Interchar Solvent Borne Acrylic Intumescent Coatings Application Guidelines

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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 Interchar to correctly prepared surfaces.

Table of Contents

1. INTRODUCTION

Interchar 963, Interchar 973, Interchar 404, Interchar 2060 and Interchar 2090 are single pack solvent-borne intumescent coatings designed to provide up to 120 minutes fire protection to structural steelwork.

Interchar 963, Interchar 973, Interchar 404, Interchar 2060 and Interchar 2090 have been tested, assessed and certified in accordance with a range of standards, detail of which can be found on the relevant technical data sheets or by contacting International Paint

The guidelines within are also relevant to Interchar 1983 in terms of storage, environmental conditions, application and primers and topcoats (Note: this product is **only** available in China)

This guideline **DOES NOT** cover Interchar 212.

Reference throughout this procedure is made to the UK document **Structural Fire Design: Off-Site Applied Thin Film Intumescent Coatings (ref. SCI P160, Second Edition)**, from the Steel Construction Institute.

It is recommended that reference should also be made to the **European Industry Best Practice Guide on the Application of Intumescent Coatings to Constructional Steel**, available via www.cepe.org.

It is the applicator's responsibility to ensure that all coatings are applied in accordance with these working procedures and that the specified dry film thickness is achieved. International Protective Coatings Technical Service is available to assist the applicator and is provided subject to our standard conditions of sale.

2. WHERE TO APPLY INTERCHAR

Each Interchar product can be used to provide fire protection on structural steel sections such as beams, columns and hollow sections.

Subject to specific country approvals;

Interchar 404 can be specified for structural beams, columns and hollow sections.
Interchar 963 can be specified for structural beams, columns, hollow sections and cellular beams.
Interchar 973 can be specified for structural beams, columns and cellular beams.
Interchar 2060 can be specified for structural beams, columns, hollow sections and cellular beams.
Interchar 2090 can be specified for structural beams, columns, hollow sections and cellular beams.

Consult International Protective Coatings for the latest information on approvals and testing.

Interchar systems can be specified for internal environments or semi-exposed environments such as those described in ISO 12944 C1 to C4 corrosive categories. Refer to Section 4 for more details.

Due to their drying and recoatability properties, Interchar solvent borne thin film acrylic coatings are suitable for off-site application in the steel fabrication shop, as well as on-site application to existing buildings or those under construction.

Interchar products can be used over a range of approved priming systems, and overcoated with a range of approved top coats; refer to sections 6 and 7 for more details. Only approved primers and topcoats can be used.

An Interchar fire protection specification typically requires the following:

Surface Preparation: To provide optimum adhesion for the primer and Interchar to the substrate to ensure sufficient adhesion for the developing char under a fire scenario.

Priming System: To provide anti-corrosive protection to the steelwork, Interchar 404, Interchar 963, Interchar 973, Interchar 2060 and Interchar 2090 must always be applied to a suitably primed steel substrate.

Interchar Product: The intumescent coating reacts to heat by rapidly swelling to produce a carbonaceous char which acts as an insulating layer between the steelwork and the elevated temperature of the environment.

The dry film thickness of the Interchar product to be applied will vary depending on the size and configuration of the individual steel sections along with the desired period of fire protection required. Dry film thickness figures for all Interchar products are available from International Protective Coatings.

Top Coat: Also known as sealer coats or finish coats, to protect Interchar products from moisture, provide a decorative cosmetic finish, and reduce dirt and dust retention. In certain circumstances and environments the top coat can be omitted. See Section 7.

3. STORAGE OF MATERIAL

Interchar 404, Interchar 963, Interchar 973, Interchar 2060 and Interchar 2090 should be stored in dry, shaded conditions away from sources of heat and ignition. Recommended storage conditions are between 5ºC and 40ºC (41-104ºF). For optimum application characteristics, Interchar products should be stored at minimum 15ºC (59ºF) storage temperatures for 24 hours prior to use.

The shelf life of Interchar 404, Interchar 963, Interchar 973, Interchar 2060 and Interchar 2090 products at 25ºC (77ºF) is 12 months from date of manufacture, subject to re-inspection thereafter. Containers should remain unopened until needed and used in date order. Shelf life may be reduced if product is stored outside the recommended storage temperatures.

