

Interline 984 Application Guidelines

Prepared by: Protective Coatings Technical Support

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The International Paint Application Guidelines have been produced and revised in line with the Worldwide Protective Coatings Product Range. The purpose of the guidelines is to ensure that the product, as applied, provides the required level of durability.

Successful in-service performance of a coating system depends upon both the correct choice of product(s) and the adoption of the correct guidelines 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. 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. The information contained herein presents guidelines for the application of Interline 984 to correctly prepared surfaces.

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1. INTRODUCTION

1.1 Surface Preparation

In common with most protective coatings schemes, the performance level of Interline 984 is ultimately determined by degree of surface preparation. The higher the degree of surface preparation achieved, the greater the long-term performance.

For optimum performance, all surfaces to be coated should be clean, dry and free from contamination including dirt, salts, oil and grease.

Steel

This product is suitable for application to new or pitted steel.

Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:2000. Where necessary, remove weld spatter, smooth weld seams and treat sharp edges or other fabrication faults; see Appendix 1 of this document, ISO 8501-3 grade 3 and/or NACE RP0178 grade C. 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. The maximum allowed total soluble salt contamination on the steel before application of the Interline 984 scheme is 5µg/cm².

All steel surfaces to be coated should be correctly prepared prior to application of the coating system. The preferred method of preparation is abrasive blast cleaning to Sa2½ (ISO 8501-1:2007) or SSPC-SP10 or NACE #2,

For some aggressive service conditions, Sa3, SSPC SP5 or NACE #1 may be required.

Compressed air used for blasting must be clean, oil free and dry. The pressure should be at least 7kg/cm⁻² (100psi) at the nozzle.

Abrasives used for blasting must be dry and free from dirt, oil, and grease and suitable for producing the standard of cleanliness and profile specified. The required amplitude of the blast profile depends upon the type of coating to be applied. Measurement on site should be by profile gauge or other mutually acceptable instrument. A minimum surface profile of 75-100 microns (3-4 mils) is recommended.

Concrete

Consult the International Concrete Surface Preparation Guide document for further information.

Other Substrates

Interline 984 is not suitable for application to other substrates.

1.2 Typical Specifications

<u>Coat</u>	<u>Product</u>	<u>DFT (microns)</u>			<u>DFT (mils)</u>		
		Spec	<i>Min</i>	<i>Max</i>	Spec	<i>Min</i>	<i>Max</i>
Tank Walls							
Primer	Interline 982	25	20	40	1	0.6	1.6
Stripe**	Interline 984	(175)	(150)	(200)	(7)	(6)	(8)
Full	Interline 984	400	300	600	16	12	24
Tank Floors							
Stripe**	Interline 984	(175)**	(150)	(200)	(7)	(6)	(8)
Full	Interline 984	600	400	1000	24	16	40

<u>Coat</u>	<u>Product</u>	<u>DFT (microns)</u>			<u>DFT (mils)</u>		
		Spec	<i>Min</i>	<i>Max</i>	Spec	<i>Min</i>	<i>Max</i>
Laminate System *		25	<i>20</i>	<i>40</i>	1	<i>0.6</i>	<i>1.6</i>
Primer	Interline 982						
Caulk	Interline 921	<i>As required to provide a smooth transition over welds, repairs, etc.</i>					
Laminate	Interline 984	1300	<i>1250</i>	<i>1400</i>	52	<i>50</i>	<i>56</i>
Gel Coat	Interline 984	375	<i>300</i>	<i>600</i>	15	<i>12</i>	<i>24</i>

Details regarding the application of the reinforced scheme are appended.

1.3 Notes

The detailed project coating specification provided by International Protective Coatings must be followed at all times. This will include specific details with regard to surface preparation and dry film thickness requirements.

Specific project requirements will be dependent upon the service end use and operating conditions of the tank or vessel. Always consult International Protective Coatings to confirm that Interline 984 is suitable for contact with the product to be stored.

Refer to the Interline 984 datasheet for precise overcoating intervals, pot life and curing requirements.

2. ENVIRONMENTAL CONDITIONS FOR APPLICATION

Interline 984 will not cure adequately at ambient temperatures below 10°C (50°F). For maximum performance the temperature should be greater than 10°C (50°F).

