# Base Load Power Hub (BLPH)

## COATING PROCEDURE- ACCORDING TO CROSSWIND PROJECT SPECIFICATION
For Sea Water Lift Progressive Cavity Pumps (P-50001 A/B)

Document Number: 1724000936-MAT-PRO-00018

Document Class: 2

| | | | | | |
|---|---|---|---|---|---|
| 03 | 09/12/2024 | Approved for Construction (AFC) | GLL | APD | AHN |
| 02 | 30/10/2024 | Approved for Construction (AFC) | GLL | APD | AHN |
| 01 | 30/09/2024 | Approved for Construction (AFC) | GLL | APD | AHN |
| 00 | 31/07/2024 | Issue for Review (IFR) | GLL | APD | AHN |
| Rev. | Date | Description | Prepared | Reviewed | Approved |

PCM | keep it moving

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## Revision / Change Log

| Rev. | Description |
|---|---|
| 00 | Issue for Review (IFR) |
| 01 | Approved for Construction (AFC)<br>Adding Ambient & Subtract temp Min/Max (Section 5.1 of PCM procedure)<br>Adding Reference documents years (Section 7 of PCM procedure) |
| 02 | Approved for Construction (AFC)<br>Adding test table in section 2.2 & Notes for Section 3 (PCM Procedure) |
| 03 | Approved for Construction (AFC)<br>No change |
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## HOLDS LIST

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# 1 DOCUMENT SCOPE

This document aims at describing painting procedure for Sea Water Lift Progressive Cavity Pumps (P-50001 A/B).

# 2 GENERAL NOTES

## 2.1 PARTS TO BE PAINTED

| Item N° | Part N° | Description | Material | Painting System | Color |
|---|---|---|---|---|---|
| 60 | T600004051 | BEARING HOUSING | Carbon steel | PCM N°5 Section N°3 | RAL 7038 |
| 88 | W-007527274 | SPACER | Carbon steel | PCM N°5 Section N°3 | RAL 7038 |
| 300 | W-008268046 | TRUNK | Carbon steel | PCM N°5 Section N°3 | RAL 7038 |
| C11B | FGAHXCG1256CEAA | GEARBOX | Cast-Aluminum | PCM N°5 Section N°3 | RAL 7038 |
| C11 | DI317464-03 | MOTOR | Cast-iron | C5-M - ABB Section N°4 | Munsell 8B 4.5/3.25 (ABB standard) |

Note that Stainless steel parts (SS316L & SDSS) won't painted.

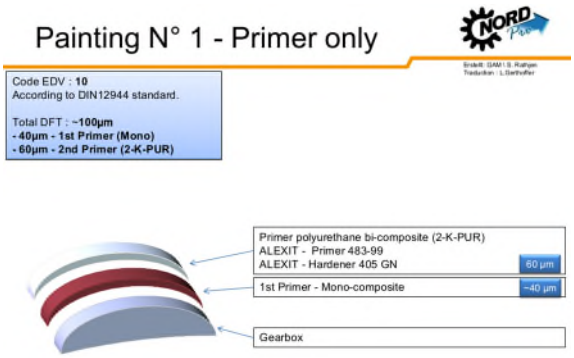
## 2.2 TESTS TO BE DONE

Please refer to section 4.4 & 5.2 & 6.2 of procedure PCM PAINTING SPECIFICATION – PROCESS N°5.
Note that Adhesion test is not included.

Please find here below table to sum-up test to be done.

| Test type | Method | Frequency | Acceptance Criteria | Consequence |
|---|---|---|---|---|
| Environmental conditions | ISO 8502-4 (Ambiant & Surface temp/ Relative Humidity / Dew point) | Before each shift / Two a day as minimum | 3°C above dew point<br>< 85% RH | No Blasting or painting |
| Cleanliness | ISO 8501-1 | 100% surface | Sa 2.5 | Re-blasting |
| Roughness | ISO 8503-2 | 1 per part | Medium | Re-blasting |
| Film Thickness | ISO 19840 | 20 points on all parts | 1st layer 60µm<br>2nd layer 260µm<br>3rd layer 320µm | Repair, add coats or recoating |

Note that gearboxes will be provided by sub-supplier with primer and PCM will apply 2nd & final layer only as per PCM PAINTING SPECIFICATION – PROCESS N°5.




Motors will be painted by ABB according to C5-M system without painting reports.

# 3 PCM PAINTING PROCEDURE (N°5 – C5-H)

Notes to be considered :

- Section 4.1 > PCM is following ISO 8503-1 to 4
- Section 4.2 > GH050 from W Abrasives is used

# PCM PAINTING SPECIFICATION – PROCESS N°5

| HISTORY OF CHANGES | | | |
|---|---|---|---|
| **Revision** | **Date** | **Changes Description** | **Page(s) modified** |
| A | 01/27/2016 | Document creation | All |
| 2 | 02/15/2017 | Change Grade of Cleanliness to Sa 2,5<br>Availability of new Paint Control: “Pull-off test for adhesion” | §4.4 – p3<br>4 ; 5 ; 7 ; 8 |
| 3 | 18/06/2020 | Include deviations on §4 and 5 regarding assembled equipment’s delivered with primer coating. | 3 - 4 |
| 4 | 12/05/2022 | Increase of paint intermediate thickness to meet C5-VH Painting system | |
| 5 | 16/09/2024 | Temperature limits added for painting application and update of document reference versions | 4 - 5 |
| | | | |
| | | | |

| BROADCASTING LIST | | |
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| World Wide Marketing and Sales Manager F&I | Market managers | WW O&G Marketing Manager |
| Innovation & Industrialization Manager | Industrialization Manager | O&G Product Champion |
| World Engineering Manager | Tender Team Manager | Project team manager |
| Engineering Pump F&I manager | Methods Manager | |
| Operation Manager (Assembly & Test) | Production supervisors | France Quality Manager |

| | Written / Modified by | Approved by |
|---|---|---|
| **NAME** | Ayoub LEGUEMIRI | Christophe WAQUET |
| **Fonction** | Production engineer | Methods Manager |
| **Date** | 17/09/2024 | 17/09/2024 |

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# 1. Scope

This specification defines the technical requirements for the execution of painting works of positive displacement pumps called « process n°5 ». The specification is based on the use of high durability painting system whose design is anticipated to meet the requirements of ISO 12944 atmospheric corrosion category C5 – very high corrosion. The durability category of such a system is anticipated to be more than 25 years as “Very High (VH)”.

