

# APPLICATION GUIDELINES OUTER HULL

Intershield® 163 Inerta 160

**Revision 11** 

Issue Date:27th September 2018





Revision 10 Date 27th September 2018

<u>C(</u>	ONTENTS	<u>S</u>	<u>Page</u>
1.	SCOPE A	AND PURPOSE	3
2.	PRODUC	T SPECIFICATION AND PRODUCT CURE GRAPHS	4
	2.1	Surface Preparation	4
	2.2	<u>Specification</u>	4
	2.3	<u>Notes</u>	5
	2.4	Product Cure Graphs	5
3.	COATING	S APPLICATION PROCEDURES	8
4.	TECHNIC	CAL INSPECTION AND PROJECT CONTROL	10
5.	GENERA	12	
	5.1	Steel Condition	12
	5.2	Steelwork Preparation	13
	5.3	Scaffolding	14
	5.4	Filling	14
	5.5	<u>Heating</u>	14
	5.6	Storage at point of application	15
	5.7	Gritblasting	15
	5.8	Cleaning	16
	5.9	Paint Application	16
	5.10	Dry Film Thickness	17
	5.11	Anode Areas	17
6.	REPAIR I	PROCEDURES	18
7	HFAI TH	19	





Revision 10 Date 27th September 2018

## 1. SCOPE AND PURPOSE

This application guidelines document has been produced in line with the requirements of the Worldwide Marine product range for outer hull coatings. The purpose of the guidelines is to ensure that a coating system, when correctly applied, provides adequate protection against mechanical damage and subsequent corrosion.

Successful in-service performance of an outer hull coating system depends upon both the correct choice of coating and the adoption of the correct procedures for surface preparation and paint application.

The responsibilities for achieving the specific standards outlined and for carrying out surface preparation and paint application rest with the Contracting Company and Shipyard. Under no circumstances do these responsibilities rest with International Paint. We will generally provide for the presence of a Technical Service Representative at key stages during the performance of the contract. The role of the International Paint Technical Service Representative is advisory only unless otherwise specified in the terms and conditions of the contract.



Revision 10 Date 27th September 2018

## 2. PRODUCT SPECIFICATION AND PRODUCT CURE GRAPHS

## 2.1 SURFACE PREPARATION

### 2.1.1 Newbuilding

Abrasive blast to ISO Standard 8501-1 (2007) -  $Sa2^{1}/_{2}$  equivalent to SSPC-SP 10, to produce a surface profile greater than 60 microns when measured as defined in section 5.7.4.

All shop primer must be removed.

If oxidation of the steel occurs between blasting and application of Intershield 163, the surface should be reblasted to the specified visual standard.

## 2.1.2 Major Refurbishment

Abrasive blast to ISO Standard 8501-1 (2007) -  $Sa2^{1}/_{2}$  equivalent to SSPC-SP 10, to produce a surface profile greater than 60 microns when measured as defined in section 5.7.4.

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

If oxidation of the steel occurs between blasting and application of Intershield 163, the surface should be reblasted to the specified visual standard.

## 2.2 SPECIFICATION

Repair Type	<u>ir Type                                    </u>		<u>D</u>	<u>Dft (microns)</u>		<u>Dft (mils)</u>			
			Spec	Min	Max	Spec	Min	Max	
Newbuilding or	1. Without antifouling	Intershield 163	500	(450)	(1250)	20	(18)	(50)	
Major	2. With antifouling	Intershield 163	500	(450)	(1250)	20	(18)	(50)	
Refurbishment	applied directly	Antifouling	As specified						
	3. With antifouling	Intershield 163	500	(450)	(1250)	20	(18)	(50)	
	applied using a tie-	Intergard 263	75	(50)	(125)	3	(2)	(5)	
	coat	Antifouling			As spe	As specified			
	4. With antifouling	Intershield 163	500	(450)	(1250)	20	(18)	(50)	
	applied using a tie-	Intergard 264	75	(50)	(125)	3	(2)	(5)	
	coat	Antifouling			As spe	cified			