Coatings should only be applied to surfaces which have been maintained in a dry condition with the steel temperature at least 3°C (5°F) above the dew point for more than one hour (in order to prevent condensation). The surfaces must be visibly dry and clean at the time of application. This condition must be maintained until the coating is cured. For all application steps, the surface temperature, air temperature and material temperature should be between 10°C (50°F) and 49°C (120°F). Application should not take place when relative humidity is more than 80% or the surface temperature is less than 3°C (5°F) above the dew point. Consult the regional International Paint technical representative for guidance on application to substrates at higher temperatures.

Dehumidification, air conditioning and/or heating equipment may be necessary to control environmental conditions but care should be taken when choosing heating methods, as some heaters can increase the local relative humidity.

Microclimate should be monitored in between applications. Changes in microclimate may affect overcoating intervals. Additionally, exposure to UV sources will reduce the overcoating interval of the Interline 984.

3. APPLICATION PROCEDURE

Ensure, prior to application, that the minimum environmental conditions specified in Section 2 are achieved. Facility should be made to ensure these conditions are maintained throughout the painting program.

The area to be coated should be primed as per the specification and in accordance with the primer technical data sheet. All areas itemised in Section 6.7 are to receive a stripe coat. The stripe coat should be applied within the overcoating intervals specified in the relevant product data sheet. Unless advised otherwise, all areas are to receive the full lining scheme to the specified dry film thickness as specified by International Protective Coatings.

When hard dry, the dry film thickness may be measured by all interested parties to confirm compliance with the specification. Any areas of under thickness are to be brought up to the minimum thickness specified. This must be carried out within the overcoating intervals specified for the product.

All damages are to be repaired in accordance with Section 7, according to size.

On completion of installation, the final coating should be inspected using a suitable non-destructive magnetic gauge to verify average lining thickness. Following testing, any defective area should be repaired in accordance with the guidelines outlined in this document.

Ensure that fresh cans are used after each unit is applied – do not refill the old cans.

4. APPLICATION

The equipment specified in this Section is a guideline to the type of equipment that can be used to spray Interline 984; however, there are some variables (equipment condition, hose length, ambient temperature, paint temperature, etc.,) that may require changes in order to establish proper atomisation of the product.

4.1 Airless Spray

Mix the Interline 984 in accordance with the product data sheet.

Available air pressure and capacity for spray equipment should be at least 7kg/cm² and 7.0m³/min (100 psi and 250 cfm). All spray equipment must be in good working order and be capable of performing to the output requirements defined in International Paint product technical data sheets. **DO NOT THIN.**

It is recommended that airless spray pump ratios of 56:1 or greater should be used. Teflon packings are recommended. Remove suction tube and all filters from the spray unit and airless spray guns. Tips should be the size range stated on the relevant product data sheet and be in good condition. Paint line (hose) should be of 13mm, (½ inch), diameter, a maximum length of 45m (148ft), with a 10mm, (3/8 inch), diameter and 3m (10ft) whip-end. Both line and whip-end should be rated at 5000psi (351 kg/cm²).

The use of trace heated lines or an inline heater is recommended to maintain the temperature required for application (35-37°C, (95°F – 100°F)).

If material reaches 54°C (130°F) during any part of the application process it is recommended that application be halted and the pump cleaned out immediately to reduce the risk of hardening in the pump, lines and gun.

Areas of overspray should be sanded down prior to overcoating.

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4.2 Plural Component Spray

Heated plural component spray application is the most practical and preferred method when working with fast curing, short pot life materials, especially when lining large areas and applying at lower temperatures.

A pump capable of accurately delivering a 2:1 mix ratio is essential (Graco 56:1 or greater power ratio is recommended). Remove all filters from the spray unit and airless spray guns.

Two (2) 1/2" x 12 elemental in-line static mixers are required – these are located in line after the mixer manifold on the plural component equipment. Heated tanks and heated lines up to 66°C (150°F) may be necessary.

The Part A fluid line should be 13mm (1/2") internal diameter minimum. The Part B fluid line should be 13mm, (1/2") internal diameter, although 10mm, (3/8") internal diameter minimum is also possible. The high pressure solvent fluid line should be 6mm, (1/4"), internal diameter minimum.

