kg/m² at a thickness of 60 mm.

Thermal properties

The λ -values and R-values detailed below are quoted in accordance with EN 12667: 2001 (Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance).

Thermal conductivity

The boards achieve a thermal conductivity (λ -value) of: 0.043 W/mK.

Thermal resistance

Thermal resistance (R-value) varies with thickness and is calculated by dividing the thickness of the slab (expressed in metres) by its thermal conductivity. The resulting number is rounded down to the nearest 0.05 (m²K/W).

Insulant thickness (mm)	Thermal resistance (m ² K/W)
40	0.90
60	1.35

U-values

U-value calculations for constructions incorporating STEICO universal dry can be carried out by the Kingspan Insulation Technical Service Department (see rear cover for details).

Fire performance

STEICO universal dry achieves European Classification (Euroclass) E when classified to EN 13501-1: 2018 (Fire classification of construction products and building elements - Classification using data from reaction to fire tests). Please contact the Kingspan Insulation Technical Service Department (see rear cover) for further test information.

There are potential restrictions placed upon this product which vary dependant on building type, height, construction and location.

For guidance regarding the routes to compliance for meeting the fire safety requirements of the Building Regulations / Standards, refer to www.kingspaninsulation.co.uk/fireregulations (for GB) or contact technical services at technical@kingspaninsulation.ie (for Ireland).

Typical constructions & U-values

Assumptions

The U-values in the tables that follow have been calculated using the method detailed in BS EN ISO 6946: 2017 (Building components and building elements. Thermal resistance and thermal transmittance. Calculation methods), and using the conventions set out in BR 443 (Conventions for U-value calculations). They are valid for the constructions shown in the details immediately above each table.

U-value table key

Further information on the applicable notional and area weighted average limiting U-values is available in the relevant geographical documentation:

- Approved Documents L to the Building Regulations for England
- Approved Documents L to the Building Regulations for Wales
- Technical Handbooks Section 6 to the Building Standards for Scotland
- Technical Guidance Document L (Dwellings) and Technical Guidance Document L (Buildings other than Dwellings) to the Building Regulations for the Republic of Ireland
- Technical Booklets F1 & F2 to the Building Regulations for Northern Ireland.

Insulation between and over rafters at 600 mm centres

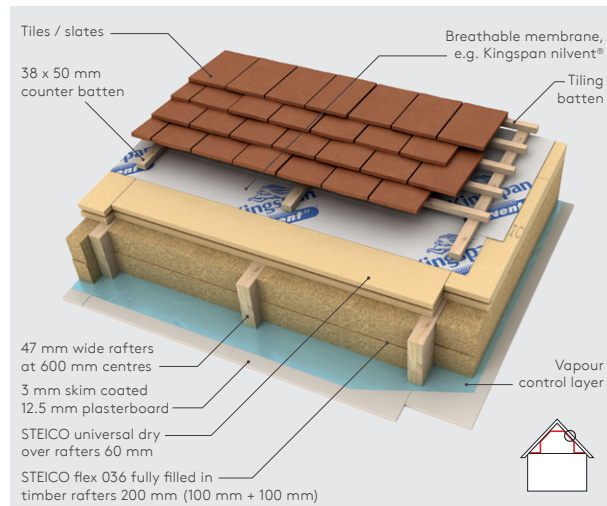


Figure 1

U-values (W/m ² K) for thicknesses of insulation and rafter depths	
Product thickness (mm)	U-values (W/m ² K)
60 mm STEICO universal dry + 200 mm STEICO flex 036 (100 mm + 100 mm)	0.16

NB Refer to local distributor or Kingspan Insulation price list for current stock and non-stock sizes.

Timber frame wall with 102.5 mm brickwork outer leaf

Insulation between timber frame studs and insulated sheathing

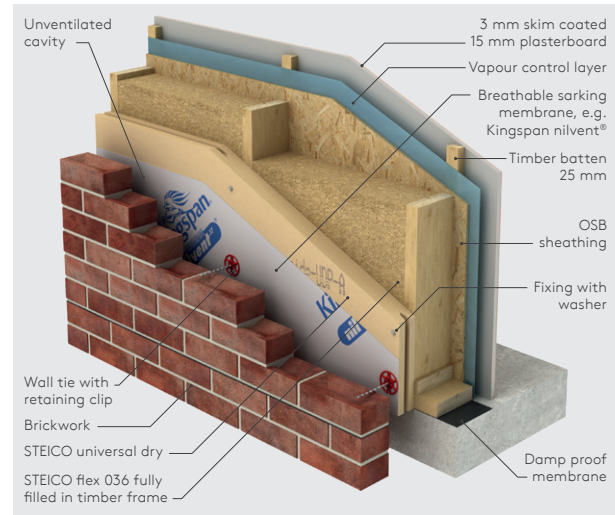


Figure 2

U-values (W/m ² K) for thickness of insulation and stud depths	
Product thickness (mm)	U-values (W/m ² K)
60 mm STEICO universal dry + 140 mm STEICO flex 036	0.19

NB Refer to local distributor or Kingspan Insulation price list for current stock and non-stock sizes.