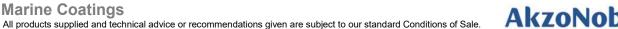
Revision 10 Date 27th September 2018

#### 2.3 **NOTES**

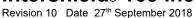
- At major refurbishment, if pitted steel is revealed by the blast cleaning process, pits must be 2.3.1 filled prior to application of the full coat of Intershield 163 (refer to section 5.4).
- 2.3.2 If an antifouling is to be applied over Intershield 163, refer to section 3.3.
- 2.3.3 Refer to the accompanying graphs for recommended overcoating intervals and curing requirements.
- 2.3.4 Drying times quoted for Intershield 163 refer to a single coat applied to give 500 microns (20 mils) dry film thickness. At higher film thicknesses drying times may be extended, particularly at low temperature.
- 2.3.5 Touch up during destaging is to be done by brush to at least the minimum dry filmthickness shown above.
- 2.3.6 All thicknesses are to be checked by the International Paint Technical Service Representative on site. Any substandard areas are to be rectified.
- For application, the steel temperature must not be lower than 10°C (50°F) and the humidity 2.3.7 must not exceed 80%. This product can be applied at temperatures down to 0°C at Newbuilding only, provided the coating is allowed to cure for a minimum of 2 months prior to vessel delivery.

#### 2.4 PRODUCT CURE GRAPHS

- 2.4.1 **Touch Dry Times**
- 2.4.2 Hard Dry Times
- 2.4.3 Minimum Overcoating Intervals
- 2.4.4 Maximum Overcoating Intervals
- 2.4.5 Time Before Launching
- 2.4.6 Time Before Service In Ice

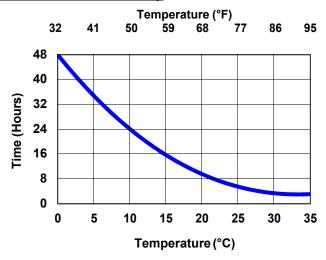




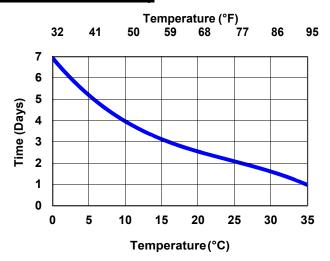




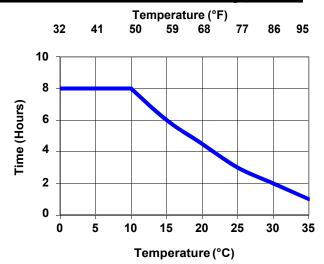
## Intershield 163: Touch Dry



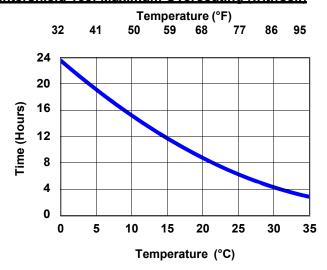
Intershield 163: Hard Dry



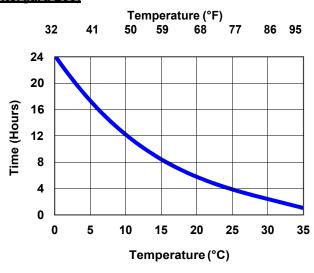
Intershield 163: Minimum Overcoating (with self)



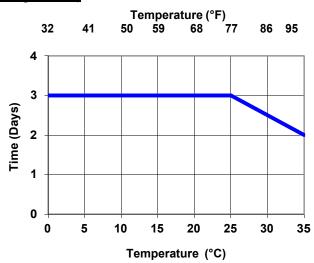
Intershield 163: Maximum Overcoating (with self)



Intershield 163: Minimum Overcoating (with Intergard 263)



Intershield 163: Maximum Overcoating (with Intergard 263)



**Marine Coatings** 

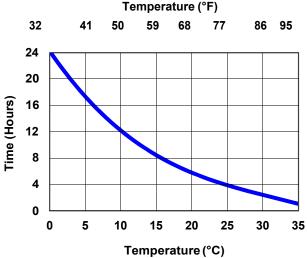


Revision 10 Date 27th September 2018

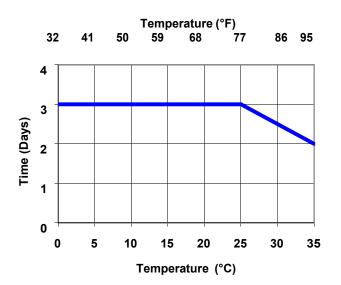
## **X.International.**

## Intershield 163: Minimum Overcoating (with

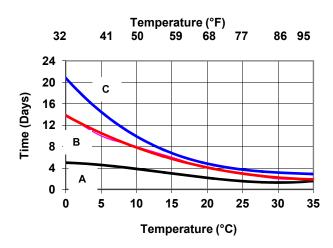
## Intergard 264) Temperature (°F)