4. ENVIRONMENTAL CONDITIONS FOR APPLICATION

Interchar products should be applied at steel temperatures between +5°C and +40°C (41 – 104°F).

The surface must be dry and the surface temperature must always be a minimum of 3°C (5°F) above the dew point. The maximum acceptable relative humidity during application is 85%. Any supplemental heating used within a fabrication shop should provide the required air/steel temperature rather than direct heat on to the coating itself. Any direct heat can lead to skinning of the Interchar products which will retard through drying via solvent entrapment. Careful selection of heating method is needed, as some types of heating equipment such as propane fuelled space heaters can increase the humidity in the workplace and thus affect the applied coating film.

The area where Interchar product is applied should be well ventilated. Any build-up of solvent vapour in the surrounding area will retard the drying of the coating. All Interchar products must be protected from condensation and water during application and drying.

Tropical grades of Interchar 404, 963, 973, 2060, and 2090 are available for application in conditions where ambient temperatures are consistently above 25°C (77°F).

Un-topcoated Interchar Systems: Interchar systems without topcoats can be applied either offsite or onsite but certain grades should only be applied when the exposure to moisture either as condensation or rainfall will be limited (typically no more than 4 weeks) and where there is NO possibility of exposure to pooling or running water, driving rain, high humidity/condensation or chemical attack.
Other grades of Interchar 404, 963, 973, 2060 and 2090 are available for both offsite and onsite application that have improved water resistance. This extends the time the coating can remain without a topcoat and exposed to prevailing weather conditions during the building construction programme. Typically this is up to 6 months. During this period exposure to pooling or running water, driving rain, high humidity, prolonged condensation or chemical attack must still be avoided. If the final service environment for the Interchar system is to be other than internal dry, these grades with improved water resistance, will still require protection from an approved topcoat system for long term durability. Please see Appendix 1 for information on choosing the correct grade for the application.

Topcoated Interchar Systems: Topcoated Interchar systems MUST be specified when the service environment during the lifetime of the building will be other than internal dry C1 category as defined in ISO12944-2 or category type Z_1 or Z_2 as defined in EN16623. This is the case for both grades of Interchar including those with improved water resistance. The topcoat should be applied within 4 weeks from application of the Interchar or within 6 months for the Interchar grades with improved water resistance.

Topcoated Interchar systems are resistant to general atmospheric conditions up to and including C4, as described in ISO 12944 and category type X as described in EN16623 .

Please consult International Protective Coatings for enquiries on specific topcoat details.

5. SURFACE PREPARATION

All Interchar single pack products must always be applied over an approved anti-corrosive primer system.

Steel Surface Preparation

The steel surface should first be assessed and treated in accordance with ISO 8504-2000. Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning. The steel should then be abrasive blast cleaned to Sa2½ (ISO 8501-1:2007) or SSPC-SP6. If oxidation has occurred between blasting and application of the primer system the surface should be re-blasted to the specified visual standard.

The blast profile appropriate for the choice of primer should be achieved. Surface defects revealed by the blast cleaning process, should be ground, filled, or treated in the appropriate manner.

Primer Surface Preparation

The primer surface should be dry and free from all contamination, and the Interchar product must be applied within the overcoating intervals specified (consult the relevant primer product data sheet).

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

Should the primer's suitability for overcoating be in doubt in any way, for example, primer type unknown, primer not approved, excessive dry film thickness, surface contamination, surface glossiness etc., International Protective Coatings MUST be consulted prior to the application of any Interchar product.

6. PRIMERS AND OVERCOATING

Interchar products covered in this procedure are not designed to provide anti-corrosive protection alone and are therefore NEVER applied directly to steel substrates. They must always be applied to an approved priming system which will provide the required anti-corrosive protection to the steelwork.

The Interchar products have been tested as part of a coating system for use in fire situations. A list of the approved primers can be found on the latest version of the relevant Interchar Product Technical Data Sheet. For other suitable primers consult International Protective Coatings.

