

# HOTCOAT

Heat Resistant Ceramic Coating  
Product Datasheet – V01 / 2025

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## HOTCOAT – High-Temperature Epoxy Lining System

HOTCOAT is a high-performance, solvent-free epoxy polymer lining engineered for use in environments involving aggressive chemicals and elevated temperatures—up to 150°C. It is designed to deliver superior chemical resistance, abrasion protection, and corrosion resistance, particularly under demanding thermal conditions.

### Key Features:

- Withstands continuous service temperatures up to 150°C
- Provides exceptional resistance to aggressive solvents, including ketones and chlorinated aromatics
- Offers excellent protection against hot, highly corrosive acids
- Developed as a barrier lining for use on steel, concrete, and brick
- Highly suitable for use in chemical processing, refineries, and thermal plant infrastructure

### Application Notes:

- Gradient heat curing is essential to achieve full cross-linking and develop the material's optimal performance characteristics
- Proper surface preparation and correct curing procedures are critical

### Use Cases:

- Internal lining for process vessels, chemical storage tanks, and high-temperature piping
- Protection of concrete or brick surfaces exposed to hot corrosive liquids
- Coating for metal structures where organic solvent exposure is expected

### Application Areas:

- Pumps & Impellers
- Ducting Systems Exhaust Stacks
- Tanks & Vessels Rail Cars
- Scrubbers Laundries
- Steelwork Coating Pipelines & Valves
- Solvent Extraction

HOTCOAT is application-enhanced—engineered for performance, reliability, and ease of use in even the harshest conditions.

## FEATURES

- Highly erosion-resistant epoxy polymer system
- Dry Film Thickness (DFT) up to 1000 microns achievable in a single coat
- Solvent-free formulation – Zero VOC (environmentally friendly)
- Engineered for high mechanical strength and durability
- Excellent resistance to a wide range of organic solvents
- Versatile application – compatible with glass flake (GF) reinforcement
- Heat Distortion Temperature (HDT) 150°C
- Exceptional chemical and acid resistance
- No hot work required

## Preparation and Mixing

### Surface Preparation Guidelines

Before applying HOTCOAT, ensure that the surface is clean, dry, and free from all contaminants and loose material. Suitable preparation methods include:

1. Sandblasting
2. Scabbling
3. Chemical Treatments
4. High Pressure Water Cleaning

For more detailed information on surface preparation, please refer to the document "Preparation of Surfaces for Use with HOTCOAT Systems" or contact your local HOTCOAT Service Office.

### Mixing and Storage Instructions

- Always adhere strictly to the prescribed mixing ratio. Do not vary the ratio under any circumstances.
- Mix until the compound is uniform in colour and texture.
- Mechanical stirrers are strongly recommended to ensure proper blending.

Store both components away from direct sunlight and heat, as elevated temperatures will significantly reduce working time.

## Technical Specifications:

Mix Ratios	4A:1B (Weight or Volume) <i>For Example: 4Lt of A (4Kg) &amp; 1Lt of B (1Kg) /Apply within 30min</i>
Pot Life @25°C	30min
Colour of Blend	Clear Amber Liquid
Specific Gravity (SG) of Blend	~1.1
Coverage	1Lt/3-5sqm Per Coat – Allow 1Lt/3sqm for Two Coats
Low Profile Coverage (Kg/sqm)	Roller Application (200micron) - 0.2Kg of Blend per sqm
Maximum Temperature Surface Exposure (°C)	140
Initial Cure Time (Hours)	24Hours
Ultimate Cure Time (Days)	7 Days
Compressive strength (ASTM D 695-85)	>70
Tensile strength (ASTM D 638-86)	>15
Flexural strength (ASTM D 790-86)	>15
Hardness shore D (ASTM D2240-86)	>81
Abrasion Resistance (ASTM D4060-90)	0.056 g/1000 cycle
Shelf Life	12 months (unopened, cool dry storage)

## APPLICATION

### MIXING & APPLICATION INSTRUCTIONS

#### Mixing Procedure

- Use a slow-speed mechanical mixer for optimal blending.
- Always add Part B into Part A, not the reverse.
- Mix thoroughly until the blend is homogeneous and free of lumps.
- Take care to avoid air entrainment during mixing.

#### Application Methods

HOTCOAT Special Novolac can be applied using:

- Airless spray
- Brush
- Roller

#### Note:

Due to its solvent-free, high-viscosity formulation, HOTCOAT allows high film builds in a single coat when applied by spray. This means 100% of the material contributes to the final dry film thickness (DFT), improving efficiency and reducing waste.

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- The product's higher viscosity (compared to conventional solvent-based coatings) may require specialized application techniques. However, this is offset by faster coverage rates and reduced need for multiple coats.
- HOTCOAT Special Novolac is a functional, industrial-grade finish. It is not designed for aesthetic purposes such as high gloss or decorative applications.

