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Intertherm 7050 Application Manual

International Paint Ltd.
www.international-pc.com

Fire protection performance and pre-fire durability are critically dependent on the correct application of the system. These guidance notes are intended to assist applicators and are for guidance only; AkzoNobel accepts no liability for the acts or omissions of any applicators.

Applicators must make direct contact with International Protective Coatings to discuss training requirements for the application of Intertherm 7050 PRIOR to any commencement of a project.

TECHNICAL AND APPLICATION DATA herein is for the purpose of establishing a general guideline of the coating and proper coating application procedure. Test performance results were obtained in a controlled laboratory environment and International makes no representation that the exhibited published test results, or any other tests, accurately represent results actually found in all field environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection, verification of performance, and use of the coating(s).

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1. INTRODUCTION

This Application Manual contains instructions on how to install Intertherm 7050 insulation systems.

Intertherm 7050 and Intertherm 7050 / Chartek systems prevent potentially catastrophic structural failures from occurring by providing an insulating shield against the intense heat of a fire or cold from cryogenic spill. The Intertherm 7050 insulation systems are the result of over 20 years of research and development and possess extensive certification for a wide range of applications.

Since both fire protection performance and pre-fire durability critically depend on the correct application of the system, International Protective Coatings requires that the Intertherm 7050 insulation systems are installed only by Chartek qualified applicators in strict accordance with the instructions contained in this Application Manual. Both Chartek and Intertherm 7050 utilise the same plural application equipment.

Our Regional Office Technical Service Managers provide the support necessary to ensure that Intertherm 7050 insulation projects are carried out in accordance with the instructions of this manual and any additional project-specific requirements.

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Intertherm 7050 Application Manual Revisions**Table 1 – Application manual revisions**

Rev	Date	Revision Notes
0	14/04/2005	Original
1	24/05/2005	Paragraphs 5.6 and 6.8
2	24/01/2006	All pages
3	04/04/2014	Format change
4	03/02/2015	Format change

This Intertherm 7050 Application Manual is verified by International Paint Ltd.'s "Technical Manager, Oil and Gas Fire & Insulation" and "Chartek and Chartek Systems Field Service Manager".

From the date of approval the contents of the manual are to be considered effective.

The registration of the verification and approval of every edition of this manual and the original document are held in the archives of the Office at Felling, which has the responsibility of conserving the document in its approved state and of distributing copies that conform to the last deposited revision. The previous editions are also held in the archives, separately, and conserved for possible consultation.

The original language of the manual is English. In the event of discordance with successive translations, the company and addressees of the manual must make reference to the English edition.

The document is identified by an ID code, revision number and issue date. This information is printed in the heading of every page.

This manual is distributed internally and externally with the aim of providing consistent information to all parties involved in the application of Intertherm 7050 insulation systems.

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This Intertherm 7050 Application Manual can be distributed in a controlled or non-controlled form. The Regional Office Technical Manager is responsible for identifying the need to transmit the manual to company departments, clients, companies, bodies, etc., and decides the form of distribution.

International Protective Coatings will ensure that successive revisions of the manual are sent to recipients of controlled copies. It is the responsibility of the recipient of the controlled copy to substitute the new revision throughout his organisation.

This manual uses metric (SI) and Imperial units of measure (in brackets).

The information given in this manual is not intended to be exhaustive: any person applying the product by any method other than that specifically recommended in this manual without first obtaining our written confirmation as to the suitability of the proposed method does so at his own risk. We try very hard to ensure that all advice we give about application of our product (whether in this manual or otherwise) is correct but we have no control over either the quality or condition of the substrate or the many factors affecting application of the product. In the event of any doubts or misunderstandings, International Protective Coatings should be consulted for clarification.

The information contained in this manual is liable to modification from time to time in the light of experience and our policy of continuous product development. It is the user's responsibility to check that this manual is current prior to using the product. Unauthorized changes or reproduction of the manual are forbidden.

Unless we agree differently in writing all our goods and related technical advice are supplied on our standard conditions of sale, a copy of which is available on request.

The quality control activities required to verify that application is carried out in accordance with this manual are described in the Quality Control Manual for Intertherm 7050 Insulation Systems, which is available to customers and applicators upon request.

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2. SYSTEM DESCRIPTION

The Intertherm 7050 insulation system consists of an epoxy syntactic insulation coating designed to protect materials from extremes of temperature and corrosion. Dependent on the exposure conditions, Intertherm 7050 insulation systems may require mesh reinforcement. Generally, no mesh reinforcement is required.

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3. SURFACE PREPARATION

Good surface preparation is critical for the success of any coating system and Intertherm 7050 is no exception.

The primary objectives of surface preparation include:

- to provide the best bond possible between the metallic substrate and chosen (qualified) primer
- to produce a surface roughness that will maximise the bond between substrate, primer and Intertherm 7050
- to guarantee effective corrosion resistance of the whole system

Acceptable surface preparation standards include, but are not limited to:

- ISO 8501: Preparation of steel substrates before application of paints and related products (visual assessment of surface cleanliness)
- ISO 8503: Preparation of steel substrates before application of paints and related products (surface roughness characteristics of blast cleaned substrates)
- SSPC (The Society for Protective Coatings) - surface preparation standards
- NACE (The National Association of Corrosion Engineers) - surface preparation standards

Applicators should be familiar with surface preparation techniques and have access to the measurement instruments required to verify the specified surface preparation requirements.

For a range of definitions and abbreviations refer to APPENDIX E – Definitions and Abbreviations.

The particular method of surface preparation required depends on the type of substrate being coated. Table 2 summarises the requirements for most substrates. Where there are special conditions not shown International should be consulted for advice.

Table 2 makes reference to a number of surface preparation operations that are defined below. The correct interpretation and execution of these operations is required in order to achieve the objectives mentioned above.

Degreasing

The presence of surface oil or grease prevents a coating from properly adhering to the substrate and can lead to rapid failure of the whole system. For this reason, all visible oil, grease and other soluble contaminants must be

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removed before the application of both primer and Intertherm 7050. Degreasing is also important before blast cleaning activities.

Definition:

The removal of all visible oil, grease or other soluble contaminants (SSPC-SP1).

Acceptable methods of degreasing include:

- steam cleaning using detergents or emulsion/alkaline cleaners followed by steam or fresh water wash to remove detrimental residues
- wiping or scrubbing the surface with rags or brushes wetted with solvent (NB: use clean solvent for the final wiping)
- vapour degreasing using stabilized chlorinated hydrocarbon solvents

The applicator must select the method most appropriate to the situation, giving due consideration to applicable health and environmental regulations. In all cases, International recommends removing any heavy oil or grease first by scraper and completing the degreasing activity with a thorough fresh water rinse.

The primer manufacturer's recommendations regarding degreasing must also be observed at all times.

Blast Cleaning

Blast cleaning is widely accepted as being the best way of preparing a metal substrate before application of a protective coating and it is a very important part of the whole Intertherm 7050 application process. Intertherm 7050 is never applied directly to blast cleaned substrates due to the risk of flash rusting. Therefore, when a primer is used, blast cleaning should be carried out in accordance with the primer manufacturer's instructions.

Definition of degrees of cleanliness:

Near white blast cleaning

The general requirement prior to Intertherm 7050 application is near-white blast cleaning. A near white blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products and other foreign matter except for staining (light shadows, streaks or discolorations caused by stains of rust, mill scale or previously applied coatings) limited to no more than 5% of the surface (Sa 2½, SSPC-SP10, NACE No. 2). Sa 2½ is a specification requirement projects.

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Sweep (Brush-off) blast

Removal of all loose mill scale, loose rust and loose coating with abrasive blast cleaning (Sa 1, SSPC-SP 7, NACE No. 4).

Blast profile

For carbon steel substrates the blast profile (Rz) must be 50 to 75 microns (2 to 3 mils) as per specification requirements. Angular abrasive should be used in order to produce a suitably sharp surface profile. The recommended method for measuring the blast profile is with replica tape.

For stainless steel substrates a suitable non-metallic abrasive should be used and a profile of 35 to 50 microns (1.5 to 2 mils) is required.

For aluminium a suitable non-metallic abrasive should be used and a deep profile of 75 to 100 microns (3 to 4 mils) is required.

For galvanised substrates a sweep (brush-off) blast to Sa 1 (ISO 8501-1), equivalent to SSPC-SP7 or NACE No. 4, is required, as a minimum, in order to produce a suitably roughened surface. The blast profile (Rz) should be 50 to 75 microns (2 to 3 mils).

Wet abrasive blasting

Wet abrasive blasting is an acceptable method of surface preparation. Surface profile and cleanliness shall be as detailed above. A qualified wet blast primer must be used with this method of surface preparation.

Hydro-blasting (high pressure water jetting)

Hydro-blasting may be an acceptable method of surface preparation of previously coated substrates. However, this is conditional on an adequate surface profile being revealed as detailed above. Where a suitable surface profile is not revealed, then sweep blasting or abrasive blasting will be required. A qualified wet blast primer must be used with this method of surface preparation.

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Table 2 – Surface preparation requirements

Operation Required	Substrate				
	Steel	Galvanised Steel	Aluminium	Stainless Steel	Glass or Fibre Reinforced Plastics
Degreasing	✓	✓	✓	✓	✓
Power Tool Cleaning	See Note 1	See Note 1	See Note 1	See Note 1	✓
Near White Blast Cleaning	✓		✓	✓	
Sweep (brush-off) Blast Cleaning		✓			✓
Blow down	✓	✓	✓	✓	✓
Primer	✓	Epoxy Primer only	See Note 2	See Note 2	
Blast Profile	50 to 75 microns (2 to 3 mils)	50 to 75 microns (2 to 3 mils)	75 to 100 microns (3 to 4 mils)	35 to 50 microns (1 ½ to 2 mils)	Abrade to remove glaze

Note 1: Power tool cleaning is not generally an acceptable method for preparing metal substrates for either primer or Intertherm 7050 application, however it may be used for small areas of repair (typically not exceeding 1 m² (10 ft²), for example welds and local repair areas). It should be carried out as described by ISO 8501-1 to surface finish ST3 (SSPC SP3).

Note 2: If there is a risk of oxidisation of the surface prior to application of Intertherm 7050 a suitable primer should be used.

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4. PRIMERS

In order to ensure optimal bonding between the Intertherm 7050 and substrate, the primer must bond well to the substrate, the Intertherm 7050 must bond well to the primer and the primer itself must have a high cohesive strength. It is recommended to use the principles in APPENDIX C – TN/F/CT/104 Guidance Notes for Maximum Overcoating Intervals of all Qualified Primers to verify if the surface is of sufficient integrity to ensure Intertherm 7050 adherence (the note references Chartek however the principle applies to the application of Intertherm 7050 to primers).

Primer Thickness

Optimal bonding is achieved when the primer's dry film thickness (DFT) is sufficient to just cover the peaks of the blast profile and maintain a rust free condition prior to application of Intertherm 7050. Excessive thickness produces weaker cohesive strength and may lead to premature failure of the system. For this reason, careful monitoring and measurement of primer thickness is required. Measurement of DFT should be carried out with a thickness gauge that has just been calibrated on a smooth calibration plate (no compensation for blast profile is to be made).

Primer Type

Primer type varies per project. Consult specification details for the required primer for specific applications. Generally priming with Intergard 269 is undertaken for cryogenic spill systems and replaces primer recommendations stated in the data sheet primarily used for higher temperature requirements.

Epoxy based primers have the highest bond strength. Inorganic zincs are not specified for Intertherm 7050.

For application of Intertherm 7050 over Intergard 269, the over-coating interval stated in the primer data sheet should be adhered to. Where the over-coating interval is longer than that stated in the primer data sheet:

1. Manually abrade the surface of the Intergard 269 with P36 disk (P100, P120 sandpaper also acceptable).
2. High pressure (2.5 bar) fresh water wash to remove all contaminants. Ensure surface is fully dry prior to application of Intertherm 7050.

The maximum allowable primer system dry film thickness are summarised in the following table:

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Table 3 – Primer system maximum DFTs

Primer System	Dry Film Thickness (DFT)	
	Normal Areas	Overlap Areas
Epoxy Primer (e.g. Intergard 251)	50 to 75 microns (2 to 3 mils)	100 microns (4 mils)
Epoxy Zinc Primer (e.g. Interzinc 52)	50 to 75 microns (2 to 3 mils)	100 microns (4 mils)
Epoxy Zinc Primer plus Tie Coat	75 to 110 microns (3 to 4.4 mils)	125 microns (5 mils)

Notes:

- Epoxy tie coat (25 to 35 microns (1 to 1.4 mils) DFT) should be used with zinc primers if Intertherm 7050 is not applied immediately after the primer has cured or if the primer is exposed to humid or outdoor conditions prior to application of Intertherm 7050.
- “Overlap areas” refers to internal angles of structural sections and other areas where multiple spray passes are unavoidable. Dry film thickness may be exceeded in stripe coat areas.

Reduction of Excessive Primer Thickness

Excessive primer thickness should be reduced to the DFTs indicated in Table 3. The preferred method to be used is abrasive sweep blasting. Sanding with P80 P100 grade aluminium oxide abrasive paper may be suitable for small areas; however care should be taken to prevent polishing of the surface which would lead to inadequate adhesion of the Intertherm 7050. Polishing must be avoided and frequent changes of the abrasive paper should be made.

After primer reduction surfaces should be cleaned of dust and contaminants, potable water washed and thoroughly dried prior to the application of Intertherm 7050.

The primer manufacturer's application instructions should be followed.

It is the responsibility of the applicator installing the Intertherm 7050 to assess the condition of the primer coating before the Intertherm 7050 is applied. Recommendation is to use APPENDIX C – TN/F/CT/104 Guidance Notes for Maximum Overcoating Intervals of all Qualified Primers to assess the primer condition if in any doubt.

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Should the primer's suitability for the over-coating with Intertherm 7050 be in doubt in any way, for example, primer type, thickness, condition etc., the primer manufacturer and International should be consulted before the application of Intertherm 7050.

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5. QUALIFIED APPLICATION CONTRACTORS

Qualified Chartek Application Contractor Companies who have not applied Chartek or Intertherm 7050 products within a period of two years must undergo refresher training prior to starting any Intertherm 7050 application work. If the Contractor Company can prove they have employed Chartek qualified and experienced Supervisory/QC personnel and hands-on application personnel, the refresher training may not be necessary.

All application contractors' personnel should be in possession of the Chartek training certificate.

6. PACKAGING AND STORAGE

For plural component spray equipment, Intertherm 7050 is supplied in a 30kg (66lb) kit comprising of one drum of pink coloured resin (Part A) and one drum of light coloured hardener (Part B).

