

# PolyKey Cavity Insulation

## PRODUCT DESCRIPTION

PolyKey is a tongue-and-groove EPS insulation element built into the cavity of a double-leaf masonry wall as the outer face-brick leaf rises. It is a non-structural infill. It is bought for three things: thermal performance, a cavity that stays clear of mortar droppings, and a joint that cannot shrink open.

## POLYKEY CAVITY INSULATION PROPERTIES

| PROPERTY                                                        | VALUE                                                                                                                               |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Element size</b>                                             | 340 H x 1200 L x 60/40 T mm, tongue-and-groove on all edges. Moulded in this profile only.                                          |
| <b>Core material and density</b>                                | Fire-retardant FRCel EPS, 20 kg/m <sup>3</sup> (20 g/l)                                                                             |
| <b>Thermal conductivity, lambda at 10 C</b>                     | <= 0.035 W/m.K (dry value)                                                                                                          |
| <b>Thermal resistance, 60/40 element, tested with wall ties</b> | R = 2.0 m <sup>2</sup> K/W. This is an element figure measured with the ties in place, so it already carries their bridging effect. |
| <b>Clear-element resistance, thin (40 mm) section</b>           | R = 1.14 m <sup>2</sup> K/W. Design the element on its thin section.                                                                |
| <b>Clear-element resistance, thick (60 mm) section</b>          | R = 1.71 m <sup>2</sup> K/W                                                                                                         |
| <b>Plain Cavity board (a separate product)</b>                  | 50 / 100 / 150 mm precision-cut board, built in with a nominal 25 mm air gap. R = 1.43 / 2.85 / 4.29 m <sup>2</sup> K/W.            |
| <b>Reaction to fire</b>                                         | B-s1,d0 (Euroclass B) to SANS 53501-1, on the FRCel EPS core.                                                                       |



Summary only — 9 further properties are given in the PolyKey Cavity Insulation datasheet.

## APPLICATIONS AND SCOPE

### APPLICATIONS

- New double-leaf (double-skin) brick and blockwork walls, where the element is built in course-by-course as the outer leaf rises.
- Face-brick residential, estate and light commercial construction, where the cavity is being built anyway and the insulation goes in without changing
- Comfort and running-cost improvement above the SANS 10400-XA minimum, and as an input to a rational-design or energy-model submission
- Cavity walls where mortar droppings bridging the cavity are a known site problem - the tongue-and-groove profile closes the cavity below as the wall
- Perimeter insulation to a foundation wall, above the DPC, where the detail is drawn, the element is fully encapsulated

### WHERE NOT TO USE IT

- Not as a route to SANS 10400-XA compliance on a double-skin masonry wall
- Not a retrofit. The element is bedded and keyed into the mortar courses as the leaves rise. It cannot be posted
- No role in single-leaf, timber-frame or light-steel-frame walls. There is no cavity to key into.
- Not for use as a fire division, and not in a fire-rated separating wall that relies on the cavity
- Not against chimneys, flues, boiler or heater vents, or any surface hot in service