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Technical Bulletin

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Special Service Environments: enclosed swimming pool buildings

Introduction

The environment associated with an enclosed swimming pool is often found to be exceptionally severe. The severity of the environment is related to the building ventilation, temperature of the pool, proximity of the walling and roofing to the pool surface, type of chemical treatment and the duty cycle of the environment.

While many municipal pool buildings are designed with appropriate ventilation capacity or often airconditioned, it has been found that during service the ventilation is reduced, or the air conditioning strictly controlled to reduce operating costs. This can only increase condensation on un-insulated roof and wall sheeting leading to increased time of wetness and severe corrosion of a wide range of metallic coating types.

The use of perforated ceiling systems to reduce reflected sound has been found to increase corrosion of structural steelwork and roof sheeting located within the adjacent ceiling cavity. Condensation passes freely through the perforated ceiling tiles and condenses either on the roof sheeting or upon ineffectively installed reflective foil insulation barriers.

When combined reflective foil barrier/bulk insulation are used in a pool area or other high condensation environments, great care must be taken to completely seal the lapped foil membrane with duct tape at each join. This must be carefully undertaken to prevent the penetration of moisture which will ultimately lead to corrosion of the roof sheeting and supporting structural steel work.

It has been noted that when following trades have caused disruption to the foil or other barriers, and the disruption has not been adequately repaired, saturation of the bulk wool insulation or ponding of the moisture directly upon the reflective foil barrier has occurred. This has led to accelerated corrosion of the structural roof components and perforation of the roof sheeting.

Moisture will also freely penetrate plaster board sheeting and lead to similar rates of corrosion within the ceiling space. Where structural steel decking (DECKFORM® steel) is included in the building design as intermediate floors, penetration of condensation to the structural decking surface can lead to accelerated attack.

Post painting of the galvanised steel surface is effective in combating such corrosive attack. Due to the variability in both design and operating parameters of enclosed pool structures, BlueScope only recommend the use of SUPERDURA® Stainless prepainted steel for the cladding of pool enclosures.