Table 4 – Packaging weights

Part A (2 drums)	2x 10.7 kg	2x 23.5 lb
Part B (1 drum)	8.6 kg	18.9 lb
Total	30 kg	66 lb

Intertherm 7050 should be stored dry, indoors and out of direct sunlight. The following storage temperature ranges must be maintained:

- Minimum 5°C (34°F), maximum 30°C (86°F)
- General storage temperatures in excess of 35°C (95°F) could have a detrimental effect on the material

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7. THICKNESS MEASUREMENT

As the fire protection rating is determined by the Intertherm 7050 thickness, it is imperative that applicators constantly measure and record thicknesses during application.

Intertherm 7050 is a 100% volume solids product, so wet and dry film thicknesses are the same.

The following procedure for thickness measurement must be followed.

A. Method for measuring wet Intertherm 7050 thickness:

The recommended method of measuring wet thickness is to use a pre-cut bridge gauge having a width of approximately 50mm (2"), typically made from a paint scraper. Notch or pin gauges are not acceptable because they limit the measurement to one point. The gauge should just touch the rolled Intertherm 7050 surface. International strongly recommends the continuous use of the bridge gauge by all members of the application team (sprayer, trowellers and rollers). This is the only way of ensuring the design thickness will be applied to the whole surface.

B. Method of measuring dry Intertherm 7050 thickness:

Dry film thickness can be measured by:

- An eddy current gauge (an example of such is Fischer Isoscope FMP30 with FA70 probe (up to 50 mm)) must be used to determine thickness up to 25mm

Note – For the Intertherm 7050 systems (Intertherm 7050 and Intertherm 7050 / Intertherm 7050), no holes should be drilled for cryogenic spill systems. This will compromise the protection.

Measurement Criteria

It is recognised that the applied Intertherm 7050 layer will never be perfectly even and that areas of lower than specified design thickness ("valleys") are compensated by areas of higher than design thickness ("peaks"). In cryogenic spill areas, no point should be less than the specified thickness of Intertherm 7050. In other application areas, the average DFT should be considered, and the following measurement criteria must be followed:

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Location

It is recommended that no thickness measurements are taken within 25mm (1") of the edge of structural sections and divisions, or within 25mm (1") of the join of flange to web of, for example, an 'I' section.

Thickness measurements should be taken randomly over the remaining areas of the coated structural sections and divisions with a frequency described below.

Frequency

The number of thickness readings to be taken shall be agreed by all parties before application commences.

As guidance, it is recommended that readings are taken as follows:

- 'I' sections, tee sections and channels:
 - Webs: 2 readings per metre length on each face
 - Outer flanges: 2 readings per metre length on each face
 - Inner flanges: 1 reading per metre length on each face
- Square or rectangular angles and hollow sections:
 - 2 readings per metre length on each face
- Circular hollow sections:
 - 8 readings per metre length spread evenly around the section
- Divisions and large flat plates:
 - 2 readings per 1m²

Acceptance Criteria

The above measurement criteria meets or exceeds the requirements specified in ASFP TGN 003: Part 1, SSPC-PA2 and ASTM E605. Thickness readings should be accurately recorded on suitable quality control forms. See the Quality Control Manual for Intertherm 7050 Insulation Systems Application for further details.

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8. PLURAL SPRAY APPLICATION

Ambient Conditions

Suitable application conditions are of critical importance for the successful application of Intertherm 7050. Consequently, Intertherm 7050 should only be applied when the ambient conditions are within the following parameters:

- Air temperature: minimum 10°C (50°F)
- Relative humidity: maximum 85%
- Surface temperature: at least 3°C (5°F) above dew point temperature

However, Intertherm 7050 may be applied at an air temperature minimum 5°C (41°F) using plural spray equipment only, recognising that the time to cure will in such applications be extended. Additionally, there may also be a higher propensity for amine bloom formation which would affect over-coating with further layers of Intertherm 7050, where required, and may affect over-coating with topcoats. For such low air temperature applications, plural equipment is the only recommended dispensing method.

Plural Component Spray Equipment

Intertherm 7050 is most efficiently applied with purpose built hot spray plural component pumps, which have the advantage of not requiring any premixing of the two parts.

Plural component equipment used to apply Intertherm 7050 must be capable of delivering the required pressures, temperatures and flow rates as well as be capable of operating reliably for long periods under a wide range of conditions. Machines built to spray Intertherm 7050 are supplied by a number of companies. Each supplier provides instructions on machine operation and maintenance and should be able to advise on the individual set up required to achieve best application qualities. This information is given for advice only and the contractor is responsible for determining the suitability of specific pieces of equipment and maintenance of the equipment in good working order according to the manufacturer's recommendations.

For Intertherm 7050 the application parameters possible depend on a number of factors (e.g. environmental conditions, equipment type, etc.) and material temperatures is required to be at 45-49°C prior to loading to the storage tanks of the plural machine:

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Table 5 – Operational parameters for Intertherm 7050

Parameter	Value
Storage tank temperatures	Part A: 55-65°C (131-149°F) Part B: 55-65°C (131-149°F)
Hose heater temperature	66-79°C (151-174°F)
Gun exit temperature	55-65°C (131-149°F)
Storage tank pressures (see Note 2)	Part A: 5.4-6.8 bar (78-99 psi) Part B: 4.0-5.4 bar (58-78 psi)
Tank stirrer speed	10-30 rpm
Displacement pump pressure	209-276 bar (3000-4000 psi)

Recommended fluid lines and spray tips:

Part A: ~18mm (¾") internal diameter fluid lines
Part B: ~12mm (½") internal diameter fluid lines
Whip length: 4.5-6.0 m (15-20 ft) with ~12 mm (½") internal diameter
Suggested tip size: 0.035" to 0.041"

Note: Ability to vary tank pressures is critical to achieve the correct weight mix ratios. Tank stirrers should also have the capability of speed variation.

It is necessary to provide controlled heated storage for the Intertherm 7050.

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Figure 1 – Typical storage container, showing insulation on inside

WARNING: Accelerated methods of heating the Intertherm 7050, such as electrical heaters in direct contact with the containers or hot water baths, are not permitted. Such methods can cause overheating of the outer layers of Intertherm 7050 in the container, which may produce undesirable changes to its properties (including shorter pot life).



Figure 2 – Example fin tube heaters (heater type dependent on local regulations)

The importance of keeping all spray equipment clean and efficient cannot be overstated, as down time is very costly. For this reason a skilled and experienced machine operator is a vital component of the team, together with a regular maintenance or service programme for the equipment.

When spraying in cold conditions, the spray pump should be located in a heated area, ideally the same area that is used to store the Intertherm 7050 at a sprayable temperature. Hoses should be insulated and heated and ambient temperature parameters must be frequently checked and maintained.

In hot conditions, the spray pump and Intertherm 7050 must be located in an air-conditioned environment. Hoses should be insulated and wrapped with heat reflecting tape. It may also be necessary to raise hoses above the ground in extremely hot environments. High substrate temperatures should be avoided by providing

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suitable shade cover and air-conditioning of the area immediately surrounding the workface may also be necessary.

Recirculation through In-line heaters is required with this product to attain the required temperature for application.

The static mixer (sometimes referred to as the “worm”) must be cleaned or exchanged for a clean worm at the end of each shift.

After shutting flow lines, flush material lines, mixers, whip line and dispensing nozzle with hot water. A minimum of 40 litres (10.5 gallons) of hot water should be run through the system.

International recommend that due to the high Intertherm 7050 dry film thickness and to achieve a uniform thickness / appearance, a maximum of 5mm per build up coat is to be spray applied in one application.

Ratio Checks

It is important that the delivery ratio of plural spray pumps is regularly checked. As a minimum, a ratio check by weight should be performed at the start-up of each day's production and again if the machine is shut down and restarted for any reason. Use the following procedure for ratio checks by weight:

1. Weigh clean empty Parts A and B containers and note the respective weights
2. Place the containers under the ratio check valves located on the mixing block and open the valves at exactly the same time
3. Close the valves when the containers are at least half full at exactly the same time
4. Find the net weight of each part by subtracting the weight of the containers
5. Calculate the ratio of Part A to Part B

Example:

Part A full container weight – 10.7kg x2 = 21.4 kg

Part B full container weight – 8.6 kg

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As a minimum a ratio check should be carried out at the start of each shift and after each machine shutdown and restart. In addition to the ratio checks, constant checking of the displacement pump pressure gauges and the colour of the mixed Intertherm 7050 should be carried out by the machine operator and sprayer respectively.

The weight ratio for Intertherm 7050 is 2.5:1.

The acceptable ratio range of Part A:Part B is:

2.35:1 Minimum
2.85:1 Maximum

Plural Spray Application Method

The first coat of Intertherm 7050 is sprayed and should be allowed to cool for 10-15 minutes prior to thoroughly trowelling / rolling into the surface. This ensures good wetting as well as providing a good key for trowelling further coats of Intertherm 7050. For all subsequent coats, rolling should be sufficient to ensure a smooth even surface after allowing Intertherm 7050 to cool for 10-15 minutes.

If trowelled, trowel marks and high points are knocked down with a short nap roller dampened with PMA solvent. Rolling achieves a uniform thickness of the coat, which allows uniform build-up of subsequent coats and ultimately the correct final thickness. Rolling also serves to produce a smoother surface finish, reducing high spots and stippled finish.

Two precautions to be taken with rolling are:

1. If the Intertherm 7050 has not gelled (started to cure) sufficiently, it may sag or slump
2. Too much solvent on the roller can reduce the cure rate if it is forced into the wet Intertherm 7050

For subsequent coats, sufficient time must pass for the applied Intertherm 7050 to gel ("set up" or partially cure) in order to support the weight of the additional material.

Preferably, subsequent coats should be applied when the previous coat is still tacky and sufficiently firm to enable the use of a wet film thickness gauge.

International recommend that due to the high Intertherm 7050 dry film thickness and to achieve a uniform thickness / appearance, a maximum of 5mm per build up coat is to be spray applied in one application.

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Where practicalities prevent “wet on wet” application, over-coating time should be reduced to a minimum and a sprayed holding coat should be applied to leave the Intertherm 7050 with a good key to improve the adhesion of the next coat. In addition, should HK-1TM mesh be used, sufficient time should be left to apply the final coat applied over HK-1TM mesh to prevent contamination entrapment.

The holding coat is produced by raising the pump output pressure and increasing the temperature to give a wide fan and increased atomisation. The spray pass is much faster than normal and the result is a coarse finish that promotes good bonding with subsequent coats.

Before spraying subsequent coats onto cured surfaces, they should be checked for cleanliness and, if required, suitably cleaned with one of the approved methods described in Section 2.0 “Surface Preparation”. It is imperative that surfaces are clean and thoroughly dry before additional coats of Intertherm 7050 are applied.

The final coat, when applied to a ‘wet’ surface, should be sufficiently thick to allow good ‘flowing out’ and to minimise surface roughness and to achieve the specified final thickness.

In applying a final coat to a hardened surface the thickness should be no less than 3mm (1/8”) to ensure adequate adhesion to the hardened surface.

Water Contamination

CAUTION: If rain or condensation occurs during application or shortly thereafter, moisture may be absorbed into the uncured material. In addition, an amine bloom may form on the Intertherm 7050 surface. These conditions will affect Interco at adhesion.

Take the following action if water contamination occurs:

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Table 6 – Solutions for contamination scenarios

Contamination	Action
Cured Intertherm 7050 (fresh water):	Dry and solvent wipe
Cured Intertherm 7050 (salt water):	Warm water wash - maximum 60°C (140°F) Dry and solvent wipe
Uncured Intertherm 7050:	Remove source of moisture Allow Intertherm 7050 to cure Dry and solvent wipe Remove and replace all uncured material

If the surface of the Intertherm 7050 is exposed to standing water (pooling or ponding) <8 hours after application (application temperature greater than 15°C) then this coat must be removed and re-instated. If the temperature is lower than 15°C consult International for further advice.

Surface Finish

Discontinuities, pinholes, voids or isolated deposits of excess thickness in the coating are not acceptable. For a closed sprayed surface finish Intertherm 7050 should be sprayed wet on wet. Where there is the risk of water ponding on horizontal surfaces, the Intertherm 7050 should be sloped sufficiently to avoid ponding.

Samples of the surface finish acceptable to the client, a separate reference section that resembles the project structure, must be prepared by the applicator prior to project start-up. Intertherm 7050 system sample reference area with project specified thickness must be carried out by the contractor / applicator prior to the project start-up. All project coatings QC departments and IP Field Service are to agree the standard of surface finish.

Terminations

Caulking or sealing of free edges and terminations is not required for Intertherm 7050 insulation.

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9. HAND TROWEL APPLICATION

Ambient Conditions

Suitable application conditions are of critical importance for the successful application of Intertherm 7050. Consequently, Intertherm 7050 should only be applied when the ambient conditions are within the following parameters:

- Air temperature: minimum 10°C (50°F)
- Relative humidity: maximum 85%
- Surface temperature: at least 3°C (5°F) above dew point temperature

However, Intertherm 7050 may be applied at an air temperature minimum 5°C (41°F) using plural spray equipment only, recognising that the time to cure will in such applications be extended. Additionally, there may also be a higher propensity for amine bloom formation which would affect over-coating with further layers of Intertherm 7050, where required, and may affect over-coating with topcoats. For such low air temperature applications, plural equipment is the only recommended dispensing method.

Material Preparation for Hand Trowel Application

Prior to applying Intertherm 7050 by hand trowel, the material should be preheated warm enough to mix, typically 20 to 32°C (68 to 90°F).

Note: The higher the temperature the shorter the working pot life. Pot life durations are published on the product data sheets.

Accelerated methods of heating the Intertherm 7050 containers, such as electrical heaters in direct contact with the containers or hot water baths, are not permitted. Such methods can cause overheating of the outer layers of Intertherm 7050 in the container, which may produce undesirable changes to its properties (including shorter pot life).

Mixing

When Part A has reached a smooth consistency, the Part B is then poured into the Part A container, scraping the sides of the Part B container to empty it completely. The two parts are thoroughly mixed together with a

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high torque variable speed paddle mixer, minimum 5 HP air motors (or 1000W/110V electric motor minimum) equipped with 250mm (10") paddles. Mixing should continue until a uniform colour is achieved.

The mixer should incorporate a drum stand or clamp to ensure the drum is held firmly during the mixing operation.

