



RETROFIT EAVES INSULATOR

Retrofit thermal insulation & ventilation at the wall plate & ceiling junction

- » Ensures excellent insulation up to the wall plate.
- » Maintains 25,000 mm² ventilation area at the eaves as required for cold lofts.
- » Minimises thermal bridging at the eaves detail, reducing the Psi value.
- » Improves thermal performance of the house.
- » Warmer internal walls reduce condensation and mould formation.
- » Innovative design ensures that installation is fast and easy.
- » A patented active hinge means that the REI is suitable for all roof pitches.
- » Appropriate for PAS 2035 projects as ventilation and thermal performance are considered.





Application

The ARC Retrofit Eaves Insulator was developed to address heat loss at the eaves junction of the existing housing stock in the UK. The eaves junction, where a pitched roof meets the wall, is a difficult detail to insulate retrospectively due to space constraints and therefore is prone to excessive heat loss. Historically, mineral or glass wool was stuffed into this detail; however, this blocks the ventilation path from the eaves into the cold loft space and can result in mould formation and interstitial condensation in the structure. If the installer estimates a ventilation gap, it is very difficult to ensure an appropriate ventilation path is maintained whilst fully insulating the eaves. A gap in the insulation at the eaves detail will result in a thermal bridge and a cold spot on the internal walls where moisture in the air can condense and mould will begin to grow.

The ARC Retrofit Eaves Insulator is easy to install, ensures insulation right up to the wall plate, and maintains a ventilation path as required in the regulations. The ARC Retrofit Eaves Insulator is to be used when continuous insulation from the loft to external wall insulation or the cavity is not possible. This may be the case when the path is blocked by a wall plate or the cavity is capped. The ARC Retrofit Eaves Insulator is best used when ventilation in the loft space is achieved through the eaves but can be used when ventilation is achieved by other methods.

Installation

The ARC Retrofit Eaves Insulator is designed to be quickly and easily installed from the loft space, reducing labour time.

- » Remove a sufficient amount of loft roll from the gap between the ceiling joists to access the eaves.
- » Fold the ARC Retrofit Eaves Insulator in half with the plastic ventilation tray on the outside.
- » With the ventilation ridges facing upwards, the tray should be compressed to expel the air from the bag.
- » Push into the eaves space with the hinge of the ventilation tray facing the corner of the eaves. The ventilation ridges should be facing upwards.
- » If access is limited, the product should be pushed into the eaves using a pole or broom handle.
- » The product will slowly unfold as air re-enters the bag. Once unfolded, the ventilation tray ridges should be in contact with the roof felt or the underside of the sarking.
- » Lay loft roll up to the ARC Retrofit Eaves Insulator ensuring that there are no gaps. Ensure that the ventilation path is maintained over the loft roll insulation.
- » At the end of a run, where the gap between the ceiling joists may be smaller, open the polythene bag, cut the insulation to size and reseal using duct tape. The product can then be fitted as normal.

Dimensions & Product Specification

The REI is suitable for all roof pitches above 15°. Due to the variability of rafter spacing, it is important to measure the gap between the rafters in the property and to ensure that this is regular so that the correct product can be ordered correctly.

Please use the table below to determine which product is suitable for you. It is important to note that the product is designed to be suitable whether rafters are in-plane or out-of-plane with the ceiling joists. The rafter gap is defined as the distance between the two opposing planes of the adjacent rafters.

Rafter Gap	Product Name
Larger than 200mm, up to and including 300mm	REI300S
Larger than 300mm, up to and including 400mm	REI400S
Larger than 400mm, up to and including 450mm	REI450L
Larger than 450mm, up to and including 500mm	REI500L
Larger than 500mm, up to and including 600mm	REI600L

Thermal Bridging

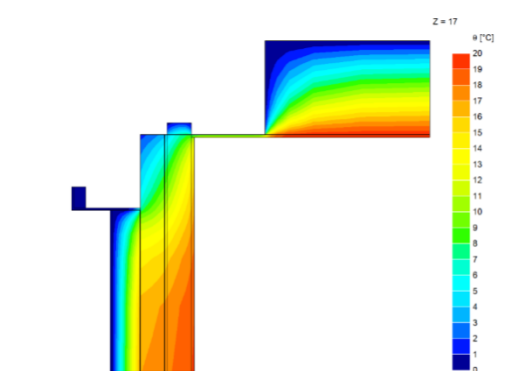
The ARC Retrofit Eaves Insulator can significantly reduce the thermal bridging in a dwelling. The Psi value is a measure of how much heat is escaping through the thermal bridge when compared to the plane elements of a building fabric and can be found in BR 497.

