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1713 Bedford Row  
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Halifax  
Nova Scotia  
B3J 1T3  
Bid Fax: (902) 496-5016

**SOLICITATION AMENDMENT  
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise  
indicated, all other terms and conditions of the Solicitation  
remain the same.

Ce document est par la présente révisé; sauf indication contraire,  
les modalités de l'invitation demeurent les mêmes.

**Comments - Commentaires**

**Vendor/Firm Name and Address**  
**Raison sociale et adresse du**  
**fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
Atlantic Region Acquisitions/Région de l'Atlantique  
Acquisitions  
1713 Bedford Row  
Halifax, N.S./Halifax, (N.É.)  
Halifax  
Nova Scot  
B3J 1T3

<b>Title - Sujet</b> MiniModular Lighthouse Design-Build CONCEPTION-CONSTRUCTION DE PHARES MINIATURES MODULAIRES	
<b>Solicitation No. - N° de l'invitation</b> F6839-205060/A	<b>Amendment No. - N° modif.</b> 002
<b>Client Reference No. - N° de référence du client</b> F6839-20-5060	<b>Date</b> 2021-05-28
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$HAL-104-6158	
<b>File No. - N° de dossier</b> HAL-0-84128 (104)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> Atlantic Daylight Saving Time ADT <b>on - le 2021-06-08</b> Heure Avancée de l'Atlantique HAA	
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Nowakowski, Leanne	<b>Buyer Id - Id de l'acheteur</b> hal104
<b>Telephone No. - N° de téléphone</b> (902) 403-7112 ( )	<b>FAX No. - N° de FAX</b> (902) 496-5016
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b>	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

**Solicitation Amendment 002 is being issued to attach specifications and the revised, correct Statement of Work.**

**DEPARTMENT OF  
FISHERIES AND OCEANS:  
CANADIAN COAST GUARD – MARITIME AND CIVIL  
INFRASTRUCTURE**

**TECHNICAL SPECIFICATION FOR:  
MINI-MODULAR LIGHTHOUSE DESIGN-BUILD**



**“For Quotation Purposes Only”**

**Date: April 2021**

## **Statement of Work**

### **Title: Mini-Modular Lighthouse Design-Build**

#### **Background**

Canadian Coast Guard has identified the need for a new lighthouse design for use in the Atlantic provinces using the same fundamental design principles of MCI Atlantic's existing Modular Lighthouse.

#### **Description of Work**

Work for this project consists of the Design, Fabrication, Coating, and delivery and offloading of three (3) lighthouse frames to:

CCG Swiss Air Hanger (Hanger J)  
101 Magnificent Ave.  
Shearwater, NS  
B0J 3A0

The design must adhere to the various design constraints outlined in this document and is subject to approval of Departmental Representative during design and prior to fabrication. A Conceptual Drawing is provided as a basic guideline. The work under this specification shall include all materials, labour and equipment necessary to complete the design, fabrication, coating and delivery and offloading to the full extent of this Specification.

#### **1.0 General**

- 1.1 The Contractor's Agreement is with the Department Representative. All Contractor requests and inquires of any nature relating to this agreement must be directed to the Department Project Officer/Engineer:

Department of Fisheries & Oceans  
Canadian Coast Guard  
MCI Engineering

P.O Box 1000  
Dartmouth, NS  
B2Y 3Z8

- 1.2 The work to be done under this Specification shall include all labor, materials and equipment necessary to complete the design, fabrication, coating, and delivery and offloading to the full extent of the Specification and Drawings.
- 1.3 Contractor is to provide unit pricing and a detailed lump sum price for provision of the identified services before the time period identified. Contract will be awarded based on the lump sum price.
- 1.4 Lighthouses to be designed, fabricated, coated and delivered on or before 18 weeks after contract award.
- 1.5 Prior to commencement of work there will be a project “Kick-Off” meeting. The Contractors Project Manager and the Departmental Representative will be in attendance. The meeting to be held virtual through Microsoft Teams.
  - 1.5.1 Determine work schedule and minimum time for sufficient notice given before inspections.
  - 1.5.2 Contractor to present cost breakdown for approval by Departmental Representative.
- 1.6 Drawings to be provided using DFO-CCG drawing template. Template to be provided upon award.
- 1.7 Review Submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Statement of Work. Submittals not stamped, signed and dated and identified as to specific project will be returned without being examined and considered rejected.
- 1.8 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements in this Specification, and stating reasons for deviations.
- 1.9 Contractor’s responsibility for deviations in submission from requirements of this Specification is not relieved by Representative’s review of submittals.

- 1.10 The contractor, at no additional cost to the Departmental Representative, shall make any changes in their drawings/design which may be required, consistent with this Specification and shall submit revised copies for review in the aforementioned methodology.
- 1.11 The contractor shall submit for review the design and detail drawings, in PDF format, to the Departmental Representative. After successful review, one copy of each submitted drawing will be returned to the contractor either “Reviewed” or “Reviewed as Noted”. There after no change shall be made to the drawing without permission of the Departmental Representative.
- 1.12 The Professional Engineer, responsible for the design, shall seal all drawings submitted to the Departmental Representative and must be registered to practice by Professional Engineers and Geoscientists of Newfoundland and Labrador, Engineers and Geoscientists New Brunswick, Engineers PEI, and Engineers Nova Scotia.
- 1.13 Drawings, as-builts, CAD files (.dwg) and all rights and privileges associated, of the work of the contractor will, upon approval and payment, become the exclusive property of the Department, who will be free to make, reuse, or change the work of the contractor.
- 1.14 Prior to fabrication provide a list of welding personnel that will work on this project, complete with proof of valid welder certification cards.
- 1.15 All welding must have a Weld Procedure Specification (WPS) supplied by metallurgist or other certified party. WPS must be made available to the Departmental Representative when requested.
- 1.16 Mill certifications for all materials must be provided to the Departmental Representative on request.
- 1.17 Upon completion of work as per this Statement of Work, contractor to provide written notice to Departmental Representative.

## **2.0 Codes and Standards**

- 2.1 As an overriding requirement, all dimensions must meet the latest edition of the National Building Code of Canada.

- 2.2 Contractor to include coating of fabricated sections, performed to the latest edition of SSPC specifications.
- 2.3 All welding and shop practices during fabrication to be in accordance with CSA W59.2-2018 (latest edition). Welding and shop to be currently certified to W47.2 latest edition, minimum Division 3 or higher. Proof (copy) of certification MUST be submitted with the lump sum price.
- 2.4 Comply with the Canada Labour Code.
- 2.5 Observe and enforce construction safety measures required by:
  - 2.5.1 Latest edition of the National Building Code of Canada.
  - 2.5.2 Provincial Worker's Compensation Board.
  - 2.5.3 Municipal statutes and ordinances.
- 2.6 In the event of conflict between any provisions of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement the Departmental Representative will advise on the course of action to be followed.

### **3.0 Design Specifications**

Design of the lighthouse frame to follow the following constraints:

- 3.1 Overall footprint dimensions of lighthouse to be a maximum of 3.5052m (11.5ft) by 3.5052m (11.5ft) with an overall height of 6.096m (20ft).
- 3.2 Lighthouse to consist of three (3), independently fabricated (take-down) modular sections, for the purpose of transportation. Mating of these three sections will be completed by Department staff.
- 3.3 Weight of each section should be kept to an absolute minimum while still meeting load requirements, as per relevant building codes. Each section must not exceed 816kg (1800lbs).
- 3.4 Utilize normal additional reinforcements (gussets, brackets, braces, etc.) as needed to minimize weight and maximize strength.
- 3.5 Each modular section must include engineered lifting points using a 7:1 design ratio.