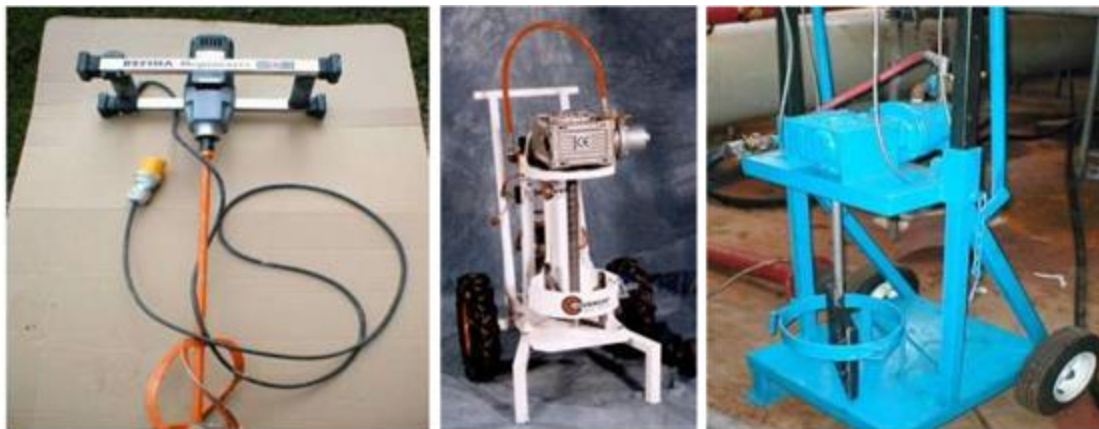


Figure 3 – Suitable Intertherm 7050 mixing equipment

For best results, the mixer should be mounted on a power ram base to ease the effort required and to allow vertical movement of the paddle blade. The mixing should begin slowly and speed built up gradually.

Mix carefully until a smooth texture and uniform colour are achieved. Kits should not be mixed until they are ready to be used.

Application Method

The product should not be thinned with solvent prior to mixing and / prior to application. Stress cracking may result at high thickness if not adhered to. For hand application the product can be applied in the absence of solvent.

Intertherm 7050 may be applied using plasterer's trowels, which has the advantage of very little waste and virtually eliminates the need for masking.

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After a kit has been mixed, it may be spread out on flat clean boards or surfaces for each applicator to work with. This prevents the material from curing too quickly and allows sufficient working time. Alternatively the material may be applied directly from the pail.

A first coat of 2-3mm thickness should be applied to the surface to ensure full wetting of the substrate and to prevent subsequent coats “pulling” away from the surface when the trowel is moved across the air coating surface.

Trowel marks and high points are knocked down with a short nap roller dampened with PMA solvent. Rolling achieves a uniform thickness of the coat, which allows uniform build-up of subsequent coats and ultimately the correct final thickness. Rolling also serves to produce a smoother surface finish, reducing high spots and stippled finish.

Two precautions to be taken with rolling are:

1. If the Intertherm 7050 has not gelled (started to cure) sufficiently, it can sag or slump
2. Too much solvent on the roller can reduce the cure rate if it is forced into the wet Intertherm 7050

For subsequent coats, sufficient time must pass for the applied Intertherm 7050 to gel (“set up” or partially cure) in order to support the weight of the additional material.

Preferably, subsequent coats should be applied when the previous coat is still tacky. Where practicalities prevent “wet on wet” application, over-coating time should be reduced to a minimum.

International recommend that due to the high Intertherm 7050 dry film thickness and to achieve a uniform thickness / appearance, a maximum of 5mm per build up coat is to be spray applied in one application.

Mixing of Partial Kits

Often trowel application will require less than a full kit of Intertherm 7050. In these cases, the required amounts of Parts A and B should be accurately weighed out into a clean container and thoroughly mixed. The correct ratio by weight for Intertherm 7050 is as follows:

When complete kits are to be split down the following method of calculation may be used:

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Table 7 – Mixing of complete kits (worked example)

Parts A:B as a ratio of total weight	2.5-1
The acceptable ratio range of Part A to Part B is:	2.35-1 Minimum 2.85-1 Maximum
Required weight of Part B calculated as follows:	<p>Measured weight of Part A ÷ 2.5 (the Intertherm 7050 weight ratio)</p> <p>e.g. 8kgs of Part A ÷ 2.5 = 3.2 kg of Part B</p> <p>Therefore the required amount of Part B to be weighed out and added to the 8kgs of Part A is 3.2 kg.</p>

Surface Finish

For trowel application a smooth, even and rolled finish should be achieved. Discontinuities, pinholes, voids or isolated deposits of excess thickness in the coating are not acceptable.

For closed sprayed surface finish Intertherm 7050 to be spray applied wet on wet.

Where there is the risk of water ponding on horizontal surfaces, the Intertherm 7050 should be sloped sufficiently to avoid ponding.

Samples of the surface finish acceptable to the client, a reference area, must be prepared by the applicator prior to project start-up. Intertherm 7050 system sample reference area with project specified thickness must be carried out by the contractor / applicator prior to the project start-up. All project coatings QC departments and IP Field Service are to agree the standard of surface finish.

Terminations

Caulking or sealing of free edges and terminations is not required for Intertherm 7050 insulation.

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10. TOP-COATS

Intertherm 7050 has been extensively tested to industry recognised standards to demonstrate its ability to withstand weather and environmental exposure, both with and without topcoats.

For cryogenic spill protection Chartek is generally specified over the top of Intertherm 7050.

International Paint recommend that Chartek is applied as soon as possible after Intertherm 7050 application. If the Intertherm 7050 surface is contaminated, International paint recommend a high pressure (2.5 bar) fresh water wash to remove all contaminants. Ensure surface is fully dry prior to application of the topcoat system.

For application of Chartek over Intertherm 7050, consult the data sheet for over-coating intervals (Chartek can be applied with the same over-coating interval as Intertherm 7050). If the conditions are such that amine bloom is observed the following procedure is required:

1. Manually abrade the surface of the Intertherm 7050 with P36 disk (P100, P120 sandpaper also acceptable).
2. High pressure (2.5 bar) fresh water wash to remove all contaminants. Ensure surface is fully dry prior to application of Chartek.

Excessive rolling with solvent can, in extreme cases, cause amine bloom on the surface of the Intertherm 7050. This is not acceptable for application of topcoats. If amine bloom occurs, surfaces must be suitably high pressure washed as stated above, prior to application of any topcoat.

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11. REMOVAL, WELD CUTBACK, AND REPAIR OF DAMAGED AREAS

Removal

Intertherm 7050 can be removed after application for additional work, e.g. welding of attachment, by the use of handheld air driven pistol chisel using a sharp chisel bit of the appropriate width, usually 25 or 50mm. The tool should be used to split the bond between Intertherm 7050 and the steel, taking care not to gouge or damage the steel substrate.

Note: Operators should wear suitable dust masks and eye protection.

Weld Cutback

For small weld operations, such as addition of clips and hangers, a cutback of 50mm from weld area should be made. For large welds of heavy angle or other members, a cutback of 100mm should be made. Intertherm 7050 can be removed with a fair degree of accuracy on an identified cut line without damage to surrounding material. After welding has taken place, the surrounding Intertherm 7050 should show no sign of discolouration or damage. If discolouration, change of applied colour or 'browning' is seen, then discoloured material should be removed back to sound material.

In the case of allowance of cutback for welding of structural members and structural members themselves which are to be pre-coated with Intertherm 7050 prior to assembly, the following recommendation is made:

No weld preheat: 100mm either side of weld

Weld preheat: See following table

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Table 8 – Cutbacks for weld preheat

Preheat °C (°F)	Duration Hours	Free Distance mm (in)
100 (212)	4 to 8	750 (30)
100 (212)	9 to 12	1000 (40)
150 (302)	4 to 8	750 to 1000 (30 to 40)
150 (302)	9 to 12	1000 to 1250 (40 to 50)

The above figures are expected to be conservative, actual distance is a combination of factors, including mass of steel at weld junction and method of preheat.

As previously noted, discolouration of surrounding material will indicate insufficient cutback or overheating of area and will have to be removed.

Repair of Damaged Areas – Cutback

Repair of damaged areas, in the fabrication yard or during service life, and cutback areas should follow the under mentioned procedures:

1. Application conditions must conform with specified conditions for primer topcoat and Intertherm 7050 application.
2. Repair of damaged primer system should conform with instructions of specification for surface treatment and coatings. All traces of corrosion of substrate steel will have to be removed and surface prepared to the required level.
3. Should the repair area be large and require mesh (Duplex system installed), as defined by requirements for mesh application for Chartek, this should be attached as detailed in the Chartek Application Manual.
4. The 'border' area of surrounding Intertherm 7050 should be checked for soundness and adhesion in the joint area.
5. The surrounding 'border' area of 50-75mm of Intertherm 7050 should be roughened by abrasives to remove topcoat and/or 'glazed' finish of Intertherm 7050 to ensure sound adhesion of new material. After roughening, a suitable PMA solvent should be used to ensure that the area is clean.

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6. Intertherm 7050 should be applied to the repair area and interfaced with the existing material bringing the repair area to the same coating thickness. Application should follow International Paint's procedures, noting that trowel application of Intertherm 7050 is acceptable for repair areas.
7. Ensure the Intertherm 7050 material used for repairs and patching meets the required specification in terms of fire protection rating, cryogenic spill rating, reinforcement (if duplex system including Chartek) and thickness.
8. Topcoat replacement and repair should follow International Protective Coatings' guidelines and topcoat manufacturer's instructions.

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12. SPECIAL APPLICATIONS

Repair Procedure for Damaged or Delaminated Intertherm 7050 / Chartek systems (APPENDIX F – TN/F/CT/085 Abutment to Existing Chartek)

Intertherm 7050 / Chartek systems should be treated as per Chartek systems in relation to repair. For pool fire areas a butt joint described in the technical note should be sufficient to give the required performance.

- A. Mark out the area to be repaired.
- B. Using a disc grinder, cut through the Intertherm 7050 or Intertherm 7050 / Chartek system including mesh (take care not to damage substrate).
- C. Using chosen tools (hammer and chisel or pneumatic chisel), cut into patch to remove damaged system. Make sure all uncured material is removed.
- D. Alternatively, ultra high pressure water jetting (UHP) can be used to remove the system and is recommended as the removal method when systems are applied to pressure vessels and piping.
- E. Reinstall primer to specification. Small areas, for example, welds and local repair areas, may be prepared by power brushing as generally prescribed by ISO 8501-1 to surface finish ST3 (or SSPC-SP3). Power brushing should not be used as a primary surface preparation method for large areas.
- F. Abrade adjacent surfaces for a distance of 150mm (6") from edge of repair area.
- G. Reinstall mesh to specification where Chartek is utilised.
- H. Reinstall system to specification, in terms of cryogenic protection, fire protection, reinforcement and thickness, taking care to smooth over the repair area edges.

APPENDIX B – TN/F/CT/077 Procedure for Inspection, Test and Replacement (PITR) contains comprehensive instructions on the repair and replacement of passive fire protection systems. The procedure should be used, as necessary, in association with the current Application Manuals.

NOTES:

- A. For repairs, Intertherm 7050 must be applied to the primer system for the project.
- B. Masking should be done around the area to be repaired in a square or rectangular shape. This will give the patch a clean appearance once completed.
- C. If any existing mesh is left from original installation, whole or edge pieces, be sure that all loose Intertherm 7050 is removed from around or behind the mesh. This will prevent the formation of voids or adhesion problems.
- D. Refer to hand application for examples.

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Coat-backs

Whilst a fire protection requirement rather than an insulation requirement, the Intertherm 7050 / Chartek system must follow the same guidelines as that required for Chartek.

The coat-back distance for all secondary attachments to primary members is typically 450mm (18in), measured from the extremity of the primary member along the secondary attachment. However, secondary members and minor attachments that either individually or collectively, in a typical length of 1 metre (for structural members) or 1 m² (for divisions), do not exceed 3000 mm² (4.65 in²) in cross sectional area need not be provided with any coat-back fire protection material.

Summary of coatback requirements:

Cross-sectional area (per linear metre)

≤ 3000 mm ² :	No coatback
> 3000 mm ² :	Coatback

Whilst there is no specific standard relating to coatbacks, this is often taken as industry norm to deal with a heat transfer situation. Note, however, that the requirements of owners, classification societies, designers and engineers may require that projects have coatback distances different to this figure or indeed no coatback at all. Where doubt exists, consultation with the project specification, design engineer, classification society or owner should be made.

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13. SAFETY AND ENVIRONMENT

Intertherm 7050 is an epoxy based compound and can be a skin irritant to some people. It is therefore good practice to keep covered up and avoid skin contact. Eye protection should always be worn. It is important to stay as clean as possible. Periodic washing with soap and warm water is recommended to minimise continued contact with the material. Appropriate Material Safety Data Sheets and local Health & Safety personnel protection requirements must be observed.

PMA is a solvent that is benign in nature. However, in common with all solvents, care should be taken during its use of PMA. Work areas should be adequately ventilated. Containers should be kept closed and rollers only lightly sprayed with the solvent. If PMA comes into contact with the eyes flushing with clear, clean water for 15 minutes is recommended followed by suitable medical attention. Consult PMA manufacturer's material safety data sheets for questions relating to health and safety issues.