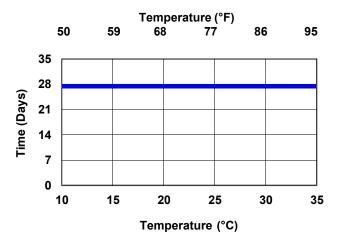
## Intershield 163: Maximum Overcoating (with Intergard 264)



## Intershield 163: Minimum time beforelaunching



Intershield 163: Minimum time before service in ice



- A: Water temperature > 10°C (50°F)
- B: Water temperature between 5°C and 10°C (41°F and 50°F)
- C: Water temperature between 0°C and 5°C (32°F and 41°F)

At Newbuilding, this product can be applied at temperatures down to 0°C provided the coating is allowed to cure for a minimum of 2 months prior to vessel delivery.

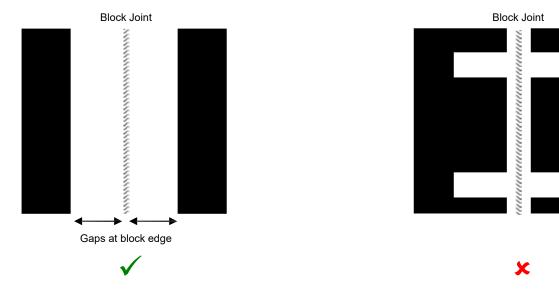


Revision 10 Date 27th September 2018

## 3. COATING APPLICATION PROCEDURES

### 3.1 **NEWBUILDING**

- 3.1.1 If scaffolding is to be used, refer to Section 5.3 for recommendations.
- 3.1.2 Remove weld spatter and grind sharp edges and uneven welds until smooth.
- 3.1.3 Grit blast entire area to ISO Standard 8501-1 (2007) Sa2<sup>1</sup>/<sub>2</sub>, removing all shop primer. Refer to section 5.7.
- 3.1.4 Upon completion of the blasting, and after inspection by the Contractor Quality Control Department, the International Paint Technical Service Representative will also inspect the whole area.
- 3.1.5 The whole blasted area is to be cleaned to remove dust and contamination.
- 3.1.6 Apply the coating scheme as specified in section 2.2 of this procedure. If the hull is to be painted in block sections, leave a 50 centimetre gap from the block edge. (Actual distance will be dictated by the extent of hot work scheduled during the erection process so that join-ups between Intershield 163 applied at block stage and erection stage will be straight lines).



Wet film thickness measurements should be made during application of Intershield 163 to ensure the specified film thickness is achieved. If Intergard 263/264 and/or antifouling is being applied this should **NOT** be stepped back from the edge of the Intershield 163.

- 3.1.7 Once the block sections have been welded together, prepare the join-up areas by power discing to produce a steep feathered edge approximately 2 centimetres wide. Each coat of the applied scheme should be visible along the full length of the disced edge. Damage areas should be squared off to again produce straight edges.
- 3.1.8 Blast bare steel areas to Sa2½ and sweep blast join-up edges to produce a profile to meet the standards described in section 5.7.4. Ensure surfaces are then clean and free from debris.
- 3.1.9 To these areas, apply the coating scheme as specified in section 2.2 of this procedure. The Intershield 163 should cover all sweep blasted Intershield edges, albeit that a small degree of overlap onto Intergard 263/264 and/or antifouling will be unavoidable.







Revision 10 Date 27th September 2018

## 3.2 MAJOR REFURBISHMENT

- 3.2.1 If scaffolding is to be used, refer to Section 5.3 for recommendations.
- 3.2.2 Grit blast to ISO Standard 8501-1 (2007) Sa2<sup>1</sup>/<sub>2</sub>. Refer to section 5.7.

The bow area and sides exposed to heaviest abrasion should be treated first to give the maximum drying period prior to service.

