

Intertherm 2205 Application Guidelines

Prepared by: Global Technical Support

www.international-pc.com

The information in this guideline is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this guideline without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this guideline or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. THEREFORE, UNLESS WE SPECIFICALLY AGREE IN WRITING TO DO SO, WE DO NOT ACCEPT ANY LIABILITY AT ALL FOR THE PERFORMANCE OF THE PRODUCT OR FOR (SUBJECT TO THE MAXIMUM EXTENT PERMITTED BY LAW) ANY LOSS OR DAMAGE ARISING OUT OF THE USE OF THE PRODUCT. WE HEREBY DISCLAIM ANY WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this guideline is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local International Paint representative that this guideline is current prior to using the product.

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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 Intertherm 2205 to correctly prepared surfaces.

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1. INTRODUCTION

Intertherm 2205 is a high-performance temperature resistant maintenance coating which is suitable for in-situ application at elevated temperatures up to 205°C (401°F). Intertherm 2205 has been specifically designed to provide a corrosion resistant barrier when used to protect steelwork beneath thermal insulation in areas subjected to wet and dry cycling. It is capable of providing corrosion protection to steel in both atmospheric service and under thermal insulation operating at continuous and cyclic temperatures up to a maximum of 205°C (401°F), with peaks of 230°C (446°F).

This document gives detailed guidance on the use and application of Intertherm 2205 and should be read in conjunction with the Intertherm 2205 technical data sheet and material safety data sheet.

2. WHERE TO APPLY INTERTHERM 2205

Typically applied direct to metal, as a single or multi-coat system, Intertherm 2205 is particularly effective in maintenance situations when used to mitigate the damaging effects of corrosion under insulation (CUI).

Intertherm 2205 is suitable for use with steelwork in situations of continuous intimate contact with insulation operating at continuous in-service temperatures ranging from ambient up to 205°C (401°F), with peaks of 230°C (446°F).

Intertherm 2205 is suitable for direct application to hot surfaces between 60°C (140°F) and 205°C (401°F) and provides effective protection to steelwork operating under cyclic conditions in the critical CUI temperature range, recognized by NACE SP0198_2017 as -4 to 175°C (25 to 347°F).

3. STORAGE OF MATERIAL

Intertherm 2205 should be stored in covered, dry conditions and kept in the temperature range of 0°C-40°C (32°F-104°F).

4. ENVIRONMENTAL CONDITIONS FOR APPLICATION

The surface onto which Intertherm 2205 is to be applied must be clean, dry and free from contaminants. Steel temperatures for application should be between 60°C (140°F) and 205°C (401°F).

5. SURFACE PREPARATION

The performance level of Intertherm 2205 is ultimately determined by the degree of surface preparation achieved prior to application. The higher the degree of surface preparation achieved, the greater the long-term performance. Intertherm 2205 should be applied direct to metal.

For optimum performance, all surfaces to be coated should be clean, dry and free from contamination. Prior to application, all surfaces should be assessed and treated in accordance with ISO 8504:1992. Where necessary, remove weld spatter, and where required, smooth weld seams and sharp edges. Where high levels of surface contamination are present, thorough cleaning may be necessary prior to application. If in doubt consult International Protective Coatings for further guidance.

Acceptable standards of surface preparation include hand or power tool prepared steel (ISO8501 St3, St2, SSPC SP11) where there is an existing surface profile or abrasive blast cleaning to Sa2½ (ISO 8501-1:2007) or SSPC-SP6, with a sharp, angular surface profile of 50µm (2 mils).

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6. MIXING

This product is supplied in two components. Due to the highly pigmented nature of Intertherm 2205, soft sedimentation of the base component can occur over time and as a consequence of transportation, particularly where long distances are involved. Correct mixing is essential to ensure that all settled material is reincorporated before application is attempted. **The importance of correct mixing is essential to ensure correct performance and cannot be over-emphasised.**

7. POT LIFE

Intertherm 2205 must not be applied after the stated pot life has been exceeded. Pot life times for Intertherm 2205 are detailed on the product data sheet.

8. BRUSH AND ROLLER APPLICATION

Brush and roller application are recommended for Intertherm 2205. Ensure that good quality brushes are used; typically, high quality synthetic filament types. Apply multiple coats to achieve specified system dry film thickness, typically two coats are required. Good practice would be to alternate between two brushes, so as to avoid reduction in pot life through the introduction of heat from the contact of the brush with the hot substrate. Microfibre rollers are recommended.

