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1. Revision History

This revision cancels and replaces revision no 0 of 10TB-011.

Date	Rev	Compiler	Remarks
Oct 2015	1	D Janse van Rensburg	New document number. Update of supplier list and contact details.
June 2013	1	D Janse van Rensburg	Update of supplier list and contact details. Add test criteria for C1 to C2 corrosive categories.
Oct 2010	0	B Hill	First issue – 10TB-011

2. Purpose

The purpose of this technical bulletin is to inform the business about the latest approved and tested corrosion protection products for the new Distribution equipment manufactured from steel.

3. Background

New corrosion protection systems (i.e. coatings or paints) are marketed by paint manufacturers and/or their suppliers on a continuous basis. Past experience and research has shown that the performances of many corrosion protection systems are often overstated by suppliers. Consequently, Eskom Distribution has maintained and insisted on the laboratory and natural performance testing of all new materials being offered or considered for the corrosion protection of new equipment manufactured from steel. This is to guard against costly and/or sub-standard corrosion protection specifications based only on the manufacturer's recommendations.

This document provides a list of the latest approved and tested products for the different corrosion protection specifications (DSs) as detailed in Distribution Specification DSP 34-1658, entitled "Corrosion protection specification for new indoor and outdoor Distribution equipment, components, materials and structures manufactured from steel".

It is important to realise that the paint industry is an ever evolving commerce, with the main driving forces for change associated with environmental, health and economic aspects. Consequently, as new coatings become more environmentally friendly, durable, surface tolerant, have greater ease of application, require less time for curing and are more cost effective, they will be tested and if found to be suitable, included in the approved list of products.

4. Latest Performance Criteria

The following criteria are currently considered in terms of the performance testing of coatings for the corrosion protection of new Distribution equipment manufactured from steel.

- Corrosion Protection of New Carbon Steel (Non- to Low Corrosive Indoor Applications) (C1 to C2 categories as per ISO 9223)
 - 120 hours (5 days) neutral salt spray testing when applied to new mild steel – Full system
 - 120 hours (5 days) water condensation testing.
 - The coating must exhibit excellent adhesion properties.
- Corrosion Protection of New Carbon Steel (Low to High Corrosive (C1 to C4 categories as per ISO 9223)
 - 720 hours (60 days) neutral salt spray testing when applied to new mild steel – Full system
 - 480 hours (20 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).

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- Proven at a marine test facility for a minimum period of 12 months.
- The coating must exhibit excellent adhesion properties.
- Corrosion Protection of New Carbon Steel (High to Very High corrosive) (C1 to lower C5 categories as per ISO 9223)
 - 1440 hours (60 days) neutral salt spray testing when applied to new mild steel – Full system.
 - 720 hours (30 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).
 - Proven at a marine test facility for a minimum period of 24 months.
 - The coating must exhibit excellent adhesion properties.
- Corrosion Protection of New Hot Dip Galvanised Mild Steel (Low to Very High Corrosive) (C1 to C5 categories as per ISO 9223)
 - 1080 hours (45 days) neutral salt spray testing when applied to new hot dip galvanised mild steel – Full system.
 - 480 hours (30 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).
 - Proven at a marine test facility for a minimum period of 24 months
 - The coating must exhibit excellent adhesion properties.
- Corrosion Protection of New Zinc-metal Sprayed Mild Steel (Low to Very High Corrosive) (C1 to C5 categories as per ISO 9223)
 - 1080 hours (45 days) neutral salt spray testing when applied to zinc-metal sprayed mild steel – Full system.
 - 480 hours (30 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).
 - Proven at a marine test facility for a minimum period of 24 months.
 - The coating must exhibit excellent adhesion properties.
- Coating of New Stainless Steel (Low to Very High Corrosive) (C1 to C5 categories as per ISO 9223)
 - 1920 hours (80 days) neutral salt spray testing when applied to new 304L or 316 stainless steel – Full system
 - 480 hours (30 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).
 - Proven at a marine test facility for a minimum period of 24 months.
 - The coating must exhibit excellent adhesion properties.
- Coating of New 3CR12
 - 1440 hours (60 days) neutral salt spray testing when applied to new abrasive blast-cleaned 3CR12 steel – Full system
 - 720 hours (30 days) water condensation testing.
 - 1000 hours accelerated weathering (QUV) testing (topcoat).
 - Proven at a marine test facility for a minimum period of 24 months.
 - The coating must exhibit excellent adhesion properties.