If the Intershield 163 is not to be overcoated, surface preparation and paint application should be scheduled such that coated areas are allowed to dry for 4-6 hours before blast cleaning is continued in the vicinity. In practice, it is recommended that 500 to 1,000 m $^2$  (600 to 1,2000 yd $^2$ ) are treated at one time. This area will depend upon how long the blast retains the specified degree of cleanliness and this will depend upon the ambient conditions. If a tiecoat and/or antifouling is to be applied however, this is not practical due to the short overcoating intervals (see section 2.4).

- 3.2.3 Upon completion of the blasting, and after inspection by the Contractor Quality Control Department, the International Paint Technical Service Representative will also inspect the area.
- 3.2.4 The whole blasted area is to be cleaned to remove dust and contamination.
- 3.2.5 If the blast cleaning process reveals pitting to a depth greater than 1mm, the pitted area is to be filled before the Intershield 163 main coat is applied (refer to section 5.4). Observe the minimum and maximum overcoating intervals specified in section 2.4.
- 3.2.6 Apply the coating scheme as specified in section 2.2 of this procedure.

## 3.2 APPLICATION OF ANTIFOULING

For vessels intended for service in ice, antifouling is not normally applied over Intershield 163. If antifouling is required, for example if the vessel is to undergo a significant voyage prior to encountering ice, then the specified antifouling scheme should be applied within the minimum and maximum overcoating intervals specified for Intershield 163 in section 2.4.





Revision 10 Date 27th September 2018

## 4. TECHNICAL INSPECTION AND PROJECT CONTROL

Project control by regular inspection and agreement on future action is vital to maximising the potential of a coating system.

All parties involved in the work must agree an inspection procedure prior to the work commencing. This should outline how and when both work and inspection will be undertaken.

Prior to commencing the project the contractor(s) must be provided with copies of the relevant product data sheets. Particular attention should be drawn to the application method by hot twin feed and control of mixing ratio.

The International Paint Technical Service Representative should supervise initial set up of the application equipment, to ensure that all parties are aware of mixing and application characteristics, and also test that the mixing ratio is correct (see section 5.9). Additionally, the International Paint Technical Service representative will regularly check the pressure gauges of the plural feed equipment during application.

Daily briefings should be arranged to confirm performance of the work and inspection schedules, minutes of these briefings should be taken and circulated to all participants.

In the event of work continuing at any stage without the agreement of International Paint, the Company cannot be held responsible for any subsequent failure of the coating system on the areas concerned. Such an event is termed an EXCEPTION, all parties MUST be officially informed in writing using the standard Exception Report Form immediately following the occurrence.

International Paint, and any other authorised personnel, may inspect any stage in the process. If additional inspections are considered necessary because of on site conditions or by agreement prior to commencement of the contract, then the contractor must obtain written approval for that stage from International Paint before continuing.

Contractors must supply interpreters if necessary.

On completion of the contract all relevant documentation must be retained, and safely archived, by the Local Technical Service Manager.

Inspection equipment for measurement of profile depth, humidity, wet and dry film thickness, etc should be of approved types.

Note: When measuring the dry film thickness of coatings, the DFT gauge must be calibrated prior to use and measurements made in accordance with ISO 2808:200, unless regulations dictate that an alternative standard should be used.



**X.International.** 

Revision 10 Date 27th September 2018

## 5. GENERAL NOTES

#### 5.1 **STEEL CONDITION**

Prior to commencement of surface preparation it is essential that the hull, or block sections, are clean, dry, and in a condition suitable for surface preparation and application of the coating. The following briefly outlines the minimum requirements at newbuilding:

- All grease and oil must be removed from all surfaces (SSPC-SP1).
- All hot work should be complete, except for join up welds if block stage coating procedures are adopted.
- If preparation and coating is to be carried out after erection, the hull must be degreased, fresh water washed and dried if it has been in contact with sea water.

Defective steelwork, prior to contract commencement, should be repaired in line with the guidance notes given in 5.2 (Steelwork Preparation).







