



WALLTITE®

The airtight insulation solution

Residential development Cork, Eire

Best Practice Case Study

 **BASF**

The Chemical Company

Residential development, Cork, Eire

Best Practice Case Study



Project data

Project: Residential development, Cork, Eire

Client: Owner/occupier

Specifier: Edge Architecture

Spray Foam Contractor: Advanced Insulation

Scope of Project: Barn conversion and new build

Year Completed: 2012

Products Used: WALLTITE and WALLTITE CV 100 injection grade foam insulation

Project description

The development comprises the conversion of a 19th Century stone barn combined with two new build properties on farm property in rural Southern Ireland.

Challenges

The objective was to provide warm and energy efficient living space. The architects wanted to meet the stringent energy efficiency standards of the Passivhaus building methods.

The walls of the barn were solid stone needing significant upgrading to meet thermal insulation standards without changing the external appearance of the building. The new build structures incorporated a cavity wall construction where the challenge was to find the most effective means of filling the cavity.

The Passivhaus building method demands exceptional airtightness, so attention to detail and the construction of joints was a key consideration.

Solution

The old barn building had solid stone walls: to get the required U-value of 0.26W/m²K a 75mm layer of WALLTITE was sprayed directly onto the interior wall surface, forming a seamless finish that is not only thermally efficient but is also both airtight and watertight. The WALLTITE layer was then covered with plasterboard for the interior finish.

The new building structures, on the other hand, were constructed of two leaves of concrete blocks with a 200mm cavity held with insulating wall ties. This cavity was filled with WALLTITE CV 100 injection grade – a variation of the spray foam product that is designed to be injected into cavity walls. The result was a U-value of 0.12W/m²K.

The original specification had called for the use of insulating beads to be pumped into the cavity, but Reinco, Renewables and Insulation Consultancy concluded that the WALLTITE, which bonds permanently to the substrate, would provide a permanently effective insulation layer that would not settle over time.

Project designers, Edge Architecture, wanted all of the building to follow the design principles of Passivhaus standards. This requires not only extremely efficient thermal insulation but also the highest airtightness standard. WALLTITE, being spray applied, is a highly reliable method of ensuring airtightness as any detailing is easily accommodated and jointing between insulation on the walls and roof is also completely sound. The buildings for this project had an airtightness target of 1m³/hr/m² @ 50Pa.

Client quote

This project was a first experience of WALLTITE for both the architect and the energy consultant and both were impressed by the solution it offered. Eric Davidson from Reinco observed: "It's a neat and practical solution and particularly good in eliminating the thermal bridging at joints."

Both companies were reassured by the fact that the applicator, Advanced Insulation, is a fully accredited Foam Master contractor. This means that they are fully trained and supported by WALLTITE manufacturer BASF through their Irish distributor Econ Polyurethanes based in Dublin.

Eddie Burgess at Edge Architecture can see the advantages of the product: "It absolutely does what we wanted it to do. It was also quick to install and caused us no problems on site. We will be specifying the product again."



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