Design considerations & sitework

Responsible sourcing

STEICO universal dry boards are PEFC certified (PEFC/16-37-1330).



Specification clause

STEICO universal dry shall be described in specifications as:

The insulation shall be STEICO universal dry ____ mm thick: comprising a wood fibre insulation. The product shall be manufactured under a management system certified to DIN EN ISO 9001: 2015 and DIN EN ISO 14001: 2015.

Wind loading

Wind loadings should be assessed in accordance with BS EN 1991-1-4: 2005 + A1: 2010 (National Annex to Eurocode 1 Actions on Structures. General Actions. Wind Actions) taking into account:

- length / width / height of the building;
- orientation of the building;
- wind speed;
- aspect (e.g. on a hill side); and
- topographical value of the surrounding area.

General

Cutting

- A dust mask and appropriate PPE must be worn at all times. Please see Product Safety Sheet for more information.
- Cutting should be carried out using a hard steel bladed saw or knife, a jigsaw or any power hand saw with two reciprocating serrated blades.

Safety in planning and processing

- STEICO universal dry boards are equipped with an all-round windproof and water-draining profiling of the board edges. An additional sealing of the joints is not necessary in roof pitches of at least 14 degrees as long as the slope does not drop more than 4 degrees below the minimum required slope of the tiles.
- Moisture must be able to escape freely from the outside of the building, for example through a ventilated gap. The STEICO wood fibre insulation boards must be kept protected from long-term moisture. If any materials become damp, they must be dried before work continues. Good ventilation is needed at all times.
- During the manufacturing process, the surface of STEICO universal dry boards are covered by a fine layer of lignin (wood sugar). When water runs over the boards, it can carry this material with it and contaminate other building components (windows, plaster etc.). During construction, please ensure that water cannot accumulate and is drained away.

- The markings on the boards indicates the direction of installation. The sanded side of the insulation boards always faces inwards.
- Moisture created during construction, such as from fresh screed, plaster, or paint, should usually be removed by ventilating the building. During construction, the inside of the building should be kept dry by bringing in dry air. Using drying equipment, such as dehumidifiers, is also recommended. The construction work should be planned and carried out in the right order to help control moisture.
- Before starting any work that could increase moisture inside the building, ensure the vapour control layer and all airtight seals are properly finished and closed.
- The vapour diffusion resistance of moisture-variable vapour control membranes is reduced at high humidity. This is especially important when the building humidity increases (interior plaster, wet screed) in winter construction sites.

Daily working practice

Warning - do not stand on or otherwise support your weight on this product unless it is fully supported by a load bearing surface. In order to ensure sufficient walkability on the roof, it is recommended that the counter battens are installed at the same time as the boards.



Accident prevention regulations must be observed.

Availability

- STEICO universal dry is available through specialist insulation distributors and selected builders' merchants throughout Great Britain and Ireland.

Packaging & storage

- Ideally, boards should be stored inside a building in a dry place and protected from weathering. If, however, outside storage cannot be avoided, then the boards should be stacked clear of the ground and covered with an opaque polythene sheet or weatherproof tarpaulin.
- Do not remove the transport packaging until the pallet is on a firm, level surface and the ambient climate is dry.
- Store and transport insulation packages horizontally without high loads.
- Protect edges from damage.
- Maximum stacking height: 4 pallets.
- Keep pallet inserts and package labels for your construction site documentation.

Design considerations & sitework

Health and safety

- A Safety Information Data Sheet for this product is available from the Kingspan Insulation website www.kingspaninsulation.co.uk/safety or www.kingspaninsulation.ie/safety.

Installation

Pitched roof - over rafter placement

- Install first row of boards starting from bottom left with tongue pointing upwards (Fig. 3). The printed side of the board indicates the direction of installation with sanded side of the board facing inwards. Install further rows in a brickwork effect.