The surface temperature factor provides an indication of how significant a cold spot on the internal surface of a wall is and can be found in BRE IP1/06. Reducing thermal bridging can increase the surface temperature, in turn reducing the risk of interstitial condensation and mould.

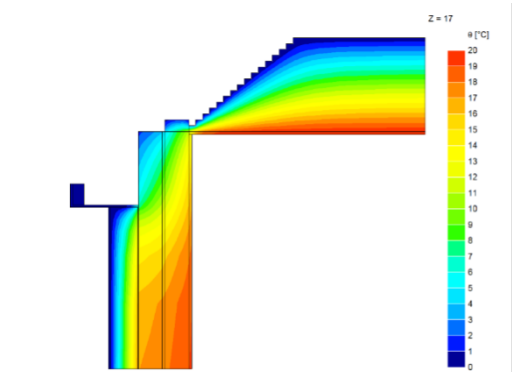
Below are some heat maps from an example case study demonstrating the improvement in heat distribution due to the addition of eaves and soffit insulation. In this study, an increase of 30% was observed in the surface temperature factor and a decrease of 94% in the Psi value.

Heat Maps

The loft insulation is 400mm thick with a thermal conductivity of 0.035 W/m.K. Wall insulation is 120mm thick with a thermal conductivity of 0.036 W/m.K. Soffit insulation is 400mm with a thermal conductivity of 0.035 W/m.K.



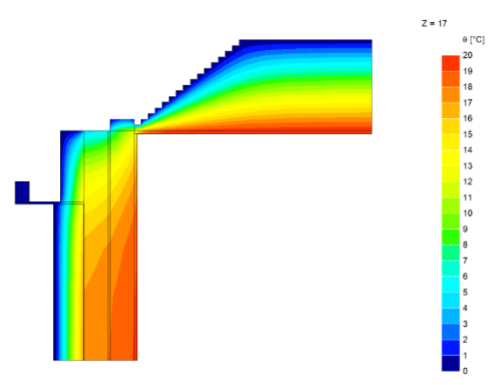
Insulated loft, and wall thermal simulation result.



Insulated, loft, wall, and eaves thermal simulation result.

Any information provided within this document is intended for guidance only. Expert technical advice should be sought before specification or installation of any product. It is of particular importance to ensure that any fire barrier or fire stopping product is tested for use with the exact application intended. ARC Building Solutions Ltd cannot accept liability for failure where usage is outside of the standard application, including but not limited to, where deflection or distortion has allowed gaps to form around the barrier, or where the barrier is not fitted in accordance with the manufacturer's guidelines.

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Insulated loft, wall, eaves, and soffit thermal simulation result.

Standards

The non-combustible glass mineral wool insulation used in the ARC REI has a thermal conductivity of 0.035W/m.K and is classified as Euroclass A1 EN 13501-1.

Storage and Packaging

ARC Eaves Insulators are supplied in polythene packs which are designed for transporting and protecting the products. It is not recommended that the packs be stored in direct sunlight. When storing the products for longer periods of time it is recommended that the product should be stored indoors, or under cover.

Environment

The non-combustible glass mineral wool insulation used in the ARC Eaves Insulator represents no known threat to the environment and is classed as ODP and GWP zero.

Health and Safety

ARC Building Solutions has an approved Health and Safety Policy and is committed to working and supplying products safely. We have assessed products as required by Substances Hazardous to Health Regulations (COSHH). An ARC COSHH data sheet is available and can be downloaded from ARC's website.



Certificate Number 19310
ISO 9001, ISO 14001
ISO 45001