The technical parameters and recommendations of the specific primer, such as maximum and minimum overcoating times, must always be adhered to.

Typical primer dry film thickness recommended is between 40 and 75 microns (1.5 – 3 mils) depending upon primer product.

The maximum recommended dry film thickness for the priming system is 150 microns (6 mils), depending on the primer product. Any restrictions on the maximum recommended DFT for the primer must be adhered to. If in doubt, contact International Protective Coatings.

7. TOPCOATS

Only topcoats approved by International Protective Coatings should be applied over Interchar products. A list of the approved topcoats can be found on the latest version of the relevant Interchar Product Technical Data Sheet. For other suitable topcoats consult International Protective Coatings.

Prior to the application of the topcoat, the applicator must ensure that the specified dry film thickness of Interchar product has been achieved. The Interchar material should be allowed to harden sufficiently so that thickness readings can be taken, i.e. the film should not be disturbed by the probe from an electronic DFT gauge.

The surface of the Interchar product must be clean, dry and free from contamination before overcoating with the topcoat. The topcoat product must be applied within the overcoating intervals specified. Consult the relevant Interchar product data sheet for specific details.

Where polysiloxane topcoats are to be used, use of a tie coat over the intumescent coating will be necessary to avoid discolouration of the finish. Suitable tie coats are Intergard 269, Intergard 276 or Interthane 990; other epoxy products are not suitable. Please observe the maximum overcoating interval for the tie coat, where Interfine polysiloxanes are specified.

Depending on the choice of topcoat colour, two or more coats may be necessary to achieve full opacity. The dry film thickness of topcoat required to give a uniform finish will also be influenced by the unevenness of the surface of the Interchar products.

Where Interchar products are applied 'off-site' and are to be subjected to any amount of external atmospheric exposure then a topcoat MUST be applied prior to placing outside. **Even when the Interchar system is correctly topcoated, any contact with pooling or running water must be avoided.**

For exposure to ISO 12944 C2 conditions, a minimum of one topcoat at 50µm DFT is recommended. For C3 and C4 conditions, 2 coats of topcoat are recommended; typically this will equate to 2 x 50 microns (2 x 2 mils) depending upon topcoat choice. Please contact International Protective Coatings for specific recommendations.

Extra care should be taken with two pack topcoats over Interchar products.

Topcoated steelwork should not be exposed to direct sunlight and/or elevated temperatures immediately after application, as this may encourage a blistering effect caused by volatilisation of residual retained solvent within the Interchar product. This can be exaggerated, in the case of direct sunlight, by the use of dark coloured topcoats that absorb more heat and so develop higher surface temperatures.

If the ambient temperature is above 20°C (68°F), then the minimum recommended overcoating time is 48 hours between final application of the Interchar and the topcoat. If overcoating takes place in less than 48 hours, there is an increased risk of the topcoat curing faster than the underlying Interchar, leading to solvent entrapment and possibly a reduction in handling properties and an increase in surface defects. If the ambient temperature is below 20°C (68°F), then 24 hours is an acceptable overcoating window from the final coat of Interchar products.

Where the total specified thickness of Interchar products exceeds 2.5mm (100mils), a 24 hour overcoating interval must be used between coats (self on self) at all application temperatures. The above details will still apply for subsequent topcoat(s).

8. AIRLESS SPRAY APPLICATION

Interchar 404, Interchar 963, Interchar 973, Interchar 2060 and Interchar 2090 are highly structured products which can build up a temporary false structure during the time it is stored in the pails or drums. Power stirring is essential to ensure that the coating is mixed to a uniform consistency and break down excess structure developed during storage to avoid cavitation at the spray pump and to ensure a steady flow.

Hand held air driven mixers are the most common and are ideal for this purpose, preferably with a helical style shaft. 1 to 2 minutes of thorough mixing reaching all parts of a 20 litre pail (5 gallon) will normally be sufficient. Lower temperatures (<15°C (59°F)) may require longer mixing (5 – 10 minutes). ***Manual mixing (e.g. using a palette knife) of Interchar 404, Interchar 963 Interchar 973, Interchar 2060 and Interchar 2090 is not recommended.***

Airless Spray Application Equipment

Air-driven airless spray pumps with a ratio of at least 45:1 are preferred. However, petrol and electrically driven airless pumps have also been found to be suitable by some applicators.