- 3.6 Space Section 1 wall studs in a fashion that optimizes sheathing with 4'x8' plywood.
- 3.7 The design shall take into account the strength added from sheathing.
  - 3.7.1 Provide a minimum plywood and fastener specification with design.
- 3.8 Add nailing flanges as needed to assure sheathing can be properly attached.
- 3.9 Design to include two different Section 1 above dormer options:
  - 3.9.1 First: Integrate aluminum plate that extends from above dormer to top of section 1 for red navigational stripe coating. Plate is to be 'built out' to integrate with vinyl siding and plywood profile. Suggested detail shown in Conceptual Drawings.
  - 3.9.2 Second: Above dormer to top of section 1 is left open for sheathing and vinyl siding. Add nailing flanges to top of dormer and top of Section 1 as needed for proper sheathing attachment.
- 3.10 Any sheathing on section 1 to be wrapped in a self-adhered, water resistive vapor permeable air barrier sheet membrane.
  - 3.10.1 All plywood sheathing and air barrier membrane to be installed by others at a later date.
- 3.11 Section 2 above deck to be sheathed with plate.
- 3.12 Add drain holes as necessary.
- 3.13 Design to eliminate water entering the lighthouse from underside of deck.
  - 3.13.1 Example: Drip edge.
- 3.14 Lighthouse to maintain desired aesthetic of a heritage lighthouse and therefore should maintain a wall pitch/slope of  $76.5^{\circ}$  and a cupola roof pitch/slope of  $30^{\circ}$ .
- 3.15 Lighthouse Section 1 to feature integrated entryway frame, 'stepped-out' from wall slope to maximize internal space (see Conceptual Drawings). The bottom of the door to be flush with the external wall.
- 3.16 Modular sections to be designed to allow for Section 1 and Section 2 to be connected in any orientation.
- 3.17 Lighthouse to feature a catwalk/deck, at a height of 3.29m (10.8 ft.), with dimensions of 3.05m (10 ft.) SQ. (square) accessible by an egress hatch, with dimensions meeting the minimum of the Building Code of Canada.

- 3.18 Egress hatch frame to be ‘stepped-in’ from wall slope to maximize external/deck space (see Conceptual Drawings). The top of the egress hatch to be flush with the external wall and be able to open full 90°.
- 3.19 Lighthouse to feature a removable (bolted connection) ladder climbing system for scaling sections/access to light and deck.
  - 3.19.1 Ladder to include integrated Fall Arrest system – Trylon TSF Cougar Rail, or approved equivalent to be installed per manufacturers guidelines.
- 3.20 Cupola to accommodate windows with dimensions 1.12m (3.67 ft.) wide by 0.76m (2.5 ft.) tall, with radius corners as seen in Conceptual Drawing.
  - 3.20.1 Lighthouse Option 1 to have one (1) window on the ‘front’ face of the cupola and Lighthouse Option 2 to have four (4) windows.
  - 3.20.2 If window is not required, the space will be continuous plate with the rest of the cupola assembly.
- 3.21 Light mount to include:
  - 3.21.1 A 234.95mm (9 ¼”) dia., and 9.525mm ( $\frac{3}{8}$ ”) thk. light mounting plate with four 15.875mm ( $\frac{5}{8}$ ”) dia. holes drilled at 200.025mm ( $7\frac{7}{8}$ ”) from the center of the plate, as shown on the conceptual drawing.
  - 3.21.2 A 355.6mm (14”) wide by 457.2mm (18”) tall junction box mounting plate of 4.7625mm (3/16”) thk. located 304.8mm (12”) below the light mounting plate.

#### **4.0 Materials**

- 4.1 Only use materials that are commonly used/readily available and marine grade.
- 4.2 Structural members of lighthouse frame to be 6061-T6 Aluminum or approved substitute.
- 4.3 Any and all hardware to be used must be 316 Stainless Steel.
- 4.4 Any sheet or plate material to be 5052-T5 Aluminum or approved substitute.
- 4.5 Tread plate of deck to be checkered 5086-H112 Aluminum Alloy.
- 4.6 All aluminum alloys to conform with CSA S157.
- 4.7 Welding consumables to be aluminum filler alloy 5356 or 4043, and to conform to AWS/ANSI A5.10 or approved equivalent.

- 4.8 Windows to be made from safety glass.
  - 4.8.1 Do not use multiple sheets to achieve required thickness of 1/4”.
  - 4.8.2 Edge to have 1/8” bevel

## **5.0 Work Required**

Referring to the design specifications, develop a final design of the Mini Modular Lighthouse. The final approved design to be used to fabricate three (3) complete modular lighthouse frames and follow the following constraints:

- 5.1 Fabricate one (1) complete Lighthouse Option 1 modular frame. This consists of modular Section 1 using integrated plate above dormer for navigational stripe, and cupola to have one front facing window.
- 5.2 Fabricate two (2) complete Lighthouse Option 2 modular frames. This consists of modular Section 1 to be left open above dormer to allow sheathing, and cupola to have all four windows.
  - 5.2.1 Lighthouse modular section 2 for both Lighthouse Options are structurally the same.
- 5.3 Calendar month and year (e.g. Dec 2020) shall be stamped or welded in 25mm high letters in each framing section onto inner ‘front’ face of perimeter structural tubing.
- 5.4 All welds to be continuous and all-around unless specified otherwise.
  - 5.4.1 Treaded plate to be seal welded on the top and stitch welded on the underside to the deck support members
- 5.5 Round or bevel any sharp corners and machine smooth all rough sides from cut material that may be a safety concern for the Departmental Representative or others working on these lighthouses during and after installation. All cuts to be saw cuts or sheared wherever possible.
- 5.6 Prior to inspection, each section shall be washed down with a liquid cleaner and rinsed with water. Cleaner to be International GTA822 or approved equal. After initial inspection all deficiencies shall be corrected immediately and each section washed again to verify correction of deficiencies.
- 5.7 Contractor will be responsible for any and all damages to the tower during transportation. Contractor to provide equipment for offloading.

- 5.8 Contractor to provide an accurate weight (+/-10lbs), after coating is complete for each section of the lighthouse. Contractor must submit these weights to the Departmental Representative before delivery.
- 5.9 Contractor is to contact Departmental Representative one week before delivery.
- 5.10 The below aluminum surfaces to be prepared and coated using the Interspec coating system, or approved alternative. See Appendix B for CCG Marine Coating Specification.
  - 5.10.1 Lighthouse Option One.
    - 5.10.1.1 Door frame, door, dormer, and plate above dormer (Section 1) to be coated in RAL 3020 - Traffic Red.
    - 5.10.1.2 Railings, exterior deck perimeter including kick plate and sheathed walls including egress hatch (Section 2) to be coated in RAL 9016 – Traffic White. A 915mm wide strip to be coated in RAL 3020 - Traffic Red centered on the front face of the railings. See Conceptual Drawings.
    - 5.10.1.3 Cupola (Section 3), consisting of roof, window frames, and drip sill to have exterior coated in RAL 3020 - Traffic Red. This cupola to have one (1) window.
  - 5.10.2 Lighthouse Option 2.
    - 5.10.2.1 Door frame and dormer roof (Section 1) to be coated in RAL 3020 - Traffic Red. Door and remaining dormer surfaces to be coated in RAL 9016 – Traffic White.
    - 5.10.2.2 Railings and exterior deck perimeter including kick plate (Section 2) to be entirely coated RAL 3020 - Traffic Red.
    - 5.10.2.3 Sheathed walls including egress hatch (Section 2) to be entirely coated in RAL 9016 – Traffic White.
    - 5.10.2.4 Cupola (Section 3), consisting of roof, window frames, and drip sill to have exterior coated in RAL 3020 - Traffic Red. This cupola to have four (4) windows.

## **6.0 Work Schedule**

- 6.1 All work on the project shall be completed within 18 weeks of award.
- 6.2 All drawings shall be submitted to Departmental Representative for approval prior to fabrication.
- 6.3 Contractor is to provide a detailed schedule and commence work immediately upon award of contract and after review and approval of all submittals.

## **7.0 Inspection and Quality Assurance/Quality Control**

- 7.1 With sufficient notice, contractor shall facilitate quality assurance/quality control inspections during, upon completion of fabrication and before coating, and upon delivery. Inspections will be conducted by the Departmental Representative and/or a certified third party. All discrepancies must be corrected before delivery. Contractor is fully responsible for structure until delivery to location identified.
- 7.2 All welds to be inspected 100% Visual Inspection (VT) and can be inspected by Departmental Representative or approved third party at anytime.
- 7.3 Non-destructive testing can be conducted by Departmental Representative or approved third part at any time.
- 7.4 All Quality Control (QC) results to be provided to the Departmental Representative on request.
- 7.5 Contractor is responsible to ensure structures are complete and ready for final inspection. In accordance to dates determined in the “kick-off” meeting and this solicitation.
- 7.6 Contractor is to provide notice a minimum of 10 calendar days prior to shipping in order to facilitate inspections.
- 7.7 Contractor to provide upon request by Departmental Representative, any documentation regarding quality assurance/quality control of the materials and/or procedures used to fabricate and assemble these structures. Including but not limited to: certified material test reports, welding procedure specifications (WPS), and welding inspection reports.
- 7.8 Inspections are to review general conformance with the specifications, contractor is responsible to ensure all relevant codes/standards/industry accepted fabrication practices are adhered to.