Revision 10 Date 27th September 2018

#### 5.2 STEELWORK PREPARATION

Preparation grades of welds, cut edges and surface imperfections are described in ISO 8501-3. Preparation to P3 grade of this standard will provide surfaces which will ensure optimum paint performance. International Paint recommend the following methods and minimum levels of preparation on any new steelwork:

ITEM	PROBLEM / SOLUTION
Sharp Edge	Remove sharp edges or gas cutting edges with grinder or disc sander:
Weld Spatter	1. Remove spatter observed before blasting by grinder, chipping hammer etc.  2. For spatter observed after blasting: a) Remove with chipping hammer /scraper etc. b) Where spatter is sharp, use disc sander or grinder until obtuse c) Obtuse spatter – no
Plate Lamination	Any lamination to be removed by grinder or disc sander
Undercut	Where undercut is to a depth exceeding 1mm and a width smaller than the depth, repair by welding or grinding may be necessary
Manual Weld	For welding bead with surface irregularity or with excessive sharp edges, remove by disc sander or grinder
Gas Cut Surface	For surfaces of excessive irregularity, remove by disc sander or grinder





Revision 10 Date 27th September 2018

### 5.3 **SCAFFOLDING**

Tubular scaffolding must not mask surfaces to be coated. Where contact is necessary then spade ends should be used.

Staging must afford easy and safe access to all surfaces to be coated, but should be at least 15cm to 30cm (6" to 12") from vertical surfaces which are to be coated. The distance between staging levels should not exceed 2 metres (6.5 feet).

Tubular scaffolding should be easy to clean.

Staging should be designed to allow thorough cleaning. International Paint recommend that staging be of the 'turn over' type, when local safety regulations permit.

Care must be taken when removing scaffolding in order to keep damages to a freshly applied coating to a minimum. Any damages should be repaired in accordance with the recommendations of the International Paint Technical Service Representative on site.

If mobile platforms or "cherry pickers" are used, they must be capable of providing access to all parts of the hull to be prepared and coated. The operatives should not have to lean or stretch excessively to gain suitable access.

### 5.4 FILLING

At major refurbishment, areas of heavy pitting should be blasted out and filled ahead of the full Intershield 163 application process. Filling can be accomplished either by –

(a) Applying Intergard 821 epoxy filler by trowel, scraping to remove excess filler from areas above the steel peaks. The filler should then be allowed to cure before surrounding unpitted areas are blasted to Sa2½ and the cured filler sweep blasted to create the required surface profile as defined in section 5.7.4.

or

(b) Applying multiple coats of Intershield 163 within the overcoating intervals shown in section 2.4. As for (a) above filled areas should then be allowed to cure before surrounding unpitted areas are blasted to Sa2½ and the cured Intershield 163 in the pits sweep blasted to create the required the required surface profile as defined in section 5.7.4.

(Should pitting be limited in area and depth so that filling with Intershield 163 can take place ahead of main coating while preserving the overcoating intervals shown in section 2.4, filling and main coating can take place as consecutive operations).

## 5.5 **HEATING**

The drying times of Intershield 163 at a range of ambient temperatures are given in section 2.4. Should the ambient temperature fall below 10°C (50°F) during the painting or drying process, the provision of shelter and artificial heating will aid the attainment of full mechanical properties. If applied at temperatures below 10°C at Newbuilding (see section 2.3.7) then an extended period is required to obtain these properties.

Providing heat to the coating is best carried out by erection of a tenting structure to enclose the coated area of the hull and using air driers within the tenting.

Typical specifications for suitable air driers are as follows:

Heating effect 280kW

**Marine Coatings** 





Revision 10 Date 27th September 2018

Coupling effect 7.5kW

Oil consumption 30 litres/h (7.92 US gallons/h) Air volume 1700 m³/h (2220 yd³/h)





Revision 10 Date 27th September 2018

The number of heaters required will depend upon the outside air temperature and the coated area.

#### 5.6 STORAGE (AT POINT OF APPLICATION)

The paint must be stored out of direct sunlight so that the temperature of the material will not exceed 35°C (95°F) for prolonged periods of time.

In winter months, when temperatures can be expected to fall below 5°C (41°F), base and curing agent must be stored in premises, (storeroom, hut, etc), which are heated to a temperature in excess of 15°C (59°F) for a period of not less than 48 hours immediately prior to use.

#### 5.7 **GRIT BLASTING**

#### 5.7.1 **General**

Gritblasting to ISO Standard ISO 8501-1 (2007) - Sa21/2 is required.