Paint line (hose) should be 13mm diameter (1/2 inch), maximum length 45m, with a 10mm (3/8 inch) diameter, 3m (10ft) whip-end. Both line and whip-end should be rated at 5000psi (351 kg/cm²)

Plural component application requires volumetric check of the mix ratio (utilizing a ratio monitoring system) before and during the application process, although any variation in product colour during application will also indicate that the plural pump is off ratio.

The plural component unit should have facility for heating of the base and curing agent components; Part A should be heated to a maximum of 40°C (140°F) and Part B to a maximum of 40°C (105°F) under agitation in the plural component equipment.

The use of trace heated lines or an inline heater may be required to maintain the temperature required for application.

Important Note: A pressure drop is associated with paint lines. This pressure drop needs to be considered and depends upon the following factors:

- The viscosity of the paint. Higher viscosity paints produce greater pressure drops than low viscosity paints.
- The length of the paint line. Longer lines produce greater pressure drops
- The internal diameter of the paint line.
- Flow rate of paint through the line.

5. TECHNICAL INSPECTION

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

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

All thicknesses are to be checked by the coatings inspector on site. Inspection equipment for measurement of profile depth, humidity, wet and dry film thickness, etc., should be within calibration limits.

NOTE: When measuring the dry film thickness of coatings, the DFT gauge must be calibrated in accordance with the manufacturer's instructions.

Measurement of dry film thickness is described in ISO Standard 2808:2007 - Method 6A or SSPC PA2 Level 3. Any substandard areas are to be rectified.

'Spark' testing (holiday testing) will detect cracks, holidays and thin spots within a coating and should be carried out in accordance with NACE SP0188. Due to the destructive nature of the test, spark testing should only be done once, prior to the actual use of the coating under projected service conditions and at the recommended voltages, 100 volts per 25µm is recommended.

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6. GENERAL NOTES

6.1 Ventilation

Ventilation is necessary during abrasive blasting operations to ensure adequate visibility. Flexible trunking should be used to allow the point of extraction to be reasonably close to the personnel carrying out the blasting.

During and after coating application it is essential that solvent vapour is removed to ensure that the level present in the atmosphere does not rise above that recommended in the section (8.2) dealing with "Danger of Explosion and Fire". This means that the ventilation system must be arranged such that "dead spaces" do not exist. The ventilation must be continued both during the time that application is proceeding and also whilst solvent is released from the paint film during the drying process. Particular care must be taken to ensure that solvent vapour, which is heavier than air, does not accumulate in the lower areas of the tanks. The extracted air must be balanced with fresh air being introduced into the encapsulated area.

Equipment used must not re-introduce abrasive dust, solvent vapour etc., into the area where the coated articles are stored.

Ventilating to 10% of the LEL is considered to provide a reasonable margin of safety to allow for possible higher local concentrations. Care should be taken when setting up ventilation/extraction systems, to ensure that 10% figure is not exceeded.

Responsibility rests with the contractor to ensure that the requisite equipment is available and operated in such a way that these requirements are met. International Paint will provide all of the information needed to allow the contractor to calculate ventilation requirements. However, International Paint does not accept responsibility for the equipment, its operation, or the monitoring necessary to ensure that the requisite ventilation requirements are met.

All equipment used after the commencement of paint application must be electrically safe in operation.

The amount of air per minute for ventilating to 10% of the LEL (lower explosive limit) can be regarded as the required air quantity multiplied by rate of application per minute. The required air quantity is the amount of air needed for each litre of paint to ventilate to the required level. International Paint should be contacted for RAQ and LEL values for the appropriate products.

In the event of a failure of the extraction/ventilation system paint application must be stopped and the area evacuated of personnel immediately.

The level of ventilation employed must take account of the Lower Explosive Limit (LEL) of the product being applied and comply with local legislative requirements. International Paint recommends that this is such that vapour concentrations do not exceed 10% of the LEL.

6.2 Heating

If heating is necessary to satisfy the painting specification, it should be by means of a heat exchange system, i.e. air admitted to the encapsulated area should not pass directly through a combustion chamber, to avoid an increase in humidity.