## Re-Coating

- Reapplication over a fully cured surface must be preceded by abrasion (mechanical roughening) of the existing layer to ensure intercoat adhesion.

## POST-CURE PROCEDURE

To achieve full cross-link density and optimum performance, a two-stage heat curing process is required:

1. Gel Stage
  - Allow the coating to reach a tack-free state (typically several hours at 25°C).
  - Avoid high temperatures during this stage to prevent sagging or curtaining.
2. Heat Cure
  - Stage A: Post-gel at 50°C for 6–8 hours using heat lamps or similar equipment.
  - Stage B: Post-cure at 120°C for 6–8 hours. This may be performed in situ depending on the substrate and environment.

Note: Testing confirms that at an air temperature of 50°C and a DFT of 500 microns, the product gels without sagging.

## IMPORTANT APPLICATION CONSIDERATIONS

- Take all necessary measures to prevent air entrapment and carbamate formation during application.
- If any uncertainties arise, consult the manufacturer for detailed guidance.

## APPLICATION METHODS

HOTCOAT coating systems can be installed using various techniques. The two primary methods are Trowel Application and Self-Levelling Application, chosen based on the area size, surface complexity, and required finish surface. Below are the recommended procedures for each method.

### Trowel Application

- **Mortar Preparation:**  
Mix HOTCOAT with 600µ silica sand to form a trowelable mortar (1 to 10 or more mix ratios).
- **Application:**  
Apply the mortar directly onto horizontal surfaces and smooth using a steel trowel to achieve a seamless, even finish. Minimum thickness: 6 mm.
- **Optional Anti-Slip Finish:**  
While the mortar is still tacky, broadcast silica sand over the surface to enhance slip resistance. Once cured, sweep off excess sand.
- **Final Sealing:**  
Apply one coat of HOTCOAT as a sealant.  
If a solid colour finish is required, use colour version from Flooring category, as the final coat.
- **Coving (Optional):**  
The same mortar mix may be used to form covings at floor-wall junctions. Health compliance and helps prevent accumulation of dirt and facilitates effective cleaning.

### Self-Levelling Application

- **Mortar Preparation:**  
Mix 1 part HOTCOAT with 1.5 parts 600µ silica sand to produce a free-flowing mortar.
- **Application:**  
Pour and spread the mix onto horizontal surfaces using a notched trowel or similar tool to ensure uniform thickness.  
Minimum thickness: 3 mm.
- **Levelling & Blinding:**  
Allow mortar to settle briefly, then roll the area with a spiked roller to remove air bubbles. Broadcast silica sand until the mortar is completely blinded.
- **Final Sealing:**  
Once cured, remove excess sand and apply one final coat in your choice of colour.
- Thickness variation can be adjusted by using notched trowels with varying apertures.

### Vertical Non-Sag Application

HOTCOAT can be modified for vertical surfaces by incorporating ultrafine Carbosil / Silica Fume:

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- **Priming:**  
Apply a thin layer of neat HOTCOAT to the surface to promote adhesion.
- **Mortar Preparation:**  
Mix HOTCOAT with 10 parts by volume of Carbosil (or enough to create a stiff mortar that holds shape when squeezed by hand).
- **Application:**  
Apply the prepared mortar vertically using a trowel. Builds up to 20 mm thickness can be achieved without sagging.

## Product Packaging & Colour Options

HOTCOAT is conveniently supplied as a two-part kit, consisting of:

- Component A – Ultra Clear Resin
- Component B – Amber Clear Curative
- Component C – Reinforcement / Rebuild Filler Materials

Each kit is pre-weighed and proportioned, ensuring ease of use and accuracy for on-site application. This streamlined packaging eliminates the need for measuring, helping reduce errors and preparation time.

## Applications:

- |                               |                              |  |
|-------------------------------|------------------------------|--|
| ▪ Concrete Repair             | ▪ Swimming Pools             | ▪ Warehouse Flooring                                 |
| ▪ Acid Bunds                  | ▪ Pharmaceutical Industries  | ▪ Healthcare & Cleanrooms                            |
| ▪ Tanks & Vessels             | ▪ Amenity Blocks             | ▪ Loading Docks                                      |
| ▪ Pipelines & Valves          | ▪ Food Processing Facilities | ▪ Laundries  |
| ▪ Acid Sumps & Drains         | ▪ Recreational Facilities    | ▪ Steelwork Coating                                  |
| ▪ Sulfur Pits                 | ▪ Dairy Industries           | ▪ Long-term repairs to oil or water-exposed surfaces |
| ▪ Industrial/Commercial Areas |                              |  |
| ▪ Vehicle Workshops           |                              |  |

## Mixing & Application Instructions

### Mixing Procedure:

1. Use a slow-speed mechanical mixer to ensure a controlled and thorough blend.
2. Gradually add Component B (curative) while continuing to mix.
3. Mix until the blend is homogeneous and free from lumps (2min).