The specification does not cover other PCM painting systems such as « process n 3 ».

# 2. Certification of personnel

Operators: Painters are individually certified by an approved organization (ACQPA level 2 as a minimum)

# 3. Surfaces concerned

Surfaces concerned by this specification are Carbon Steel and Cast iron. Stainless steel and other metals are excluded.

# 4. Surface preparation

## 4.1. Preparation before blasting

All surfaces to be coated shall be blast cleaned[1].

All oil or grease shall be removed by washing the item to be painted with appropriate solvents or any other suitable means before beginning blast-cleaning operations.

## 4.2. Abrasives

- The use of copper slag or silica sand is prohibited

## 4.3. Blast cleaning

All surfaces to be coated shall be blast-cleaned according to :

- Grade of cleanliness (ISO 8501 standard)
- Surface profile Grit Medium (ISO 8503 standard – roughness meter with adapted visio-tactile surface profile comparator)

After blast-cleaning, all dust must be removed using dry air without lubricant

## 4.4. Controls

| Measures | Target value | Standard | Mean of measurement |
|---|---|---|---|
| Abrasive reference | Angular for Grit | ISO 8503 | Supplier Technical data sheet |
| Batch number of abrasive | | | Certificate of compliance from supplier |
| Dew Point | < 85%HR | ISO 8502-4 | Dew Point meter |
| Grade of cleanliness | Sa 2,5 | ISO 8501-1 | Comparison to standard pictures |
| Roughness | Medium | ISO 8503-2 | Surface Roughness comparator |
| Date and Time | | | |

**In any case, any surface that has been blast-cleaned shall be coated on the same day.**

[1] except surfaces from assembled equipment's delivered with primer coating from the following manufacturer list: NORD, ABB.

# 5. Paint application

## 5.1. Records

- Dew Point
- Relative Humidity (moisture)
- Substrate temperature

**Painting works shall not proceed if:**

- Temperature of substrate is less than 3°C above the dew point
- The relative Humidity is more than 85% RH
- Ambient and substrate temperature is less than 10°C
- Ambient and substrate temperature is more than 40°C
- The minimum or maximum temperature of the ambient atmosphere and the substrate are outside the limits given in the product data sheets

## 5.2. Controls at each layer of the painting work

| Measures | Target values | Standard | Mean of measurement |
|---|---|---|---|
| Relative Humidity | < 85% RH | ISO 8502-4 | Dew Point meter |
| Ambient air temperature | | | |
| Dew Point | | | |
| Substrate Temperature | 3°C above the dew point | | |
| Date and Time | | | |

## 5.3. Products to be used

The coating system shall be composed of the following products from International Coatings:

| | ***Supplier : International coatings*** | |
|---|---|---|
| | **Product name** | **Minimum Thickness** |
| **Primer**[2] | Interzinc 52 | 60 µm |
| **Intermediate** | Intergard 475 HS | 200 µm |
| **Top coat** | Interthane 990 | 60 µm |
| ***Complete system*** | **TOTAL** | **320 µm** |

For each base-hardener mixture of two component paintings, the pot life shall not be exceeded. In case of time limit exceeded, the mixture of base, hardener and thinner shall be thrown away

The default color according to RAL standard of the topcoat are **"Capri blue" RAL5019**, **"Sapphire blue" RAL 5003, "iron Grey" RAL 7011**and **"Pire White" RAL 9010.** It can be replaced by other color on customer request.

[2] except for surfaces from assembled equipment's delivered with primer coating from the following manufacturer list: NORD, ABB.

# 6. Drying of each layer

The drying time limit recommended by the paint manufacturer on the technical data sheet, i.e. minimum and maximum over coating intervals shall be observed.

## 6.1. Controls

| Measures | Target value | Standard | Mean of measurement |
|---|---|---|---|
| Dry Film Thickness | According to § 4.d | ISO 19840 | Film Thickness gauge |
| **(On demand only)** Pull-off test | 5 MPa | ISO 4624 | Adhesion Pull-off tester |

## 6.2. Control reports

Throughout the duration of the work, PCM shall check the following points and record the results in its quality control report. The following data shall be available:

**Default paint report**

- Painting follow-up worksheet – document n° ERWA0042
  - Dates
  - Times
  - Temperatures
  - Moisture – Dewpoint, Relative Humidity
  - Thickness

**On demand report**

- Pull-off test Adhesion report – document n° ERWA0277

# 7. Reference documents

| Reference | Title |
|---|---|
| ISO 12944-1:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 1: General introduction |
| ISO 12944-2:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 2: Classifications of environments |
| ISO 12944-3:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 3: Design and constructive requirements |
| ISO 12944-4:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 4: Surface types and preparation |
| ISO 12944-7:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 7: Execution and supervision of painting work |
| ISO 12944-8:2017 | Paints and varnishes-Corrosion protection of steel structures by paint systems. Part 8: Development of specifications for new and maintenance work |
| ISO 8501-1:2007<br>ISO 8501-3:2006 | Preparation of steel substrates before application of paints and related products. Visual assessment of surface cleanliness. |
| ISO 8502-4:2017 | Preparation of steel substrates before application of paints and related products. Tests for the assessment of surface cleanliness |
| ISO 8503-2:2012<br>ISO 8503-3:2012 | Preparation of steel substrates before application of paints and related products. Surface profile of abrasive blast-cleaned steel |
| ISO 8504-1:2001<br>ISO 8504-2:2001<br>ISO 8504-3:2001 | Preparation of steel substrates before application of paints and related products. Methods for surface preparation |
| ISO 19840:2012 | Paints and varnishes. Determination of dry film thickness. Nondestructive magnetic flux method |
| ISO 4624:2024 | Paints and varnishes – Pull-off test for adhesion |

# 8. Annexes – Control report

## 8.1. Paints Technical data sheets

International

## Interzinc® 52

**Epoxy Zinc-Rich**

**PRODUCT DESCRIPTION**

A two component, metallic zinc rich epoxy primer which complies with the composition and performance requirements of SSPC Paint 20.

**INTENDED USES**

As a high performance primer to give maximum protection as part of any anti-corrosive coating system for aggressive environments including those found on offshore structures, petrochemical facilities, pulp and paper plants, bridges and power plants.
Interzinc 52 has been designed to provide excellent corrosion resistance in both maintenance and new construction situations.