6.3 Lighting

Lighting during painting must be electrically safe and provide suitable illumination for all work. As a guide, lighting may be considered suitable if this text can be read at a distance of 30 centimeters (12 inches) from the eye.

Ideally, the lighting should be powerful mains supplied spotlight with background lighting on at all times in the interests of safety. Powerful mains spotlighting must be provided when inspection work is being carried out.

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6.4 Storage of Product at Point of Application

The paint must be stored out of direct sunlight so that the temperature of the material will not exceed 25°C (77°F) for prolonged periods of time. In some regions, this may require the use of refrigerated facilities.

Provision must be made for heated storage of the Interline 984 to ensure a temperature of >10°C (50°F) is achieved for both components prior to application.

6.5 Weather Shelters

Weather shelters should be made available to cover application equipment during mixing and application of material. This should also prevent contamination from entering the area where application is underway.

6.6 Cleaning

Prior to initial blasting inspection, the bulk of spent grit should be removed. Any substandard areas should be identified and should be brought up to the specified standard.

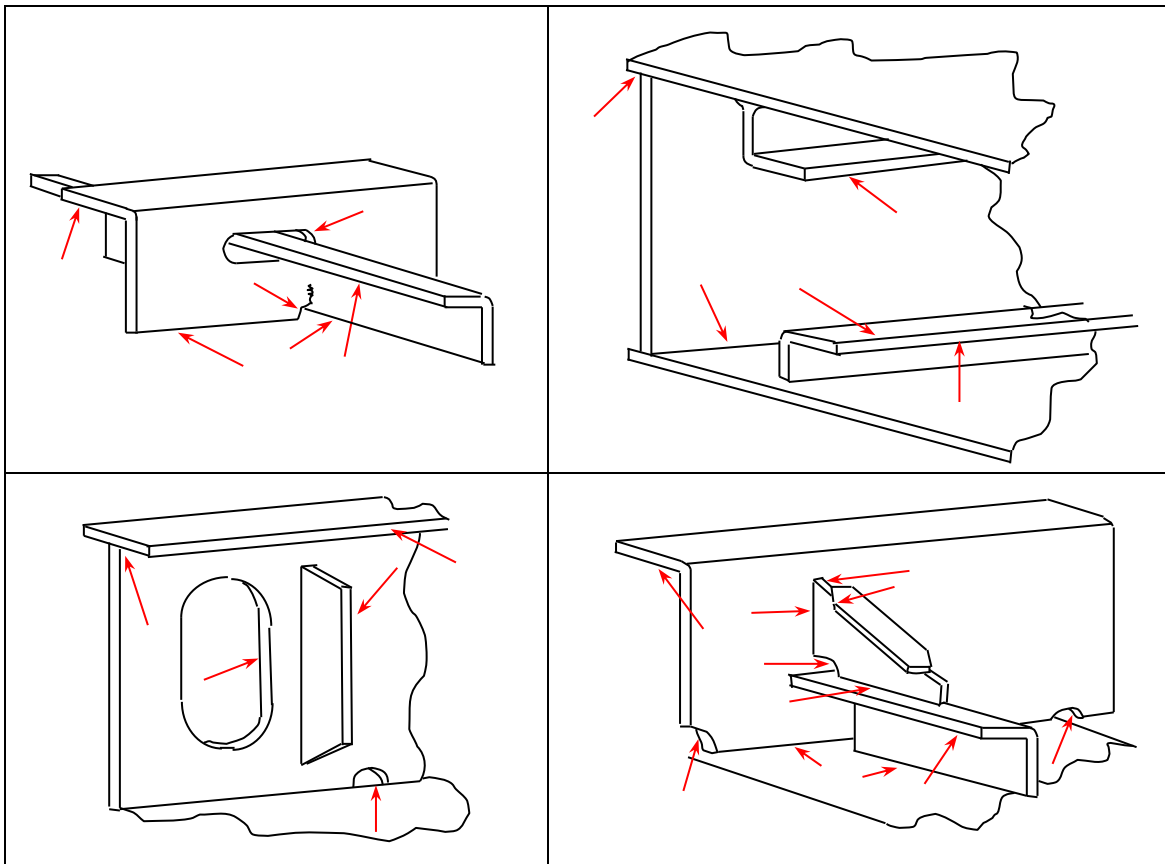
Following provisional approval of the blast standard, all remaining traces of grit and dust should be removed from all areas. Final approval of a substrate for coating application should be confirmed after final cleaning.