- 7.9 An acceptance inspection by the Departmental Representative will be carried out after delivery of the lighthouse.

## **8.0 Safety Requirement**

This Section describes specific safety requirements to be observed and enforced during the progress of the Work. Inclusion of these specific safety requirements shall not constitute a relief of the Contractor's responsibility but is a precaution against oversight and errors.

- 8.1 The Contractor is solely responsible for safety procedures deemed necessary by the Contractor to meet the requirements of this contract.
- 8.2 Provide all workers, including sub-trades, with adequate and appropriate safety procedures prior to commencement of their duties. Ensure all workers comply with all safety regulations required by National and Provincial Building Codes, Workmen's Compensation Board, Canada Labour Code Part II and any applicable Provincial acts and municipal statutes and bylaws.
- 8.3 In the event of conflict between any provisions of above authorities the most stringent provision governs.
- 8.4 The Contractor/Offer, or, at all times during the performance of the Contract/Standing Offer/Supply Arrangement, MUST NOT access PROTECTED and/or CLASSIFIED information or assets.
- 8.5 The contractor and/or its employees MUST NOT have unescorted access to Fisheries and Oceans Canada facilities, vessels and/or restricted access areas. The Contractor must therefore contact the DFO Project Authority prior to commencement of work to ensure that necessary steps are taken to ensure security.
- 8.6 The contractor and/or its employees MUST NOT remove any PROTECTED and/or CLASSIFIED information or assets from the identified work site(s).

## **9.0 Environmental Requirements**

- 9.1 Contractor is solely responsible for all environmental protection procedures deemed necessary to comply with all applicable Federal, Provincial and Municipal regulatory requirements.

## **10.0 Cost Breakdown**

- 10.1 Submit detailed breakdown of Lump Sum price before submitting the first progress claims. Ie: cost of design, cost of fabrication, etc.
- 10.2 After approval by Departmental Representative, cost breakdown will be used as basis for progress payments.

## **11.0 Oral Agreement**

- 11.1 No oral order, objection, claim or notice by any party to the others shall affect or modify any of the terms or obligations contained in any of the Contract Documents and none of the provisions of the Contract Documents shall be help to be waived or modified by reason of any act whatsoever, other than by a definitely agreed waiver or modification thereof in writing, and no evidence shall be introduced in any proceeding of any other waiver or modification.

## **12.0 Taxes and Permits**

- 12.1 Contractor to obtain all Federal, Provincial and Municipal permits and pay all applicable taxes.

## CCG Marine Coating Specification

### Epoxy Primer / Epoxy Mid-Coat / Polysiloxane Topcoat System

**Environment Notes:** A high durability (above 15 years) coating specification designed for environments classified by ISO 12944-2 as C5-M very high corrosivity (Marine).

**Min/Max Service Temperature:** -35°F / 212°F

**Substrate:** Aluminium and Stainless Steel

**Scope:** New Construction

#### Surface Preparation & Comments

- Surface Preparation details are detailed below.

**Area Size:** 1ft<sup>2</sup>

Product Name	Marketing Chemistry	Coat Type	Volume Solids %	DFT (mil)	Comments
Intergard 251	Epoxy	Full Coat	63	3.0	Epoxy primer for Aluminum
Interseal 670HS	Surface Tolerant Epoxy	Full Coat	82	5.0	Epoxy-Mid Coat
Interfine 979	Acrylic Polysiloxane	Full Coat	76	5.0	Colous as specified
				<b>13.0</b>	

#### Additional Notes

SURFACE PREPARATION - SSPC-SP 16

REFER TO PRODUCT DATA SHEETS FOR COMPLETE INFORMATION CONCERNING THESE PRODUCTS.

This design of this coating specification is based on information provided by the client and its suitability is dependent upon the accuracy of such information. AkzoNobel maintain the right to amend the specification and may do so at any time. For further information regarding prices availability and technical information please consult your AkzoNobel representative. Subject to our Standard Terms and Conditions which are available on request.  
<http://www.international-nc.com/>

## SSPC: The Society for Protective Coatings

# SURFACE PREPARATION SPECIFICATION

## SSPC-SP 16

### Brush-Off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals

#### Foreword

This standard covers surface preparation of coated or uncoated metal surfaces other than carbon steel prior to the application of a protective coating system. Surface preparation using this standard is used to uniformly roughen and clean the bare substrate and to roughen the surface of intact coatings on these metals prior to coating application. Substrates that may be prepared by this method include, but are not limited to, galvanized surfaces, stainless steel, copper, aluminum, and brass. For the purpose of this standard, the zinc metal layer of hot-dip galvanized steel is considered to be the substrate, rather than the underlying steel. This standard is not to be used for cleaning coated or uncoated carbon steel substrates. Five different standards are available for cleaning carbon steel: White Metal Blast Cleaning<sup>1</sup>, Near-White Metal Blast Cleaning<sup>2</sup>, Commercial Blast Cleaning<sup>3</sup>, Industrial Blast Cleaning<sup>4</sup>, and Brush-Off Blast Cleaning<sup>5</sup>. This standard is intended for use by coating specifiers, applicators, inspectors, or others who may be responsible for defining a standard degree of surface cleanliness.

This standard represents a degree of cleaning that is similar to that defined for carbon steel substrates in SSPC-SP7/NACE No. 4 except that a minimum surface profile depth on the bare metal surface is required.

#### 1. Scope

**1.1** This standard covers the requirements for brush-off blast cleaning of uncoated or coated metal surfaces other than carbon steel by the use of abrasives. These requirements include visual verification of the end condition of the surface and materials and procedures necessary to achieve and verify the end condition.

**1.2** Information about the function of brush-off blast cleaning as defined in SP 16 is in Paragraph A1 of Appendix A.

#### 2. Definitions

**2.1** A brush-off blast cleaned non-ferrous metal surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, metal oxides (corrosion products), and other foreign matter. Intact, tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife. Bare metal substrates shall have a minimum profile of 19 micrometers (0.75 mil).

**2.1.1** The entire surface shall be subjected to the abrasive blast to achieve the specified degree of cleaning and to produce a dense and uniform surface profile on the bare metal substrate. The peaks and valleys on the surface shall form a continuous pattern, leaving no smooth, unprofiled areas. Tightly adherent coating is permitted to remain. A coating is considered tightly adherent if it cannot be removed by lifting with a dull putty knife.

**2.1.2** Intact coatings that are present shall be roughened and cleaned as specified in the procurement documents. If the surface profile is not specified in the procurement documents, the abrasive selected shall roughen the cleaned surface to the degree required by the product data sheet for the coating to be applied.

**2.1.3** Immediately prior to coating application, the entire surface shall comply with the degree of cleaning as specified herein.

#### 3. Associated Documents

**3.1** Documents cited in the mandatory sections of this standard include:

Document	Title
SSPC-SP 1 <sup>6</sup>	Solvent Cleaning
ASTM D 4285 <sup>(1),7</sup>	Standard Test Method for Indicating Oil or Water in Compressed Air

<sup>(1)</sup> ASTM International (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959

<b>ASTM D 4417<sup>(2),8</sup></b>	Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel
<b>ASTM D 7127<sup>9</sup></b>	Standard Test Method for Measurement of Surface Roughness of Abrasive Blast Cleaned Metal Surfaces Using a Portable Stylus Instrument
<b>ASTM D 7393<sup>10</sup></b>	Method for Indicating Oil in Abrasives

**3.2** The latest issue, revision, or amendment of the documents listed in Paragraph 3.1 in effect on the date of invitation to bid shall govern unless otherwise specified.

**3.3** If there is a conflict between the requirements of any of the documents listed in Paragraph 3.1 and this standard, the requirements of this standard shall prevail.