**PRACTICAL INFORMATION FOR INTERZINC 52**

| | |
|---|---|
| **Color** | Blue, Gray, Green |
| **Gloss Level** | Matte |
| **Volume Solids** | 59% |
| **Typical Thickness** | 2-3 mils (50-75 microns) dry equivalent to 3.4-5.1 mils (85-127 microns) wet |
| **Theoretical Coverage** | 315 sq.ft/US gallon at 3 mils d.f.t and stated volume solids<br>7.90 m²/liter at 75 microns d.f.t and stated volume solids |
| **Practical Coverage** | Allow appropriate loss factors |
| **Method of Application** | Airless Spray, Air Spray, Brush |

**Drying Time**

| | | | Overcoating Interval with recommended topcoats | |
|---|---|---|---|---|
| **Temperature** | **Touch Dry** | **Hard Dry** | *Minimum* | *Maximum* |
| 41°F (5°C) | 2 hours | 10 hours | 8 hours | Extended[1] |
| 59°F (15°C) | 90 minutes | 6 hours | 4 hours | Extended[1] |
| 77°F (25°C) | 75 minutes | 4 hours | 3 hours | Extended[1] |
| 104°F (40°C) | 45 minutes | 2 hours | 2 hours | Extended[1] |

[1] See International Protective Coatings Definitions & Abbreviations
For curing at low temperatures an alternative curing agent is available. See Product Characteristics for details. Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

**REGULATORY DATA**

| | |
|---|---|
| **Flash Point** | Part A 84°F (29°C); Part B 86°F (30°C); Mixed 84°F (29°C) |
| **Product Weight** | 21.0 lb/gal (2.52 kg/l) |
| **VOC** | 2.80 lb/gal (336 g/lt) EPA Method 24<br>152 g/kg EU Solvent Emissions Directive (Council Directive 1999/13/EC) |

See Product Characteristics section for further details

Protective Coatings — Worldwide Product

AkzoNobel

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Issue Date:7/7/2009
Ref:2561

# International

# Interzinc® 52

## Epoxy Zinc-Rich

**SURFACE PREPARATION**

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application, all surfaces should be assessed and treated in accordance with ISO 8504:2000.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

**Abrasive Blast Cleaning**

Abrasive blast clean to a minimum of SSPC-SP6 or Sa2½ (ISO 8501-1:2007). If oxidation has occurred between blasting and application of Interzinc 52, the surface should be reblasted to the specified visual standard.

Surface defects revealed by the blast cleaning process, should be ground, filled, or treated in the appropriate manner.

A surface profile of 1.6-3.0 mils (40-75 microns) is recommended.

**Shop Primed Steelwork**

Interzinc 52 is suitable for application to unweathered steelwork freshly coated with zinc silicate shop primers.

If the zinc shop primer shows extensive or widely scattered breakdown, or excessive zinc corrosion products, overall sweep blasting will be necessary. Other types of shop primer are not suitable for overcoating and will require complete removal by abrasive blast cleaning.

Weld seams and damaged areas should be cleaned to a minimum St3 (ISO 8501-1:2007) or SSPC-SP3. Optimum performance will be achieved with blasting to Sa2½ (ISO 8501-1:2007) or SSPC-SP6; where this is not practical, hand preparation to SSPC-SP11 is recommended.

**APPLICATION**

**Mixing**

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed, it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.

(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

**Mix Ratio**

4 part(s) : 1 part(s) by volume

**Working Pot Life**

| 41°F (5°C) | 59°F (15°C) | 77°F (25°C) | 104°F (40°C) |
|---|---|---|---|
| 24 hours | 12 hours | 5 hours | 2 hours |

**Airless Spray**

Recommended

Tip Range 17-21 thou (0.43-0.53 mm)
Total output fluid pressure at spray tip not less than 2503 psi (176 kg/cm²)

**Air Spray (Pressure Pot)**

Recommended

Gun DeVilbiss MBC or JGA
Air Cap 704 or 765
Fluid Tip E

**Brush**

Suitable - Small areas only

Typically 2.0-3.0 mils (50-75 microns) can be achieved

**Roller**

Not recommended

**Thinner**

International GTA220 (or International GTA415)

Do not thin more than allowed by local environmental legislation

**Cleaner**

International GTA822 (or International GTA415)

**Work Stoppages**

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

**Clean Up**

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.

International.

# Interzinc® 52

**Epoxy Zinc-Rich**

## PRODUCT CHARACTERISTICS

In order to ensure good anti-corrosive performance, it is important to achieve a minimum dry film thickness of Interzinc 52 of 1.5 mils (40 microns). To achieve a uniform, coalesced, closed film at this dry film thickness, it will be necessary to thin Interzinc 52 with 10% with International thinners. The film thickness of Interzinc 52 applied must be compatible with the blast profile achieved during surface preparation. Low film thickness should not be applied over coarse blast profiles.

Care should be exercized to avoid the application of dry film thicknesses in excess of 6 mils (150 microns).

Care should be exercised to avoid over-application which may result in cohesive film failure with subsequent high builds, and to avoid dry spray which can lead to pinholing of subsequent coats. Over-application will also result in slower curing and extended handling and overcoating times.

Over-application of Interzinc 52 will extend both the minimum overcoating periods and handling times, and may be detrimental to long term overcoating properties.

When Interzinc 52 is allowed to weather before topcoating ensure all zinc salts are removed prior to paint application and only topcoat with recommended materials.

Surface temperature must always be a minimum of 5°F (3°C) above dew point.

Interzinc 52 is not normally recommended for underwater use. Please consult International Protective Coatings for further details in this situation.

Interzinc 52 is suitable for the localized repair of damaged inorganic zinc primer - consult International Protective Coatings for specific advice.

**Low Temperature Curing**

An alternative curing agent is available for applications at temperatures less than 41°F (5°C). When using this alternative curing agent it should be noted that the VOC will increase to 3 lb/gal (360 g/l).

Interzinc 52 is capable of curing at temperatures below 32°F (0°C). However, this product should not be applied at temperatures below 32°F(0°C ) where there is a possibility of ice formation on the substrate.

| | | | Minimum overcoating interval with recommended topcoats | |
|---|---|---|---|---|
| Temperature | Touch Dry | Hard Dry | Minimum | Maximum |
| 23°F (-5°C) | 6 hours | 32 hours | 36 hours | Extended* |
| 32°F (0°C) | 3 hours | 16 hours | 18 hours | Extended* |
| 5°C (41°F) | 2 hours | 6 hours | 6 hours | Extended* |

Touch dry times shown above are actual drying times due to chemical cure, rather than physical set due to solidification of the coating film at temperatures below 32°F (0°C).

