Tessara Metal Silos

Project Case Study

Refurbishment of Metal Silos at Tessara, Epping, Cape Town.

Tessara, a manufacturer of table grape preservation sheets intended for grapes, litchis, blueberries, tomatoes and cut flowers markets.

The company offers laminated sulfur dioxide-based plastic sheets to protect produce, thereby enabling customers to keep flowers and fruit fresh during transport.

DEKRO PAINTS

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Project Scope:

An external redecoration and corrosion protection of two existing mild steel silos used for water storage

Scope of works

	Metal Surfaces		
Number	*Description*	*Product*	*Spread rate **
Spec 1	*Mild Steel Surfaces (Previously Coated)*	*Hydrolock Primer* *Acri 700*	*12m2/l* *8m2/l*

* **Average surface texture – primers will vary vastly in surface coverage depending on the roughness and porosity of surface. Refer to technical data sheet**

Exclusions

Metal Repair and Replacement

Existing Conditions:

Substrate: Mild Steel water tanks, showing signs of moderate surface rust, particularly at seams, bolt heads, and areas with minor dents or scratches.
Existing Paint: Evidence of a previous alkyd-based paint system, now exhibiting fading, chalking, and localized peeling.
Contamination: Accumulation of dust, agricultural debris, and some bird droppings on the silo surfaces.
Structural Integrity: Generally sound, with no major structural damage identified during the initial inspection.
Challenges: Weather
High UV Exposure: Leading to paint fading and degradation of coatings.
Temperature Fluctuations: Causing expansion and contraction of the metal, potentially leading to cracking of rigid coatings.
Occasional Strong Winds: Requiring a durable and well-adhered paint system.

Scope of Works:

Detailed Inspection and Assessment:

Thorough visual inspection of all silo surfaces to identify areas of rust, damage, and coating failure.

Adhesion testing of the existing paint system to determine its integrity.

Measurement of the surface profile to ensure adequate key for the new coating system.

Surface Preparation (Remedial Repairs):

Cleaning: High-pressure washing with a single component salt removing, flash rust preventing, and degreasing additive solution to remove all loose dirt, debris, and biological growth.

Rust Removal: Manual or mechanical abrasion (wire brushing, sanding) to remove loose and flaky rust back to a sound metal substrate (aiming for SSPC-SP 2 or SP-3 standard).

Repair of Minor Damage: Filling minor dents and imperfections with a suitable metal filler where necessary, followed by sanding to a smooth profile.

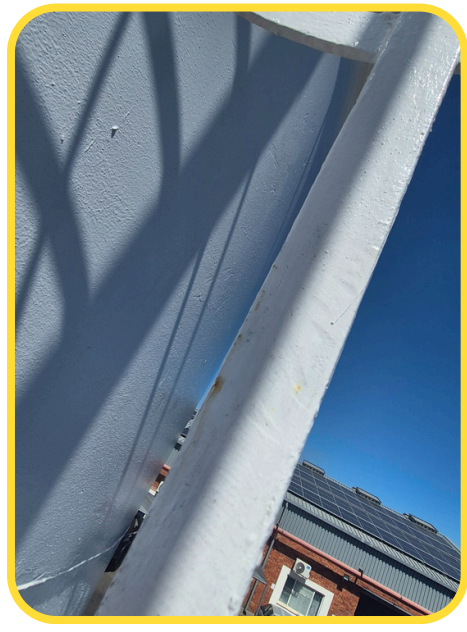
Edge Feathering: Rounding sharp edges and corners to ensure better paint coverage and prevent premature failure.

Application of Protective Coating System:

Primer (Anti-Corrosive): Application of a high-performance, rust conversion primer with excellent adhesion to steel and proven anti-corrosive properties.

I*ntermediate Coat:* Depending on the severity of the environment and the specified topcoat, an epoxy intermediate coat may be applied to build film thickness and enhance protection.

Topcoat (UV and Weather Resistant): Application of a durable single pack polyurethane topcoat with excellent UV resistance and color retention suitable for the Western Cape's climate.



Quality Control:

- Regular monitoring of surface preparation standards.
- Wet film thickness measurements during application to ensure correct build-up.
- Dry film thickness measurements after curing.
- Adhesion testing (e.g., pull-off tests) to verify the bond strength of the coating system.
- Visual inspection for any defects such as runs, sags, or pinholes.

Products Specified:

Degreaser/Cleaner: *Dekro Wunda Clean* - A Biodegradable industrial degreaser.
Rust Converter: Hydromet Rust converter provides rust-converting properties to the coating layer and enables direct applications on rust or on poorly prepared substrates.
Metal Filler: Epoxy Fine Fairing Compound - A highly quality, light weight, high strength filler and fairing compound for smoothing imperfections above or below the water line on steel, cement, aluminium and fiberglass hulls.
Primer: ***Hydrolock Primer*** - Water based 2-component epoxy for use on most sound and eroded building substrates where a bonding effect is required.
Topcoat: Acri 700 - a finishing coat based on acrylic resin and drying by evaporation of the solvents. It has excellent adhesion property, weathering resistance and gloss and colour retention. It also has a Food Grade Certificate for dry room areas.