## **Comparative Standards**

ISO 8501-1: 2007	Japanese Standard on new steel	SSPC Standard		
Sa2½	JA SH2	SSPC-SP10		

In cases where the substrate is corroded or pitted, it may be necessary to fresh water wash the areas after abrasive blasting, then re-blast, in order to ensure complete removal of soluble corrosion products.

#### 5.7.2 Compressed Air

Air used for blasting must be clean, oil free and dry. The pressure should be at least 7kg/cm<sup>2</sup> (100lb/sq inch) at the nozzle.

#### 5.7.3 <u>Abrasive</u>

Abrasives used for blasting must be dry and free from dirt, oil, grease and suitable for producing the standard of cleanliness and profile specified. The abrasive must therefore be in accordance with the specifications given in ISO 11126 - Parts 1 to 8 and each delivery should carry a certificate of conformity to this specification.

If blasting abrasive is supplied on site without a certificate of conformity, the material should be tested by the yard or contractor in accordance with the methods given in ISO 11127 -Parts 1 to 7.

Particular attention should be given to ISO 11127 - Part 6, where the level of water soluble contaminants must not give a conductivity value greater than 25mS/m, and ISO 11127 - Part 7, where the level of water soluble chlorides must not exceed 0.0025% by weight.

Iron or steel abrasives can be used for in-situ open blasting. Specifications for metallic abrasives are given in ISO 11124 - Parts 1 to 4 and the corresponding test methods in ISO 11125 - Parts 1 to 7. If used, careful and thorough cleaning must be carried out at all stages of the operation.

Although not recommended, recycled grit may be used providing it is dry, has been shown to be free from contamination by dirt, oil, grease, and has been tested in accordance with

Marine Coatings





Revision 10 Date 27th September 2018 the above ISO standards.



Revision 10 Date 27th September 2018

## 5.7.4 Blast Profile

The amplitude of the blast profile should be a value of 60-100 microns (Ry5).

Measurement of surface profile using comparators is described in ISO 8503-2. The comparators themselves are described in ISO 8503-1. A medium 'G' type comparator should be used and a value of 60-100 microns (Ry5) is acceptable when measured by:

a) ISO 8503-3: Focusing microscope

b) ISO 8503-4: Stylus

c) ISO 8503-5: Replica tape

### 5.8 **CLEANING**

Following provisional approval of the blast standard, all remaining traces of grit and dust must be removed from all areas including scaffolding by suitable methods agreed by International Paint.

If compressed air cleaning is used, ensure that the air is dry and oil free.

Final approval of a substrate for coating application must be confirmed after final cleaning.

### 5.9 PAINT APPLICATION

Intershield 163 must be applied using hot twin feed application equipment, e.g. Graco Hydra-Cat, with pump ratio of 30:1 minimum, 45:1 recommended. Instructions given by the twin feed equipment manufacturer must be followed.

Spray tips in the range 0.021 – 0.032" (533 – 813 microns) are recommended.

Intershield 163 is supplied in two containers as a unit. These containers should be preheated to minimize waste and each component added to the appropriate hopper of the twin feed equipment. Thinners must not be used as they will impair the abrasion resistant properties of the coating.

The actual procedure for application may vary depending upon the type of hot twin feed equipment used. The following example is based on the use of a Graco Hydra-Cat:

The two components should be circulated separately through the twin feed equipment with the feed tank thermostats typically set to  $55^{\circ}$ C ( $130^{\circ}$ F). This will allow the mixed material at the gun to be within the optimum temperature range of  $40^{\circ}$ C to  $50^{\circ}$ C ( $104^{\circ}$ F to  $122^{\circ}$ F). At lower temperatures, atomization will be poor and at higher temperatures the pot life will be shortened. Once the paint has reached the required temperature, cease circulation and raise the main pump pressure to 200-300 bar. Allow mixed paint to replace solvent in the line after the mixing block immediately before commencing spray application.

It is critical that the correct mixing ratio of 2 volumes part A to 1 volume of part B is obtained. This should be checked prior to the commencement of application by attaching a spray gun to each of the fluid lines (this is necessary to achieve back pressure), setting the correct pressures for application and spraying each of the base and curing agent into separate 5 litre tins. When two 5 litre tins have been filled with the base component, exactly one 5 litre tin should have been filled with the curing agent.