6.7 Stripe Coating

Stripe coating is an essential part of good painting practice. Typical areas where stripe coats must be applied include:

- behind bars
- cut outs e.g. scallops, manholes etc.,
- welds
- areas of pitting
- plate edges
- areas of difficult access
- small fitments of difficult configuration

Note: The above list is not comprehensive, all areas must be included. The diagrams following indicate key areas requiring stripe coating:



In general, stripe coats should be applied by brush. Application by roller should be limited to the inside of scallops.

6.8 Pit Filling

Areas showing deep pitting should be filled with Interline 984 prior to application of the full scheme. This can be best accomplished by spraying material over the pitted area and then ensuring penetration by use of a squeegee. The filled pits may then be overcoated "wet on wet" with Interline 984 although allowing a minimum of 15 minutes is recommended, to allow the material to flow into the pits, before overcoating.

7. REPAIR PROCEDURES

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

Minor Repairs

Minor repairs are areas damaged either at the initial coating stage or caused during service, of an area up to approximately 40 square inches. The principal requirements are:

The area to be repaired must be fresh water washed and dry.

Remove any corrosion and coatings back to a firm tight edge by means of either:

- vacuum blasting (to achieve the profile specified for new substrates)
- hand tools, i.e. disc sander and grinder (to a standard of SSPC SP11 with a profile of 40-50µm (1.6-2 mils)).

Any pits which do not need re-welding should be prepared by cone shaped grinder.

Abrade area immediately surrounding repair to provide key for subsequent paint application. Apply the paint system in accordance with our recommendations. If small areas are involved and application is by brush, several coats may be required to achieve the correct dry film thickness.

To repair an area of a tank that does not meet minimum thickness, brush blast, abrade (coarse grit), or grind the affected area to remove gloss and obtain a suitable surface roughness profile. Feather edges of repair site to achieve a smooth transition between repair and surrounding coating. Clean to remove any dust or debris prior to re-coating and solvent wipe with MEK. Allow solvent to evaporate. Spray or brush-apply Interline 984, depending upon the size of the affected area, to obtain the proper thickness or to cover any discontinuities.

Any repair area more extensive than this should be treated as for new surfaces; i.e. re-blast to the specified standard and apply the full specification.

8. HEALTH AND SAFETY

8.1 Introduction

Some coatings contain volatile flammable organic solvents which can form explosive mixtures with air. Safety precautions must be taken whilst applying this type of coating in enclosed areas. Detailed attention must be given to the following points:

- Danger of explosion or fire
- Provision of a suitable breathing environment for workers.
- Prevention of skin irritation problems.
- Use of paints which have been specially formulated for use in tanks.

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8.2 Danger of Explosion or Fire

The key factors in preventing an explosion or fire are:

- Adequate ventilation.
- Elimination of naked flames, sparks and any ignition sources.

Any organic solvent based coating could, merely by the normal process of drying, give off sufficient solvent vapour to produce an explosive mixture in an enclosed area when the vapour concentration reaches or exceeds 1% by volume in air. However, at 1% the solvents in the coatings produce an intolerably unpleasant odour, (often with irritating skin effects) and smarting of the eyes. These symptoms must be taken as a warning sign that better ventilation is needed. 0.1% solvent vapour in air is normally recommended to give a tenfold safety margin and at this concentration, no explosion can occur and no operator effects should be noticed.

8.3 Elimination of Ignition Sources

Safety is the overriding consideration with this type of coating work, and the Site Safety Department must be made fully aware of all aspects of the operation.

Welding, cutting or grinding in the immediate vicinity should be forbidden until paint fumes are totally dispersed. Lights, including hand torches, must be certified by the manufacturer as flash proof and suitable for use in solvent laden atmospheres. Smoking must be prohibited in the area or near to extraction systems. No electrical junction boxes should be allowed in the area where application is carried out. Airless spray equipment must be earthed (because of the danger of static electricity build-up)

Mobile telephones, electrical cameras, and any equipment that is not intrinsically safe, must not be used in the area or near to extraction systems.