*See International Protective Coatings Definitions & Abbreviations

For further details regarding cure times and overcoatability, please contact International Protective Coatings.

This product has the following specification approvals:
- Steel Structures Painting Council - SSPC Paint 20

On consultation with International Protective Coatings this product is compatible with alternative application methods such as flow coating.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

## SYSTEMS COMPATIBILITY

Interzinc 52 is designed for application to correctly prepared steel. It is possible to apply over approved prefabrication primers. Details of these can be obtained from International Protective Coatings.

Recommended topcoats are:

| | |
|---|---|
| Intercure 200 | InterH2O 401 |
| Intercure 420 | Interseal 670HS |
| Interfine 629HS | Interthane 990 |
| Intergard 251 | Interzone 1000 |
| Intergard 269 | Interzone 505 |
| Intergard 475HS | Interzone 954 |
| Intergard 740 | |

For other suitable topcoats, consult International Protective Coatings.

International.

# Interzinc® 52

**Epoxy Zinc-Rich**

**ADDITIONAL INFORMATION**

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

**SAFETY PRECAUTIONS**

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

| | | | | | |
|---|---|---|---|---|---|
| **PACK SIZE** | Unit Size | Part A | | Part B | |
| | | Vol | Pack | Vol | Pack |
| | 10 liter | 8 liter | 10 liter | 2 liter | 2.5 liter |
| | 3 US gal | 2.4 US gal | 3.5 US gal | 0.6 US gal | 1 US gal |
| | For availability of other pack sizes contact International Protective Coatings | | | | |
| **SHIPPING WEIGHT** | Unit Size | Part A | | Part B | |
| | 10 liter | 24.5 kg | | 2.1 kg | |
| | 3 US gal | 63.3 lb | | 5.3 lb | |
| **STORAGE** | Shelf Life | 12 months minimum at 77°F (25°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition. | | | |

**Important Note**

*The information in this data sheet is not intended to be exhaustive: any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to law) any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.*

*Issue date: 7/7/2009*

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**www.international-pc.com**

International.

# Intergard® 475HS

**Epoxy**

**PRODUCT DESCRIPTION**

A low VOC, high solids, high build, two component epoxy coating. Available with conventional pigmentation, or alternatively can be pigmented with micaceous iron oxide to provide enhanced overcoating properties.

**INTENDED USES**

For use as a high build epoxy coating to improve barrier protection for a range of anti-corrosive coating systems in a wide range of environments including offshore structures, petrochemical plants, pulp and paper mills and bridges. Suitable for use in both maintenance and new construction situations as part of an anti-corrosive coating system. The micaceous iron oxide variant improves long term overcoating properties, better facilitating application in the fabrication shop, prior to shipping, with final overcoating on site.

**PRACTICAL INFORMATION FOR INTERGARD 475HS**

| | |
|---|---|
| **Color** | Light gray MIO and a selected range of colors |
| **Gloss Level** | Matte |
| **Volume Solids** | 80% |
| **Typical Thickness** | 4-8 mils (100-200 microns) dry equivalent to 5-10 mils (125-250 microns) wet |
| **Theoretical Coverage** | 257 sq.ft/US gallon at 5 mils d.f.t and stated volume solids<br>6.40 m²/liter at 125 microns d.f.t and stated volume solids |
| **Practical Coverage** | Allow appropriate loss factors |
| **Method of Application** | Airless Spray, Air Spray, Brush, Roller |

**Drying Time**

| | | | Overcoating Interval with recommended topcoats | |
|---|---|---|---|---|
| **Temperature** | **Touch Dry** | **Hard Dry** | *Minimum* | *Maximum* |
| 23°F (-5°C) | 150 minutes | 48 hours | 48 hours | Extended[1] |
| 41°F (5°C) | 90 minutes | 16 hours | 16 hours | Extended[1] |
| 59°F (15°C) | 75 minutes | 10 hours | 10 hours | Extended[1] |
| 77°F (25°C) | 60 minutes | 5 hours | 5 hours | Extended[1] |

[1] See International Protective Coatings Definitions & Abbreviations
Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

For curing at elevated temperatures an alternative curing agent is available. See Product Characteristics for details.

**REGULATORY DATA**

| | |
|---|---|
| **Flash Point** | Part A 93°F (34°C); Part B 88°F (31°C); Mixed 91°F (33°C) |
| **Product Weight** | 17.5 lb/gal (2.10 kg/l) |
| **VOC** | 1.72 lb/gal (207 g/lt) EPA Method 24<br>92 g/kg EU Solvent Emissions Directive (Council Directive 1999/13/EC) |

See Product Characteristics section for further details

# International. Intergard® 475HS

**Epoxy**

## SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application, all surfaces should be assessed and treated in accordance with ISO 8504:2000.

**Primed Surfaces**

Intergard 475HS should always be applied over a recommended anti-corrosive coating scheme. The primer surface should be dry and free from all contamination, and Intergard 475HS must be applied within the overcoating intervals specified (consult the relevant product data sheet).

Areas of breakdown, damage etc., should be prepared to the specified standard (e.g. SSPC-SP6 or Sa2½ (ISO 8501 -1:2007), Abrasive Blasting, or SSPC-SP11, Power Tool Cleaning) and patch primed prior to the application of Intergard 475HS.

**Zinc Primed Surfaces**

Ensure that the surface of the primer is clean, dry and free from contamination and zinc salts before application of Intergard 475HS. Ensure zinc primers are fully cured before overcoating.

## APPLICATION

**Mixing**

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed, it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.
(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

**Mix Ratio**

3 part(s) : 1 part(s) by volume

**Working Pot Life**

| 23°F (-5°C) | 41°F (5°C) | 59°F (15°C) | 77°F (25°C) |
|---|---|---|---|
| 3 hours | 3 hours | 2.5 hours | 2 hours |

| | | | |
|---|---|---|---|
| **Airless Spray** | Recommended | Tip Range 21-25 thou (0.53-0.63 mm)<br>Total output fluid pressure at spray tip not less than 2702 psi (190 kg/cm²) | |
| **Air Spray (Pressure Pot)** | Recommended | Gun<br>Air Cap<br>Fluid Tip | DeVilbiss MBC or JGA<br>704 or 765<br>E |
| **Brush** | Suitable | Typically 3.0 mils (75 microns) can be achieved | |
| **Roller** | Suitable | Typically 3.0 mils (75 microns) can be achieved | |
| **Thinner** | International GTA007 | Do not thin more than allowed by local environmental legislation | |

**Cleaner**

International GTA822 (or International GTA415)

**Work Stoppages**

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

**Clean Up**

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation

International.

