



High grade coatings keep coastal stadium gleaming

Sports stadia present a unique combination of challenges for stemming corrosion of exposed steel sections that are mostly outdoors and border heavily trafficked areas during matches, whilst ensuring that the home team's colours stay fast.

Known as the Metricon Stadium, the \$144.2 million new home ground of the Gold Coast Suns AFL football team at Carrara in Queensland, less than 10km from the breaking surf, represented a challenge in terms of both corrosion resistance and aesthetic appeal.

The home team's colours were chosen to reflect the Suns' radiant red and yellow and the selected coating system ensured long durability and ease of both initial application and 'touch up' maintenance. International Paint's systems were chosen for the job which included a high-performance two-coat system for the external steelwork consisting of a zinc-rich epoxy primer for corrosion protection, (Interzinc® 52) and acrylic polysiloxane topcoat for aesthetic appeal and

durability, (Interfine® 979). These products were specified at the correct dry film thickness to obtain a long-term corrosion protection coating system PSL1 in a high corrosivity category as per AS/NZS 2312:2002.

Protective Coating Project Manager Nigel Williams said that the design architect team established the requirements for corrosion protection for the steelwork structure, not least the stadium's distinctive perimeter canopy, at an early project stage via a single source provider.

"The International Paint offer provided the brilliant finish required as well as a high level of corrosion resistance for the job," he said.

International's technical team offered the technical protective coating specification, Interspec™ to the stadium project to document the structures, factor in usage, durability, environmental and design considerations and define the required corrosion protection to AS/NZS 2312.

The AS/NZS 2312:2002 Standard – Guide to the *protection of structural steel against atmospheric corrosion by the use of protective coatings* references coating system types against environmental exposure to predict the durability of coatings in years. The Standard defines durability as years to first major maintenance. However that does not equate to protection warranty duration as that is a commercial consideration specific to the structure.

Mr Williams said that for increased added value to the client, International Paint complements its long term warranties with long-term support on corrosion control via its Interplan™ (planned maintenance) service.

As the protective coating system was in part of the stadium's public areas, technical performance included requirements for improved resistance to day-to-day wear, possible vandalism (resistance to graffiti) and mechanical damage (abrasion test ASTM D4060 and impact test ASTM D2794), all whilst

preserving a pristine appearance. International Paint nominated a zinc-rich primer (SSPC – Paint 20 Level 2) for cathodic protection from the metallic zinc pigment and high performance 'polysiloxane' high build topcoat technology.

International Paint assessed the durability of the coating system with their locally-based technical service team and in conjunction with the International Standard ISO 9223 to the 'C4' high corrosivity category after consideration of macro and micro environments in the stadium structure. They established that durability periods from 10 to 15 years could be attained before the first major maintenance refurbishment with high performance coatings appropriate to the stadium's unique atmospheric environment.

Design considerations for the tubular steel-based canopy build required engineered planning, with Arup and Beenleigh Steel Fabrications Pty Ltd able to fabricate lifting points achieving less damage on erecting. Faying surfaces were nominated to be treated with an approved zinc-rich coating, (Interzinc® 315) which ensured the friction bolted joints remain tight as it met ASTM A490 Class B Slip coefficient.

For surface preparation, International Paint recommended standard AS 1627.4 Sa 2½ - 'near white' cleanliness which removes all mill scale, rust and foreign particles, allowing for some grey shading (as designated in ISO 8501-1) and a sharp angular surface profile ranging between 50-75 microns, plus attention to surface defects and weld splatter which had to be filled or removed.

"In total, we coated 1400 tonnes of external and internal steelwork on the stadium, requiring 25,000 litres of paint," Mr Williams said.

"We worked closely with the applicator, Tranzblast Coating Services to ensure that the project ran smoothly and we're happy to say that the golden yellow colour chosen by architects Populous, a notoriously difficult colour to obtain opacity was successfully applied due to high solids formulation."

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