- Other criteria that are also considered include:
 - Environmental acceptability
 - Reduced volatile organic compound (VOC)
 - Ease of application
 - Reduced curing rate
 - Product price
 - Product quality
 - Product availability.
 - Fire retardancy (added benefit).

5. Latest Specification

The latest revision for the corrosion protection of new indoor and outdoor Distribution equipment manufactured from steel, DSP_34-1658: Corrosion protection specification for new indoor and outdoor Distribution equipment manufactured from steel was published in March 2010 and is available at the following URL: http://intranet/tescod/specific/DSP_34-1658.pdf.

6. Approved Products and Suppliers

6.1 Approved Powder Coating Suppliers

- Akzo Nobel
- Ferro
- Powder-Lak

The Powder Coating Manufacturer shall specify the method and materials to be used for the repair procedures.

6.2 Approved Manufacturers for Zinc Phosphate Alkyd Primers

- Dulux South Africa
- Kansai Plascon
- Optima Coatings

6.3 Approved Manufacturers for Alkyd Universal Undercoats

- Any supplier verified to conform to Grade I of SANS 681:2007's requirements, entitled "*Undercoats for paints*".

6.4 Approved Manufacturers for Phenolated Alkyd Primers

- Kansai Plascon.

6.5 Approved manufacturers for Alkyd Gloss Enamels

- Any supplier verified to conform to Grade II of SANS 630:2009's requirements, entitled "*Decorative high gloss enamel paints*".

6.6 Approved General Purpose Epoxy Primers / Tie Coats

- Sigma Coatings - Sigmacover 280
- Jotun – Penguard Primer
- Stoncor – Carboguard 893
- International Paints – Intergard 269 (tie coat)
- Varcol Paints – Varguard 50.
- Speccoats – Epoxy Multi Prime
- Dekro Paints – Chugoku Umeguard SX
- Optima Coatings – OptiGuard Universal EP

(Warning: Some of these epoxies may be more prone to amine blush/bloom and exhibit limited overcoating intervals. Please consult the Paint Supplier regarding any specific product limitations).

6.7 Approved Zinc Rich Epoxy Primers

- Sigma Coatings – Sigmazinc 109HS
- Jotun – Barrier 80
- Stoncor – Carbozinc 859
- International Paints – Interzinc 52
- Varcol Paints – Varguard 30
- Speccoats – Epoxy Multi Zinc.
- Dekro Paints – Chugoku Epicon Zinc HB
- Optima Coatings – OptiPrime EZ

(Warning: Some of these epoxies may be more prone to amine blush/bloom and exhibit limited overcoating intervals. Please consult the Paint Supplier regarding any specific product limitations).

6.8 Approved MIO Filled Epoxy Intermediate Coatings

- Sigma Coatings –Sigmacover 435 (Sigmacover CM Miocoat).
- Jotun – Penguard Express MIO and Penguard Midcoat MIO.
- Stoncor – Carboguard 893 MIO.
- International Paints – Intergard 400.
- Varcol Paints – Varguard 52 MIO Epoxy Intermediate.
- Speccoats – Epoxy MIO HB
- Dekro Paints – Chugoku Umeguard MT
- Optima Coatings – OptiGuard HB MIO

(Warning: Some of these epoxies may be more prone to amine blush/bloom and exhibit limited overcoating intervals. Please consult the Paint Supplier regarding any specific product limitations).

