

# Interfine Polysiloxane Finishes 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 Interfine 979 to correctly prepared surfaces.

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## 1. INTRODUCTION

Interfine® 979 and Interfine® 878 are high performance, two component, high solids inorganic hybrid finishes which offer compliance to all current VOC legislation, and contains no free isocyanate. In combination with a suitable priming scheme, they provide excellent long term anti-corrosive protection to structural steel. This document gives detailed guidance on the use and application of Interfines 979 and 878 and appropriate primers.

**This document should be read in conjunction with the respective technical data sheet and material safety data sheet (MSDS).**

## 2. WHERE TO APPLY

Interfines 979 and 878, with primer/intermediate coats, are capable of application in the steel fabrication shop or at an applicator's works, provided that sufficient time is allowed for through drying (hard dry) before handling. Care should be taken during transport and erection to minimise damage.

## 3. STORAGE OF MATERIAL

Interfine polysiloxane finishes are moisture sensitive and should be stored in covered, dry conditions, and kept in the temperature range of 0°C to 40°C (32°F to 104°F). At lower temperatures (<5°C, <41°F), materials will become slightly thicker and may require warming up prior to application. At higher temperatures, materials will flow more easily and dry faster.

## 4. ENVIRONMENTAL CONDITIONS FOR APPLICATION

Interfine polysiloxane finishes are moisture sensitive and, as such, environmental monitoring is important for application. The following parameters apply, and should be measured and recorded:-

- Ideal application temperature is between 15°C and 25°C (59°F and 77°F).
- The surface onto which Interfine is to be applied must be dry.
- Relative humidity during application and curing should be between 40% and 85%. Curing will be slower at lower humidity and faster at higher humidity.
- Steel temperature must always be 3°C (5°F) above dew point. If conditions are deteriorating, or likely to do so within a few hours, application should stop.

Ambient conditions should be measured at regular intervals, typically twice per day (or shift). If conditions are subject to change, measurements should be taken more frequently, depending on speed of change.

Application should be carried out under cover from the elements. Interfine polysiloxane finishes should be protected from rain and dampness during application and cure.

Premature exposure to ponding water, condensation and/or dampness may cause colour change or gloss reduction. Colour change may be irreversible if Interfine polysiloxane finishes are exposed to moisture for protracted periods. This phenomenon is particularly prominent in dark colours and at low temperatures.

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## 5. SURFACE PREPARATION

Interfines 979 and 878 should always be applied over a recommended anti-corrosive coating scheme which provides the required protection to the surfaces. A list of compatible coatings is given in the respective technical data sheets. Maximum overcoating intervals may change according to ultimate service exposure; please consult International Protective Coatings.

All steel surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:1992.

All steel surfaces to be coated should be correctly prepared. For suitable primers, this normally entails abrasive blast cleaning to Sa2½ (ISO 8501-1:2007) or SSPC-SP6 prior to the application of the primer. In all cases consult the relevant primer product technical data sheet for specification recommendations.

All primer surfaces should be dry and free from all contamination such as oil and grease prior to application. Special attention should be paid to zinc primers to ensure they are free from zinc salts and are fully cured prior to overcoating.

Any other repair system should be approved by International Protective Coatings.

**Mixing: It is important to note that both the base and the curing agent are moisture sensitive. Once the containers have been opened, it is recommended that the material is mixed and used as soon as possible. This is to limit the effect of atmospheric moisture causing the material to react. Note: No induction period is necessary.**

Although the mixing ratio by volume is stated on the product data sheet, it is recommended that the material be mixed as a complete unit. Any surplus or unused curing agent component (Part B), exposed to the atmosphere for more than 2 hours should be discarded and not used. Any surplus or unused base component (Part A), exposed to the atmosphere for more than 24 hours should be discarded and not used.

During the spray application of Interfine 979 at high relative humidity (>85%), "skinning" on the surface of the mixed material may occur. The addition of approximately 100mls of International GTA007 per 20 litre mixed unit on the surface of the material will help to prevent this.