# Intergard® 475HS

**Epoxy**

## PRODUCT CHARACTERISTICS

Intergard 475HS is primarily designed for use as a high build barrier coat to impart barrier protection to a coating system. It is recommended that it should be overcoated with a durable finish from the Interfine or Interthane range when appearance is important.

Maximum film build in one coat is best attained by airless spray. When applying by methods other than airless spray, the required film build is unlikely to be achieved. Application by air spray may require a multiple cross spray pattern to attain maximum film build. Lower or high temperatures may require specific application techniques to achieve maximum film build.

When applying Intergard 475HS by brush or roller, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

Surface temperature must always be a minimum of 5°F (3°C) above dew point. When applying Intergard 475HS in confined spaces, ensure adequate ventilation. Exposure to unacceptably low temperatures and/or high humidities during, or immediately after, application may result in incomplete cure and surface contamination that could jeopardize subsequent intercoat adhesion.

**Elevated Temperature Curing**

An alternative curing agent is available for applications at temperatures greater than 77°F (25°C).

| | | | Overcoating Interval with recommended topcoats | |
|---|---|---|---|---|
| Temperature | Touch Dry | Hard Dry | *Minimum* | *Maximum* |
| 77°F (25°C) | 90 minutes | 6 hours | 6 hours | Extended * |
| 104°F (40°C) | 60 minutes | 2 hours | 2 hours | Extended * |

* See International Protective Coatings Definitions and Abbreviations

Interchanging standard and elevated temperature curing agents during application to a specific structure will give rise to an observable color change due to the difference in the yellowing/discoloration process common to all epoxies on exposure to UV light. In common with all epoxies, Intergard 475HS will chalk and discolor on exterior exposure. However, these phenomena are not detrimental to anti-corrosive performance.

Intergard 475HS is not designed for continuous water immersion.

The micaceous iron oxide variant of this product is frequently used as a "travel coat" prior to final overcoating on site. To ensure best extended overcoating properties, ensure overapplication does not occur and that the surface is fully cleaned of any contamination which may be present in the surface texture due to the coarse nature of the micaceous iron oxide pigmentation.

When applying Intergard 475HS at temperatures less than 59°F (15°C) or wet film thicknesses of 6 mils (150 microns) or less, addition of around 5% International GTA007 thinners will improve film appearance, sprayability and aid film thickness control.

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in color and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also effect VOC values determined using EPA Method 24.

## SYSTEMS COMPATIBILITY

Intergard 475HS is designed for use over correctly primed steel. Suitable primers are:

| | |
|---|---|
| Intercure 200 | Interzinc 22 (mist coat or tie coat recommended)* |
| Intergard 251 | Interzinc 315 |
| Intergard 269 | Interzinc 52 |

Suitable topcoats are:

| | |
|---|---|
| Intergard 740 | Interfine 629HS |
| Interthane 990 | Intergard 475HS |

For alternative primers and finishes, consult International Protective Coatings.

* See relevant product data sheet for details.

International.

# Intergard® 475HS

Epoxy

**ADDITIONAL INFORMATION**

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

**SAFETY PRECAUTIONS**

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

**PACK SIZE**

| Unit Size | Part A | | Part B | |
|---|---|---|---|---|
| | Vol | Pack | Vol | Pack |
| 20 liter | 15 liter | 20 liter | 5 liter | 5 liter |
| 5 US gal | 3 US gal | 5 US gal | 1 US gal | 1 US gal |

For availability of other pack sizes contact International Protective Coatings

**SHIPPING WEIGHT**

| Unit Size | Part A | Part B |
|---|---|---|
| 20 liter | 35.4 kg | 9.3 kg |
| 5 US gal | 57.1 lb | 8.4 lb |

**STORAGE**

| | |
|---|---|
| Shelf Life | 12 months minimum at 77°F (25°C). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition. |

**Disclaimer**

*The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this data sheet is current prior to using the product.*

*This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.*

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**www.international-pc.com**

# International

# Interthane® 990

**Polyurethane**

**PRODUCT DESCRIPTION**

A two component acrylic polyurethane finish giving excellent durability and long term recoatability.

**INTENDED USES**

Suitable for use in both new construction and as a maintenance finish which can be used in a wide variety of environments including offshore structures, chemical and petrochemical plants, bridges, pulp and paper mills, and in the power industry.

**PRACTICAL INFORMATION FOR INTERTHANE 990**

| | |
|---|---|
| **Color** | Wide range via the Chromascan® system |
| **Gloss Level** | High Gloss |
| **Volume Solids** | 57% ± 3% (depends on color) |
| **Typical Thickness** | 2-3 mils (50-75 microns) dry equivalent to 3.5-5.3 mils (88-132 microns) wet |
| **Theoretical Coverage** | 457 sq.ft/US gallon at 2 mils d.f.t and stated volume solids<br>11.40 m²/liter at 50 microns d.f.t and stated volume solids |
| **Practical Coverage** | Allow appropriate loss factors |
| **Method of Application** | Airless Spray, Air Spray, Brush, Roller |

**Drying Time**

| | | | Overcoating Interval with recommended topcoats | |
|---|---|---|---|---|
| **Temperature** | **Touch Dry** | **Hard Dry** | *Minimum* | *Maximum* |
| 41°F (5°C) | 5 hours | 24 hours | 24 hours | Extended[1] |
| 59°F (15°C) | 150 minutes | 10 hours | 10 hours | Extended[1] |
| 77°F (25°C) | 90 minutes | 6 hours | 6 hours | Extended[1] |
| 104°F (40°C) | 60 minutes | 3 hours | 3 hours | Extended[1] |

[1] See International Protective Coatings Definitions & Abbreviations

**REGULATORY DATA**

**Flash Point (Typical)** Part A 93°F (34°C); Part B 120°F (49°C); Mixed 95°F (35°C)

| | | |
|---|---|---|
| **Product Weight** | 10.1 lb/gal (1.21 kg/l) | |
| **VOC** | 3.50 lb/gal (420 g/lt)<br>341 g/kg | EPA Method 24<br>EU Solvent Emissions Directive (Council Directive 1999/13/EC) |

See Product Characteristics section for further details

# International. Interthane® 990

**Polyurethane**

**SURFACE PREPARATION**

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application, all surfaces should be assessed and treated in accordance with ISO 8504:2000.