At this point, correct mixing should be checked by taking a test sample from a point in the system after the mixer. The mixed paint should have uniform colour. If the sample is streaky, the mixer

Marine Coatings





Revision 10 Date 27th September 2018 should be cleaned or replaced.



Revision 10 Date 27th September 2018

During application, the pressure gauges on the plural pump should be constantly monitored by the operator to ensure no drops in pressure for either component. The International Paint Technical Service Representative will also, regularly check the pressures.

If application is to be suspended, the two components should be prevented from passing through the mixing capillary and solvent should be pumped through the line containing mixed paint. The pump pressure should then be reduced and circulation of the individual paint components commenced.

At the end of application, the mixing tube, spray hose and gun should be immediately cleaned by circulating solvent for 15 to 30 minutes.

### 5.10 FILM THICKNESS

In order to ensure that the specified film build is achieved, wet film thickness measurements should be made frequently throughout the application process and the thickness immediately "topped up" where necessary.

NOTE: If film thickness were to be left for rectification after the coating had cured to the pointwhere it could be checked with a dry film gauge, areas of low thickness would require sweep blasting before recoating (and remaining areas may well then also exceed the overcoating limits for application of Intergard 263/264).

#### 5.11 ANODE AREAS

Dielectric shield areas around impressed current anodes require additional protection of the underlying steel, to ensure the protection current is distributed to all areas of the hull. (Failure in this regard risks a short circuit in the protection system rendering it incapable of protecting hull areas at any distance from the anodes). There are 2 options to provide this protection.

#### Option 1

A two step approach may be taken as follows:

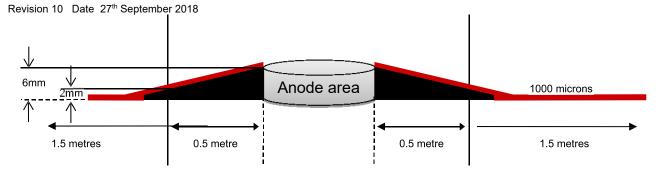
The primary dielectric shield is typically a plastic backing plate or an area of epoxy filler extending 0.5 metres in all directions away from the edge of the anode. If a plastic backing plate is used this will be supplied by the ICCP system manufacturer. If epoxy filler is used then Intergard 821 is suitable and should be applied over an Sa2½ blast (minimum profile as defined in section 5.7.4) at 6mm thickness closest to the anode, tapering to 2mm thickness at 0.5 metres distance. The filler shield area should be allowed to cure and then power disced to smooth out trowelling ridges.

The secondary dielectric shield is a double thickness Intershield 163 scheme extending 1.5 metres in all directions from the edge of the primary shield. If the primary shield is plastic then the secondary shield will not be applied over it. If, however, the primary shield is epoxy filler it should be sweep blasted to create a profile as defined in section 5.7.4 at the same time as the secondary shield area is blasted for application of Intershield 163. The secondary shield should then be applied over both the epoxy filler and the area extending 1.5 metres from the filler edge.

2m





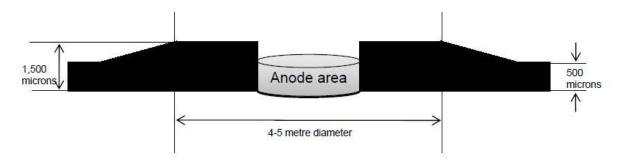




Revision 10 Date 27th September 2018

## Option 2

An area of 4-5 metres (13 - 16 feet) diameter around cathodic protection installations requires a higher film thickness of Intershield 163. These areas should be prepared as specified in section 2.1. Three coats of Intershield 163 should then be applied each at 500 microns (20 mils). Observe the minimum and maximum overcoating intervals shown in section 2.4. Alternately, the DFT of Intershield 163 can then be built up by wet on wet application to 1500 microns.





Revision 10 Date 27<sup>th</sup> September 2018

## 6. REPAIR PROCEDURES

## 6.1 Introduction

These repair procedures are recommended for damages either at the initial coating stage or where breakdown of coating has occurred during the service life of the vessel.

The repair procedure recommended will depend upon the extent of damage involved but can be split into:

- i) Repairs of major areas
- ii) Repairs of minor areas

## 6.2 Major Repairs

A Major repair should essentially be dealt with as if the project were beginning. The recommendations given earlier for steel preparation, coating application, etc. MUST all beadhered to.