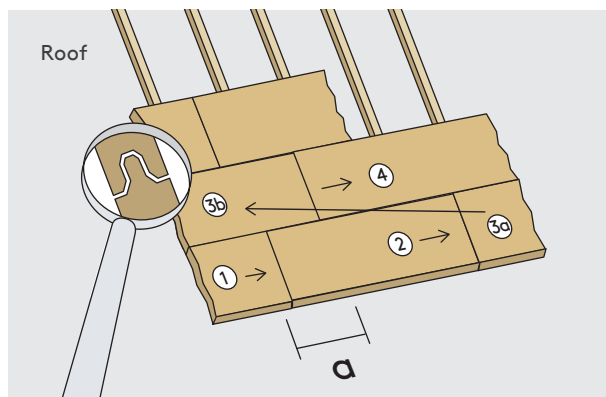


Figure 3

- STEICO universal dry board can be fixed temporarily to the frame during installation with 2 fixings per rafter, at a maximum 300 mm centres. The primary fixing of the board is the counter batten and associated fixing.
- Approved fixings should be applied at centres appropriate to the design of the roof and location of the building.
- A breathable membrane, e.g. Kingspan nilvent®, is fitted to the boards and temporarily stapled or pinned in place.
- Lay 38 x 50 mm treated softwood counter battens in line with the rafters by fixing through both the counter battens and STEICO universal dry board.
- Guidance on appropriate fixings should be sought from the relevant fixing manufacturer based on project specific requirements.

Timber frame wall placement

STEICO universal dry should be fixed to the external surface of the timber frame structure, and restrained in accordance with the timber frame manufacturers recommendations. However, in the absence of other guidance please note the following:

- Installation pattern - recommended offset of vertical joint in next row is 600 mm (Fig. 4).

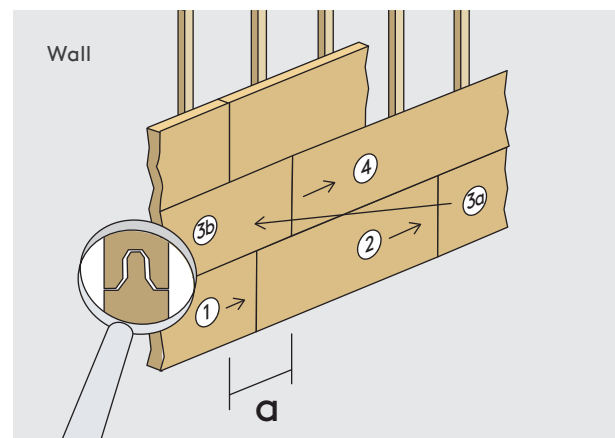


Figure 4

For brickwork masonry

- STEICO universal dry board should be fixed to the frame with 2 metal screw fixings with washers per stud, at a maximum of 300 mm centres.
- A breathable membrane, e.g. Kingspan nilvent®, is fitted to the boards and temporarily stapled or pinned in place.
- The outer leaf of masonry may be constructed in the conventional manner, using appropriate brick ties to hold the two wall leaves together.
- Always ensure that fixings coincide with the underlying timber studs, head rails and sole plates.

For timber cladding

- Large headed galvanised clout nails can be used as temporary fixings to secure the STEICO universal dry boards to the timber framing prior to the counter battens and timber cladding being installed.
- A breathable membrane, e.g. Kingspan nilvent®, is fitted to the boards and temporarily stapled or pinned in place.
- Attach 38 x 50 mm treated softwood counter battens in line with the timber studs by fixing through both the counter battens and STEICO universal dry to the timber studs.
- Approved fixings should be applied at centres appropriate to the design of the wall and location of the building.

Design considerations & sitework

■ Fixing suppliers for both roof and wall applications:

Aptus Fasteners +44 (0) 1773 740 410
www.aptusfasteners.co.uk

Ancon Building Products +44 (0) 1142 755 224
www.ancon.co.uk

Helifix Limited +44 (0) 208 735 5222
www.helifix.co.uk

MAK Fasteners +353 (0) 1 451 9900
www.makfasteners.com

Simpsons +44 (0) 1827 255 600
www.strongtie.co.uk

Installation of skylights

- Openings (e.g. skylights) must be protected by suitable water drainage. Where STEICO universal dry boards are used as a temporary weather protection a controlled drainage of the accumulating water is necessary, even during construction (Fig. 5).

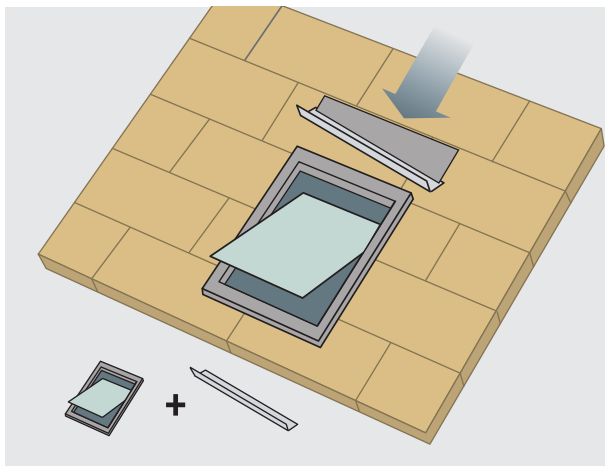


Figure 5

- If the position of the skylight is already known a piece of a vapour permeable rainproof membrane can be fixed in the next joint above the future skylight (Fig. 6). When installing skylights at a later date, a metal angle with a slope is attached above the skylight using suitable adhesive products.