When using the faster grade curing agent, this surface skinning may occur more readily at relative humidity much lower than 85% (i.e. approx. 60% and above). In these conditions, it is advised that the slower drying alternative curing agent (as described on page 3 of the technical data sheet) be used to increase product workability

## 6. PRIMERS AND OVERCOAT INTERVALS

Absolute maximum overcoating intervals of Interfine 979 (both curing grades) and Interfine 878 with various approved primers and intermediates is very much product- and service environment-specific. It is important that this is taken into account during the specification process. Please consult your local AkzoNobel representative for further details.

## 7. POT LIFE

**Pot life times must not be exceeded**, even though the material may be still liquid and appear useable. Failure to comply with this will result in a film with inferior performance which may not be detectable.

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## 8. SPRAY APPLICATION

Airless spray and air spray are the recommended method of application to give the optimum cosmetic appearance.

International GTA007 thinners should be used for cleaning. All equipment should be cleaned immediately after use. It is good working practice to periodically flush out spray equipment during the course of the working day.

Standard industrial equipment such as DeVilbiss MBC or JGA gun with a 704 or 765 air cap and "E" fluid tip or other manufacturers equipment should be used for air spray application. A moisture and oil trap in the main air supply line is essential.

Typical pressures:-

Atomising Pressure	:	40-50 p.s.i.	(2.8-3.5kg/cm <sup>2</sup> )
Pot Pressure	:	10-20 p.s.i.	(0.7-1.4kg/cm <sup>2</sup> )

Interfine 979 is designed to be applied in one spray coating without the need for thinning via air spray and airless spray techniques. Stripe coats should be applied to bolts, welds and difficult areas which are likely to be under-applied prior to application of a full coat. Any sharp edges should be ground to a radius and stripe coated. Application of the full thickness coat of Interfine 979 can take place over a wet or dry stripe coat.

It is recommended to flush out all application equipment with International GTA007 prior to application, to ensure that there is no contamination and/or moisture in the lines.

**NOTE: ONLY USE INTERNATIONAL GTA007, OTHER THINNERS CAN AFFECT CURE.**

Thinning should not normally be required. However, if material is cold or equipment is not in optimum condition, application properties may be improved by thinning.

At low temperatures, <10°C (<50°F), 2.5% thinning by volume with International GTA007 will be satisfactory for this purpose.

For application over Inorganic zinc primers or aluminium metal spray, it may be necessary to thin Interfine 979 for mist coating to ensure that subsequent "pinholing" does not occur. Normally 10% thinning (by volume) with International GTA007 will be satisfactory for this purpose. This should be left for approx. 1 hour then overcoated with a full coat of Interfine 979.

**Note:**

- Interfine 979 has a tendency to produce more overspray than other conventional finishes. Some improvement can be obtained by modifying tip size, fan angle and/or the addition of small quantities of International GTA007 thinners to improve "wet edge" time.  
However, in certain circumstances overspray maybe unavoidable and the best approach maybe to protect adjacent steelwork during the application process.
- Pinholing may also occur if Interfine 979 is applied to surfaces which are dusty or primed surfaces which have dust or dirt embedded in the primer. Applying Interfine 979 on to primed surfaces contaminated with dry spray from adjacent coating activity can also lead to pinholing.
- It is important that Interfine 979 is always applied at a minimum dry film thickness of 100µm (4 mils) in order to achieve coalescence and full opacity in one coat. In the event that this is not achieved, a further full coat of Interfine 979 would be required to prevent possible pinholing and poor surface appearance. In bright shades, a minimum of 125µm (5 mils) may be necessary.

Wet film thickness readings should be taken during application, using a wet film comb or similar. Wet film readings are a guide to the applicator, to enable him to judge his application technique. They should be taken as frequently as necessary to enable a feel for the material to be established. When the material is theoretically up to specified thickness, dry film thickness readings must be taken.