**Primed Surfaces**

Interthane 990 should always be applied over a recommended anti-corrosive coating scheme. The primer surface should be dry and free from all contamination, and Interthane 990 must be applied within the overcoating intervals specified (consult the relevant product data sheet).

Areas of breakdown, damage etc., should be prepared to the specified standard (e.g. SSPC-SP6 or Sa2½ (ISO 8501-1:2007), Abrasive Blasting, or SSPC-SP11, Power Tool Cleaning) and patch primed prior to the application of Interthane 990.

**APPLICATION**

**Mixing**

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed, it must be used within the working pot life specified.

(1) Agitate Base (Part A) with a power agitator.
(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

**Mix Ratio**

6 part(s): 1part(s) by volume

**Working Pot Life**

| 41°F (5°C) | 59°F (15°C) | 77°F (25°C) | 104°F (40°C) |
|---|---|---|---|
| 12 hours | 4 hours | 2 hours | 45 minutes |

| | | |
|---|---|---|
| **Airless Spray** | Recommended | Tip Range 13-18 thou (0.33-0.45 mm)<br>Total output fluid pressure at spray tip not less than 2204 psi (155 kg/cm²) |
| **Air Spray (Pressure Pot)** | Recommended | Gun: DeVilbiss MBC or JGA<br>Air Cap: 704 or 765<br>Fluid Tip: E |
| **Air Spray (Conventional)** | Suitable | Use suitable proprietary equipment. |
| **Brush** | Suitable | Typically 1.6-2.0 mils (40-50 microns) can be achieved |
| **Roller** | Suitable | Typically 1.6-2.0 mils (40-50 microns) can be achieved |
| **Thinner** | International GTA713 (or International GTA733 or GTA056) | Do not thin more than allowed by local environmental legislation |
| **Cleaner** | International GTA713 (or International GTA733 or GTA056) | |
| **Work Stoppages** | Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA056. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages, work recommences with freshly mixed units. | |
| **Clean Up** | Clean all equipment immediately after use with International GTA713. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.<br>All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation. | |

International.

# Interthane® 990

**Polyurethane**

**PRODUCT CHARACTERISTICS**

Interthane 990 is available in a range of metallic finishes - please consult the separate Interthane 990 Metallic Working Procedures document for further information.

Level of sheen and surface finish is dependent on application method. Avoid using a mixture of application methods whenever possible.

Best results in terms of gloss and appearance will always be obtained by conventional air spray application.

For brush and roller application, and in some colors, two or more coats of Interthane 990 may be required to give uniform coverage, especially when applying Interthane 990 over dark undercoats, and when using certain lead free bright colors such as yellows and oranges. Best practice is to use a color compatible intermediate or anticorrosive coating under the Interthane 990.

When overcoating after weathering, or aging, ensure the coating is fully cleaned to remove all surface contamination such as oil, grease, salt crystals and traffic fumes, before application of a further coat of Interthane 990.

Absolute measured adhesion of topcoats to aged Interthane 990 is less than that to fresh material, however, it is adequate for the specified end use.

This product must only be thinned using the recommended International thinners. The use of alternative thinners, particularly those containing alcohols, can severely inhibit the curing mechanism of the coating.

Surface temperature must always be a minimum of 5°F (3°C) above dew point.

When applying Interthane 990 in confined spaces, ensure adequate ventilation.

Condensation occurring during or immediately after application may result in a matte finish and an inferior film.

Premature exposure to ponding water will cause color change, especially in dark colors and at low temperatures.

This product is not recommended for use in immersion conditions. When severe chemical or solvent splashing is likely to occur, contact International Protective Coatings for information regarding suitability.

A modified version of Interthane 990 is available for use within the Korean marketplace in order to provide improved workability.

Note: VOC values quoted are based on maximum possible for the product taking into account variations due to color differences and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also effect VOC values determined using EPA Method 24.

---

**SYSTEMS COMPATIBILITY**

The following primers/intermediates are recommended for Interthane 990:

| | |
|---|---|
| Intercure 200 | Interseal 670HS |
| Intercure 200HS | Interzinc 315 |
| Intercure 420 | Interzinc 52 |
| Intergard 251 | Interzinc 52HS |
| Intergard 269 | Interzone 505 |
| Intergard 345 | Interzone 954 |
| Intergard 475HS | Interzone 1000 |

Interthane 990 is designed to be topcoated with itself.

For other suitable primers/intermediates, consult International Protective Coatings.

## 8.2. Painting follow-up worksheet

PCM | keep it moving

**FICHE DE SUIVI D'EXECUTION PEINTURE – procédé 5**
**PAINTING FOLLOW-UP WORKSHEET – process n°5**

| PROCESSUS : | WR4 | CODE : | ERWA0042 | INDICE : | C |
|---|---|---|---|---|---|
| EMIS PAR : | Guillaume GODARD | LE : | 05/12/2022 | PAGE : | Page 2 sur 3 |

**SURFACES ACIER ET FONTES / STEEL AND CAST IRON SURFACES** — **PROCEDE STANDARD PCM N°5 / STANDARD PCM PROCESS N°5**

**N° de série ou commande** *Serial number or order* | **N° d'ordre de fabrication** *Work order* | **Pièces** *Parts*

**PREPARATION DE SURFACE** / ***SURFACE PREPARATION***

DECAPAGE / *BLASTING*

**ABRASIF** *ABRASIVE*: **Acier** *Steel* — **Type** *Type*: **Angulaire** *Grit*

| Date | Heure *Time* | Humidité relative (%HR) *Relative Humidity* | Températures (°C) | | | Degré de soin *Cleanliness* | | Rugosité *Roughness* | | NOM OPERATEUR *OPERATOR NAME* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Support (Ts) | Point de rosée (Td) *Dew point* | ΔT (Ts-Td) | Cible *Target* | Mesure *Measurement* | Cible *Target* | Mesure *Measurement* | |
| | | | | | | Sa 2,5 | | Moyen *Medium* | | |
| | | Max 85% HR | | | Mini + 3°C | Selon / *According to* ISO 8501-1 | | Selon / *According to* ISO 8503-2 | | |

MOYENS DE CONTRÔLE / *MEANS OF CONTROL*

| Moyen *Mean of control* | Fabricant *Manufacturer* | Modèle *Model* | PCM Quality reference Serial number | A vérifier le *To be checked on* |
|---|---|---|---|---|
| Thermo-Hygromètre *Dew Point meter* | | | | |
| Comparateur Visio-tactile *Roughness comparator* | | | | |