8.4 Solvent Vapour and Paint Mists - Protection of Painting Personnel


No ventilation system can reduce solvent vapour levels to below the Occupational Exposure Limit for solvents whilst coating is in operation. Painters should, therefore, wear air fed hoods or pressure fed masks with additional eye protection. (Please note: air fed hoods which provide a curtain of air across the visor are available. These help to prevent settlement of spray mist on the visor). Normal protective clothing must be worn, e.g. overalls, gloves, and suitable footwear of non-spark type.

8.5 Skin Irritation

If proper protective clothing has been worn, e.g. overalls, gloves, air fed hood 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.

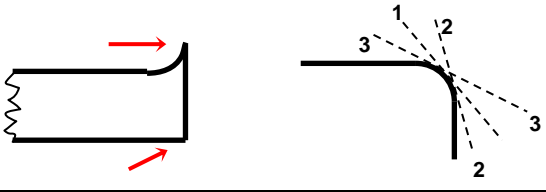
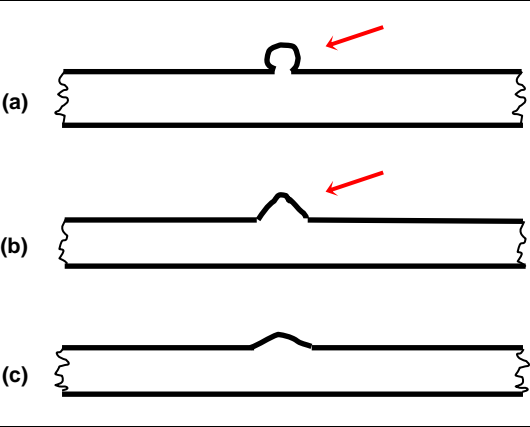
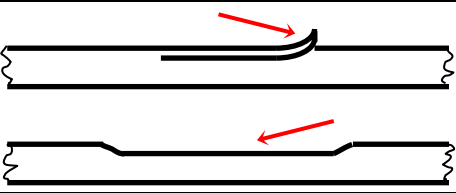
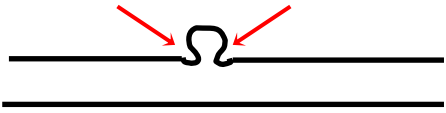
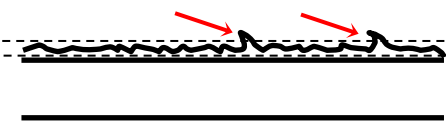
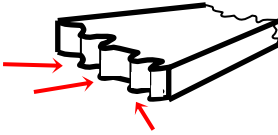
Note

1. The preceding safety information is given for guidance only.
2. It is imperative that, prior to the commencement of any tank coating project, local Regulations regarding Health and Safety be consulted.

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APPENDIX A – FABRICATION RECTIFICATION

ITEM	PROBLEM / SOLUTION
Sharp Edge	<p>Remove sharp edges or gas cutting edges with grinder or disc sander to achieve a radius of 1.5mm-2.0mm</p> 
Weld Spatter	<p>Remove spatter observed before blasting by grinder, chipping hammer etc.</p> <p>For spatter observed after blasting: Remove with chipping hammer /scraper etc. Where spatter is sharp, use disc sander or grinder until obtuse Obtuse spatter – no treatment required</p> 
Plate Lamination	<p>Any lamination to be removed by grinder or disc sander</p> 
Undercut	<p>Where undercut is to a depth exceeding 1mm and a width smaller than the depth, repair by welding or grinding may be necessary</p> 
Manual Weld	<p>For welding bead with surface irregularity or with excessive sharp edges, remove by disc sander or grinder</p> 
Gas Cut Surface	<p>For surfaces of excessive irregularity, remove by disc sander or grinder</p> 

APPENDIX B - GLASS FIBRE REINFORCED SYSTEMS (“Laminate” System)

Pre-Application Requirements

Tanks with riveted construction shells, where necessary, shall have the following mechanical repairs made prior to coating the tank bottom.