6.9 Approved Aliphatic Acrylic Polyurethane Topcoats

- Sigma Coatings – Sigmadur 550 (Sigmadur Gloss).
- Jotun – Hardtop AS
- Stoncor – Carbothane 134 (Carboline 134).
- International Paints – Interthane 990.
- Varcol Paints – Varthane 431.
- Speccoats – PU 4:1 or PU 7.3:1 55 HB
- Dekro Paints – Chugoku Unymarine
- Optima Coatings – Optithane 421

6.10 Approved High Build Polyurethane Primer/Finish Coatings

- Sigma Coatings – Sigmafast 210.
- Speccoats - PU 4:1 50 SP HB Satin

6.11 Approved Water-based Styrene Acrylic Primer (formulated for Zinc Surfaces)

- Optima Coatings – OptiPrimeAqua
- Stoncor – Pegalink Primer

6.12 Approved Water-based Modified Vinyl Acrylic Coatings

- Optima Coatings – OptiRustBusta
- Stoncor – Noxyde.

6.13 Approved Hot Dip Galvanisers

- Members of the Hot Dip Galvanizers Association Southern Africa (HDGASA) www.hdgasa.org.za
- Or others that have been shown to comply with SANS 121 (ISO 1461).

6.14 Approved Zinc Metal Sprayers

- Members of the Hot Dip Galvanizers Association Southern Africa (HDGASA) www.hdgasa.org.za
- Or others that have been shown to comply with BS EN 22063.

6.15 Approved Repair Coatings for Hot Dip Galvanising or Zinc Metal Sprayed Coatings

- Speccoats – Zincfix
- Sigma Coatings – Sigmazinc 19
- Or others as approved by the Hot Dip Galvanizers Association Southern Africa (HDGASA)

6.16 Approved Suppliers/Applicators for Sherardized Zinc Coatings

- DiSTek
- LEVICOR
- Any supplier verified to conform to SANS 53811.

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6.17 Paint/Material Supplier Contact Details

- Akzo Nobel Powder Coatings SA (Pty) Ltd. – Contact Person: Russel Thomson at 011 861 0500. Private Bag X032, Alberton, 1450.
- Kansai Plascon - Contact Person: Ivonne Ryland at 011 951 4500. P O Box 4010, Leipaardsvlei, 1743.
- Dekro Paints (Pty) Ltd – Contact Person: Samuel Jansen or Terry Render at 021 903 3131, P O Box 131, Kuils River, 7579
- Denso SA – Contact Person: Donovan Edward at 011 704 7685, P.O. Box 630, Maraisburg 1700.
- Distek – Contact Person: Lev Greenburg at 011 974 2581. P O Box 10343, Edlene, 1625.
- Ferro – Contact Person: William Shipway at 011 746 4000. P O Box 108, Brakpan, 1540.
- International Paints – Contact Person: Mark Lategan / Noel Norris 011 861 1000 / P.O. Box 123704, Alrode 1451.
- Jotun SA – Contact Person: Bruce Trembling at 011 974 7055 / 082 302 3333 / 021 941 8800 / P.O. Box 187, Blackheath, 7581.
- Optima Coatings – Contact Person: Kobus Pretorius or Shawn Leach at 011 955 6166 / 082 366 7690 / 031 539 5407, P.O. 866, Westville, 3036.
- Powder-Lak – Contact Person: Patrick Flinner at 011 437 5905/6, P.O. Box 9535, Germiston South Ext. 7.
- Sigma Coatings – Contact Person: Divan Conradie at 011 389 4800, P.O. Box 124055, Alrode, 1451
- Speccoats – Contact Person: Greg Cohen at 0861 1372 468, P O Box 14583, Wsadeville 1422.
- Stoncor Africa – Contact Person: Dave Thompson at 011 254 5500 / 083 267 8965, P.O. Box 2205, Halfway House 1685.
- Varcol Paints – Contact Person: Ami Leeftong at 012 653 0096 / 082 887 9160, P O Box 8210 Centurion, 0046.