

TeploTie

Thermally insulating basalt fibre wall ties



TeploTie

For use in connecting masonry cavity walls

Made from a thermally insulating, corrosion resistant and strong basalt fibre reinforced polymer composite

Improves the energy efficiency of a building by removing the thermal bridging created by metal wall ties

Improves wall U values by 10 – 40%

40% lower global warming impact in production than stainless steel

Basalt is an abundant resource

Case Studies: highly insulated wide cavity walls

Dumfriesshire, detached house.

A project with dense concrete block walls, a 200mm cavity fully filled with two 100mm glass wool batts and TeploTies (325mm long ties, 6mm diameter).

The calculated U-Value for the walls is 0.18 W/(m² K). The same walls with stainless steel wall ties would have a U-Value of 0.21 W/(m² K) (~17% less thermally efficient).

Pembrokeshire, detached house.

A project with dense concrete block walls, a 300mm wide cavity fully filled with three 100mm mineral wool batts and TeploTies (425mm long ties, 6.5mm diameter).

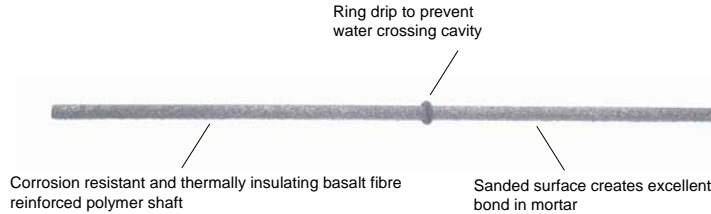
The calculated U-Value for the walls is 0.12 W/(m² K). The same walls with stainless steel wall ties would have a U-Value of 0.17 W/(m² K) (~42% less thermally efficient).



See www.magmatech.co.uk further for details

U-Values calculated using BRE approved software "BRE U-Value calculator 1.10" and "BuildDesk 3.2 U" Software from BuildDesk Ltd.

TepliTie Features



Wall Tie Selection

Type	Cavity Width	Application
Type 1	50 mm - 150 mm	For most building sizes and types of a maximum height of 18m. Suitable for most sites.
Type 2	50 mm - 300 mm	General purpose tie for domestic and small commercial buildings of a maximum height of 15m. For flat sites where the basic wind speed is up to 31m/s and altitude is not more than 150m above sea level.
Type 4	50 mm - 300 mm	Light duty wall tie suitable for box form domestic dwellings with a maximum height of 10m and leaves of a similar thickness. For flat sites in towns and cities where the basic wind speed does not exceed 25m/s and altitude is not more than 150m above sea level.

In accordance with BS 5628-1: 2005 and BS 5628-6: 1

TepliTie should be of the correct length to ensure that it is properly embedded in to the masonry. The tie should have a minimum embedment of 50mm in each leaf but also take site tolerances into account for both cavity width and centering of the tie. For this reason we suggest tie lengths which achieve an embedment of between 62.5mm and 75mm.

Recommended tie lengths;

Cavity Width	Tie Length
75 mm or less	200mm
76 mm to 100 mm	225mm
101 mm to 125 mm	250mm
125 mm to 150 mm	275mm
151 mm to 175 mm	300mm
176 mm to 200 mm	325mm
201 mm to 225 mm	350mm
226 mm to 250 mm	375mm
252 mm to 275 mm	400mm
276 mm to 300mm	425mm

Installation

For walls in which both leaves are 90mm or thicker, 2.5 ties per square metre (900mm horizontal x 450mm vertical centres) should be used.

For walls in which either leaf is thinner than 90 mm, 4.9 ties per square metre (450mm horizontal x 450mm vertical centres) should be used.

At vertical edges of an opening, unreturned or unbonded edges, and vertical expansion joints, additional ties should be used at a rate of one per 300mm height, located not more than 225mm from the edge.

TepliTie should be pressed down into fresh mortar and should be buried in to the fresh mortar to ensure that the tie is covered within the mortar joint. Ties should be installed with a slight fall to the outer leaf, not towards the inner leaf as this could provide a path for moisture to cross the cavity.

The drip part of the tie should be positioned near the centre of the open cavity.

Installed ties should be clear of mortar droppings to allow the drip to function and prevent water from crossing to the inner leaf of masonry.

Insulation retaining clips are available for partial fill cavity walls.

Thermal Conductivity

TepliTie has a thermal conductance of 0.7 W/K.m. Stainless Steel has a thermal conductance of 17 W/K.m

Certification

In the UK, TepliTie has a BBA certificate and is accepted by the NHBC.

TepliTie has been tested to EN standards, accepted across Europe.



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