For air-driven airless spray pumps the following modifications to the normal set up are recommended:

- Remove any wet end extension hose and place the wet end directly into the coating.
- Place the pail or drum so that condensation from the pump does not run into the coating.
- All filters should be removed from the pump, lines and gun. A coarse filter can be fitted over the wet end to prevent contamination from external sources from entering the spray machine and causing blockages.
- Use the minimum length of 9mm (0.35”) bore fluid line. A 2 metre, 6.5mm (6.6’, 0.26”) bore whip end with a swivel connection to the spray gun makes the fluid lines much easier to handle and more manœuvrable.
- The recommended airless spray tip range is 0.48-0.59mm (19-23 thou.)

Thinning
Thinning of Interchar products is not normally required for airless spray application.

Recommended Procedure
For optimum throughput of coated steelwork the following procedure is recommended:

Dry Film Thickness up to 750 microns (30mils)

Spray-apply a single coat of Interchar product, as required, at a calculated wet film thickness up to 1000 microns (40mils), No more than 1000 microns wet film thickness is recommended in a single coat. This will dry back to 700-750 microns dry film thickness (28-30 mils) depending on the volume solids of the particular Interchar product being used.

If thicker coats are applied, the drying and the handling time will be extended.

Alternatively, if the Interchar product dry film thickness is built up in thinner coats, (i.e. <750 microns (30mils)), the overall drying time per coat will be reduced. The minimum and maximum overcoating times for the Interchar products are quoted on the Technical Data Sheets for the product specific typical dry film thickness.

Dry Film Thickness greater than 750 microns (30mils)
Where the specified dry film thickness of any Interchar product is greater than 750 microns (30mils), the total thickness should be built up in two or more applications up to a maximum wet film thickness of 1000 microns per coat employing recommended overcoating windows from the technical datasheet. Minimum overcoating times will vary depending upon whether temperate or tropical grades of Interchar are being used.

Drying times will be optimized if successive coats are of similar thickness. For further advice on overcoating intervals contact International Protective Coatings.

9. BRUSH AND ROLLER APPLICATION

Application of all Interchar products by brush is a suitable method but is generally recommended for small areas and repairs only. Roller application is **not** recommended. Between 250-400 microns (10-16mils) wet film thickness can be achieved per coat and multiple coats will be required. The appearance of brush applied Interchar products will be different to that of the spray applied coating.

10. STANDARD OF COSMETIC FINISH

The cosmetic finish of all Interchar products will vary depending on the method of application. Spray application of the coating is generally considered to give a superior appearance to brush application.

Particular requirements for the quality of the finish should be stated in the specification. For non-visible areas, for example, the standard of finish achieved may not be of concern.

At the outset of a project it is strongly recommended that a sample area is prepared and the standard of cosmetic finish is agreed by all parties concerned.

As an example, **SCI P160 section 4.3 clause R470** outlines three standards which can be specified:

- Basic Finish
  The coating system achieves the required fire performance and corrosion protection performance but is not required to achieve any requirement for standard of finish.

- Decorative Finish
  In addition to the requirements for (i) above, a good standard of cosmetic finish is generally required when viewed from a distance of 5 metres. Minor “orange peel” or other texture resulting from application or localised repair is acceptable.

- Bespoke Finish
  In addition to the requirements for (i) above, the coating finish is required to have a standard of evenness, smoothness and gloss agreed between the Specifier and Contractor.

More work will be required to achieve the higher standards. It may be necessary to abrade the Interchar surface to remove texture. It may also be necessary to apply the Interchar products in a series of thinner coats.

Topcoats are relatively thin and will tend to highlight rather than hide surface defects. It is, therefore, important to ensure that the required finish has been achieved prior to application of the topcoat.

11. HANDLING

It is essential that steelwork coated with all Interchar products are stored and handled correctly to minimise damage and the need for site repair. Experience has shown that chains are frequently the most effective method for handling the coating when it is not fully hard, and particularly when turning steelwork in the paint shop. The damage can be quite deep, but localised and limited.