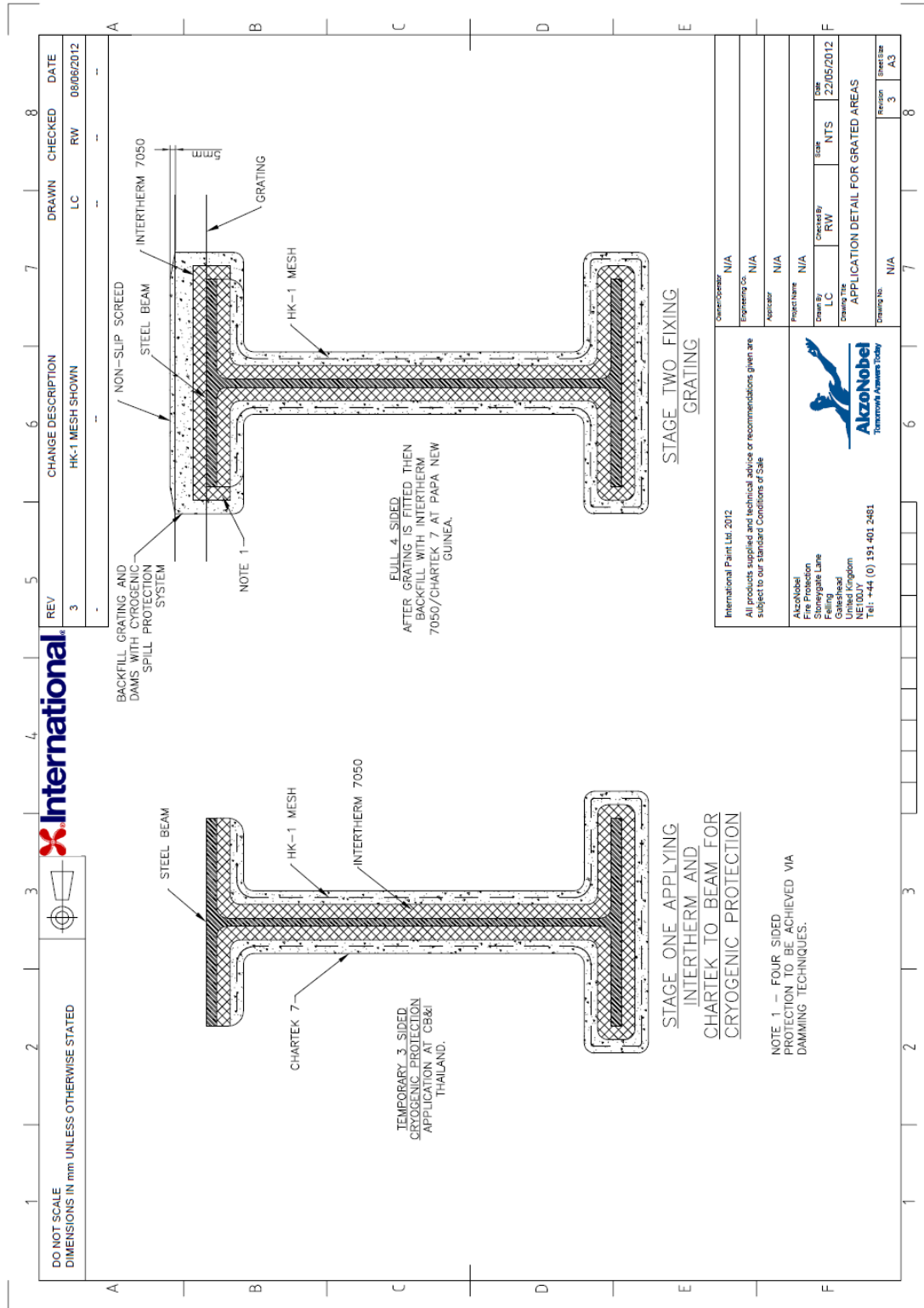
As Intertherm 7050 is delivered primarily through high pressure spray equipment, there is always a possibility that a fitting or line could fail. Therefore, any maintenance operation or changing of spray tips should be done with all pressure off the machines. If it is suspected that spray lines have become clogged, extreme caution should be used when unscrewing fittings, as it may not be possible to vent the pressure.

Refer to the manufacturer's specific instructions with regard to equipment safety.

For instruction on the disposal of Intertherm 7050 refer to APPENDIX D – TN/F/CT/101 Disposal of Chartek Mixed (Cured) Material which follows the same guidelines as Chartek.

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APPENDIX A – Example grating detail



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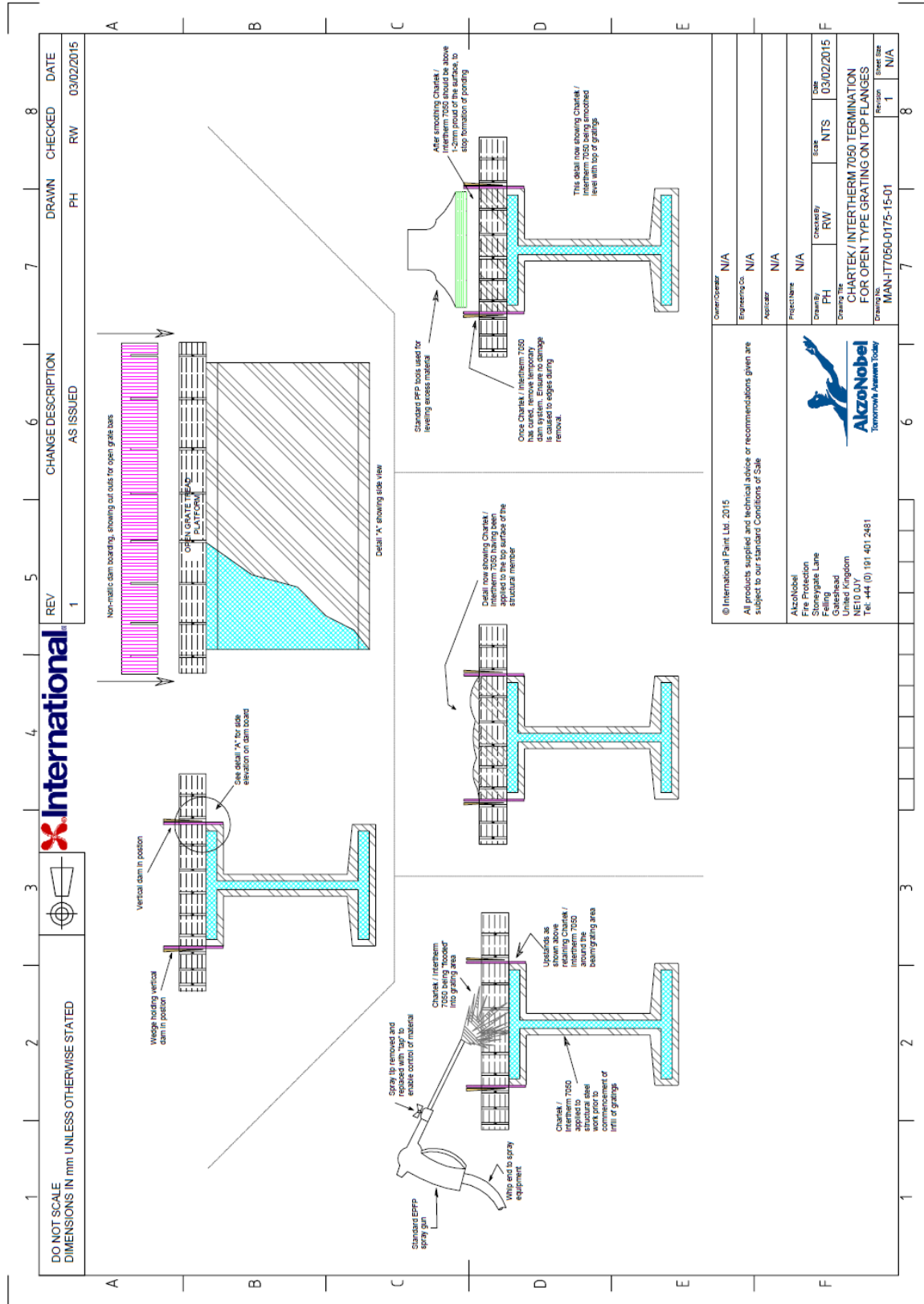
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APPENDIX B – TN/F/CT/077 Procedure for Inspection, Test and Replacement (PITR)



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Procedure for Inspection, Test and Replacement (PITR) of Passive Fire Protection

Introduction

Based on the understanding that the previously applied passive fire protection (PFP) material is a known Chartek product, the following is the recommended inspection, test and replacement procedure to be implemented.

Inspection and Test Plan

An Inspection and Test Plan (ITP) should be developed based upon this document and other documentation/specifications relating to the structure in question. The ITP should include clear details of each stage of the process and 'hold' points for acceptance of critical items.

1. Material Removal

The existing passive fire protection material must be completely removed from the surface revealing clean and sound primer system prior to overcoating with Chartek. Method of removal is to be advised to International Paint prior to work commencing. Typically methods include hand tools, high pressure water jetting and other mechanical methods.

2. Reinstatement of Existing Primer System

2.1 Generally it is anticipated that the primer system under the failing material will be sufficiently degraded that full surface preparation and reinstatement of primer system will be required. However, in the event of early failure (disbondment) of a fire protection system, it may be that a sound primer system can be revealed. In this situation the following procedure applies.

2.2 The cleanliness, condition, thickness and general soundness of the primer is critical to the ultimate adhesion of the Chartek fireproofing and consequently procedures relating to inspection and evaluation of primer soundness must be thoroughly followed for the full surface area.

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2.3 Dependent upon the method of removal of the failing fire protection material, the inspection after treatment of the primer system may vary. Any departure or change from the procedure recommended in this document must be reported to International Paint for review and acceptance prior to the change being implemented. Method used to be advised to International prior to work commencing.

2.4 Damage to the primer system during removal of the failed pfp material must be repaired by appropriate means (approved by International) to result in a sound surface prior to Chartek® application. Generally this will require surface treatment to ISO 8501-1 St 3 or SSPC-SP3 for limited areas of damage.

2.5 Key criteria for acceptance of the existing primer system are as follows:

- The primer system is of known origin and approved by International Paint for use under Chartek fireproofing. The primer system must be a recognised primer in accordance with the current acceptable primers list for use with Chartek fireproofing, obtainable from International Paint, Fire & Insulation Products.
- The primer thickness must be within the tolerable levels indicated in the Chartek Application Manual, Section 4, a synopsis of which is as follows:

The **maximum** allowable primer system DFTs are summarized in the following table:

Primer System	Dry Film Thickness (DFT)	
	Normal Areas	Overall Areas
Epoxy primer (e.g. Intergard 251)	<75 microns (<3 mils)	150 microns (6 mils)
Epoxy zinc primer (e.g. Interzinc 52)	<75 microns (<3 mils)	150 microns (6 mils)
Epoxy zinc primer plus tie-coat	<110 microns (<4.4 mils)	150 microns (6 mils)

Table 1 - Primer system maximum DFTs

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2.6 The primer system must be sound with no evidence of breakdown, flaking, rust breakthrough, contamination, or other defective condition which would indicate that the primer may not be suitable for overcoating with Chartek fireproofing in accordance with the Chartek 7 Fireproofing Application Manual

2.7 Final cleaning and preparation of sound primer system will be obtained by high pressure fresh water washing or, if required, solvent cleaning to SSPC SP1.

2.8 Test for the presence of soluble chloride salts using a method approved by International Paint.

2.9 Adhesion and cohesive strength of the primer system are critical to the longevity of the fire protection system. Consequently, test in accordance with TN/F/CT/104 to determine primer suitability. If adhesive properties are unacceptable then the surface is required to be manually abraded and surface contaminants removed with high pressure water wash.

2.10 It is the responsibility of the Chartek fireproofing Qualified Applicator carrying out the installation of fire protection to review all procedures utilised on the foregoing 1.1 to 2.8 and to accept the surface as suitable for overcoating with Chartek fireproofing. This may require obtaining acceptance of the owner or the owner's designated contractor.

3. Method to be used for Surface Re-preparation and/or Primer Replacement is Required

In certain circumstances the inspection of the steel surface after removal of the pfp material may reveal that a more thorough remedial treatment is required. Typical situations include:

- the primer or coating system does not appear on the Chartek fireproofing approved primers list
- the thickness of the primer system is unacceptable
- the primer system is degraded to the point where significant corrosion is present
- the general condition of the surface is such that anything other than full surface treatment will not result in a surface that is acceptable for Chartek application

The most acceptable form of surface re-preparation is open abrasive blasting. It is recognised that in certain situations, particularly on offshore installations, open abrasive blasting is not permissible.

Consequently, alternative methods of preparation may be found including wet blasting and high pressure water jetting. Methods which do not develop or reveal a surface profile are generally unacceptable.

Power tool cleaning is acceptable but only for limited areas.

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NB: Methods used must be advised to International Paint and approved prior to commencement of work.

Once the appropriate surface preparation method has been determined and carried out, utilisation of an appropriate primer system should be employed. This may include application of a specific primer system relevant to the surface preparation method. Any new primer system used must be listed on the Chartek fireproofing approved primers list.

Chartek fireproofing material must be installed by a Qualified Applicator using equipment approved by International Paint, Fire & Insulation Products, and personnel who have been trained at the Chartek fireproofing applicator school and who are in possession of a certificate attesting to the fact that they have attended training.

Chartek fireproofing must be installed in strict accordance with the Chartek 7 Fireproofing Application Manual. Particular attention should be paid to the environmental conditions during application of material.

Chartek material is to be installed to the correct thickness in accordance with the specified material thickness to meet the installation's fire criteria. It is the responsibility of the Chartek fireproofing Qualified Applicator to ensure that the correct thickness is applied to the specific area of the structure being fire protected. Should there be doubt with reference to specified thicknesses, these should be checked with the owner or the owner's designated representative and International Paint, Fire & Insulation Products.

Application of Chartek fireproofing should not commence until acceptance for overcoating of the prepared surface has been given as in 2.9 above. Where required this will include acceptance by the Chartek fireproofing Field Service Engineer as part of the fire protection installation audit procedure conducted by International Paint, Fire & Insulation Products.

NB: It is the responsibility of the International Paint, Fire & Insulation Products Field Service Engineer to carry out an audit of the installation process. He is not responsible for the daily inspection activities, which should be carried out by the Chartek fireproofing Qualified Applicator.

4. Acceptance of Installed Surface and Topcoating

The Chartek fireproofing Qualified Applicator is responsible for obtaining acceptance by the owner or the owner's designated representative that the installation is completed to the required standard and thicknesses prior to application of topcoat. Topcoating should be applied in accordance with the Chartek 7 Fireproofing Application Manual in a timely fashion.

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APPENDIX C – TN/F/CT/104 Guidance Notes for Maximum Overcoating Intervals of all Qualified Primers



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Technical Note TN/F/CT/104_Rev.2
19/04/13

Guidance Notes for Maximum Overcoating Intervals of all Qualified Primers

Introduction

Chartek passive fire protection can be applied over a range of freshly applied pre-qualified primers, which have the correct properties for adequate adhesion.

Pre-qualified primers, which have undergone a degree of weathering, (e.g. atmospheric exposure/UV exposure) can result in these properties becoming compromised and adequate adhesion not being achieved. In this sense, Chartek fire protection behaves similarly to a solvent free epoxy type system and, as such, care must be taken to ensure adequate adhesion.

For zinc rich primers, International Paint advise that best performance will be achieved if the Chartek is applied within 5 days of application of the actual primer.

For zinc rich primers with epoxy tie coat, and epoxy primers direct to steel, it is advised that best performance will be achieved if the Chartek is applied within 3 weeks of application of the primer.

If these intervals are exceeded, it is strongly recommended that field trials are undertaken to fully evaluate the condition of the primer surface prior to full Chartek application. Ideally, this should be done via an adhesion test patch in addition to an overall visual inspection.

Adhesion Test Patch

An adhesion test patch can be realistically evaluated using a sharp edged tool such as a scraper or chisel in combination with a hammer. The Chartek material should first be hand applied to the surface to give approximately 1-2mm thickness and allowed to cure to a hard film. It is recommended that Chartek is allowed to cure for 7 days at a minimum temperature of 10°C (50°F). See Photos 1 and 2 (soft films can give erroneous results).

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The adhesion should then be evaluated by attempting to remove the Chartek using the sharp edged tool almost parallel to the primer/Chartek interface at the edge of the test patch area. A degree of force may be required via the use of a hammer.