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## 9. BRUSH AND ROLLER APPLICATION

Brush and roller application are suitable methods, although the very highest standards of cosmetic appearance are difficult to achieve using these techniques. Brush and roller techniques are appropriate for small areas, stripe coating and where minimal overlap to other areas is required. It may be necessary to apply multiple coats to achieve the total specified system dry film thickness. Depending on technique and brush/roller type, typically between 50µm and 75µm (2-3 mils) dry film thickness can be achieved per coat.

Wet film thickness readings should be taken periodically during application, using a wet film comb or similar. Wet film thickness readings are a guide to the applicator, to enable him to judge his application technique. They should be taken as frequently as necessary to enable a 'feel' for the material to be established.

When the material is theoretically up to specified thickness, dry film thickness readings must be taken and any low areas brought up to specification.

## 10. STANDARD OF COSMETIC FINISH

Interfine 979 is designed to provide excellent long term colour and gloss retention, superior to that exhibited by typical polyurethane finishes. As with all high gloss finishes, the standard of cosmetic finish achieved is dependent upon the quality of application and applicator experience, as well as the equipment employed.

The initial level of gloss and surface finish is dependent on application method. Avoid using a mixture of application methods whenever possible. The best results in terms of gloss and appearance will always be obtained with conventional air spray application.

Airless spray application techniques will typically give a slightly lower gloss than that achieved by air spray. Brush and roller application can also give lower gloss and a different surface appearance due to the presence of orange peel and brush strokes etc.

## 11. POSSIBLE FILM DEFECTS

### Possible Film Defects

- **Over-application**

This is the result of excessive film thickness and poor spray technique.

Interfine 979 is tolerant to a degree of over-application, however, excessive film thickness may lead to extended cure times.

It is advised that Interfine 979 should not be specified at a dry film thickness in excess of 150µm (6 mils).

- **'Orange Peel'**

Due to the nature of application employed within the industrial Protective Coatings market, it is not unusual for the appearance of the film to have slight orange peel.

The addition of 5% by volume of International GTA007 may help to reduce the effect. A small test area is advised to establish the standard of cosmetic appearance achievable.

- **Overspray**

Overspray will have the appearance of poor coalescence/"surface roughness". Interfine 979 generally produces more overspray than traditional epoxy and polyurethane thin film finishes. It is important that any steelwork being stored in adjacent areas is protected from overspray. Intercoat adhesion problems may result on areas covered with overspray, which are subsequently topcoated. Overspray will normally stay tacky for 2-3 days and may result in overcoating problems. This includes self-self overcoating and overcoating zinc primers.

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- **Pinholes**

Pinholing can be a problem when applying Interfine 979 over metal spray or zinc primed surfaces. When applying two coats of Interfine 979, it will be necessary to apply a continuous wet film, otherwise pinholing can occur. It is therefore important that the first coat is applied at the correct dry film thickness as any remedial work to correct low film thickness will be expensive further add to material and application costs.

- **Water Spotting**

Water spotting is a result of premature exposure to moisture or ponding water etc. This is particularly prominent in dark colours. Interfine 979 will exhibit resistance to water spotting (i.e. exhibit no gloss loss and permanent colour change) after 2 days cure at 10°C (50°F) and 16 hours cure at 25°C (77°F).

## 12. MEASUREMENT OF DRY FILM THICKNESS

An electronic dry film thickness gauge, capable of storing statistical data, is very strongly recommended to enable a meaningful dry film thickness survey to be conducted. Gauges should be calibrated on smooth steel plate.

Where Interfine 979 is specified as part of a two-coat scheme, it is important to note that specified DFTs are minimum, as opposed to nominal.

The average measured dry film thickness should not be less than the specified thickness (exclusive of primers).

## 13. HEALTH AND SAFETY

Interfine polysiloxane finishes are 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.

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