

# Interthane 990E

## 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 Interthane 990E to correctly prepared surfaces.

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## 1. INTRODUCTION

Interthane 990E is a high-performance coating that is intended to provide a durable colour and gloss stable finish to International anti-corrosive coating schemes in all environments classified in ISO 12944-2.

This document gives detailed guidance on the use and application of Interthane 990E and should be read in conjunction with the relevant Technical Datasheet and Material Safety Datasheet (MSDS).

## 2. WHERE TO APPLY INTERTHANE 990E

Interthane 990E is primarily intended for new construction and maintenance applications either in shop or on site. Interthane 990E finish can be used in a wide range of industrial and offshore facilities, on tank externals, pipe lines and structural steel items where a high standard of cosmetic finish is required.

Coating systems utilising Interthane 990E finish and appropriate primer/intermediate coats are suitable for application onsite and in the paint shop, provided that sufficient time is allowed for through drying (hard dry) before handling. Care should be taken during handling and movement to minimise damage.

## 3. ENVIRONMENTAL CONDITIONS FOR APPLICATION

Refer to data sheet for details on storage of material.

As with all isocyanate cured topcoats it is important that application does not take place above 85% relative humidity. Interthane 990E dry time and mechanical properties can be adversely affected if the humidity levels are >85% because some of the water will react with the isocyanate.

The same reaction of water and isocyanate will occur if there is condensation present. Steel temperature must always be 3°C (5°F) above the dew point. If conditions are deteriorating, or likely to do so within a few hours, application should stop when substrate temperature falls to within 3°C (5°F) of the dew point.

In common with many finish coatings, the premature exposure of Interthane 990E to ponding water, condensation and/or dampness may cause colour change or gloss reduction.

## 4. SURFACE PREPARATION

Interthane 990E should always be applied over recommended primers and undercoats; see product datasheet for further details or consult your regional AkzoNobel representative.

## 5. MIXING

Interthane 990E has an 8:1 by volume mix ratio and it is essential with such a small volume of curing agent that it is **ALL** incorporated into the base correctly, otherwise film properties such as film hardness may be compromised or there may be a susceptibility to dirt pick up and retention in the dry film.

It is also essential to mix the paint thoroughly to ensure that the small volume of curing agent is suitably dispersed in the mix. Power mixing for at least 5 minutes is recommended.

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## 6. THINNING

As Interthane 990E is a fast-drying high solids product, it may require addition of recommended thinner up to 3-5% to achieve better gloss in warmer tropical climates.

## 7. AIRLESS SPRAY APPLICATION

Airless spray and air spray are suitable methods of application for Interthane 990E.

Wet film thickness readings are taken as a guide to the applicator to enable them to judge their application technique. They should be taken as frequently as necessary to enable a feel for the material to be established.

For applicators that are used to applying Interthane 990, extra care needs to be taken when applying by airless spray as it is very easy to over-apply higher solids products, leading to a higher consumption of paint than anticipated. It is advised that two passes will be required to reach 50 microns DFT but they will need to be slightly faster passes than the applicator normally uses. Consequences of over-application may be sagging, longer drying times, softer films – see Section 10 Possible Film Defects.

When the material is theoretically up to specified thickness, dry film thickness readings must be taken.

Any low thickness areas should be brought up to specification by application of a full coat of Interthane 990E. For large areas, it is advised that the adjacent areas be covered or taped to prevent overspray damaging cosmetic appearance.

Pot life values should be strictly adhered to; refer to product data sheet.

## 8. BRUSH AND ROLLER APPLICATION

Brush and roller are suitable methods of application for Interthane 990E, although the standard of cosmetic appearance may be reduced. They are recommended for small areas of touch-up or stripe coating, where minimal overlap to other areas is required and where local site access prevents spray application. When using a brush/roller technique it may be necessary to apply multiple coats to achieve specified system dry film thickness.

## 9. STANDARD OF COSMETIC FINISH

Interthane 990E has been designed to provide long term colour and gloss retention. The degree of cosmetic finish attained is dependent on the quality of application, applicator experience and the equipment employed.