The mode of failure is the important issue here. This type of testing can be subjective at times. However, it is important to interpret the results via mode of failure and the 'ease' (if any) at which the Chartek can be removed from a leading edge. See Photos 3, 4 and 5. Where primer/Chartek adhesion is shown to be poor, in-house lab tests have indicated that a **very thorough sanding down** followed by a **very thorough fresh water wash down** can improve primer/Chartek adhesion. Alternatively the primer may be sweep blasted and re-primed, if necessary. Where 'sweep blast' (brush-off) is defined as removal of all loose coating and the surface is cleaned with abrasive blast.

Suitable abrasive paper grades for this type of work are P100 and P120. Water pressures should be adequate enough to remove any loose debris and dust following the sanding operation.

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Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

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APPENDIX D – TN/F/CT/101 Disposal of Chartek Mixed (Cured) Material

Although the technical note describes the procedure for Chartek, the same principle applies to Intertherm 7050 based upon the same technology platform as Chartek



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Technical Note TN/F/CT/101_Rev.0
12/11/04

Disposal of Chartek Mixed (Cured) Material

This Technical Note addresses the procedure for the disposal of Chartek Parts A and B when mixed, that is cured material.

In the first instance, the local authorities under whose jurisdiction the disposal of waste materials fall should be consulted as local regulations may differ in various parts of the world and within different regions of a country. Additionally, disposal regulations are constantly being changed or amended and the following can only be considered a guide.

Mixed, that is when cured, Chartek material may be incinerated and disposed of in a land-fill site.

Chartek's constituent components Parts A and B when mixed and cured are classified as non-flammable and non-hazardous, and contain no toxins that would prevent land-fill disposal.

Should there be components of Parts A and B they should be mixed together and allowed to cure. All excess of each component should be removed from containers and the work site. The solid material is classified as non-flammable and non-hazardous.

After a fire charred material may also be treated in the same way, as above.

There are no specific requirements for protective clothing. However, it is recommended that as a precaution, during disposal, personnel wear overalls, gloves and a mask.

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APPENDIX E – Definitions and Abbreviations

Definitions and Abbreviations



FLASH POINT The minimum temperature at which a product, when confined in a Setaflash closed cup, must be heated for the vapours emitted to ignite momentarily in the presence of a flame (ISO 3679:1983).

VOLATILE ORGANIC CONTENT (VOC) Volatile Organic Content (VOC) is the weight of organic solvent per litre of paint.
Legislative requirements differ from country to country, and from region to region, and are constantly being reviewed. Two values are quoted for VOC on the product data sheet which have been determined practically in the laboratory using the following published test methods:-

UK - PG6/23(92), Appendix 3

This test method was published in February 1992, by the UK Department of the Environment as part of the Secretary of State's Guidance Note (PG6/23(92)), issued as a guide to local authorities on the appropriate techniques to control air pollution, in order to achieve the objectives laid down in the Environmental Protection Act 1990. The method described in Appendix 3 includes guidance on the method of measuring VOC of coatings, as applied to demonstrate compliance with Clause 19 of the Guidance Note.

USA - EPA Federal Reference Method 24

The Environmental Protection Agency (EPA), published procedures for demonstration of compliance with VOC limits under Federal Reference Method 24 "The Determination of Volatile Matter Content, Density, Volume Solids and Weight Solids of Surface Coatings". This method was originally published in the Federal register in October 1980, and coded 40 CFR, Part 60, Appendix A, and amended in 1992 to incorporate instructions for detailing with multi-component systems, and a procedure for the quantitative determination of VOC exempt solvent.

It is recommended that users check with local agencies for details of current VOC regulations, to ensure compliance with any local legislative requirements when proposing the use of any coating.

WORKING POT LIFE The maximum time during which the product supplied as separate components should be used after they have been mixed together at the specified temperature (ISO 9514:1922).

The values quoted have been obtained from a combination of laboratory tests, and application trials, and refer to the time periods under which satisfactory coating performance will be achieved.

Application of any product after the working pot life has been exceeded will lead to inferior product performance, and must **NOT** be attempted, even if the material in question appears liquid in the can.

SHIPPING WEIGHT The shipping weights quoted refer to the total weight of the product supplied plus the weight of the can. These weights are quoted for individual components, and do not take into account any additional packaging weight attributable to cartons, etc.

SHELF LIFE The shelf life quoted on the product data sheets is generally a conservative value, and it is probable that the coating can be applied without any deterioration in performance after this period has elapsed. However, if the specified shelf life has been exceeded, it is recommended that the condition of the material is checked before any large scale application is undertaken using materials beyond the quoted shelf life.

For further information consult International Protective Coatings.

Important Note

The information given in this manual is for general guidance only and is not guaranteed as being wholly accurate or complete. Unless otherwise agreed in writing, all products supplied and technical advice given by us are subject to our standard conditions of sale, a copy of which is available upon request.

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Definitions and Abbreviations

TOLERANCES The numerical information quoted in this data manual has been derived from laboratory test data obtained under controlled conditions for the products described. Whilst every effort has been made to ensure accuracy, this information will be subject to minor variations obtained in normal manufacturing tolerances, and any fluctuations in ambient conditions during the application and curing periods.

GLOSS LEVEL Typical gloss values have been determined in accordance with ISO 2813:1978 using a 60° gloss head. The categories used in the data sheet are:

Finish (Sheen)	Gloss (60° Head)
Matt	0-15
Eggshell	16-30
Semi-Gloss	31-60
Gloss	61-85
High Gloss	>85

In practice, the level of sheen and surface finish will be dependent upon a number of factors, including application and the condition of the surface to be overcoated.

DRY FILM THICKNESS (DFT) The measured thickness of the final dried film applied to the substrate.

WET FILM THICKNESS (WFT) The initial thickness of the wet coating applied to the substrate.

VOLUME SOLIDS The volume solids figure given on the product data sheet is the percentage of the wet film, which remains as the dry film, and is obtained from a given wet film thickness under specified application method and conditions. These figures have been determined under laboratory conditions using the test method described in the Oil & Colour Chemists (OCCA) Monograph No. 4 - Determination of the Solid Content of Paint (by Volume). This method is a modification of ASTM D-2697 which determines the volume solids of a coating using the recommended dry film thickness of the coating quoted on the product data sheet, and a specified drying schedule at ambient temperature, i.e. 7 days at 23°C ± 1°C.

DRYING TIME The drying times quoted in the product data sheet have been determined in the laboratory using a typical dry film thickness, the ambient temperature quoted in the relevant product data sheet, and the appropriate test method, i.e.

Touch Dry (ISO 1517-73)- The surface drying state of a coating when Ballotini (small glass spheres) can be lightly brushed away without damaging the surface of the coating.

Hard Dry (ISO 9117-90) - The condition of the film in which it is dry throughout its thickness, as opposed to that condition in which the surface of the film is dry but the bulk of the coating is still mobile.

This through drying state is determined by the use of a "mechanical thumb" device which, when applied using a specified gauge, under specified pressure, torsion and time, does not mark or damage the film.

The drying times achieved in practice may show some slight fluctuation, particularly in climatic conditions where the substrate temperature differs significantly from the ambient air temperature.

OVERCOATING INTERVAL The product data sheet gives both a "minimum" and a "maximum" overcoating interval and the figures quoted at the various temperatures are intended as guidelines, consistent with good painting practices. Certain terms require elaboration as follows:

Minimum

The "minimum overcoating time" quoted is an indication of the time required for the coating to attain the necessary state of dryness and hardness to allow the application of a further coat of paint. It assumes:

- (i) the coating has been applied at the normal recommended thickness.

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Definitions and Abbreviations

- (ii) environmental conditions both during and after application were as recommended for that particular coating, especially in respect of temperature, relative humidity and ventilation.
- (iii) the paint used for overcoating is suitable for that purpose.
- (iv) an understanding of the "method of application". For example, if a coating can be applied by both brush or spray it is expected that overcoating may be carried out more rapidly if sprayed and it is the "lowest" figure that is quoted.

If the above conditions are not met, the quoted minimum overcoating times are liable to variation and will invariably have to be extended.

Maximum

The "maximum overcoating time" indicates the allowable time period within which overcoating should take place in order to ensure acceptable intercoat adhesion is achieved.

Extended

Where an "extended" overcoating time is stated, the anticipated level of intercoat adhesion can only be achieved if:

- (i) the coating has been applied in accordance with good painting practices and at the specified film thickness.
- (ii) the aged coating has the "intended" surface characteristics required for long term overcoatability. For example, an over-applied epoxy MIO may not have its usual "textured" surface and will no longer be overcoatable after ageing unless it is abraded.
- (iii) the condition of the coating to be overcoated must be in intact, tightly adherent, clean, dry and free from all contaminants. For example, the rough textured surface of an MIO may require "extensive" cleaning, especially in an industrial and/or coastal environment.
- (iv) coatings having a glossy surface which could have a detrimental effect on the adhesion of subsequent coats should be treated by light surface abrasion, sweep blasting, or other suitable processes which will not cut through or detract from the performance of the underlying coating.

It should be recognised that the level of intercoat adhesion obtained is also dependent upon the chemistry of the "topcoat". By their nature, primers or undercoats with acceptable pigment levels will have inherently better adhesion than finish coats with lower pigment contents.

The measurement of ultimate "adhesive strength" can often be a difficult process, and interpretation of results can be subjective. Excellent adhesion does not necessarily mean good performance, nor does relatively poor adhesion necessarily mean poor performance.

Although the adhesion of coatings applied to aged/cured coatings may be deemed satisfactory for the specified end use, actual numerical values obtained for adhesion may be less than with coatings applied within "minimum/short" overcoating intervals. For further additional information on individual products, or coating schemes, consult International Protective Coatings.

Although the adhesion of coatings applied to aged/cured coatings may be deemed satisfactory for the specified end use, actual numerical values obtained for adhesion may be less than with coatings applied within "minimum/short" overcoating intervals. For further additional information on individual products, or coating schemes, consult International Protective Coatings.

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APPENDIX F – TN/F/CT/085 Abutment to Existing Chartek

Note: Procedure and principles described for pool fire scenarios applies despite Intertherm 7050 being placed below Chartek.



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Technical Note TN/F/CT/085_Rev.5
14/03/14

Abutment to cured Chartek, reinforced by HK-1 carbon fibre/glass fibre mesh, with fresh Chartek

Introduction

In repair applications and procedures where Chartek passive fire protection material is to be installed, either to a steel substrate or existing cured Chartek, and abutted to existing cured and/or aged Chartek material, the process should be carried out in the following stages:

Chartek Applied Over and Adjacent to existing (cured) Chartek

Stage 1

All defective material shall be removed and the substrate prepared and primed in accordance with Stage 2 below. Only fully cured Chartek and Chartek that is tightly adhering to the substrate shall remain in place. All topcoat and any other material, that Chartek will not adhere to and to which the freshly applied Chartek will be located, must be removed.

Surface damage

There are cases where it is not necessary to remove all existing Chartek to expose the steel substrate.

- Chartek that is damaged only at the surface (e.g. small chips not reaching the mesh or where the Chartek that has charred above the mesh leaving unreacted Chartek surrounding the mesh).
- If the mesh is damaged by a single defect, but the area is less than 3000mm² (circle diameter of 60mm) and the single defect is not on an edge (i.e. flange tip). In such cases it is acceptable to reinstate the existing Chartek specification with new material for both pool fire and jet fire scenarios.

Loose Chartek must be removed to expose undamaged or non-reacted and sound material. The surface of the Chartek, to receive additional Chartek material, must be clean, dry and free from contaminants. The Chartek should be sanded to roughen the surface and loose material removed. The material thickness of the new material shall be in accordance with the design or certified thickness. Where

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damage is more extensive – multiple damage within 3000mm² (circle diameter of 60mm) or damage on edges – the following procedures should be undertaken:

Damage proximal and below the mesh

Chartek Non-Jet Fire Applications – See attached Drawing No. GEN-CHX-0128-14-01_REV2

Existing tightly adhering Chartek material should be chamfered at its edge to at least a 45° angle. The surface of the Chartek to receive additional Chartek material must be clean, dry and free from contaminants. The Chartek should be removed by mechanical means such as a disc grinder. For such application no pins are required. No mesh overlap is required for small damaged areas. Where the area of damage is greater than 150mm diameter then repair as per Jet Fire Applications is to be employed with a step back at the mesh layer greater than 50mm.

Chartek Jet Fire Applications – See attached Drawing No. GEN-CHX-0129-14-01_REV5

Removal and chamfering of Chartek is as for Non jet fire applications.

To achieve the jet fire specification for the Chartek thickness and reinforcement mesh (HK-1), the sound Chartek must be removed to a depth that enables both layers of HK-1 mesh to be within the mid-third of the overall thickness, to minimum distance of 150mm from the defect, taking care not to damage the existing reinforcement of the Chartek. Where required the thickness of Chartek should be increased to facilitate the mesh placement in the middle third of the overall film thickness.

Stage 2

The substrate steelwork to which the Chartek material is to be applied shall be prepared, cleaned and primed in accordance with all specifications and documents relating to the project and in particular with reference to the current Chartek Application Manual.

Stage 3

The replacement Chartek shall be applied by standard application procedures to approximately mid-depth of the specified thickness. For jet fire design where the existing Chartek has been recessed, the replacement Chartek shall be applied to a depth of approximately the same as the existing reinforcement mesh. Reinforcement mesh may now be installed. (Note: For 1 hour fire duration and thickness less than 7mm no mesh is required for Chartek 1709, 8)

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Further and final coats for Chartek material shall be installed to reinstate the thickness to that of the original design and consequently level of the existing material. The chamfered edge of the existing material must be thoroughly wetted by fresh material and at this point trowelling of the interface between old and new material may be required to ensure thorough contact and to achieve the appropriate level. It shall be ensured that the new Chartek is worked firmly to the existing material by trowelling and rolling.

Stage 4

Once the freshly installed Chartek material has been cured for the appropriate duration, topcoat may be applied, blending into previously installed material and topcoat, ensuring that any interface area of new to old topcoat is clean, dry, free of contaminants and suitable for the overcoating process.