Intertherm 2205 can be applied to substrates operating at elevated temperatures with a surface temperature from 60°C (140°F) up to 205°C (401°F). When applying material to 'hot' substrates, it is important that appropriate consideration is given to the working environment, equipment, applicators' welfare and quality of the applied film.

Over-application and use of multiple thick coats should be avoided, as this can create internal stresses which can lead to cracking when in service at elevated temperatures. Application of a heavy coat direct to the hot steel may result in film bubbling. It is recommended that multiple thin-film coats are applied and that over-working of the coating is avoided. The viscosity of the product will immediately lower on contact with the hot steel, so applicators should be aware of drips or runs from the undersides of pipes, etc.

When applying Intertherm 2205 to substrates at elevated temperatures up to 205°C (401°F), consideration must be given to the increased levels of solvent vapour. It is essential that all relevant health and safety precautions are taken, and appropriate reference is made to local operating conditions, local site working practices and safe systems of work. A safe system of work should consider, but is not limited to, the increased chances of personal exposure, fire and explosion, control of ignition sources and static electricity, confined spaces, emergency arrangements, "hot work" and other permit requirements.

WARNING: The application of Intertherm 2205 to substrates at temperatures above 205°C (401°F) or the use of unapproved materials within the elevated temperature application process e.g. thinners, may lead to conditions that give rise to an increased risk of auto ignition of materials, fire and/or explosion.

9. STANDARD OF COSMETIC FINISH

Intertherm 2205 is not designed to provide a high degree of cosmetic appearance. It should be noted that different application methods will give rise to different visual appearance, as may application at different temperatures. Depending upon the operating temperature, overcoating of Intertherm 2205 with cosmetic topcoats for colour identification purposes may be possible. Consult International Protective Coatings for the latest technical advice.

10. APPLICATION OF TOPCOATS

Intertherm 2205 does not require topcoating for anti-corrosive performance. Topcoating may be required for identification purposes, such as safety colours. Consult International Protective Coatings for the latest technical advice.

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11. POSSIBLE FILM DEFECTS

As an elevated temperature resistant coating Intertherm 2205 may be applied to many different types of structures and equipment. As these structures are often large, and complex in design, the practicalities of site working make it possible that film defects can occur. The manner of application should be such that these are avoided or minimised. A number of potential defects are detailed below, together with recommended remedial treatment.

- **Bubbling**
This may occur if a heavy coat is applied to hot steel. Bubbling can be avoided by good application technique. When applying by brush and roller, sufficient working of the film should be carried out such that the film is evenly applied at appropriate dft and that air is released.
- **Over-application**
This is the result of excessive film thickness. Intertherm 2205 is tolerant to a degree of over-application; however, excessive film thickness may lead to extended cure times and potential cracking when operating at elevated temperatures. "As Intertherm 2205 should only be specified to a total scheme DFT not exceeding 200µm (8 mils), the total applied film thickness in any situation should not exceed 400µm (16 mils)."
- **Pinholes**
Pinholes can occur as solvent evaporates from the coating during application. Application of the product in multiple coats can prevent pinholes which penetrate down to the steel substrate.
- **Sagging**
This is the result of excessive film thickness. If the areas are greater than 100mm equivalent diameter, the incorrectly applied material should be removed and re-applied.
- **Soft Films**
Films which show signs of being mobile after hard dry time, are indicative of lack of cure. This may be as a result of poor mixing, or even omission of the curing agent. If this is suspected, the affected areas will require removal, and re-application of Intertherm 2205.

12. MEASUREMENT OF DRY FILM THICKNESS

Due to the rapid cure of this product at high temperatures, measurement of the wet film thickness is not possible. Dry film thickness measurement on hot steel is difficult and should be carried out with care.

13. INSPECTION AND REPAIR

Damage Down to Steel

Prepare substrate as per initial surface preparation e.g. by power tooling to SSPC-SP11, followed by a full coat of Intertherm 2205. If in doubt, consult International Protective Coatings.

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14. HEALTH AND SAFETY

Intertherm 2205 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 air-fed 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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