The applicator is advised to use the maximum/minimum film thickness guidelines and to avoid using a mixture of application techniques whenever possible.

Spray applications will generally give the best results in terms of glossy, uniform films. The level of gloss and surface finish may be affected when using other techniques such as brush/roller application, which creates a more uneven appearance due to the presence of brush marks.

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## 10. POSSIBLE FILM DEFECTS

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

### **Gloss Reduction**

Relative humidity in excess of 85% may lead to a noticeable reduction in gloss, so regular environmental measurements should be conducted throughout application. Stop application if the humidity is above 85%.

### **Orange Peel**

This is often due to application technique and/or the environmental conditions. The effects can be minimised by adjusting the spray/pump pressures and tip sizes, spraying position, etc.

### **Over-Application**

Interthane 990E is tolerant to some over-application. However, excessive film thickness may lead to extended cure times and film softness. On some colour shades full opacity may not be achieved in a single coat and efforts to achieve full opacity will lead to over application.

### **Under-Application**

If insufficient coating is applied then the film may not adequately coalesce and this will reduce the gloss and general aesthetics of the finish.

Stripe coats should be applied to bolts, welds, sharp edges and areas of difficult access which are likely to receive less than the specified film thickness. When the material is theoretically up to specified thickness, film thickness readings must be taken and any low areas brought up to specification.

### **Overspray / Dry Spray**

Dry spray will be apparent as a rough surface with poor aesthetics and reduced gloss.

The touch dry time of Interthane 990E is faster than some of the conventional lower solids polyurethanes and more care should be taken to ensure that dry spray does not land on the freshly painted surface. It can be minimised by good work planning, good spray technique, electrostatic spray, thinning, reduction of air pressure, appropriate tip size, etc. depending on the structure to be sprayed. If the effect is severe, leaving a rough, uneven surface, a further thin coat may be applied on top once it has dried sufficiently.

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. If the areas are greater than 100mm equivalent diameter, the coating should be removed and reapplied.

### **Soft Films**

Films which show signs of being soft after the hard dry time indicate a lack of curing. This may be because of poor mixing or even omission of the curing agent. Affected areas will require removal and re-application. Film hardness can be affected by temperature and humidity, as at lower temperatures and at low humidity the film will need further time to reach hard dry properties.

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### ***Pinholing***

Pin holing may occur if Interthane 990E is applied to surfaces which are dusty or to surfaces which have dust or dirt embedded in the primer. Applying Interthane 990E on to primed surfaces contaminated with overspray from adjacent coating activity can also lead to pin holing.

### ***Bubbling, Blistering or Micro-foaming***

This can present itself where the film build is excessive or where moisture contamination has occurred. This can be avoided by ensuring that the pot life is observed, correct thinners are used for cleaning, environmental conditions are appropriate for application and part-used or old curing agent is not used. Good control of the dry film thickness will also help to ensure that bubbling/blistering does not occur.

## 11. CLEANING


In certain environments Interthane 990E can pick up some dirt. The best way to clean is to firstly water or high-pressure water wash (2 – 3,000psi) followed by a mild detergent wash. The use of solvent or chemical cleaners is not recommended because of the risk of etching the surface of the Interthane 990E, affecting gloss level and making it more susceptible to dirt pick up in the future.

## 12. HEALTH AND SAFETY

Interthane 990E 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 and Safety Data Sheets (MSDS) which International® Protective Coatings has provided to its customers. If for any reason a copy of the relevant MSDS is not immediately available, the user should obtain a copy before using the product.

**This product contains isocyanate and air-fed respirators should always be used during application, to prevent inhalation of the spray mist.**

- Ensure that in addition to air-fed breathing apparatus, all recommended personal protective equipment is used, e.g. overalls, gloves, goggles, face mask, barrier creams etc.
- Provide adequate ventilation.
- If product comes into 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 so keep away from sparks and open flames. Smoking should be prohibited in the area.
- Observe all precautionary notices on containers.

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