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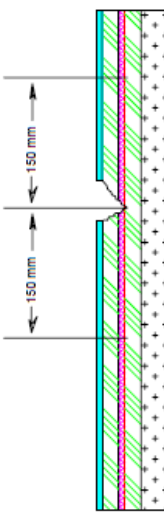
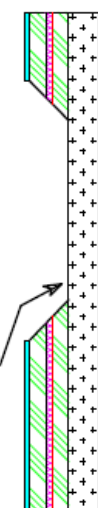
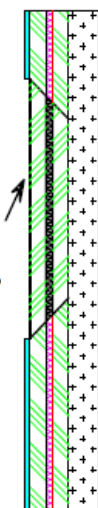
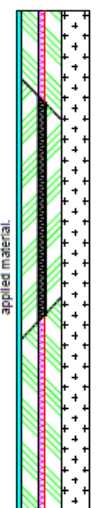
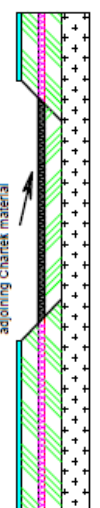
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DO NOT SCALE DIMENSIONS IN mm UNLESS OTHERWISE STATED		CHANGE DESCRIPTION		DRAWN		CHECKED		DATE	
		DAMAGED AREA LIMITS CLARIFIED		PH		RW		13/03/2014	
<p>CHARTERK - POOL FIRE</p> <p>Damaged area of fire protection > 60mm diameter circle (3000 mm²)</p> <p>Client approved topcoat system</p> <p>HK-1(M) system</p> <p>Substrate steelwork</p>		<p>Using the appropriate hand tools, remove the damaged area.</p> <p>Note: The contractor must ensure no damage is caused to the sub-structure whilst removing the damaged PFP</p>		<p>The tightly adhered Chartek shall be chamfered to at least 45 degree angle</p>					
<p>STAGE 1: From the centre of the damaged area, mark a minimum 150mm scribe in all directions of damage</p> 		<p>STAGE 2:</p> <p>The substrate steelwork must be prepared to the same standards as laid down in the original clients specification. Prior to re-application of fresh Chartek the substrate shall be checked and signed off for acceptability</p> 		<p>STAGE 3:</p> <p>Further and final coats of Chartek material are installed to the thickness of the original design and consequently level of the existing material. The chamfered edge of the existing material must be thoroughly wetted by fresh material and at this point trowelling of the interface between old and new material may be required to ensure through contact.</p> 		<p>STAGE 4:</p> <p>Once the freshly installed Chartek material has been cured for the appropriate duration, topcoat may be installed over the freshly applied material.</p> 		<p>STAGE 5:</p> <p>The first coat of freshly applied Chartek will be trowelled in the normal fashion of application and attention should be paid to ensure that the adjacent existing installed Chartek material is wetted out to the appropriate level for HK-1 installation. From this point HK-1 mesh is installed the normal fashion tight to the adjoining Chartek material</p> 	
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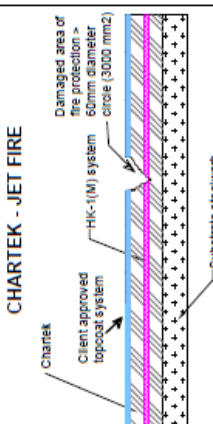
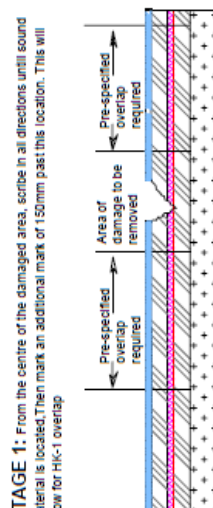
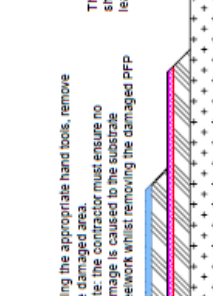
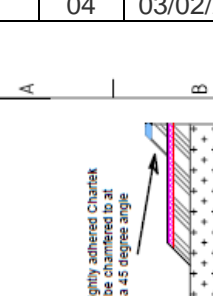

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1	2	3	4	5	6	7	8		
DO NOT SCALE DIMENSIONS IN mm UNLESS OTHERWISE STATED		 International		REV S	CHANGE DESCRIPTION BOTTOM CHARTEK LAYER CHAMFERED		DRAWN PH	CHECKED RW	DATE 14/03/2014
CHARTEK - JET FIRE 		STAGE 1: From the centre of the damaged area, scribe in all directions until sound material is located. Then mark an additional mark of 150mm past this location. This will allow for HK-1 overlap. 							
<p>The substrate steelwork must be prepared to the same standards as laid down in the original clients specification. Prior to re-application of fresh Chartek this substrate shall be checked and signed off for acceptability</p>		<p>STAGE 2:</p>		<p>STAGE 3:</p>		<p>STAGE 4:</p>		<p>Further and final coats of Chartek material are installed to the thickness of the original design and consequently level of the existing material. The chamfered edge of the existing material must be thoroughly wetted by fresh material and at this point trowelling of the interface between old and new material may be required to ensure through contact.</p>	
<p>The first coat of freshly applied Chartek will be trowelled in the normal fashion of application and attention should be paid to ensure that the adjacent existing installed Chartek material is wetted out to the appropriate level for HK-1 installation. From this point HK-1 mesh is installed in the normal fashion tight to the adjoining Chartek material</p>		<p>Once the freshly installed Chartek material has been cured for the appropriate duration, topcoat may be installed over the freshly applied material.</p>		<p>Using the appropriate hand tools, remove the damaged area. Note: the contractor must ensure no damage is caused to the substrate steelwork whilst removing the damaged PPP</p>		<p>The tightly adhered Chartek shall be chamfered to at least a 45 degree angle</p>			
<p>© International Paint Ltd. 2014 All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale</p>		<p>AkzoNobel Fire Protection Stonegate Lane Felling Cumbria United Kingdom NE10 0JY Tel: +44 (0) 191 467 2481</p>		<p>Client/Contractor N/A</p> <p>Engineering Co. N/A</p> <p>Applicator N/A</p> <p>Project Name N/A</p>		<p>Drawn By PH</p> <p>Checked By RW</p> <p>Scale NTS</p>		<p>REPAIR OF CHARTEK</p> <p>Drawing No. GEN-CHX-0129-14-01</p> <p>Revision 5</p> <p>Sheet No. N/A</p>	

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APPENDIX G – Technical data sheet for Intertherm 7050

Intertherm® 7050



Syntactic Insulation

PRODUCT DESCRIPTION Intertherm 7050 is a high performance thermal insulation system based on a solvent free, 100% solids, epoxy syntactic foam.

Designed to provide both thermal insulation and corrosion protection in its own right and also when used as part of the CharteK fireproofing system.

Suitable for use at continuous operating temperatures from -40°C (-40°F) up to +120°C (+248°F).

Application techniques include spray, trowel and moulding/casting.

Intertherm 7050 is impervious to moisture and is extremely resilient to damage and chemical spills.

INTENDED USES

Thermal Insulation: To provide thermal insulation of pipes, ductwork, vessels and equipment operating at temperatures between -40°C (-40°F) and +120°C (+248°F) for either heat conservation or personnel protection.

Fire Protection: Intertherm 7050 may also be used as an underlayment or overlayment for International Protective Coatings' CharteK fireproofing systems, allowing CharteK's use on substrates operating between 80°C (176°F) and 120°C (248°F) or to provide protection to CharteK from external heat sources.

Preventing Corrosion Under Insulation: In addition to its insulation properties, Intertherm 7050 provides excellent long term corrosion protection thereby removing corrosion under insulation (CUI) concerns associated with traditional insulation systems. Requiring no external cladding, its high compressive and impact strength provides tremendous durability, eliminating the problem of damage to insulation from foot traffic and accidental loads.

Thermal Shock Protection: Tested and proven in cryogenic spills to prevent the effects of low temperature embrittlement of steel or thermal shock cracking/spalling of concrete. When used with CharteK fireproofing systems Intertherm 7050 can be used to provide combined thermal shock and fire protection from incidents such as spills and ruptures at LNG processing and storage facilities.

Not to be used in areas where only 'non-combustible' materials are permitted.

PRACTICAL INFORMATION FOR INTERTHERM 7050

Colour	Pale pink when mixed (Part A - Pink; Part B - White)			
Gloss Level	Not applicable			
Volume Solids	100%			
Typical Thickness	Dependent on insulation and anti-corrosive requirements. Typically 5 - 50 mm (0.2 - 2 inches)			
Density	Nominal: 0.57g/cm ³ (36 lb/cu.ft.) Note: Final density depends on method of application and may vary. Typically, spray density will be up to 7% above nominal			
Method of Application	Trowel, Hot Twin Feed Airless Spray			
Drying Time	Overcoating interval with self			
Temperature	Touch Dry	Hard Dry	Minimum	Maximum
10°C (50°F)	4 hours	30 hours	4 hours	48 hours
15°C (59°F)	2 hours	12 hours	2 hours	48 hours
25°C (77°F)	1 hour	6 hours	2 hours	48 hours
40°C (104°F)	1 hour	4 hours	1 hour	24 hours

Dry times determined at 25 mm (1 inch) dry film thickness. For extended overcoating intervals please consult International Protective Coatings.

REGULATORY DATA

Flash Point (Typical)	Part A >106°C (223°F); Part B >106°C (223°F); Mixed >106°C (223°F)	
VOC	0.00 lb/gal (0 g/lit) 0 g/kg	EPA Method 24 EU Solvent Emissions Directive (Council Directive 1999/13/EC)
See Product Characteristics section for further details		

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Intertherm® 7050



Syntactic Insulation

SURFACE PREPARATION

All 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 8504:2000.

Abrasive Blast Cleaning

Abrasive blast cleaning to Sa2½ (ISO 8501-1:2007) or SSPC-SP10 is the preferred method of surface preparation, however commercial blast cleaning to Sa2 (ISO 8501-1:2007) or SSPC-SP6 is acceptable when a suitable primer is used. Intertherm 7050 may be applied directly to the blast cleaned substrate or over an approved anti-corrosive primer. If oxidation has occurred between blasting and application of primer or Intertherm 7050, the surface should be reblasted to the specified visual standard.

Surface defects revealed by the blast cleaning process should be ground, filled, or treated in the appropriate manner.

A sharp, angular surface profile of 50-75 microns (2-3 mils) is recommended.

Primed Surfaces

Intertherm 7050 can be applied over approved anti-corrosive primers. The primer surface should be dry and free from all contamination and Intertherm 7050 must be applied within the overcoating intervals specified (consult the relevant product data sheet).

Areas of breakdown, damage etc., should be prepared to the specified standard (e.g. Sa2½ (ISO 8501-1:2007) or SSPC-SP10 Abrasive Blasting, or SSPC-SP11, Power Tool Cleaning) and patch primed prior to the application of Intertherm 7050.

For surfaces abrasive blast cleaned to Sa2½ (ISO 8501-1:2007) or SSPC-SP10, the preferred primer for high temperature service is Intertherm 228 applied at a dry film thickness of 75-100 microns (3-4 mils).

For surfaces abrasive blast cleaned to Sa2 (ISO 8501-1:2007) or SSPC-SP6 or power tool cleaned to SSPC-SP11, the preferred primer for high temperature service is Interplus 256 applied to a dry film thickness of 150-200 microns (6-8 mils).

APPLICATION

Mixing

Hand Application

Individual components must be stored at 21-32°C (70-90°F) for 24 hours prior to mixing.

Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.

- (1) Agitate Base (Part A) with a power agitator.
- (2) Agitate Curing Agent (Part B) with a power agitator.
- (3) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.

Plural Component Spray Application

Consult Intertherm 7050 Application Manual

Mix Ratio

Always mix full units.

Working Pot Life

10°C (50°F)	15°C (59°F)	25°C (77°F)
30 minutes	30 minutes	15 minutes

Plural Component Airless Spray

Recommended

Consult Intertherm 7050 Application Manual

Trowel

Recommended

Application is carried out using standard plastering techniques.
The first coat should be hand trowelled to 3-6 mm (¼-¼ inch) thickness to ensure full wetting of the substrate.
The final surface should be rolled to remove trowel marks and high spots and achieve a uniform thickness.
Use short nap rollers dampened with International GTA123.
When the required total film thickness cannot be reached in one shift, the Intertherm 7050 surface should be scratched to provide a key for subsequent coats.

Thinner

DO NOT THIN

Cleaner

International GTA822

Work Stoppages

Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA822. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units.

Clean Up

Clean all equipment immediately after use with International GTA822. It is good working practice to periodically clean equipment during the course of the working day. Frequency of cleaning will depend upon amount used, temperature and elapsed time, including any delays.

All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.

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Intertherm® 7050



Syntactic Insulation

PRODUCT CHARACTERISTICS

The following conditions shall apply (or be generated) throughout the application:

Minimum Air Temperature	10°C (50°F) - Recommended
Maximum Humidity	85 %
Surface Temperature	A minimum of 3°C (5°F) above dew point of surrounding air.

General

All surfaces to be coated should be clean and dry at all times. Intertherm 7050 may be applied when the surrounding air temperature is at a minimum of 5°C (41°F) as long as the surface temperature is at least 3°C (5°F) above the dew point temperature.

In these conditions curing will be extended and there is the possibility of amine bloom forming on the Intertherm 7050 surface that may adversely affect the adhesion of subsequent coatings. If an amine bloom is formed, it should be removed by solvent wipe.

Application

Application by moulding or casting is also recommended for Intertherm 7050. It may be dispensed into moulds, e.g. pipe half shells, using modified plural component application equipment. Please consult the Intertherm 7050 Application Manual for further information.

Maximum film build in one coat is best attained by plural component airless spray. When applying by trowel or other methods, it may be necessary to apply multiple coats to achieve the total specified system dry film thickness.

Where high thicknesses are to be applied (typically over 40-50 mm (1.6-2.0 inches) depending on environmental conditions) the coating should be applied in two stages, allowing the first stage to cure before the second is applied. This is to prevent excessive heat building up due to the exothermic reaction that occurs during cure. For further advice please contact International Protective Coatings.

Equipment

Only equipment qualified by International Protective Coatings shall be used as detailed in the Intertherm 7050 Application Manual or by the International Protective Coatings Technical Service Representative.

Alternative Surface Preparation

International Protective Coatings' procedures are also developed and available under certain project specific circumstances for wet blasting, needle gunning and ultra high pressure water blasting - Seek specific advice from International Protective Coatings.

Operating Notes

The maximum operating temperature for Intertherm 7050 is 120°C (248°F).

In common with all epoxies, Intertherm 7050 will chalk and discolour on exterior exposure. However, these phenomena are not detrimental to anti-corrosive or insulation performance.

Where a durable cosmetic finish or reduced surface spread of flame is required, overcoat with recommended topcoats.

Epoxy Wrap System

For severe service conditions requiring a more durable outer layer over the Intertherm 7050, International's flexible wrap system may be used. This system consists of a knitted glass tape of approximately 127 mm (5 inches) wide overlapped 50% and impregnated with a flexible epoxy resin.

Please consult the Intertherm 7050 Application Manual for further information.