PCM | keep it moving

**FICHE DE SUIVI D'EXECUTION PEINTURE – procédé 5**
**PAINTING FOLLOW-UP WORKSHEET – process n°5**

| PROCESSUS : | WR4 | CODE : | ERWA0042 | INDICE : | C |
|---|---|---|---|---|---|
| EMIS PAR : | Guillaume GODARD | LE : | 05/12/2022 | PAGE : | Page 3 sur 3 |

**SURFACES ACIER ET FONTES / STEEL AND CAST IRON SURFACES** — **PROCEDE STANDARD N°5 / STANDARD PROCESS N°5**

**N° de série ou commande** *Serial number or order* | **N° d'ordre de fabrication** *Work order* | **Pièces** *Parts*

**APPLICATION PEINTURE** / ***PAINTING APPLICATION*** - **équipement** / ***equipment*** **:** Pistolet conventionnel / *Conventional spray gun*

| Couche n° *Layer* | Peinture *Paint* | Date | Heure *Time* | N° lot *Batch numbers* | Humidité relative (%HR) *Relative humidity* | Temperatures (°C) | | | Mesure de l'épaisseur totale (µm) *Measurement of total Thickness (µm)* | | | NOM OPERATEUR *OPERATOR NAME* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Support (Ts) *Substrate* | Point de rosée (Td) *Dew point* | ΔT (Ts-Td) | Epaisseur cible de la couche *Target thickness of the layer* | Cible (valeurs réelles lues) *Target (real values to be read)* | Mesures *Measurement* (20 points mini) | |
| 1 | Interzinc 52 | | | Base / Durcisseur *Curing agent* | | | | | 60 µm | 85 µm | | |
| 2 | Intergard 475 HS | | | Base / Durcisseur *Curing agent* | | | | | 200 µm | 285 µm | | |
| 3 | Interthane 990 | | | Base / Durcisseur *Curing agent* | | | | | 50 µm | 345 µm | | |
| | | | | | Max 85% HR | | | Mini 3°C | | | | |

MOYENS DE CONTRÔLE / *MEANS OF CONTROL*

| Moyen *Mean of control* | Fournisseur *Supplier* | Modèle *Model* | PCM Quality reference | A vérifier le *To be checked on* |
|---|---|---|---|---|
| Thermo-Hygromètre *Dew Point meter* | TQC | DewCheck 4 | HY1 | |
| Mesureur d'épaisseur *Thickness meter* | Elcometer | ☐ Elcometer 456 *Top Dual Fe/NFe* | ME 5 | |
| | Fischer | ☐ Dualscope MPOR-FP | ME 4 | |

## 8.3. Pull-off test adhesion report

PCM | keep it moving

**Procès-verbal d'essai de traction – Painting pull-off test report**

| | | | | | |
|---|---|---|---|---|---|
| **PROCESS :** | WR52 | **CODE :** | ERWA0277 | **INDEX :** | A |
| **AUTHOR :** | Le Nouail Loïc | **ISSUE DATE :** | 2016-11-25 | **PAGE :** | Page **1** of **2** |
| **CONFIDENTIALITY :** | Internal | | | | |

Please make sure you use the latest version of the form when filling the record **N°** :

**Suivant la norme ISO 4624:2002 / *According to ISO 4624:2002 standard***

Contrôle / *Control* : ☐ Interne / *Internal* ☐ Externe / *External*

N° de série ou commande / *Serial number or order* :.....

N° Document de fabrication / *Work order* :.....

**Procédé de peinture / Painting system**

☐ Multicouches / Multicoat ☐ Autre / *Other*

Pour des informations plus précises sur le système de peinture, merci de se référer au PV d'application peinture / *For more information about painting system, please refer to the painting report.*

**Conditions climatiques / *Climatic condition***

| | Date *Date* | Heures *Time* | Température / *Temperature* (°C) | | | Taux d'humidité / *Degree of moisture* (%) |
|---|---|---|---|---|---|---|
| | | | Température ambiante / *Room temperature* (Ta) | Support / *Support* (Ts) | Point de rosée / *Dew point* (Tpr) | |
| Au collage *During Glueing* | | | | | | |
| A la traction *During traction* | | | | | | |

**Adhéromètre / *Adherometer***

Type d'instrument / *Instrument type* : ☐ Hydraulique et manuel / *Manual and hydraulic* ☐*Autre / Other*:.....

Ref interne / *Internal Item* :..... Etalonné le / *Calibrated on:* ..... Prochain étalonnage/ *Next calibration date*:.....

| **Support / *Support*** | **Colle / *Glue*** | **Plots d'adhérence / *Traction Dollies*** |
|---|---|---|
| ☐ Acier / *Steel*<br>Code matière / *Material item*: .....<br>Nuance / Grade : .....<br>☐ Acier inoxydable / *Stainless steel*<br>Code matière / *Material item*: .....<br>Nuance / Grade : .....<br>☐ Alliage d'aluminium / *Aluminium*<br>Code matière / *Material item*: .....<br>Nuance / Grade : ..... | Type / *Type* :<br>☐Cyanoacrylate/ *Cyanoacrylate*<br>☐Autre / *Other* : .....<br>Marque / *Brand* : .....<br>Dénomination / *Name* : .....<br>Temps de prise conseillé / *Setting time* :..... | ☐ Ø20 mm<br>☐ Autre / *Other* :.....<br>**Outil de découpe / *Cutting tool***<br>☐  Découpe Ø20,1 mm<br>☐ Autre / Other :..... |

keep it moving

**Procès-verbal d'essai de traction – Painting pull-off test report**

| | | | | | |
|---|---|---|---|---|---|
| PROCESS : | WR52 | CODE : | ERWA0277 | INDEX : | A |
| AUTHOR : | Le Nouail Loïc | ISSUE DATE : | 2016-11-25 | PAGE : | Page **2** of **2** |
| CONFIDENTIALITY : | Internal | | | | |

Please make sure you use the latest version of the form when filling the record N° :

| Nature de la rupture / *Nature of the failure* | | | | | |
|---|---|---|---|---|---|
| **Plot N° / *Dolly's item*** | **Repérage / *Location*** | **Epaisseur / *Thickness* (µm)** | **Valeur obtenue / *Value* (MPa)** | **Nature de la rupture / *Nature of failure*** | **Valeur cible / *Target value*** |
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |
| Moyenne / Average | | | | | |

**Résultats / *Results***

Critère de validation / *Validation criterion* :