#### **4. Procedures Before Brush-Off Blast Cleaning of Non-Ferrous Metal Surfaces**

**4.1** Before blast cleaning of non-ferrous metal surfaces, visible deposits of oil, grease, or other contaminants that would interfere with coating adhesion shall be removed in accordance with SSPC-SP 1 or other specified methods.

**4.2** Surface imperfections shall be corrected to the extent specified in the procurement documents (project specifications). Additional information on surface imperfections is in Paragraph A2 of Appendix A.

##### **4.3 Unique Requirements for Preparation of Galvanized Steel**

**4.3.1** Before blast cleaning, galvanized surfaces shall be checked for the presence of "wet storage stain." Blast cleaning shall not be used to remove wet storage stain. The "dwell time" necessary for the blast stream to remove wet storage stain can damage the galvanized surface. Additional information on the removal of wet storage stain is in Paragraph A3 of Appendix A. Additional information on blast cleaning galvanized steel is in Appendix A9.

**4.3.2** Unless written documentation exists to confirm that a galvanized surface is known to be free of chromates or other passivating treatments, representative areas of galvanized surfaces that will be coated shall be tested as described in Section 4.3.3 for the presence of chromates or other passivating treatments before brush-off blast cleaning is performed. If chromates or other passivating treatments are detected, the surface shall be retested after blast cleaning to confirm complete removal. OSHA requirements for worker protection from toxic metals may apply. Additional information on heavy metal toxicity is in Paragraph A4 of Appendix A.

**4.3.3 Test for Presence of Passivating Treatments on Galvanizing (e.g., Chromating):** "Chromating" refers to the treatment of galvanized parts to prevent the occurrence of wet storage stain. Most sheet metal and coil stock used to fabricate decking and curtain wall receives chromating treatments. The presence of chromates or other passivating treatments is detected by using a solution of copper sulfate, with the following procedure:

1. Ensure that surfaces are free of any visible oxidation or oxidation by-products
2. Prepare the solution by dissolving 2 grams of copper sulfate crystals in 100 ml of deionized water.
3. Mark off three adjacent areas on the galvanized part, approximately 6.45 cm<sup>2</sup> (1 inch<sup>2</sup>)
4. Leave one area untouched, solvent wash the second and third areas, and also thoroughly sand the third area using emery paper.
5. Using an eyedropper or pipette, saturate a cotton swab with the copper sulfate solution and apply to all three areas, or apply the solution directly to the three areas.

If all three areas turn black immediately, there is no passivation on the surface. If the first area does not turn black within 10 seconds and the second and third areas turn black immediately, there is no passivation on the surface with the possible exception of light oil. If the first and second areas do not turn black within 10 seconds and the third area turns immediately, a passivator of some type is present.

#### **5. Blast Cleaning Methods and Operation**

**5.1** Clean, dry compressed air shall be used for nozzle blasting. Cleanliness of the compressed air shall be verified in accordance with the procedure described in ASTM D 4285. Moisture separators, oil separators, traps, or other equipment may be necessary to achieve this requirement.

**5.2** Any of the following methods of surface preparation may be used to brush-off blast clean a non-ferrous metal substrate, but the presence of toxic metals in the abrasives or coating being removed can place restrictions on the methods of cleaning permitted. The chosen method shall comply with all applicable regulations.

**5.2.1** Dry abrasive blasting using compressed air, blast nozzles, and abrasive.

**5.2.2** Dry abrasive blasting using a closed-cycle, recirculating abrasive system with compressed air, blast nozzle, and abrasive, with or without vacuum for dust and abrasive recovery.

**5.2.3** Dry abrasive blasting using a closed-cycle, recirculating abrasive system with centrifugal wheels and abrasive.

<sup>(2)</sup> Although ASTM D 4417 is written for blast-cleaned steel, the methods are suitable for use on non-ferrous metals.

**5.2.4** When specified, other methods of surface preparation (such as wet abrasive blast cleaning) may be used to brush-off blast clean non-ferrous metal surfaces. Additional information on cleaning soft and thin substrates is in Paragraphs A5, A6, and A7 of Appendix A. Additional information on the use of wet abrasive blast cleaning to clean galvanized surfaces is in Paragraph A9.3 of Appendix A.

## **6. Abrasives for Brush-Off Blast Cleaning of Non-Ferrous Metal Substrates**

**6.1** The selection of abrasive size and type shall be based on the type, grade, and surface condition of the surface to be cleaned, the type of blast cleaning system used, the finished surface to be produced (cleanliness and surface profile [roughness]), and whether the abrasive will be recycled.

**6.2** The cleanliness and size of recycled abrasives shall be maintained to ensure compliance with this standard.

**6.3** The blast cleaning abrasive shall be dry and free of oil and grease, as determined by ASTM D 7393.

**6.4** The abrasive shall comply with any limitations or special requirements stipulated by the procurement documents. Abrasive embedment and abrasives containing contaminants may not be acceptable for some service requirements. Additional information on abrasive selection is in Paragraphs A8 and A8.1 of Appendix A.

**6.5** The abrasive material shall produce a dense and uniform profile acceptable for application of the intended coating. After cleaning, the cleaned metal surface shall have a minimum 19-micrometer (0.75 mil) profile, measured in accordance with ASTM D 4417 or ASTM D 7127. If present, intact tightly adherent coating shall be roughened as specified in the procurement documents (project specification). If the surface profile is not specified in the procurement documents, the abrasive selected shall roughen the cleaned surface to the degree required by the product data sheet for the coating to be applied.

## **7. Procedures Following Brush-Off Blast Cleaning and Immediately Prior to Coating**

**7.1** Visible deposits of oil, grease, or other contaminants shall be removed as required by SSPC-SP 1, or as specified.

**7.2** Dust, dirt and loose residues shall be removed from prepared surfaces by brushing; blowing off with clean, dry air; vacuum cleaning; or other specified methods.

**7.3** Removal of chromates or other passivating treatments detected on galvanized surfaces (see Section 4.3.2) shall be confirmed before coating application, using the procedure in Section 4.3.3.

**7.4** Immediately prior to coating application, the entire surface shall comply with the degree of cleaning specified in this standard.

## **8. Disclaimer**

**8.1** While every precaution is taken to ensure that all information furnished in SSPC standards and specifications is as accurate, complete, and useful as possible, SSPC cannot assume responsibility nor incur any obligation resulting from the use of any materials, coatings, or methods specified herein, or of the specification or standard itself.

**8.2** This specification does not attempt to address all problems concerning safety and health associated with its use. The user of this specification, as well as the user of all products or practices described herein, is responsible for instituting appropriate health and safety practices and for ensuring compliance with all governmental regulations.

## **References**

1. SSPC-SP 5/NACE No. 1 (latest revision), White Metal Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
2. SSPC-SP 10/NACE No. 2 (latest revision), Near-White Metal Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
3. SSPC-SP 6/NACE No. 3 (latest revision), Commercial Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
4. SSPC-SP 14/NACE No. 8 (latest revision), Industrial Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
5. SSPC-SP 7/NACE No. 4 (latest revision), Brush-Off Blast Cleaning (Pittsburgh, PA: SSPC, and Houston, TX: NACE)
6. SSPC-SP 1 (latest revision), Solvent Cleaning (Pittsburgh, PA: SSPC).
7. ASTM D 4285 (latest revision), Standard Test Method for Indicating Oil or Water in Compressed Air (West Conshohocken, PA: ASTM International).
8. ASTM D 4417 (latest revision), Standard Test Methods for Field Measurement of Surface Profile of Blast Cleaned Steel (West Conshohocken, PA: ASTM International)
9. ASTM D 7127 (latest revision), Standard Test Method for Measurement of Surface Roughness of Abrasive Blast Cleaned Metal Surfaces Using a Portable Stylus Instrument (West Conshohocken, PA: ASTM International)
10. ASTM D 7393 (latest revision) Method for Indicating Oil in Abrasive
11. Code of Federal Regulations, Title 29 Part 1926.1126 (Chromium VI)
12. ASTM B 6 (latest revision), Standard Specification for Zinc (West Conshohocken, PA: ASTM International)
13. Code of Federal Regulations, Title 29 Part 1926.62 (Lead)