- All butt joints in the bottom chime angle shall be welded solid to provide a continuous chime angle.
- Install an adequate water stop in all vertical lap or butt joints in bottom.

Pre-cut steel plates shall be pre-coated and installed under support bases.

Cone Roof Tanks

If possible, pre-cut steel plates, approximately 6mm (¼”) thick of adequate size should extend 15cm (6”) beyond the roof support base in all directions. The plates are for installation under the bases of all roof support columns and other free standing equipment supports, prior to coating the remainder of the tank bottom. The plate should be blast cleaned to the standard specified in Section 3 and coated with Interline epoxy primer.

Hand lay, typically 350gm⁻² (1.2 oz/ft²) chopped strand mat using Interline 984 leaving a 7.5cm (3”) strip the entire perimeter of each plate uncoated. The fibreglass mat should be over-sealed with Interline 984.

If the raised leg is hollow, properly wrap to prevent oil contamination.

The coated plates shall be centred under each support base and attached to the tank bottom by one of the following methods:-

- By welding: place the coated plate in position under the support base and continuously weld with 6mm (¼”) full fillet weld to tank bottom.
- By adhesive: blast clean the area on the tank bottom corresponding to the plate size to the standard specified in Section 4. Thoroughly mix Interline 921 caulk and apply a coat to the underside of the plate and the tank bottom and place the plate in position. Apply a full fillet of caulking to the plate edges.

Properly designed and placed guide clips shall be attached to the coated plates under all roof support column bases. The guide clips shall be designed and placed to permit free vertical movement of the columns and prevent any horizontal movement.

Floating Roof Tanks

Steel plates approximately 6mm (¼”) thick and 45 x 45cm (18” x 18”) square to be prepared and coated as per Cone Roof Tanks and installed centred under all roof support column bases, vacuum breakers and any other equipment projecting below the roof deck which could contact the floor in the down position.

Prior to carrying out blasting the following steel defects must be repaired:-

- Weld spatter and weld lumps removed
- Weld slag removed
- Ragged or sharp edges to be rounded to minimum 12mm (½”) radius
- Laminations removed

Coating materials should be stored in warm, dry conditions. It is important that the fibreglass is kept dry. Prior to use the materials may require heating dependent on ambient temperatures. See product data sheets.

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Surface Preparation

Blast clean to Sa2½ (ISO 8501-1, SSPC SP-10) sharp angular profile 75-100µm (3-4 mils), as detailed in the Application Guidelines.

Typical Specification

		DFT Microns		DFT Mils			
		Spec	Min	Max	Spec	Min	Max
Primer	Interline 982	25	20	40	1	0.6	1.6
Caulk	Interline 921	As required to provide a smooth transition over welds, repairs, pits, etc.					
Laminate	Interline 984*	1300	1250	1400	52	50	56
Gel Coat	Interline 984	375	300	600	15	12	24

* To include chopped strand glass fibre mat, as detailed in the application information below.

Priming

Under practical conditions, a holding primer is often used to aid the blasting programme. Holding primers must be compatible with the lining system and applied at the specified film thickness to avoid introducing a weakness into the system.

If practical, normally in small vessels only or in larger tanks where small areas will be blasted and then coated after a short period, the blast standard may be maintained by use of dehumidification only. If maintaining standard by this method the standard must meet the requirements stipulated in the individual product data sheets.

Cold Steel Repairs

Penetrations in the steel bottom plates up to a maximum 2.5cm (1") diameter may be patched with minimum 6mm (¼") thick steel plate sized to extend a minimum of 7.5cm (3") beyond the penetration in all directions. The plates should be prepared in accordance with Section 3. The penetration and immediate area should be flooded with Interline 921 caulk and the plate pushed firmly into place. Alternatively, plates may be welded in place.

Caulking

Application of Interline 921 caulk is carried out using the equipment recommended on the product data sheet.

Apply to all pits, weld seams, lap joints, shell joints, rivet heads or other surface projections to provide a smooth uniform transition. It is important that the surface provided by the caulking is regular and even. Deep pitted areas in the shell or bottom plate should be filled with Interline 921 caulk by filling knife or squeegee and levelled flush with the adjoining plate.

