

Press Release
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Archtechnik announces solution to cold bridging, heat conduction and new Part L Regulations

As a result of the world becoming more conscious of our environment, the construction industry has undertaken laws in order to make both public and private buildings much more energy efficient.

The new laws come in the form of the new 'Part L Building Regulations', which plan to increase energy efficiency and stop all cold bridging on a larger scale at each stage of its implementation.

The Problem

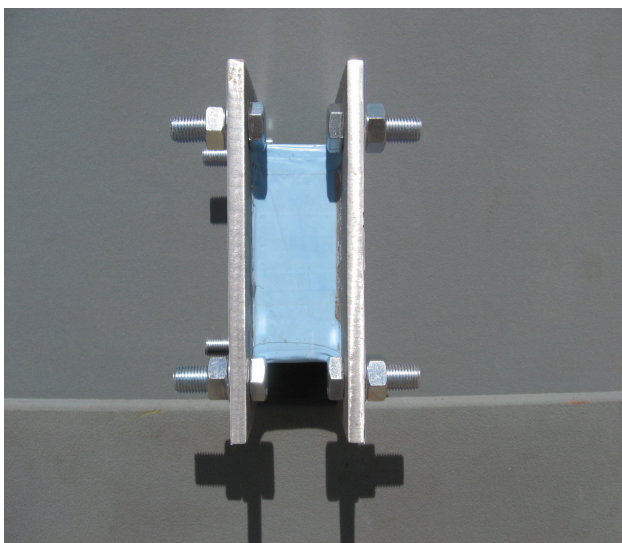
Steel is very well known for its ability to conduct heat ($\lambda = 47.6 \text{ W/Km}$) and when a metal member is required to run from inside the building envelope through the insulation cavity and on to the outside of the building it creates a pathway or Cold Bridge, which is very efficient at conducting heat energy out of the building and conducting cold back in.

Many methods have been tried in order to avoid this problem including:

- Breaking the beam and welding on fixing plates then placing layers of neoprene between these plates and drawing them together as the connecting bolts are tightened, entrapping the neoprene in the joint.
- Following the same procedure as above, but leaving a gap of approximately 60mm between the fixing plates. This is achieved by using an additional set of nuts to set the distance between the plates, then simply filling the air gap between the fixing plates with an insulation material 'Styrofoam' or other insulation material such as mineral wool.

The above mentioned methods are mostly used only as a last resort due to their ineffectiveness, mostly because (a.) The ability of this type of joint to take load and (b.) the thermal bridge's created by each of the steel fixings (bolts) collectively are very efficient at conducting heat energy out of the building. As we all know, these and other such methods cannot diminish the conductive qualities of steel.

The Solution



Combining the very latest technology ceramic alloy materials with leading edge computer aided design, this combination has negated and requirement for continuous steel connection through the ThermConX Thermal Break. The new ThermConX from Archtechnik not only solves the problem of thermal bridges at the source, but also retains the connection's ability to take load in compression, tension and shear, and also cantilever moments and twisting torsion.

The thermal effectiveness of the technical materials used in the ThermConX connections give them a thermal efficiency of steel of 47.5 W(Km) and with no loss in their ability to transmit load.

Due to the efficiency of the ThermConX to halt heat energy transfer in both ways, the problem of cold spots forming in the walls and ceiling of the building immediately around where the members protrude through the insulated envelope of the building are no more. This would be the case for any structure attached to the outside of the building such as a balcony, canopy or brise soleil. This eliminates the age-old problem of mould and mildew forming on the internal surfaces of the building in these areas. The cold temperatures outside cannot conduct into the building via a cold bridge and cause cold spots, which when in contact with warmer, moist air inside creates condensation, which often forms into mould.

To find out more about the unique Archtechnik range of structural balconies and other products such as canopies, Brie soleil and Balustrade all fitted with the ThermConX thermal break connection visit the company's website at www.archtechnik.co.uk

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