14. ASTM D 1730 (latest revision), Standard Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting (West Conshohocken, PA: ASTM International)
15. SSPC-SP COM (latest revision), Surface Preparation Commentary for Steel and Concrete Substrates (Pittsburgh, PA: SSPC)
16. SSPC-AB 1 (latest revision), Mineral and Slag Abrasives (Pittsburgh, PA: SSPC).
17. SSPC-AB 2 (latest revision), Cleanliness of Recycled Ferrous Metallic Abrasives (Pittsburgh, PA: SSPC).
18. SSPC-AB 3 (latest revision), Ferrous Metallic Abrasives (Pittsburgh, PA: SSPC).
19. SSPC-AB 4 (latest revision), Recyclable Encapsulated Abrasive Media (Pittsburgh PA: SSPC).
20. ASTM A 123 (latest revision), Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products (West Conshohocken, PA: ASTM International)
21. ASTM A 153 (latest revision), Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware (West Conshohocken, PA: ASTM International)
22. ASTM A 780 (latest revision), Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings (West Conshohocken, PA: ASTM International)
23. ASTM D 6386 (latest revision), Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Painting (West Conshohocken, PA: ASTM International)

## Nonmandatory Appendix A: Explanatory Notes

**A1 FUNCTION:** This standard provides a degree of cleaning for non-ferrous metal substrates comparable to or greater than brush-off blast cleaning (SSPC-SP 7/NACE No. 4) of carbon steel. It is used to clean and roughen coated and uncoated metal surfaces (other than carbon steel), typically associated with the application of a protective coating system. The primary functions of brush-off blast cleaning of non-ferrous metal substrates before coating are (a) to remove material from the surface that can cause early failure of the coating and (b) to obtain a suitable surface profile (roughness) to enhance the adhesion of the new coating system.

**A2 SURFACE IMPERFECTIONS:** Surface imperfections can cause premature failure when the service is severe. Coatings tend to pull away from sharp edges and projections, leaving little or no coating to protect the underlying surface. Other features that are difficult to properly cover and protect include crevices, weld porosities, laminations, etc. The high cost of the methods to remedy surface imperfections requires weighing the benefits of edge rounding, weld spatter removal, etc., versus a potential coating failure.

**A3 WET STORAGE STAIN:** Wet storage stain is the whitish zinc corrosion product that forms when galvanized

parts are exposed to moist air without sufficient air circulation between the parts. Wet storage stain will reduce the adhesion of subsequently applied coatings, possibly resulting in coating delamination. Using a nylon brush and rinsing with water may remove light cases of wet storage stain. More severe cases with thick deposits may be removed by brushing with a dilute solution of acetic or citric acid. Surface contact time should be less than four minutes. Lime juice and white vinegar have been found to be effective cleaners.<sup>(3)</sup> Immediately after brushing, the cleaned areas should be rinsed with a large amount of water.

**A4 TOXICITY:** The presence of toxic substances in the abrasive or material being removed may place restrictions on the methods of cleaning permitted. If chromates are present, requirements of 29 CFR 1926.1126 (hexavalent chromium [chromium VI])<sup>11</sup> for worker protection may apply. ASTM B 6<sup>12</sup> lists five grades of zinc containing various levels of lead ranging from 0.003% to 1.4%. Depending on the grade of zinc used by the galvanizer, abrasive blast cleaning of the galvanized surface may also require compliance with Code of Federal Regulations,<sup>(4)</sup> Title 29 part 1926.62 (Lead).<sup>13</sup>

**A5 EROSION OF SOFT METAL SUBSTRATES:** When performing brush-off blast cleaning of soft metals such as aluminum, copper, and brass, care should be taken to avoid erosion of the metal substrate. Examples of techniques that may reduce the risk of erosion include the use of softer abrasives, lower nozzle pressures, and increased stand-off distances.

**A6 DEFORMATION OF THIN METAL SUBSTRATES:** Metal parts less than about 20 gauge in thickness may deform during brush-off blast cleaning. Deformation of thin metal substrates may be prevented by reducing the blast pressure and moving the blast nozzle rapidly across the surface being roughened and cleaned.

**A7 BRUSH-OFF BLAST CLEANING ALUMINUM, COPPER, BRASS AND STAINLESS STEEL:** Brush-off blast cleaning may not remove stains that could be detrimental to a paint system. If stains are still present after brush-off blast cleaning, they should be removed by spot cleaning, power brushing, or orbital sanding using stainless steel wire brushes, or stainless steel abrasive pads, followed by repeat brush-off blast cleaning if necessary to provide the desired profile.

When brush-off blast cleaning aluminum, the protective oxide layer is removed. A high performance coating system will improve the corrosion protection of the metal.

Additional information on the preparation of aluminum and aluminum alloys for painting can be found in ASTM D 1730.<sup>14</sup>

<sup>(3)</sup> B. Duran and T. Langill, "Cleaning Wet Storage Stain from Galvanized Surfaces," in Galvanizing Notes, October 22, 2007. (Centennial, CO: American Galvanizers Association).

<sup>(4)</sup> The U.S. Code of Federal Regulations may be accessed online at <<http://www.access.gpo.gov/nara/cfr/cfr-table-search.html>>.

**A8 ABRASIVE SELECTION AND USE:** Types of metallic and non-metallic abrasives are discussed in the Surface Preparation Commentary (SSPC-SP COM).<sup>15</sup> It is important to recognize that blasting abrasives may become embedded in or leave residues on the surface during preparation. Embedment can be detrimental (for example, ferrous metallic abrasives on stainless steel or aluminum). Carbon steel and chilled iron abrasives should not be used on stainless steel substrates, or when chemistry of the embedded abrasive could cause halogen-induced stress corrosion cracking or liquid metal embrittlement. Care should be taken to ensure that the abrasive is free from detrimental amounts of water-soluble, solvent-soluble, acid-soluble, or other soluble contaminants (particularly if the prepared surface is to be used in an immersion environment). Criteria for selecting and evaluating some types of abrasive media are given in SSPC-AB 1, AB 2, AB 3 and AB 4.<sup>16, 17, 18, 19</sup> Other media may also be suitable (see A8.1.1).

**A8.1 Abrasive Size and Hardness:** The size and hardness of abrasive media selected for brush-off blasting of non-ferrous metal substrates should be based on surface profile requirements. Abrasives in the size range 35 to 70 mesh having a Mohs hardness of 5 or less will generally perform well for cleaning substrates such as galvanized steel, aluminum, brass, and copper. Harder abrasives are typically required for stainless steel.

**A8.1.1** Softer abrasives are frequently used to prevent deformation of thin sheets of metal during blast cleaning. Some materials that have been found to be suitable include, but are not limited to aluminum/magnesium silicate, soft mineral sands, soft crushed glass and glass bead media, and organic media such as corncobs or walnut shells.

**A8.2 Air Pressure:** Relatively low nozzle pressures should be used for aluminum, copper, and galvanized steel to reduce the risk of damage to the substrate. Higher pressures are more suitable for stainless steel.

## **A9 BRUSH-OFF BLAST CLEANING GALVANIZED STEEL**

**A9.1 Thickness of Zinc on Galvanized Steel:** The zinc layers should remain intact during brush-off blast cleaning. The rate of cleaning is typically 110 m<sup>2</sup> per hour (1200 ft<sup>2</sup> per hour) or greater. It is recommended that the thickness of new galvanizing be measured before and after brush-off blast cleaning using measurement techniques described in SSPC-PA 2 to confirm that it still conforms to ASTM A123 or ASTM A153A/153M, as applicable. Any areas with insufficient thickness should be repaired in accordance with ASTM A 780.<sup>20,21,22</sup>

**A9.1.1** For some complicated shapes, a reduction in galvanizing thickness may be difficult to avoid. A mock-up or test area should be abrasive blasted to determine if excessive zinc is removed. If this is the case, consideration should be given to replacing the zinc (e.g. spot applications of an organic zinc-rich primer) or alternative measures of surface preparation such as zinc phosphate treatment may be used. These methods are beyond the scope of this standard.

**A9.2 Zinc Oxides:** Newly exposed zinc surfaces will oxidize rapidly, especially in the presence of moisture. During brush-off blast cleaning and subsequent painting of galvanized steel, the surface temperature should be a minimum of 3 °C (5 °F) above the dew point, in order to retard the formation of zinc oxides. To limit the amount of zinc oxide on the cleaned surface, galvanizing should not be permitted to get damp after cleaning, and should be painted as soon as possible within the same work shift that the surfaces were cleaned.