Application of the Fibreglass Reinforced Epoxy Coating System

Spray Application (Matcote Process)

All application of the chopped fibreglass reinforced epoxy coating system carried out using the equipment as recommended by International Protective Coatings.

Spray apply Interline 984 incorporating chopped, continuous fibreglass roving at a level of 300-400gm-2 (1-1.3 oz/ft2). Immediately after application the mat formed by spraying shall be thoroughly rolled to embed the fibreglass strands, eliminate air entrapment in the coating film, forming a compact uniform laminate. The rolled coating film must be periodically checked and have a wet film thickness 1250-1400µm (51-56 mils).

Spray applications should overlap 7.5cm (3") onto the coated surface of the pre-coated tank bottom column support plates and extend up a minimum 5cms of all attached appurtenances and to the required height on the lower shell course.

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Following each day's application or when the laminate is sufficiently hard, the surface should be visually inspected. Protruding fibreglass strands or other irregularities should be removed by abrading with either coarse abrasive paper or orbital sanders. Dry film thicknesses should be recorded at this stage and typically be in the range 1250-1400µm (50-56 mils).

Hand Lay Up Application

The fibre glass reinforcement shall be random chopped 300-450gm² (1-1.5oz/ft²) fibre glass mat. To avoid breakdown of the primer in the curb angle, due to possible condensation on the underside of the roof and shell, or leaking around the seal during possible rain, laminate this area first. This area should include 45cm (18") of the shell and 7.5cm (3") onto the floor plate. Do not seam this laminate directly in the curb angle. The tank bottom surface shall be marked off in strips based on the width of the fibre glass mat. The mark off pattern shall provide a minimum of a 7.5cm (3") overlap on all fibre glass joints.

It may be necessary to apply the epoxy coating and fibre glass mat in alternate stripes of the mark-off pattern. This is determined by the width of the fibre glass mat used. This procedure is required to ensure adequate working space and to make sure the entire mat can be adequately rolled during application. The fibre glass mat shall be pre-cut in lengths convenient for handling and re-rolled in individual rolls.

Spray apply 500-750µm (20-30 mils) of thoroughly mixed Interline 984 to cover the width of the strip and the length of the pre-cut fibre glass mat. Lay the pre-cut mat and immediately spray apply 600µm (24 mils) of Interline 984 to completely saturate the mat. Roll the entire surface immediately with a suitable ribbed roller to eliminate wrinkles and/or air entrapment and to embed all fibre glass strands. Repeat this application procedure until the entire surface is coated.

Visually inspect the laminate after initial hardening has occurred. Projecting fibre glass strands shall be sanded flush with the adjoining coated surface. The saturated laminate shall be a minimum of 1250µm (50 mils) dry film thickness.

Application of the Gel Coat

Application of the Interline 984 is carried out using normal airless spray or approved hot twin feed, however, it is recommended at paint temperature up to 25°C (77°F) a suitable in line heater is used to facilitate good airless spray properties.

Interline 984 must be applied to the laminate surfaces strictly within the specified recoat interval. Where recoat intervals are exceeded the laminate must be thoroughly abraded using appropriate equipment to give an acceptable, coarse profile. Any debris from preparation of the laminate must be removed by thorough sweeping and vacuuming.

Spray apply Interline 984 to a film thickness of 250-500µm (10-20 mils), ensuring a smooth uniform finish is achieved. Immediately after application, the gel coat may be thoroughly rolled using short nap rollers to ensure any porosity in the applied laminate is satisfied. After completion of the coating application, surfaces should be examined for glass fibre protrusions. Any present should be removed by mechanical abrasion and the area coated with Interline 984. The film thickness of the applied system should be checked and be of a minimum 1600µm (64 mils) thickness.

Areas blast cleaned and primed but not fibreglassed shall be treated with Interline 984 by brush, roller or spray application, e.g. pipes etc.

Curing

In order for any lining to perform as expected, sufficient cure time must be allowed before being placed into service. The recommended temperature and humidity as specified on individual product data sheets must be maintained over a 24 hour basis throughout the cure cycle. The length of time required is dependent on the coatings intended in-service use, substrate temperature and relative humidity. Consult International Protective Coatings for details.

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