Straps can strip a large area of soft coating. They may make an impression on a firm coating but are considered not to cause such severe damage as chains when the coating has hardened. Straps may be more suitable for loading out finish coated steelwork. Other handling methods such as lifting eyes or lugs greatly reduce the potential for damage to the coating.

Once hard enough to handle, coated steelwork may be removed to a lay down area ensuring minimal stacking and sufficient air movement to allow drying to continue. If being stored externally for any length of time, the coated steelwork must be protected from pooling or running water. During storage and transportation the coated steel should wherever possible be kept in dry, shaded areas to minimise softening in high temperatures.

Erectors should use appropriate handling methods to avoid excessive damage. After erection all transport and erection damage should be repaired in accordance with Section 14.0.

All drying times stated in Technical Data Sheet are quoted at 1000 microns (40 mils) wet film thickness equating to approx. 700-750 microns (28-30 mils) dry film thickness depending upon the Interchar product. Increased applied thickness per coat will result in longer drying times and a subsequent longer time to achieve satisfactory damage resistance and suitable handling characteristics. Increased thicknesses applied per coat will result in longer times for coating to become 'block' resistant.

12. POSSIBLE FILM DEFECTS

A number of potential defects are detailed below together with recommended remedial treatment.

Over-Application
Excessive thickness may lead to extended drying and overcoating times.

Overspray / Dry Spray
All dry overspray should be removed from primed surfaces prior to application of the Interchar product. Failure to do so may impair adhesion and affect final appearance.

Overspray present on Interchar products may give an appearance of poor coalescence or surface roughness. Sometimes this can be dusted off but abrasion may be required to achieve a satisfactory smooth finish onto which a topcoat can be applied in order to satisfy the requirements for cosmetic appearance.

Overspray can be minimised by good work planning and good spray technique. Steelwork should be arranged to allow good access for spraying all surfaces. The sprayer should be close enough to the work surface at all times to minimise airborne overspray without leading to excessive ripples or other texture in the coating caused by the pressure of the spray. All dry overspray must be removed prior to topcoating Interchar products.

This can be minimised by work planning (i.e. taking into account the rapid touch dry times), good spray technique, thinning, reduction of air pressure, sensible tip size, etc., depending on the structure to be sprayed (i.e. using a larger tip results in less "passes" to achieve a wet film although it will be more difficult to control the amount of paint being applied at any one time).

For large areas or areas where overspray may be unavoidable, it is advised that the adjacent steelwork be covered or taped to prevent overspray damaging cosmetic appearance.

Sagging
This is the result of excessive film thickness and poor spray technique or over-thinning. Any areas which are subject to this should have the coating removed and re-applied. A maximum dry film thickness value is supplied in the data sheet and this should be adhered to as closely as possible.

13. MEASUREMENT OF DRY FILM THICKNESS

Marking of Steelwork for Identification and Traceability
The dry film thickness of all Interchar products to be applied to individual steel sections will vary depending on the section size and its intended configuration as well as the number of sides to be coated, and for beams, the type of decking being supported. To ensure efficient working the applicator should be in possession of a full list of the specified dry film thicknesses and number of sides to be coated, etc and should mark the sections accordingly.

Marking with felt tip pen is a simple method but it is easily lost under coating or overspray and would not be visible when the dry film thickness is being checked. A more reliable method is to mark the details on a thin tinplate tag which can be folded to prevent obliteration by coating and then attached to the section by wire through a bolt hole. Any method of marking must not interfere with the application or adhesion of the coatings.

Wet Film Thickness
During the application of all Interchar products, frequent checks should be made on the coating using a wet film comb to ensure that the specified thickness is achieved.

Wet film thickness readings are a guide to the applicator to enable application technique to be monitored and adjusted if necessary. They should be taken as frequently as necessary to enable a “feel” for the coating, and the number of spray gun passes required, to be established. On second and subsequent coats, wet film readings may be inaccurate due to the gauge sinking into the previous coat if the first coat softens.