- Valeurs mesurées / *Measured values* ≥ Valeur cible / *Target value* → Conforme / *Compliant*
- Valeurs mesurées / *Measured values* < Valeur cible / *Target value* → Non conforme / *Non-compliant*

Décision / *Decision*: ☐ CONFORME / *COMPLIANT* ☐ NON CONFORME / NON-COMPLIANT

Si non conforme, décision / *If non-compliant, decision* :

Commentaires / *Comment* :

Contrôle Qualité PCM : (Nom, Date et signature) / *PCM Quality inspection : (Name, Date and signature)*

Contrôle Client (facultatif) / *Customer control (optional)*

Date / *Date* : Nom / *Name* : Visa / *Initial* :

# 4 ABB PAINTING PROCEDURE (C5-M)

LEAFLET

# Surface treatment and paint systems
## for IEC low voltage cast iron frame motors



This document describes the different paint systems available for IEC low voltage cast iron motors.
ABB standard paint color is blue, Munsell 8B 4.5/3.25. Others colors are available and can be ordered with variant codes 114 or 179.
The availability of the paint systems depends from the production unit aswell as from the product and the order type (limited availability for stock orders and more options for production orders). The paint systems and film thickness combinations for the different production units are all tested according to ISO12944-6.

| **Paint systems, suitability for atmospheric-corrosivity categories in accordance with EN ISO 12944-2** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Corrosivity category** | **C1** | **C2** | **C3, durability medium** [1] | **C4, durability medium** [1] | **C5, durability medium** [1] | **C5, durability high** [1] | **CX** [2] |
| **Variant code** | | | **111** **ABB standard paint system** | **115** **Special paint system** | **754** **Special paint system** | **711** **Special paint system** | **719** **Special paint system** |
| **Examples of typical environments (informative only)** | | | | | | | |
| **Exterior** | - | Atmospheres with low levels of pollution: mostly rural areas | Urban and industrial atmospheres, moderate sulfur dioxide pollution, coastal areas with low salinity. | Industrial ares and coastal areas with moderate salinity | Industrial areas with high humidity and aggressive atmospheres and coastal areas with high salinity | Industrial areas with high humidity and aggressive atmospheres and coastal areas with high salinity | Offshore areas with high salinity, and industrial areas with extreme humidity and an aggressive atmosphere, and sub-tropical and tropical atmospheres |
| **Interior** | Heated buildings with clean atmospheres, e.g., offices, shops, schools, hotels | Unheated buildings where condensation can occur, e.g., depots, sports halls | Production rooms with high humidity ans some air pollution, e.e. food-processing plants, laundries, breweries, dairies | Chemical plants, swimming pools, coastal ship- and boatyards | Buildings or areas with almost permanent condensation and with high pollution | Buildings or areas with almost permanent condensation and with high pollution. | Industrial areas with extreme humidity and an aggressive atmosphere |
| **Durability** | | | | | | | |
| | | | from 7 to 15 years | from 7 to 15 years | from 7 to 15 years | from 15 to 25 years | from 15 to 25 years |
| **Cast iron parts** | | | | | | | |
| **Surface preparation** | | | Blast-cleaning Sa 2 ½ | Blast-cleaning Sa 2 ½ | Blast-cleaning Sa 2 ½ | Blast-cleaning Sa 2 ½ | Blast-cleaning Sa 2 ½ |
| **Primer coat** | | | 2-component zinc rich epoxy primer | 2-component zinc rich epoxy primer | 2-component zinc rich epoxy primer | 2-component zinc rich epoxy primer | 2-component zinc rich epoxy primer |
| | | | **alternatively** | **alternatively** | | | |
| | | | 2-component epoxy primer | 2-component epoxy primer | | | |
| | | | **alternatively** | | | | |
| | | | 1-comp epoxy ester | | | | |

[1] Tested acc. to ISO 12944-6

[2] As alternative for CX paint system, ABB offers variant codes 710 and 755 that are acc. to Norsok M-501 standard.

[3] Nominal dry film thickness, µm (micro meter). The total film thickness results from the used coat combinations.

| Paint systems, suitability for atmospheric-corrosivity categories in accordance with EN ISO 12944-2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Corrosivity category** | **C1** | **C2** | **C3, durability medium [1]** | **C4, durability medium [1]** | **C5, durability medium [1]** | **C5, durability high [1]** | **CX[2]** |
| **Variant code** | | | **111** | **115** | **754** | **711** | **719** |
| | | | **ABB standard paint system** | **Special paint system** | **Special paint system** | **Special paint system** | **Special paint system** |
| **Intermediate coats** | | | No intermediate coat | 2-component epoxy primer | 2-component epoxy primer | 2-component epoxy primer | 2-component epoxy primer |
| | | | **alternatively** | | | | |
| | | | 2-component epoxy primer | | | | |
| **Topcoat** | | | 2-component epoxy topcoat | 2-component epoxy topcoat | 2-component epoxy topcoat | 2-component epoxy acrylic (NISO) | 2-component epoxy acrylic (NISO) |
| | | | **alternatively** | **alternatively** | **alternatively** | **alternatively** | **alternatively** |
| | | | 2-component polyurethane topcoat | 2-component polyurethane topcoat | 2-component polyurethane topcoat | 2-component polyurethane topcoat | 2-component polyurethane topcoat |
| | | | **alternatively** | | | | |
| | | | 1-component acrylic topcoat | | | | |
| **Total NDFT, µm[3]** | | | 100 or 80 | 160 or 180 | 200 or 240 | 320 | min. 280 |
| **Fan cover** | | | | | | | |
| **Topcoat** | | | Polyester power coat | Polyester power coat | Polyester power coat | Polyester power coat | Polyester power coat |
| | | | **alternatively** | **alternatively** | **alternatively** | **alternatively** | **alternatively** |
| | | | Polyester power coat + wet paint (2-component epoxy/ polyurethane topcoat) | Polyester power coat + wet paint (2-component epoxy/ polyurethane topcoat) | Polyester power coat + wet paint (2-component epoxy/ polyurethane topcoat) | Polyester power coat + wet paint (2-component epoxy/ polyurethane topcoat) | Polyester power coat + wet paint (2-component epoxy/ polyurethane topcoat) |

[1] Tested acc. to ISO 12944-6

[2] As alternative for CX paint system, ABB offers variant codes 710 and 755 that are acc. to Norsok M-501 standard.

[3] Nominal dry film thickness, µm (micro meter). The total film thickness results from the used coat combinations.

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9AAU000000000023 EN 12-2022