**A9.3** On galvanized steel surfaces, the use of wet abrasive blast cleaning can result in formation of oxides and hydroxides. Additional information on the preparation of galvanized steel for painting can be found in ASTM D 6386.<sup>23</sup>

# Intergard® 251



## Epoxy

### PRODUCT DESCRIPTION

A two component epoxy anti-corrosive primer pigmented with zinc phosphate.

### INTENDED USES

For use on properly prepared surfaces in both new construction situations and as an industrial maintenance primer for a wide range of anti-corrosive coatings systems for use in the offshore, petrochemical, chemical, pulp and paper and bridge industries.

The fast drying and handling properties, together with extended overcoatability, make this an excellent primer for factory application prior to full system application on site. Intergard 251 provides good abrasion resistance which minimizes mechanical damage in transit between the factory and site.

### PRACTICAL INFORMATION FOR INTERGARD 251

<b>Color</b>	Buff, Grey, Red Oxide
<b>Gloss Level</b>	Matte
<b>Volume Solids</b>	63% ± 2%
<b>Typical Thickness</b>	2-3 mils (50-75 microns) dry equivalent to 3.2-4.8 mils (79-119 microns) wet
<b>Theoretical Coverage</b>	337 sq.ft/US gallon at 3 mils d.f.t and stated volume solids 8.40 m <sup>2</sup> /liter at 75 microns d.f.t and stated volume solids
<b>Practical Coverage</b>	Allow appropriate loss factors
<b>Method of Application</b>	Air Spray, Airless Spray, Brush, Roller

### Drying Time

Temperature	Touch Dry	Hard Dry	Overcoating Interval with recommended topcoats	
			Minimum	Maximum
50°F (10°C)	2 hours	7 hours	7 hours	12 months <sup>1</sup>
59°F (15°C)	1 hour	5 hours	5 hours	12 months <sup>1</sup>
77°F (25°C)	45 minutes	3 hours	3 hours	12 months <sup>1</sup>
104°F (40°C)	30 minutes	2 hours	2 hours	12 months <sup>1</sup>

<sup>1</sup> Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

**REGULATORY DATA** **Flash Point (Typical)** Part A 75°F (24°C); Part B 81°F (27°C); Mixed 75°F (24°C)

**Product Weight** 11.5 lb/gal (1.38 kg/l)

**VOC** 3.25 lb/gal (390 g/lt)  
293 g/kg  
EPA Method 24  
EU Solvent Emissions Directive  
(Council Directive 1999/13/EC)

See Product Characteristics section for further details

## 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.

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 Intergard 251, 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.

Surface profile must be a minimum of 2 mils (50 microns).

#### Shop Primed Steelwork

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.

If the shop primer shows extensive or widely scattered breakdown overall sweep blasting may be necessary.

### APPLICATION

<b>Mixing</b>	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.			
<b>Mix Ratio</b>	4 part(s) : 1 part(s) by volume			
<b>Working Pot Life</b>	50°F (10°C) 10 hours	59°F (15°C) 8 hours	77°F (25°C) 6 hours	104°F (40°C) 3 hours
<b>Airless Spray</b>	Recommended	Tip Range 15-21 thou (0.38-0.53 mm) Total output fluid pressure at spray tip not less than 2204 psi (155 kg/cm²)		
<b>Air Spray (Pressure Pot)</b>	Recommended	Gun Air Cap Fluid Tip	DeVilbiss MBC or JGA 704 or 765 E	
<b>Brush</b>	Suitable	Typically 1.6-2.0 mils (40-50 microns) can be achieved		
<b>Roller</b>	Suitable	Typically 1.6-2.0 mils (40-50 microns) can be achieved		
<b>Thinner</b>	International GTA220 (or International GTA415)	Do not thin more than allowed by local environmental legislation		
<b>Cleaner</b>	International GTA822 or International GTA415			
<b>Work Stoppages</b>	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.			
<b>Clean Up</b>	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			

# Intergard® 251



## Epoxy

### PRODUCT CHARACTERISTICS

Intergard 251 is preferred for use with systems for chemical environments where zinc based materials can be subject to attack in both acidic and alkaline conditions.

The maximum overcoating interval will be dependent upon the integrity of the exposed film. A film of 3 mils (75 microns) dry film thickness will normally be overcoatable after 6-12 months exposure (depending upon the corrosivity of the environment) provided it is adequately cleaned and any areas of mechanical damage repaired.

Over-application should be avoided as thick films will not be as good a substrate for topcoat adhesion after ageing as those at the specified thickness. When using as a blast holding primer avoid over-application as thick films may suffer from cohesive film splitting if subsequent coats are also over-applied.

Over-application of Intergard 251 will extend both the minimum overcoating periods and handling times, and may be detrimental to long term overcoating properties.

When applying Intergard 251 by brush or roller, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

This product will not cure adequately below 41°F (5°C). For maximum performance, curing temperatures should be above 50°F (10°C).

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

In common with all epoxies, Intergard 251 will chalk and discolor on exterior exposure. However, these phenomena are not detrimental to anti-corrosive performance.

Intergard 251 is not designed for continuous water immersion.

Where a durable cosmetic finish with good gloss and color retention is required, overcoat with recommended topcoats.

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 251 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.

The following primers are recommended for Intergard 251:

Interzinc 22 (mist coat or tie coat recommended)\*  
Interzinc 52  
InterH2O 280

The following topcoats are recommended for Intergard 251:

Intercure 200HS	Intergard 345
Intercure 420	Intergard 475HS
Interfine 629HS	Intergard 740
Interfine 878	Interseal 670HS
Interfine 979	Interthane 870
Intergard 251	Interthane 990

Alternative topcoats are also available, consult International Protective Coatings.

\* See relevant product data sheet for details.

## 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](http://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	16 liter	20 liter	4 liter	5 liter
	5 US gal	4 US gal	5 US gal	1 US gal	1 US gal
For availability of other pack sizes contact International Protective Coatings					
SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A		Part B	
	20 liter	26 kg		4.2 kg	
	5 US gal	54.2 lb		8.8 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 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](http://www.international-marine.com) or [www.international-pc.com](http://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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**PRODUCT DESCRIPTION**

A low VOC, two component high build, high solids surface tolerant epoxy maintenance coating. Available in an aluminum pigmented version to provide additional anti-corrosive barrier protection.

**INTENDED USES**

For application to a wide variety of substrates including hand prepared rusty steel, abrasive blast cleaned and hydroblasted steel, and a wide range of intact, aged coatings. Provides excellent anti-corrosive protection in industrial, coastal structures, pulp and paper plants, bridges and offshore environments in both atmospheric exposure and immersion service.

NSF Certification is for tanks greater than 100 gallons (378.5 litres).



Certified to NSF/ANSI 61

**PRACTICAL INFORMATION FOR INTERSEAL 670HS**

<b>Color</b>	Range
<b>Gloss Level</b>	Semi-gloss (Aluminum is eggshell)
<b>Volume Solids</b>	82% ± 3% (depends on color)
<b>Typical Thickness</b>	4-10 mils (100-250 microns) dry equivalent to 4.9-12.2 mils (122-305 microns) wet
<b>Theoretical Coverage</b>	263 sq.ft/US gallon at 5 mils d.f.t and stated volume solids 6.56 m <sup>2</sup> /litre at 125 microns d.f.t and stated volume solids
<b>Practical Coverage</b>	Allow appropriate loss factors
<b>Method of Application</b>	Airless spray, Air spray, Brush, Roller

**Drying Time ▲**

Temperature	Touch Dry	Hard Dry	Overcoating Interval Interseal 670HS with Self			Overcoating Interval with recommended topcoats		
			Min	Max ●	Max †	Min	Max ●	Max †#
50°F (10°C)	8 hours	32 hours	32 hours	6 weeks	Extended*	20 hours	21 days	12 weeks
59°F (15°C)	7 hours	26 hours	26 hours	4 weeks	Extended*	14 hours	14 days	8 weeks
77°F (25°C)	5 hours	18 hours	18 hours	14 days	Extended*	10 hours	7 days	4 weeks
104°F (40°C)	2 hours	6 hours	6 hours	7 days	Extended*	4 hours	3 days	2 weeks

▲ For curing at low temperatures, an alternative curing agent is available. See Product Characteristics for details.