Dry Film Thickness
After sufficient drying time a survey of the dry film thickness should be carried out using a suitable calibrated gauge. An electromagnetic induction instrument with a statistical function to store readings and give an average is most useful. Where dry film readings include a primer and/ or top coat an allowance must be made for these coatings and subtracted from the total reading.

The following is the recommended procedure for measuring dry film thickness and acceptance criteria based on Section 5.4 Testing, Clause R630 of SCI P160. Readings should be taken on every steel section as follows:

I sections:	Webs: Two readings per metre length on each face Outer flanges: Two readings per metre length on each face Inner flanges: One reading per metre length on each face
Hollow sections:	Eight readings per metre length spread evenly around the section.

No readings should be taken within 25mm (1 inch) of any edge or web/flange junction.

Other procedures for frequency of measuring and acceptance criteria exist, for example, AWCI Technical Manual 12-B, Standard Practice for the Testing and Inspection of Field Applied Thin Film Intumescent Fire Resistive Materials.

Dry Film Thickness Measurements over a Shim

Indicative dry film thickness readings can be taken on Interchar products which have not fully hardened. This can be achieved by taking the readings over a shim using the following simple steps

- Place a rigid shim of known thickness on the Interchar surface
- Take readings over the shim.
- Subtract the thickness of the shim, and the primer and topcoat if applied, to give the dry film thickness of Interchar product.

This will give an indication only of the dry film thickness of the Interchar material.

Dry Film Thickness Acceptance Criteria

The average thickness of each steel section should be equal to, or greater than, the specified thickness. Where any single thickness reading is found to be less than 80% of the specified thickness, a further three readings should be taken on the same face within a 300mm radius of the low reading. If one or more of the additional readings are also less than 80% of the specified thickness, further readings should be taken to establish the extent of the area of under thickness and the whole area should be brought up to the specified thickness.

Individual thickness readings of less than 50% of the specified thickness are not acceptable. The average measured dry film thickness of any steel section should not exceed by more than 10% of the maximum stated dry film thickness for the particular steel shape and orientation (as quoted in the latest published loading tables for the specific Interchar product).

Correction Procedure

Where the dry film thickness is found to be lower than unacceptable in the specification, remedial action will be necessary.

The applicator must first establish the extent of the low thickness. Areas of low thickness may be random but frequently a pattern can be observed e.g. low thickness tending to occur on inner flanges. Additional material should be applied to ensure conformance with the acceptance criteria stated in 11.3.3. The surface of the existing Interchar coating must be clean, dry and free from all contamination. If the topcoat has already been applied it will need to be removed. Where the dry film thickness exceeds the recommended limit, guidance should be sought from International Protective Coatings.

Dry Film Thickness of the Topcoat

The top coat dry film thickness is difficult to measure due to the variation in thickness of the underlying coats of intumescent and its own relatively low thickness in comparison.

It is, however, important that the topcoat is applied at the specified thickness to ensure the longevity of the system without applying excessive thickness. Judging the thickness of the top coat is also made more difficult as an uneven surface will require more coating to achieve a uniform appearance. As a guide, the number of spray gun passes to achieve the required wet film thickness can be determined by spraying on to a smooth surface. Monitoring of material usage will also give an indication of the applied thickness.

14. INSPECTION AND REPAIR

The repair method will depend on the extent of the damage. Repairs should be carried out at the earliest opportunity using the appropriate procedure from those given below.

Damage Down to Steel (Small Areas)
Remove unsound and damaged coatings to a neat firm edge with sound adhesion. Remove all corrosion products. Prepare steel surface in accordance with SSPC SP11 without polishing the substrate.

Chamfer coating edges by abrading. Reinstate the priming system, avoiding overlap of primer onto surrounding Interchar coating. Reinstate the Interchar coating within the recommended overcoating limits of the repair primer.

Apply specified Interchar coating in multiple applications by brush. If a topcoat has already been applied to the existing system, minimise overlap of fresh Interchar product over the existing topcoat. Apply topcoat as appropriate.