D.F.T. Calculation

The required thickness of Intertherm 7050 is dependent on the design requirements and operating conditions of the structure requiring protection.

D.F.T. requirements for standard pipe sizes and common service conditions are available from published tables. For other applications, individual D.F.T. recommendations will be provided by International Protective Coatings.

Thermal Properties

Thermal Conductivity:	0.118 W/(m·K) at 20°C ASTM C177 (0.068 BTU/Ft·Hr·°F at 68°F)
	0.120 W/(m·K) at 60°C ASTM C177 (0.069 BTU/Ft·Hr·°F at 140°F)

Specific Heat:	1250 J/(kg·K) (0.299 BTU/(lb·°F))
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SYSTEMS COMPATIBILITY

Intertherm 7050 may be applied directly to correctly prepared abrasive blasted substrates. Where a primer is used, the following are recommended:

Intertherm 228
Interplus 258

Intertherm 7050 is generally overcoated for identification purposes or to provide additional protection.

The following topcoats are recommended to provide a durable cosmetic finish:

Interfine 629HS
Interthane 990

Ideally, Intertherm 7050 should be overcoated once hard dry (see table on page 1 for guidance) and before the coating becomes contaminated.

For topcoats designed to reduce surface spread of flame or details of other approved primers/topcoats, please consult International Protective Coatings.

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Intertherm® 7050



Syntactic Insulation

ADDITIONAL INFORMATION

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following documents available at www.international-pc.com:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

SAFETY PRECAUTIONS

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

PACK SIZE	Unit Size	Part A		Part B	
		Weight	Pack	Weight	Pack
	30 kg	10.7 kg	20 litre	8.6 kg	20 litre
* The unit is supplied as: 2 x 10.7 kg Part A in 20 litre containers; 1 x 8.6 kg Part B in a 20 litre container. For availability of other pack sizes, contact International Protective Coatings.					
SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A		Part B	
		30 kg		11.8 kg	
STORAGE	Shelf Life	6 months minimum at 25°C (77°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.			

Important Note

The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet 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 data sheet 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 data sheet 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 representative that this data sheet is current prior to using the product.

This Technical Data Sheet is available on our website at www.international-marine.com or www.international-pc.com, and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.

Issue date: 12/12/2014

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APPENDIX H – Safety data sheets for Intertherm 7050 and GTA 123



International Paint Ltd.

Safety Data Sheet

HTA071 Intertherm 7050 Pink Part A

Version No. 4 Date Last Revised 25/06/12

Conforms to the requirements of Regulation (EC) No.1907/2006 (REACH), Annex II and Regulation (EC) No.1272/2008

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1. Product identifier** Intertherm 7050 Pink Part A
Product Code HTA071
Registration Number
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use See Technical Data Sheet.
For professional use only.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Manufacturer International Paint Ltd.
Stoneygate Lane
Felling Gateshead
Tyne and Wear
NE10 0JY UK

Telephone No. +44 (0)191 469 6111

Fax No. +44 (0)191 438 3711

1.4. Emergency telephone number

Manufacturer +44 (0)191 469 6111 24hr

Official Advisory Body Telephone No.:
Advice for Doctors and Hospitals

+44 (0)844 892 0111
Email sdsfellinguk@akzonobel.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Mixture NOT yet classified according to Regulation (EC) No. 1272/2008

Classification according to 67/548/EEC or 1999/45/EC.

Xi Irritant.
N Dangerous for the environment.

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

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According to 1999/45/EC



Irritant



Dangerous for the environment

Contains: Epoxy resin (av.mol.wt.<700), mono[(C12-14-alkyloxy)methyl] derivs.,
R36/38 Irritating to eyes and skin.
R43 May cause sensitisation by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S23 Do not breathe vapour/spray.
S24 Avoid contact with skin.
S37 Wear suitable gloves.
S51 Use only in well-ventilated areas.

P. Phrases;

Contains epoxy constituents. See information supplied by the manufacturer.

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

SECTION 3: Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient/Chemical Designations	Weight %	67/548/EEC Classification	EC No. 1272/2008 Classification	Notes
Epoxy resin (av.mol.wt.<700) CAS Number: 0025068-38-6 EC No. 500-033-5 Index No.: 603-074-00-8 REACH Reg. No.: 01-2119456619-26-xxxx	50 - 100	R43 Xi;R36/38 N;R51-53	Eye Irrit. 2;H319 Skin Irrit. 2;H315 Skin Sens. 1;H317 Aquatic Chronic 2;H411	[1]
mono[(C12-14-alkyloxy)methyl] derivs. CAS Number: 0068609-97-2 EC No. 271-846-8 Index No.: 603-103-00-4 REACH Reg. No.: 01-2119485289-22-xxxx	2.5 - < 10	R43 Xi;R38	Skin Irrit. 2;H315 Skin Sens. 1;H317	[1]
Amorphous silica, hydrophobic CAS Number: 0067762-90-7 EC No. Index No.: REACH Reg. No.:	1 - < 2.5			[1]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

SECTION 4: First aid measures

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4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Eye

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂ powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

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Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

Activities such as sanding, burning off etc. of paint films may generate dust and/or fumes hazardous to the skin and lungs. Sanding dust may contain levels of unreacted hazardous materials which may cause irritation and sensitization; these are highest in the first 24/48 hours after application. Work in well ventilated areas. Use local exhaust ventilation and personal skin and respiratory protective equipment as appropriate.

7.3. Specific end use(s)

There are no exposure scenarios, see details in section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m ³	ppm	mg/m ³	
Amorphous silica, hydrophobic	-	-	-	4	

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For Key to entries in 'Comments' column see Section 16

DNEL/PNEC values

No Data Available

8.2. Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Eye/face protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should meet the requirements of standard EN 166.

Skin protection

For prolonged or repeated contact use protective gloves. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Skin should be washed after contact.

Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended gloves: Viton® or Nitrile
Breakthrough Time: 480 min

When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Other

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. For maximum protection when spraying this product it is recommended that a multi layer combination type filter, such as ABEK1, is used. In confined spaces use compressed air or fresh air respiratory equipment.

Thermal hazards

No Data Available

SECTION 9: Physical and chemical properties

Protective Coatings

All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale.

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Appearance	Red Liquid
Odour	No smell
Odour threshold	Not Measured
pH	Not Measured
Melting point / freezing point (°C)	Not Measured
Initial boiling point and boiling range (°C)	218
Flash point (°C)	106
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapour pressure (Pa)	Not Measured
Vapour density	Heavier than air.
Relative density	0.66
Solubility(ies)	Immiscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature (°C)	Not Measured
Viscosity (cSt)	998

9.2. Other information
No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

10.3. Possibility of hazardous reactions

May react exothermically with: oxidising agents, strong alkalis, strong acids.

10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

10.6. Hazardous decomposition products

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

SECTION 11: Toxicological information

Acute toxicity

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

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Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Based on the properties of the epoxy constituents and considering toxicological data on similar preparations this preparation may be an irritant and a skin and respiratory sensitiser. Low molecular weight epoxy constituents are irritating to eyes, mucous membranes and skin. Repeated skin contact may lead to irritation and sensitisation, possibly with cross-sensitisation to other epoxies. Skin contact with the preparation and exposure to spray mist and vapour should be avoided.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Amorphous silica, hydrophobic - (67762-90-7)	1,000.00, Rat	2,000.00, Rat	Not Available	Not Available
Epoxy resin (av.mol.wt.<700) - (25068-38-6)	2,000.00, Rat	2,000.00, Rabbit	Not Available	Not Available
mono[(C12-14-alkyloxy)methyl] derivs. - (68609-97-2)	Not Available	Not Available	Not Available	Not Available

SECTION 12: Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is classified for eco-toxicological properties accordingly. See Sections 2 and 3 for details.

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Epoxy resin (av.mol.wt.<700) - (25068-38-6)	3.10, Pimephales promelas	1.40, Daphnia magna	Not Available
mono[(C12-14-alkyloxy)methyl] derivs. - (68609-97-2)	Not Available	Not Available	Not Available
Amorphous silica, hydrophobic - (67762-90-7)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

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12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

European Waste Catalogue Classification: 08 01 12 Waste paint other than those mentioned in 08 01 11

SECTION 14: Transport information

14.1. UN number 3082

14.2. UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(contains Epoxy Resin)

14.3. Transport hazard class(es)

ADR/RID/ADN UN3082 Environmentally Hazardous Substance, Liquid, N.O.S., (Contains Epoxy Resin), 9, III

IMDG class/div 9 Sub Class -
Segregation Group No segregation group appropriate

EmS F-A,S-F

ICAO/IATA Air class 9 Sub Class -

14.4. Packing group III

14.5. Environmental hazards

ADR/RID/ADN Environmentally Hazardous: Yes

IMDG Marine Pollutant: Yes (Epoxy resin (av.mol.wt.<700))

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

SECTION 15: Regulatory information

EU Legislation

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC)

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No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

National Legislation

UKSI 2009 No. 716 CHEMICALS (HAZARD INFORMATION AND PACKAGING FOR SUPPLY) REGULATIONS 2009.

SECTION 16: Other information

IMPORTANT NOTE: the information contained in this data sheet (as may be amended from time to time) is not intended to be exhaustive and is presented in good faith and believed to be correct as of the date on which it is prepared. It is the user's responsibility to verify that this data sheet is current prior to using the product to which it relates.

Persons using the information must make their own determinations as to the suitability of the relevant product for their purposes prior to use. Where those purposes are other than as specifically recommended in this safety data sheet, then the user uses the product at their own risk.

MANUFACTURER'S DISCLAIMER: the conditions, methods and factors affecting the handling, storage, application, use and disposal of the product are not under the control and knowledge of the manufacturer. Therefore the manufacturer does not assume responsibility for any adverse events which may occur in the handling, storage, application, use, misuse or disposal of the product and, so far as permitted by applicable law, the manufacturer expressly disclaims liability for any and all loss, damages and/or expenses arising out of or in any way connected to the storage, handling, use or disposal of the product. Safe handling, storage, use and disposal are the responsibility of the users. Users must comply with all applicable health and safety laws.

Unless we have agreed to the contrary, all products are supplied by us subject to our standard terms and conditions of business, which include limitations of liability. Please make sure to refer to these and / or the relevant agreement which you have with AkzoNobel (or its affiliate, as the case may be).
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The information in this Health & Safety Data Sheet is required pursuant to EC Regulation 1907(2006) and the Chemicals (Hazard Information & Packaging for Supply) Regulations 2009.

Key to 'Comments' column in Section 8.

- (+) There is a risk of absorption through unbroken skin.
- (C) Capable of causing cancer and/or heritable genetic damage.
- (R) Suppliers recommended limit.
- (S) Capable of causing occupational asthma.

The full text of the R, H & EUH phrases appearing in section 3 is:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

R36/38 Irritating to eyes and skin.

R38 Irritating to skin.

R43 May cause sensitisation by skin contact.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The following sections have changed since the previous revision.

SECTION 3: Composition/information on ingredients

SECTION 9: Physical and chemical properties

SECTION 11: Toxicological information

SECTION 12: Ecological information

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End of document



Your attention is drawn to the disclaimer on the Product Data Sheet which with this Safety Data Sheet and the package labelling comprise an integral information system about this product. Copies of the Product Data Sheet are available from International Paint on request or from our Internet sites : www.yachtpaint.com , www.international-marine.com, www.international-pc.com

Protective Coatings

All products supplied and technical advice or recommendations given are subject to our standard Conditions of Sale.

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International Paint Ltd.

Safety Data Sheet

HTA072 Intertherm 7050 Part B

Version No. 3 Date Last Revised 25/06/12

Conforms to the requirements of Regulation (EC) No.1907/2006 (REACH), Annex II and Regulation (EC) No.1272/2008

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1. Product identifier** Intertherm 7050 Part B
Product Code HTA072
Registration Number
- 1.2. Relevant identified uses of the substance or mixture and uses advised against**
Intended use See Technical Data Sheet.
For professional use only.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Manufacturer International Paint Ltd.
Stoneygate Lane
Felling Gateshead
Tyne and Wear
NE10 0JY UK

Telephone No. +44 (0)191 469 6111

Fax No. +44 (0)191 438 3711

1.4. Emergency telephone number

Manufacturer +44 (0)191 469 6111 24hr

Official Advisory Body Telephone No.:
Advice for Doctors and Hospitals

+44 (0)844 892 0111

Email sdsfellinguk@akzonobel.com

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Mixture NOT yet classified according to Regulation (EC) No. 1272/2008

Classification according to 67/548/EEC or 1999/45/EC.

Xi Irritant.

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

2.2. Label elements

According to 1999/45/EC

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Irritant

Contains: Tetraethylenepentamine, Fatty acids, C18-unsatd., dimers, compds. with polyethylenepolyamine-tall-oil fatty acid reaction products,

R36/38 Irritating to eyes and skin.

R43 May cause sensitisation by skin contact.

S23 Do not breathe vapour/spray.

S24 Avoid contact with skin.

S37 Wear suitable gloves.

S51 Use only in well-ventilated areas.

P. Phrases;

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

SECTION 3: Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient/Chemical Designations	Weight %	67/548/EEC Classification	EC No. 1272/2008 Classification	Notes
Fatty acids, C18-unsatd., dimers, compds. with polyethylenepolyamine-tall-oil fatty acid reaction products CAS Number: 0064754-99-0 EC No. 613-690-9 Index No.: REACH Reg. No.:	50 - 100	Xi; R36; R38; R43	Skin Sens. 1; H317 Eye Irrit. 2; H319 Skin Irrit. 2; H315	[1]
Amorphous silica, hydrophobic CAS Number: 0067762-90-7 EC No. Index No.: REACH Reg. No.:	1 - < 2.5			[1]
Tetraethylenepentamine CAS Number: 0000112-57-2 EC No. 203-986-2 Index No.: 612-060-00-0 REACH Reg. No.:	1 - < 2.5	C; R34 Xn; R21/22 R43 N; R51-53	Acute Tox. 4; H312 Acute Tox. 4; H302 Skin Corr. 1B; H314 Skin Sens. 1; H317 Aquatic Chronic 2; H411	[1]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General

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In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Eye

Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO². powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

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Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

7.3. Specific end use(s)

There are no exposure scenarios, see details in section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m ³	ppm	mg/m ³	
Amorphous silica, hydrophobic	-	-	-	4	

For Key to entries in 'Comments' column see Section 16

DNEL/PNEC values

No Data Available

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8.2. Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Eye/face protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should meet the requirements of standard EN 166.

Skin protection

For prolonged or repeated contact use protective gloves. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Skin should be washed after contact.

Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended gloves: Viton® or Nitrile
Breakthrough Time: 480 min

When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Other

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. For maximum protection when spraying this product it is recommended that a multi layer combination type filter, such as ABEK1, is used. In confined spaces use compressed air or fresh air respiratory equipment.