● Refers to situations where immersion is likely to occur

† Refer to atmospheric service only

\* See International Protective Coatings Definitions & Abbreviations

# Maximum overcoating intervals are shorter when using polysiloxane topcoats. Consult International Protective Coatings for further details.

**REGULATORY DATA**

<b>Flash Point (Typical)</b>	Base (Part A) 97°F (36°C)	Curing Agent (Part B) 133°F (56°C)	Mixed 91°F (33°C)
<b>Product Weight</b>	13.3 lb/gal (1.6 kg/l)		
<b>VOC</b>	114 g/kg	EU Solvent Emissions Directive (Council Directive 1999/13/EC)	
	2.00 lb/gal (240 g/l)	EPA Method 24	

**SURFACE PREPARATION**

The performance of this product will depend upon the degree of surface preparation. The surface 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.

Accumulated dirt and soluble salts must be removed. Dry bristle brushing will normally be adequate for accumulated dirt. Soluble salts should be removed by fresh water washing.

**Abrasive Blast Cleaning**

For immersion service, Interseal 670HS must be applied to surfaces blast cleaned to Sa2.5 (ISO 8501-1:2007) or SSPC-SP10. However, for atmospheric exposure best performance will be achieved when Interseal 670HS is applied to surfaces prepared to a minimum of Sa2.5 (ISO 8501-1:2007) or SSPC-SP6.

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

A surface profile of 2-3 mils (50-75 microns) is recommended.

**Hand or Power Tool Preparation**

Hand or power tool clean to a minimum St2 (ISO 8501-1:2007) or SSPC-SP2.

Note, all scale must be removed and areas which cannot be prepared adequately by chipping or needle gun should be spot blasted to a minimum standard of Sa2 (ISO 8501-1:2007) or SSPC-SP6. Typically this would apply to C or D grade rusting in this standard.

**Ultra High Pressure Hydroblasting/Abrasive Wet Blasting**

May be applied to surfaces prepared to Sa2.5 (ISO 8501-1:2007) or SSPC-SP6 which have flash rusted to no worse than Grade HB2.5M (refer to International Hydroblasting Standards) or Grade SB2.5M (refer to International Slurry blasting Standards). It is also possible to apply to damp surfaces in some circumstances. Further information is available from International Protective Coatings.

**Aged Coatings**

Interseal 670HS is suitable for overcoating a limited range of intact, tightly adherent aged coatings. Loose or flaking coatings should be removed back to a firm edge. Glossy finishes may require light abrasion to provide a physical 'key'. See Product Characteristics section for further information.

**APPLICATION**

<b>Mixing</b>	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.		
<b>Mix Ratio</b>	5.67 parts : 1.00 part by volume			
<b>Working Pot Life</b>	50°F (10°C)	59°F (15°C)	77°F (25°C)	104°F (40°C)
	5 hours	3 hours	2 hours	1 hour
<b>Airless Spray</b>	Recommended	Tip range 18-23 thou (0.45-0.58 mm) Total output fluid pressure at spray tip not less than 2,500 p.s.i. (176 kg/cm <sup>2</sup> )		
<b>Air Spray (Pressure Pot)</b>	Recommended	Gun	DeVilbiss MBC or JGA	
		Air Cap	704 or 765	
		Fluid Tip	E	
<b>Brush</b>	Recommended	Typically 4-5 mils (100-125 microns) can be achieved		
<b>Roller</b>	Recommended	Typically 3-4 mils (75-100 microns) can be achieved		
<b>Thinner</b>	International GTA220 (or GTA415)	May be necessary at low temperatures. Do not thin more than allowed by local environmental legislation.		
<b>Cleaner</b>	International GTA822 (or GTA415)			
<b>Work Stoppages</b>	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.			
<b>Clean Up</b>	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.			

### PRODUCT CHARACTERISTICS

In order to achieve optimum performance on hand prepared steel, the aluminum pigmented version should be applied as a primer coat by brush to ensure thorough wetting out of the substrate by Interseal 670HS.

For water immersion service, surface preparation to a minimum of Sa2.5 (ISO 8501-1:2007) or SSPC-SP10 followed by application of multi-coats of Interseal 670HS to a total minimum dry film thickness of 10 mils (250 microns) is required.

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. Low or high temperatures may require specific application techniques to achieve maximum film build.

If salt water is used in the wet blast process the resulting surface must be thoroughly washed with fresh water before application of Interseal 670HS. With freshly blasted surfaces a slight degree of flash rusting is allowable, and is preferable to the surface being too wet. Puddles, ponding and accumulations of water must be removed.

Interseal 670HS may be applied to suitably sealed or primed concrete; contact International Protective Coatings for further advice on specification and primers.

Interseal 670HS is suitable for overcoating intact, aged alkyd, epoxy and polyurethane systems. However, this product is not recommended where thermoplastic coatings such as chlorinated rubbers and vinyls have previously been used. Please consult International Protective Coatings for alternative recommendations.

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

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

In common with all epoxies Interseal 670HS will chalk and discolor on exterior exposure. However, these phenomena are not detrimental to anti-corrosive performance.

Premature exposure to ponding water will cause a color change, especially in dark colors.

Interseal 670HS can be used as a non-skid deck system by modification with addition of GMA132 (crushed flint) aggregate. Application should then be to a suitably primed surface. Typical thicknesses will be between 20-40 mils (500-1,000 microns). Preferred application is by a suitable large tip hopper gun (e.g. Sagola 429 or Air texture gun fitted with a 5-10 mm nozzle). Trowel or roller can be used for small areas. Alternatively, a broadcast method of application can be used. Consult International Protective Coatings for further details.

Interseal 670HS is certified to NSF/ANSI Standard 61 (selected colors only). Consult International Protective Coatings for further details. Certification is for tanks greater than 100 gallons (378.5 litres), for pipes which are 6 inches (15 cm) in diameter or greater and for valves which are 2 inches (5 cm) in diameter or greater.

### Low Temperature Curing

A winter grade curing agent is also available to enable more rapid cure at temperatures less than 50°F (10°C), however this curing agent will give an initial shade variation and more rapid discoloration on weathering.

Interseal 670HS 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.

Temperature	Touch Dry	Hard Dry	Overcoating Interval Interseal 670HS with Self			Overcoating Interval with recommended topcoats		
			Min	Max ●	Max †	Min	Max ●	Max †
23°F (-5°C)	24 hours	72 hours	72 hours	12 weeks	Extended*	72 hours	84 hours	12 weeks
32°F (0°C)	16 hours	56 hours	56 hours	10 weeks	Extended*	42 hours	54 hours	10 weeks
41°F (5°C)	9 hours	36 hours	36 hours	8 weeks	Extended*	36 hours	48 hours	8 weeks
50°F (10°C)	5 hours	24 hours	24 hours	6 weeks	Extended*	16 hours	24 hours	6 weeks

● Refers to situations where immersion is likely to occur

† Refer to atmospheric service only

\* See International Protective Coatings Definitions & Abbreviations

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).

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 affect VOC values determined using EPA Method 24

### SYSTEMS COMPATIBILITY

Interseal 670HS will normally be applied to correctly prepared steel substrates. However, it can be used over suitably primed surfaces. Suitable primers are:

- Intercore 200
- Interzinc 315
- Interplus 356
- Interplus 256
- Intergard 269

Where a cosmetically acceptable topcoat is required the following products are recommended:

- Intercryl 530
- Interfine 878
- Intergard 740
- Interthane 990
- Interfine 629HS
- Interfine 979
- Interthane 870

Other suitable primers/topcoats are available. Consult International Protective Coatings.

**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](http://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 litre	17 litre	20 litre	3 litre	3.7 litre	
	5 US gal	4.25 US Gal	5 US Gal	0.75 US Gal	1 US gal	

For availability of other pack sizes, contact International Protective Coatings

SHIPPING WEIGHT (TYPICAL)	Unit Size		Part A	Part B
	20 litre		30.8 kg	3.5 kg
	5 US gal		64.9 lb	6.8 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. Protect from frost.

**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](http://www.international-marine.com) or [www.international-pc.com](http://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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## Acrylic Polysiloxane

### PRODUCT DESCRIPTION

A patented (US 6,281,321 and EP 0 941290), high performance, two component, high solids inorganic hybrid finish which contains no free isocyanates.