Damage Not Requiring Primer Repair
Depending on severity of damage, either lightly abrade the damaged area to a chamfered edge, or cut out a suitable area of Interchar product and feather out the edges. If cutting out, do not damage the priming system, otherwise repair as for “damage down to steel” will be required.

Reinstate specified Interchar product to the required dry film thickness using the method described above. After the appropriate overcoating interval apply an approved topcoat in accordance with original specification.

Damage to Topcoat Only
Remove loose or unsound coatings to a firm edge and chamfer the edges. All surfaces should be clean, dry and free from all contamination. Reinstate top coat in accordance with original specification.

Future Inspection and Maintenance
The fire protection properties of the Interchar systems will remain as long as the integrity of the coating scheme remains intact. Regular inspections of the Interchar fire protection system should be carried out. Any defects, damaged areas etc. must be repaired as soon as possible and as recommended above.

The inspection intervals for a project should be stated in the specification. The frequency of inspections will be dependent upon the environment and application within which the Interchar system is operating.

Topcoats must be maintained as a continuous film to protect all Interchar products from the environment. However, excessive build-up of top coat thickness could be detrimental to the fire protection system and must be avoided. As a guide the maximum recommended number of topcoats is two, applied at 50 microns DFT per coat.

Only approved topcoats can be applied over all Interchar products. For further information contact International Protective Coatings.

15. HEALTH AND SAFETY

Interchar is intended for use only by professional applicators in industrial situations in accordance with the advice given in this leaflet and on containers and should not be used without reference to the Material Health and Safety Data Sheets (MSDS) which International Protective Coatings has provided to its customers. If for any reason a copy of the relevant Material Health & Safety Data Sheets (MSDS) is not immediately available the user should obtain a copy before using the product.

Minimum safety precautions in dealing with all paints are:

- Take precautions to avoid skin and eye contact (i.e. use overalls, gloves, goggles, face mask, barrier creams etc.).
- Where possible provide adequate ventilation. In confined spaces with poor or no ventilation, use airfed hoods.
- If product comes in contact with the skin, wash thoroughly with lukewarm water and soap or suitable industrial cleaner. Do not wash with solvents. If the eyes are contaminated flush with water (minimum 10 minutes) and obtain medical attention at once.
- These coatings contain flammable materials and should be kept away from sparks and open flames. Smoking should be prohibited in the area.

Observe all precautionary notices on containers.

Appendix 1: Interchar Grades

The Interchar products are available in a limited colour range and in standard (fast) and tropical (slow) drying grades. Separate grades with improved moisture resistance are also available; see Section 4 and table below;

Interchar 404

Code	Drying	Colour	Water resistance
HFA404	Standard	White	Improved
HFA405	Tropical	White	Improved
HFA409	Standard	White	Limited
HFA407	Standard	Grey	Improved
HFA410	Standard	Grey	Limited

Interchar 963

Code	Drying	Colour	Water resistance
HFA963	Standard	White	Improved
HFA966	Tropical	White	Improved
HFA968	Standard	White	Limited
HFA965	Tropical	White	Limited
HFA964	Standard	Grey	Improved
HFA970	Tropical	Grey	Improved
HFA969	Standard	Grey	Limited
HFA967	Tropical	Grey	Limited
HFA961	Standard	Pearl Grey	Improved
HFA962	Standard	Pearl Grey	Limited

Interchar 973

Code	Drying	Colour	Water resistance
HFA978	Standard	White	Improved
HFA979	Tropical	White	Improved
HFA980	Standard	White	Limited
HFA981	Tropical	White	Limited
HFA974	Standard	Pale Grey	Improved
HFA975	Tropical	Pale Grey	Improved
HFA973	Standard	Pale Grey	Limited
HFA977	Tropical	Pale Grey	Limited

Interchar 2060

Code	Drying	Colour	Water resistance
HFA060	Standard	White	Limited
HFA061	Tropical	White	Limited
HFA062	Standard	White	Improved
HFA063	Tropical	White	Improved

Interchar 2090

Code	Drying	Colour	Water resistance
HFA290	Standard	White	Limited
HFA291	Tropical	White	Limited
HFA292	Standard	White	Improved
HFA293	Tropical	White	Improved