

SCI CONSULTANCY: DEVELOPMENT & SPECIFICATION PRODUCT & ENGINEERING SOFTWARE



Client:

Knauf Facades is a division of Knauf the multinational producer of building materials and construction systems.

The Knauf Group operates in 59 countries worldwide, providing construction materials and systems for Dry Lining, Insulation, Structural Steel, Floors and External Renders.

www.knauffacades.co.uk

SCI and Knauf Facades develop innovative light steel infill wall system

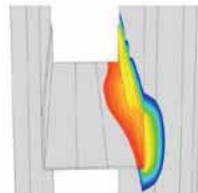
SCI and Knauf Facades have worked together to develop two new light steel infill wall systems. One system uses an innovative cold frame approach utilising a thermal stud and the other system is based on the more traditional warm frame solution.

SCI involvement in the development was focused on the two most important performance characteristics; thermal performance and structural performance. The first issue to address with the cold frame system was that of condensation risk. Using advanced thermal modelling techniques, SCI thoroughly investigated the condensation risk and developed the system to eliminate any risk.

Development of the systems for maximum structural performance involved a combination of theoretical calculation in accordance with the Eurocodes and structural testing of the systems. The structural testing enabled SCI to produce enhancement factors to apply to the theoretical design capacity which takes account of the panel acting compositely as a system rather than individual components.



Knauf cold frame with thermal stud being structurally tested



Extract of thermal modelling

The final part of the package that SCI were able to provide Knauf Facades was to produce a bespoke software package for the structural design of their infill wall systems. The software not only designs the wall panels based on design capacities derived from the structural testing programme but also determines the wind loads for different parts of the building for its specified location within the UK.

Paul Tollervey, Research & Development Manager and Mandeep Bansal, Technical Services Manager of Knauf Facades commented: "SCI worked with us to develop two light steel infill wall systems. We benefitted from both their technical expertise and commercial approach; having helped us design the infill wall systems they then supported us by developing bespoke engineering software aimed achieving market acceptance and uptake of these new products."