Interfine 979 significantly improves upon the gloss and colour retention exhibited by typical polyurethane finishes as well as offering improvement in gloss and colour retention when compared to 1st generation epoxy modified polysiloxane finishes.

Interfine 979 also displays the same corrosion resistance and has enhanced mechanical properties when compared to traditional epoxy technology.

### INTENDED USES

Interfine 979 is part of International's premium range of polysiloxane finishes. It is designed to provide excellent long-term colour and gloss retention and provide extended lifetime to first maintenance when utilised as part of a high performance anti-corrosive system. Interfine 979 is intended for use in those market sectors where visual impact is important, and the need for a high standard of cosmetic appearance is required. These include high performance constructions such as bridges, offshore structures and tank farms in addition to general industrial and commercial steelwork where high levels of cosmetic performance are a key requirement.

The dual benefits of corrosion protection & high cosmetic appearance afforded by Interfine 979 mean that as well as exhibiting superior durability, this product also serves as an effective barrier coat similar to a traditional epoxy intermediate, and as such, allows a reduction in the total number of coats required from a multi-coat high performance system - saving application costs, and improving productivity during application.

### PRACTICAL INFORMATION FOR INTERFINE 979

<b>Colour</b>	Wide range via the Chromascan system			
<b>Gloss Level</b>	Gloss			
<b>Volume Solids</b>	76%			
<b>Typical Thickness</b>	100-150 microns (4-6 mils) dry equivalent to 132-197 microns (5.3-7.9 mils) wet			
<b>Theoretical Coverage</b>	6.08 m <sup>2</sup> /litre at 125 microns d.f.t and stated volume solids 244 sq.ft/US gallon at 5 mils d.f.t and stated volume solids			
<b>Practical Coverage</b>	Allow appropriate loss factors			
<b>Method of Application</b>	Airless Spray, Air Spray, Brush, Roller			
<b>Drying Time</b>	Overcoating Interval with recommended topcoats			
<b>Temperature</b>	<b>Touch Dry</b>	<b>Hard Dry</b>	<b>Minimum</b>	<b>Maximum</b>
5°C (41°F)	6 hours	8 hours	8 hours	Extended <sup>1</sup>
15°C (59°F)	4.5 hours	6 hours	6 hours	Extended <sup>1</sup>
25°C (77°F)	3 hours	4 hours	4 hours	Extended <sup>1</sup>
40°C (104°F)	1.5 hours	2.5 hours	2.5 hours	Extended <sup>1</sup>

<sup>1</sup> On other undercoats consult Interfine 979 Recommended Working Procedures or Interspec for specific details. The drying times quoted have been determined at the quoted temperature and 50% relative humidity. In warmer climates (>25°C (77°F)) and/or those that have a tendency for high relative humidity (>60%), an alternative curing agent is available which will allow improved product workability. See Product Characteristics.

### REGULATORY DATA

<b>Flash Point (Typical)</b>	Part A 32°C (90°F); Part B 55°C (131°F); Mixed 35°C (95°F)	
<b>Product Weight</b>	1.33 kg/l (11.1 lb/gal)	
<b>VOC</b>	1.81 lb/gal (218 g/l) 162 g/kg 176 g/lit	EPA Method 24 EU Solvent Emissions Directive (Council Directive 2010/75/EU) Chinese National Standard GB23985

See Product Characteristics section for further details

## Acrylic Polysiloxane

### 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

Interfine 979 should always be applied over a recommended anti-corrosive coating scheme. The primer surface should be dry and free from all contamination and Interfine 979 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. Sa2½ (ISO 8501-1:2007) or SSPC-SP10, Abrasive Blasting, or SSPC-SP11, Power Tool Cleaning) and patch primed prior to the application of Interfine 979.

#### Metallic Zinc Primed Surfaces

Ensure that the surface of the primer is clean, dry and free from contamination and zinc salts before application of Interfine 979. Ensure zinc primers are fully cured before overcoating.

### APPLICATION

<b>Mixing</b>	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.			
<b>Mix Ratio</b>	4 part(s) : 1 part(s) by volume			
<b>Working Pot Life</b>	5°C (41°F)	15°C (59°F)	25°C (77°F)	40°C (104°F)
	3.5 hours	2.5 hours	2 hours	1.5 hours
	Note: Pot life times are applicable to both curing agent grades.			
<b>Airless Spray</b>	Recommended	Tip Range 0.28-0.53 mm (11-21 thou) Total output fluid pressure at spray tip not less than 155 kg/cm <sup>2</sup> (2204 p.s.i.)		
<b>Air Spray (Conventional)</b>	Recommended	Gun DeVilbiss MBC or JGA Air Cap 704 or 765 Fluid Tip E		
<b>Brush</b>	Suitable	Typically 50-75 microns (2.0-3.0 mils) can be achieved		
<b>Roller</b>	Suitable	Typically 50-75 microns (2.0-3.0 mils) can be achieved		
<b>Thinner</b>	International GTA007	Do not thin more than allowed by local environmental legislation		
<b>Cleaner</b>	International GTA007			
<b>Work Stoppages</b>	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA007. Once units of material have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.			
<b>Clean Up</b>	Clean all equipment immediately after use with International GTA007. 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.			

## Acrylic Polysiloxane

### PRODUCT CHARACTERISTICS

**The detailed Interfine 979 Application Guidelines should be consulted prior to use.**

Level of sheen and surface finish are 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.

When applying Interfine 979 by brush or roller, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

This product must only be thinned using recommended International thinners. The use of alternative thinners, particularly those containing alcohols and ketones, can severely inhibit the curing mechanism of the coating. After mixing a slight exotherm may be noted, which is typical of this product and is a result of chemical reaction.

Pot life times must not be exceeded even though the material may be still liquid and appear useable. It is good working practice that application should commence with full unopened units of material. Due to the moisture sensitivity with partially filled units of the curing agent component, there is a danger of reaction with atmospheric moisture which could adversely affect the performance of the final coating film. This phenomenon will be more prominent in the faster drying grade of curing agent where mixed product surface skinning in the container may occur more readily, particularly in warmer climates and / or those with high humidity.

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

When applying Interfine 979 in confined spaces ensure adequate ventilation.

Care must be taken when spray applying multiple coats of Interfine 979 to ensure that a continuous wet film is applied and a minimum dry film thickness of 100 microns (4 mils) is achieved. Failure to do so may result in pinholing which will detract from ultimate appearance and performance.

Interfine 979 will cure satisfactorily at relative humidities between 40% and 85%. Curing will be slower at lower humidities and faster at higher humidities.

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

When overcoating after weathering or ageing, 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 Interfine 979.

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

Absolute measured adhesion of topcoats to aged Interfine 979 is less than that to fresh material, however, it is adequate for the specified end use.

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.

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 colour 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.

#### **Alternative Curing Agent**

For improved product workability in warmer climates and / or those with high relative humidity.

The drying times quoted have been determined at the quoted temperature and 50% relative humidity.

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### SYSTEMS COMPATIBILITY

The following primers/intermediates are recommended for Interfine 979:

- Intercure 200
- Intercure 200HS
- Intercure 420
- Intergard 251

Interfine 979 is designed to be topcoated with itself.

For other suitable primers/intermediates consult International Protective Coatings.

Interfine 979 must not be applied directly over Interzinc 52 low temperature grade cure (EPA176).

Absolute maximum overcoating intervals with Interfine 979 are dependent upon primer.

Interfine 979 should only be overcoated with itself.

## Acrylic Polysiloxane

### 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](http://www.international-pc.com):

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage
- Interfine 979 Application Guidelines

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 Safety Data Sheet and the container(s), and should not be used without reference to the Safety Data Sheet (SDS).

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 AkzoNobel for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	20 litre	16 litre	20 litre	4 litre	5 litre
	5 US gal	4 US gal	5 US gal	1 US gal	1 US gal

For availability of other pack sizes, contact AkzoNobel.

SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A	Part B
	20 litre	24.3 kg	4.4 kg
	5 US gal	49.6 lb	8.8 lb

STORAGE	Shelf Life	Part A: 12 months minimum at 25°C (77°F). Part B: 6 months minimum at 25°C (77°F). 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 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 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](http://www.international-marine.com) or [www.international-pc.com](http://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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