## 6.3 Minor Repairs

Under this heading are repairs to areas damaged either at the initial coating stage (i.e. caused by de-staging, etc) or caused during service. The principle requirements are:

The area to be repaired must be fresh water washed to remove all salt contamination.

Degrease according to SSPC-SP1 solvent cleaning to remove oil, dirt etc.

The area to be repaired must be dry.

Abrade the coated area immediately surrounding the repair area to square it off (straight edges).

Remove any corrosion by blast cleaning to ISO Standard 8501-1 (2007) - Sa2<sup>1</sup>/<sub>2.</sub> equivalent to SSPC-SP 10:

Apply the touch-up paint system by hot twin feed spray. Brush or roller application should be restricted to small areas only. Several coats may be required to achieve the correct dry film thickness.



Revision 10 Date 27th September 2018



## 7. HEALTH & SAFETY

## 7.1 DANGER OF EXPLOSION OR FIRE

The key factor in preventing an explosion or fire, when considering the application of coatings in open air is elimination of naked flames, sparks and any ignition sources.

Welding, cutting or grinding in the vicinity of paint application should be forbidden until paint fumes are totally dispersed.

Smoking must be prohibited in the vicinity of paint application.

Airless spray equipment must be earthed (because of the danger of static electricity build-up).

Large volumes of mixed, waste paint should not be allowed to build up as there is a danger of an exotherm taking place with the resultant risk of fire.

Mobile telephones and electrical cameras <u>must not</u> be used in the vicinity of paint application until paint fumes are totally dispersed.

## 7.2 **AIRLESS SPRAYING**

The recommended method of application of Intershield 163 is by hot twin feed airless spray. Caution is required when using this method of application, and attention to the following points is advised:-

- Airless spray application of paints is a potentially hazardous operation.
- The high fluid output pressures generated by airless spray pumps can be extremely
  dangerous. No- one should carry out airless spraying without first being instructed in the
  correct use of the machine, the hazards involved, and the action necessary in the event of an
  accident.
- The equipment manufacturer's handbooks should be read and the contents and safety advice noted and understood by the applicator.

## 7.3 EYE AND SKIN IRRITATION

If the correct protective clothing has been worn, e.g. overalls, gloves etc, no discomfort should be experienced from skin irritation. Any small areas not protected by clothing, e.g. wrists or neck, can be treated with a non-greasy barrier cream. (Petroleum jelly is not recommended as this can assist the transport of solvents into the skin).

Any areas of skin accidentally contaminated with paint must be thoroughly washed with soap and water. A skin conditioner that is designed to replace the natural oils in the skin can be used.

Suitable eye protection should be worn at all times.

### **Note**

1. The preceding safety information is given for guidance only.

Marine Coatings

All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale.

AkzoNobel



Revision 10 Date 27th September 2018

It is imperative that, prior to the commencement of any hold coating project, local Regulations regarding Health and Safety be consulted.



Revision 10 Date 27th September 2018

All representations and statements concerning the product(s) in this publication are accurate to the best of our knowledge. Statements made in this publication are advisory only and are not intended to be specific recommendations or warranties of any product, combination of products or fitness for any particular purpose. To the extent permitted by law, we do not accept any liability to any person for any loss or damage (direct or indirect) that may arise from any use or reliance on any of the methods or information contained in this publication for any purpose.

Unless otherwise agreed in writing, all products supplied and technical advice or recommendations given are subject to the Conditions of Sale of our supplying company. Any warranties, if given, are contained in those standard Conditions of Sale and are the only ones made with respect to any products we sell to your or advice or recommendations we give to you.

We hereby disclaim any warranties or representations, expressed or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose.

For each of our products the relevant Product Data Sheet, Material Safety Data Sheet and package labelling comprise an integral information system about the product in question. Copies of our Product Data Sheets and Material Safety Data Sheets are available on request or from our website: <a href="www.international-marine.com">www.international-marine.com</a>.

x , International and all product names mentioned in this publication are trademarks of, or licensed to, Akzo Nobel.

Global Marine Coatings Headquarters International Paint Singapore Pte Ltd, 21, Tuas South Street 3, Singapore 638023

**Marine Coatings** 