Thermal hazards

No Data Available

SECTION 9: Physical and chemical properties

Appearance	White Liquid
Odour	Smell of Amine
Odour threshold	Not Measured
pH	Not Measured
Melting point / freezing point (°C)	Not Measured

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Initial boiling point and boiling range (°C)	340
Flash point (°C)	106
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapour pressure (Pa)	Not Measured
Vapour density	Heavier than air.
Relative density	0.59
Solubility(ies)	Immiscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature (°C)	Not Measured
Viscosity (cSt)	998

9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

10.3. Possibility of hazardous reactions

May react exothermically with: oxidising agents, strong alkalis, strong acids.

10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

10.6. Hazardous decomposition products

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

SECTION 11: Toxicological information

Acute toxicity

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

Amine based materials may cause skin irritation and sensitisation.

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Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
Amorphous silica, hydrophobic - (67762-90-7)	1,000.00, Rat	2,000.00, Rat	Not Available	Not Available
Fatty acids, C18-unsatd., dimers, compds. with polyethylenepolyamine-tall-oil fatty acid reaction products - (64754-99-0)	Not Available	Not Available	Not Available	Not Available
Tetraethylenepentamine - (112-57-2)	2,140.00, Rat	Not Available	Not Available	Not Available

Percent Unknown Toxicity

SECTION 12: Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment, but contains substance(s) dangerous for the environment. See section 3 for details

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Fatty acids, C18-unsatd., dimers, compds. with polyethylenepolyamine-tall-oil fatty acid reaction products - (64754-99-0)	Not Available	Not Available	0.00 (hr),
Amorphous silica, hydrophobic - (67762-90-7)	Not Available	Not Available	Not Available
Tetraethylenepentamine - (112-57-2)	420.00, Poecilia reticulata	24.00, Daphnia magna	2.00 (72 hr), Pseudokirchneriella subcapitata

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

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13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

European Waste Catalogue Classification: 08 01 12 Waste paint other than those mentioned in 08 01 11

SECTION 14: Transport information

14.1. UN number

14.2. UN proper shipping name Non hazardous

14.3. Transport hazard class(es)

ADR/RID/ADN Non hazardous

IMDG	class/div	Sub Class -
	Segregation Group	No segregation group appropriate

EmS

ICAO/IATA	Air class	Sub Class -
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14.4. Packing group

14.5. Environmental hazards

ADR/RID/ADN Environmentally Hazardous: No

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

SECTION 15: Regulatory information

EU Legislation

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC

National Legislation

UKSI 2009 No. 716 CHEMICALS (HAZARD INFORMATION AND PACKAGING FOR SUPPLY) REGULATIONS 2009.

SECTION 16: Other information

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Key to 'Comments' column in Section 8.

- (+) There is a risk of absorption through unbroken skin.
- (C) Capable of causing cancer and/or heritable genetic damage.
- (R) Suppliers recommended limit.
- (S) Capable of causing occupational asthma.

The full text of the R, H & EUH phrases appearing in section 3 is:

- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H411 Toxic to aquatic life with long lasting effects.
- R21/22 Harmful in contact with skin and if swallowed.
- R34 Causes burns.
- R36 Irritating to eyes.
- R38 Irritating to skin.
- R43 May cause sensitisation by skin contact.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

The following sections have changed since the previous revision.

- SECTION 2: Hazards identification
- SECTION 3: Composition/information on ingredients
- SECTION 9: Physical and chemical properties
- SECTION 11: Toxicological information
- SECTION 12: Ecological information

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End of document



Your attention is drawn to the disclaimer on the Product Data Sheet which with this Safety Data Sheet and the package labelling comprise an integral information system about this product. Copies of the Product Data Sheet are available from International Paint on request or from our Internet sites : www.yachtpaint.com , www.international-marine.com, www.international-pc.com

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International Paint Ltd.

Safety Data Sheet**GTA123 CHARTEK SOLVENT**

Version No. 6 Date Last Revised 06/02/13

Conforms to the requirements of Regulation (EC) No.1907/2006 (REACH), Annex II

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1. Product identifier CHARTEK SOLVENT
Product Code GTA123
Registration Number
- 1.2. Relevant identified uses of the substance or mixture and uses advised against
Intended use See Technical Data Sheet.
For professional use only.
Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Manufacturer International Paint Ltd.
Stoneygate Lane
Felling Gateshead
Tyne and Wear
NE10 0JY UK

Telephone No. +44 (0)191 469 6111

Fax No. +44 (0)191 438 3711

1.4. Emergency telephone number

Manufacturer +44 (0)191 469 6111 24hr

Official Advisory Body Telephone No.:
Advice for Doctors and Hospitals

+44 (0)844 892 0111
Email sdsfellingUK@akzonobel.com

SECTION 2: Hazards identification

- 2.1. Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008
Flam. Liq. 3;H226 Flammable liquid and vapour.

Classification according to 67/548/EEC or 1999/45/EC.

R10 Flammable.

2.2. Label elements

Using the Toxicity Data listed in section 11 & 12 the product is labelled as follows.
According to Regulation (EC) No 1272/2008

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Warning.

Contains:

H226 Flammable liquid and vapour.

P210 Keep away from heat / sparks / open flames / hot surfaces - No smoking.

p260 Do not breathe mist / vapours / spray.

P271 Use only outdoors or in a well-ventilated area.

p280 Wear protective gloves / eye protection / face protection.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P403+233 Store in a well ventilated place. Keep container tightly closed.

P501 Dispose of contents / container in accordance with local / national regulations.

2.3. Other hazards

This product contains no PBT/vPvB chemicals.

SECTION 3: Composition/information on ingredients

If the product contains substances that present a health hazard within the meaning of the Dangerous Substances Directive 67/548/EC, or have occupational exposure limits detailed in EH40, these substances are listed below.

Ingredient/Chemical Designations	Weight %	67/548/EEC Classification	EC No. 1272/2008 Classification	Notes
1-Methoxy-2-propyl acetate CAS Number: 0000108-65-6 EC No. 203-603-9 Index No.: 607-195-00-7 REACH Reg. No.:	50 - 100	R10	Flam. Liq. 3;H226	[1]

[1] Substance classified with a health or environmental hazard.

[2] Substance with a workplace exposure limit.

[3] PBT-substance or vPvB-substance.

*The full texts of the phrases are shown in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General

In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation

Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Skin

Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognised skin cleanser. Do NOT use solvents or thinners.

Eye

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Irrigate copiously with clean fresh water for at least 10 minutes, holding the eyelids apart and seek medical attention.

Ingestion

If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.

Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Remove sources of ignition, do not turn lights or unprotected electrical equipment on or off. In case of a major spill or spillage in a confined space evacuate the area and check that solvent vapour levels are below the Lower Explosive Limit before re-entering.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

6.3. Methods and material for containment and cleaning up

Ventilate the area and avoid breathing vapours. Take the personal protective measures listed in section 8.

Contain and absorb spillage with non-combustible materials e.g. sand, earth, vermiculite. Place in closed containers outside buildings and dispose of according to the Waste Regulations. (See section 13).

Clean, preferably with a detergent. Do not use solvents.

Do not allow spills to enter drains or watercourses.

If drains, sewers, streams or lakes are contaminated, inform the local water company immediately. In the case of contamination of rivers, streams or lakes the Environmental Protection Agency should also be informed.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling

This coating contains solvents. Solvent vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Areas of storage, preparation and application should be ventilated to prevent the creation of flammable or explosive concentrations of vapour in air and avoid vapour concentrations higher than the occupational exposure limits.

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In Storage

Handle containers carefully to prevent damage and spillage.

Naked flames and smoking should not be permitted in storage areas. It is recommended that fork lift trucks and electrical equipment are protected to the appropriate standard.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

Avoid skin and eye contact. Avoid inhalation of vapours and spray mists. Observe label precautions. Use personal protection as shown in section 8.

Smoking, eating and drinking should be prohibited in all preparation and application areas.

Never use pressure to empty a container; containers are not pressure vessels.

Store in a well ventilated, dry place away from sources of heat and direct sunlight.

Store on concrete or other impervious floor, preferably with bunding to contain any spillage. Do not stack more than 3 pallets high.

Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in the original container or one of the same material.

Prevent unauthorised access.

7.3. Specific end use(s)

There are no exposure scenarios, see details in section 1.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

The following workplace exposure limits have been established by the Health and Safety Executive as published in EH40.

Material	Short term (15 min. ave)		Long term (8hr TWA)		Comments
	ppm	mg/m ³	ppm	mg/m ³	
1-Methoxy-2-propyl acetate	100	548	50	274	+

For Key to entries in 'Comments' column see Section 16

DNEL/PNEC values

No Data Available

8.2. Exposure controls

Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapour below occupational exposure limits suitable respiratory protection must be worn.

Eye/face protection

Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids. Eyewear should meet the requirements of standard EN 166.

Skin protection

For prolonged or repeated contact use protective gloves. Barrier creams may help to protect the exposed areas of skin, they should however not be applied once exposure has occurred. Skin should be washed after contact.

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Use chemical resistant gloves classified under Standard EN 374: Protective gloves against chemicals and micro-organisms. Recommended gloves: Viton® or Nitrile
Breakthrough Time: 480 min

When prolonged or frequently repeated contact may occur, a glove with a protection class of 6 (breakthrough time greater than 480 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 2 or higher (breakthrough time greater than 30 minutes according to EN 374) is recommended.

NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Other

Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. Barrier creams may help to protect areas which are difficult to cover such as the face and neck. They should however not be applied once exposure has occurred. Petroleum jelly based types such as Vaseline should not be used. All parts of the body should be washed after contact.

Respiratory protection

If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators. For maximum protection when spraying this product it is recommended that a multi layer combination type filter, such as ABEK1, is used. In confined spaces use compressed air or fresh air respiratory equipment.

Thermal hazards

No Data Available

SECTION 9: Physical and chemical properties

Appearance	Colourless Liquid
Odour	Smell of Solvent
Odour threshold	Not Measured
pH	Not Measured
Melting point / freezing point (°C)	Not Measured
Initial boiling point and boiling range (°C)	143
Flash point (°C)	42
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	Lower Explosive Limit: Not Measured Upper Explosive Limit: Not Measured
Vapour pressure (Pa)	Not Measured
Vapour density	Heavier than air.
Relative density	0.97
Solubility(ies)	Immiscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature (°C)	Not Measured
Decomposition temperature (°C)	Not Measured
Viscosity (cSt)	10

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9.2. Other information

No further information

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7). When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.

10.3. Possibility of hazardous reactions

May react exothermically with: oxidising agents, strong alkalis, strong acids.

10.4. Conditions to avoid

Stable under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Keep away from the following materials: oxidising agents, strong alkalis, strong acids.

10.6. Hazardous decomposition products

Fire will produce dense black smoke. Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

Avoid exposure and use breathing apparatus as appropriate.

SECTION 11: Toxicological information

Acute toxicity

Exposure to solvent vapour concentrations from the component solvents in excess of the stated occupational exposure limits may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms include headache, nausea, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness.

Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin resulting in dryness, irritation and possible non-allergic contact dermatitis. Solvents may also be absorbed through the skin. Splashes of liquid in the eyes may cause irritation and soreness with possible reversible damage.

The preparation has been assessed using the Acute Toxicity Data listed below, and classified for toxicological hazards accordingly. See section 2 for details.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapour LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr
1-Methoxy-2-propyl acetate - (108-65-6)	8,532.00, Rat	5,000.00, Rabbit	Not Available	Not Available

Classification	Category	Hazard Description
Acute toxicity (oral)	Not Classified	Not Applicable
Acute toxicity (dermal)	Not Classified	Not Applicable
Acute toxicity (inhalation)	Not Classified	Not Applicable

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Skin corrosion/irritation	Not Classified	Not Applicable
Serious eye damage/irritation	Not Classified	Not Applicable
Respiratory sensitization	Not Classified	Not Applicable
Skin sensitization	Not Classified	Not Applicable
Germ cell mutagenicity	Not Classified	Not Applicable
Carcinogenicity	Not Classified	Not Applicable
Reproductive toxicity	Not Classified	Not Applicable
STOT-single exposure	Not Classified	Not Applicable
STOT-repeated exposure	Not Classified	Not Applicable
Aspiration hazard	Not Classified	Not Applicable

SECTION 12: Ecological information

12.1. Toxicity

The preparation has been assessed following the conventional method of the Dangerous Preparations Directive 1999/45/EC and is not classified as dangerous for the environment

There are no data available on the product itself.

The product should not be allowed to enter drains or water courses.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
1-Methoxy-2-propyl acetate - (108-65-6)	100.00, Salmo gairdneri	500.00, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

The European Waste Catalogue Classification of this product, when disposed of as waste is 08 01 11 Waste paint and varnish containing organic solvents or other dangerous substances. If mixed with other wastes this code may no longer apply and the appropriate code should be assigned. For further information contact your local waste authority.

SECTION 14: Transport information

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14.1. UN number 1263
 14.2. UN proper shipping name PAINT RELATED MATERIAL
 14.3. Transport hazard class(es)

ADR/RID/ADN UN1263 Paint related material, 3, III

IMDG class/div 3 Sub Class -
 Segregation Group No segregation group appropriate

EmS F-E,S-E

ICAO/IATA Air class 3 Sub Class -

14.4. Packing group III

14.5. Environmental hazards

ADR/RID/ADN Environmentally Hazardous: No

IMDG Marine Pollutant: No

14.6. Special precautions for user
 No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
 Not Applicable

SECTION 15: Regulatory information

EU Legislation

REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

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National Legislation

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SECTION 16: Other information

16.1. Classification of the substance or mixture
 Classification according to 67/548/EEC or 1999/45/EC.

R10 Flammable.

16.2. Label elements
 According to 1999/45/EC

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Contains:

R10 Flammable.

S23 Do not breathe vapour/spray.

S51 Use only in well-ventilated areas.

P. Phrases;

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Key to 'Comments' column in Section 8.

(+) There is a risk of absorption through unbroken skin.

(C) Capable of causing cancer and/or heritable genetic damage.

(R) Suppliers recommended limit.

(S) Capable of causing occupational asthma.

The full text of the R, H & EUH phrases appearing in section 3 is:

H226 Flammable liquid and vapour.

R10 Flammable.

This is the first revision of this SDS format, changes from previous revision not applicable.

End of document



Your attention is drawn to the disclaimer on the Product Data Sheet which with this Safety Data Sheet and the package labelling comprise an integral information system about this product. Copies of the Product Data Sheet are available from International Paint on request or from our Internet sites : www.yachtpaint.com , www.international-marine.com, www.international-pc.com

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