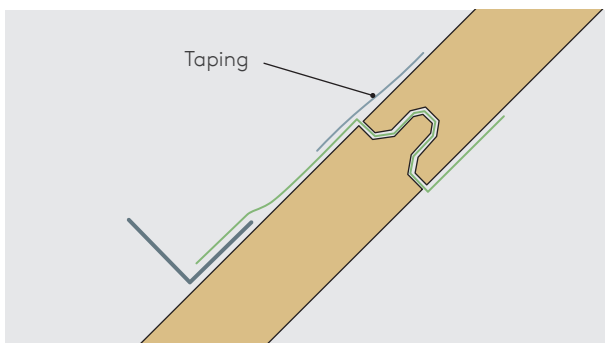


Figure 6

Expansion joints

- Expansion joints are recommended for installation lengths of more than 20 m (Fig. 7). If expansion joints are provided in the existing building structure they are to be continued at the level of STEICO sheathing boards.
- For details on STEICO multi tape F and STEICO multi primer please contact Kingspan Technical Services.

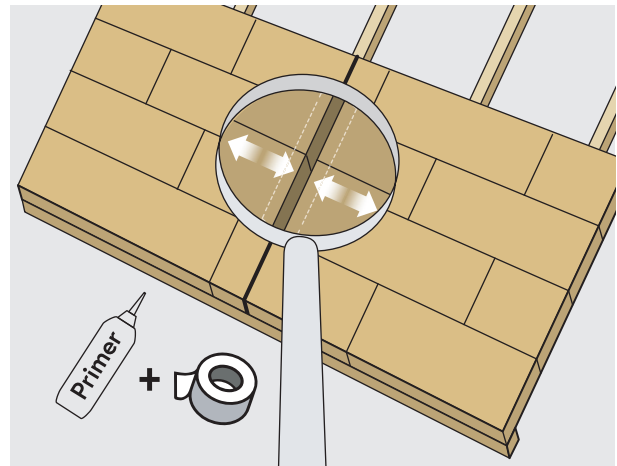


Figure 7

For all projects, guidance from a fixing supplier and project engineer, designer should be sought.

About Kingspan Insulation

Company details

Kingspan Insulation Ltd is part of the Kingspan Group plc., one of Europe's leading construction product manufacturers. The Kingspan Group was formed in the late 1960s and is a publicly quoted group of companies headquartered in Kingscourt, County Cavan, Ireland.

Kingspan Insulation Ltd is a market leading manufacturer of premium and high performance rigid insulation products and insulated systems for building fabric and building services applications.

Products & solutions

Optimum, premium and high performance rigid insulation products for building fabric applications, including roofs, walls and floors.

- Kingspan AlphaCore® – premium performance microporous silica-based insulation.
- Kingspan OPTIM-R® – optimum performance vacuum insulation panel (VIP) systems.
- Kingspan Kooltherm® – premium performance phenolic insulation.
- Kingspan Therma™ – high performance PIR insulation.
- K-Roc® – rock mineral fibre insulation.
- Kingspan GreenGuard® – extruded polystyrene insulation (XPS).
- STEICO – wood fibre insulation.
- Kingspan TEK® – structural insulated panels (SIPs).
- Cavity closers – PVC-U extrusions with an insulation core.
- Membranes – for pitched roofs and walls.

Services

We are proud to offer one of the most advanced support services in the construction industry, designed to give fast and accurate advice no matter what your role is. Visit our website to access the following services.

- U-value calculations – free, quick and easy U-value calculations with our U-value Calculator.
- Help and advice on your projects, including stockists, how to guides, regulatory guidance and e-learning.
- Building Information Modelling (BIM) – download BIM objects for our products.
- Tapered roofing service – Kingspan Insulation's tapered roofing systems come with a supporting design service to ensure the most cost-effective solution for a roof is identified.
- CPDs – Kingspan Insulation offer a number of free CPD seminars for architects and specifiers covering a wide range of industry topics. CPDs can be booked or a range of online learning courses can be found online.

Planet Passionate

Planet Passionate is our ambitious Group-wide environmental sustainability programme. Click [here](#) for more information on our targets and progress to date.

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