

THORNTON SCIENCE PARK, CHESTER
SFS GROUP FASTENING TECHNOLOGY LIMITED



SFS flat roofing solutions, including their adjustable fastener system, were used to overcome a refurbishment challenge for the new energy R&D facility at Thornton Science Park, University of Chester

The refurbishment project posed particular challenges in respect of the flat roof, which consisted of a solid concrete deck, followed by screed laid to falls, a thin dense concrete layer and three bituminous membrane layers. The new roof specification required the application of new insulation to upgrade the thermal performance and a new single ply waterproofing membrane.

Due to the location of this project and the presence of existing bonded layers, adhesive application was ruled out at an early stage and a mechanically fastened solution was sought.

Initial pull-out tests confirmed that fixing was required through the existing screed and direct into the concrete deck. With the roof's high exposure rating and dimensions, wind load calculations indicated that only corner and perimeter zones should be used, which demanded a high density of fasteners in these areas.

Solution

Working with Range Roofing, the solutions provided by SFS included its TIA adjustable fastener in combination with the isoweld® 3000 heat induction welding system. This fastener system included specially coated isoweld® stress plates combined with 230mm and 300mm FI-R-20 sleeves and the 150mm long TIA fastener. These were installed through the insulation and screed layers and were mechanically fastened into the concrete substrate.



The fasteners were applied through the insulation boards in a field fix grid pattern followed by the Protan SE single ply waterproofing membrane, which was then installed using the specialist isoweld® 3000 system, welding the membrane directly onto the isoweld® stress plates. This provided an extremely secure fix, without having to duplicate fasteners, and the associated drilling, and without the need to penetrate the waterproof membrane as would be necessary on seam fix systems.



Client	University of Chester
Main contractor	Willmott Dixon
Sub-contractor	Range Roofing Ltd
Location	Chester
Application	isoweld® system, TIA adjustable fastener, FI-R-20 sleeves



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