

Case Study

Products: PIR Insulation, VCL & PUMA Waterproofing

Resiprufe Waterproof the Mornflake Factory Roof

Resiprufe worked with the client and the manufacturer of the waterproofing PCP to manage the project which was a roof on a brand new concrete structure. Unusual in its nature, the roof deck was flat not tapered, because in 3-5 years it will most likely be turned into a floor and a further storey adding. The challenge was to do complex detailing in the dead of winter, and to create drainage channels on a flat concrete floor. The system specified was MMA Damp Primer/PU bonded tissue faced insulation, VCL, PUMA, MMA Top Coat.





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Why PUMA vs other technologies?

The client insisted on PUMA liquid due to the extreme fast cure in low temperatures and also because of the seamless transition across the roof – no seams to leak in the future. The technology had already been used by the client previously.



Commencing on the first week of January, the concrete literally had 5mm of pure ice over the whole deck. The first step was to start working on the edge detailing by melting the ice and flashing the concrete dry.



The next step was to apply EleRoof MMA Damp Prime to the surface, this works to seal in residual construction moisture from the concrete and providing a low MVT rate. The surface was aggregate blinded to enhance adhesion of the PU foam adhesive.



Three drainage channels were created, using insulation 40mm lower than the surrounding areas to reduce the chance of water pooling on the main roof, and to help aid the water filtering into the channel. We used tannelised wood to create edge protection to prevent damage between the transition of 100mm and 60mm insulation.





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The insulation was started at the outer edge and we created a slight fall from the outer edge inwards to aid any flow of water in the future towards the drainage channels. We used PU foam adhesive to bond the insulation.



To the insulation, a VCL layer was applied which consists of an aluminium foil facer on top of a bitumen membrane – the Provap has a self adhesive backing.



In extremely cold temperatures and on porous surfaces we use the Provap primer to ensure perfect adhesion.

For the back edge connecting to the old building, it was important to waterproof to a high level. The gap was filled with rockwool to give linear gap fire performance vs PU foam or insulation. The rockwool was then coated with the PUMA Thixo membrane tanking up the wall.

We did a second detail on top of the insulation (inset picture)





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Due to the extreme weather – lots of rain, ice and strong winds during installation, the joints in the Provap VCL were feathered with PUMA Thixo as an effective night seal.



The next step was to start the installation of the 2mm PUMA elastic membrane with polyester fleece reinforcement. This provides the flexible layer in case of any movement.

The PUMA sets in only 30 minutes allowing rapid installation even in adverse weather.



The façade goes up and over the metal perlins at the side and the client wanted a special detail around the perimeter – install a 200mm flexible GRP trim screwed to the metal (and later the cladding will be fixed through the top). The GRP was connected to the deck with a band of PUMA thixo under it and also 100mm fleece reinforced PUMA was applied to overlap the trim and the deck.





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Once the PUMA membrane was installed, it is necessary to apply the 0.5kg/m² EleRoof MME Top Coat FR to provide maximum fire performance and weather resistance.

The top coat is MMA technology and was pigmented RAL 7015



A red walkway was added for a fire exit (stairs to be installed later). This was using the MMA Top Coat pigmented traffic red and whilst wet aggregate was scattered and backrolled to provide a non-slip surface.

This walkway is only for emergency exit situations.

You can see the resulting roof at work a week after completion resisting water and the channels were functioning and providing an exit for the water.

On a typical project the insulation would have been tapered but this deck will be covered and be a floor in 3-5 years time so had to be flat.

Another great Resiprufe project!