### Application Guidelines:

- Pour the mixed product directly over the surface.
- Use a squeegee to spread out to assist with self-levelling.
- Using a medium nap roller, apply the product evenly to the substrate.
- Finish off the surface uniformly, ensuring there are no puddles, streaks, or roller trails.

For Thin Coat Applications of 100 microns, HOTCOAT Diluent may be added to adjust consistency. Dilute up to 10% by volume.

## NON-SLIP FINISH APPLICATION

Variety of slip resistant materials can be used to achieve your desired Slip Resistant Floor finishing system:

### Broadcast (Silica Sand / Quarts / ALOX / GLASS BEAD)

Full broadcast the grits over the entire wet surface.

Broadcast within 30 minutes of rolling down the HOTCOAT base product.

Ensure the product is fully blinded out (completely covered)

### Curing

Allow the floor to cure for 8–12 hours.

After curing, carefully sweep off all loose, unbound sand.

Remove loose sand completely

### Seal Coat / Topcoat Shield

Apply a final thin coat of HOTCOAT over the surface.

This coat locks in the Slip Resistant grit and provides an even appearance.

*SHIMICOAT recommend above Broadcast Slip Resistant as the most uniform method of application.*

### Add into Resin:

Polypropylene Grit - Single Size of Medium

Add Non-Slip Additive into the resin, mix and apply.

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Add a small amount of Diluent if needed for consistency.  
Occasionally stir the mixture during application to prevent the additive from settling.

## CUREING PROCESS

Cure time may vary depending on several factors:

- Application thickness
- Amount of material applied
- Surface temperature
- Product temperature

To Accelerate Cure:

- Warm the product before mixing, or
- Allow mixed material to stand for 15 minutes prior to application.

To Slow Cure:

- Cool the product before mixing.

Temp °C	Pot Life (min)	Surface Dry (Hours)	Initial Cure (Hours)	Recoat Time (Hours)	Fully Cured (Days)
10°C	45	12	24	24	7 Days
20°C	40	10	18	18	7 Days
30°C	35	8	16	16	7 Days

## Combating Corrosion in Harsh Environments with SHIMICOAT

Marine and Offshore harsh environments are inherently corrosive. Continuous exposure to wet, harsh atmospheres—especially in splash zones and underwater areas, combined with erosive forces from waves and floating debris, accelerates the degradation of equipment and structural components. If left untreated, corrosion can lead to severe structural damage, leaks, ruptures, costly downtime, and significant environmental risks.

## SHIMICOAT In-Situ Protection & Repair Systems

SHIMICOAT offers innovative in-situ solutions specifically designed for many industrial and commercial surfaces. These systems require minimal surface preparation and are engineered to perform in some of the most challenging marine environments.

In addition to our comprehensive product range, SHIMICOAT provides surface-tolerant technologies that are highly effective even on wet, oily, or sweating substrates. These products are engineered for exceptional adhesion to steel, regardless of immersion conditions.

### Why Choose SHIMICOAT?

- Cures to Perfection
- No hot work required
- Minimal surface preparation
- Strong adhesion to steel / Concrete
- Long-lasting, permanent protection
- Proven performance globally

SHIMICOAT's surface-tolerant repair systems reduce maintenance costs and extend the life of your assets—above water, in splash zones, and underwater.

## Get in Touch

For more information on SHIMICOAT's industrial solutions, contact your local SHIMICOAT representative today.

## STORAGE

### STORAGE

- Store both components away from direct sunlight and sources of heat, as elevated temperatures will severely reduce pot life.
- In their original, unopened containers, each component has an indefinite shelf life.
- However, prolonged storage may cause settling of contents. Ensure thorough mixing before use to restore a uniform consistency.

The products shall be stored out of direct sunlight and heat at all times. The standard shelf life of the product is 24 months, mix uniformly for 3 minutes prior to use.

### DISCLAIMER

Material Safety Data Sheet, Technical and Environmental Data Sheet can be provided upon request.

The information provided in this document is guidance only and considering the uses of this product are beyond the seller's control, the product is sold without guarantees or warranties. Warranties and guarantees shall be governed by SHIMICOAT Standard Terms of Sale. The purchaser shall make its own tests to determine the suitability for their specific application, and Shimicoat Pty Ltd is taking no responsibility for misuse of the product. The purchaser assumes all risk of use and handling of this product. This product will be happily replaced or credited back if defective. Beyond this, Shimicoat Pty Ltd is not liable for any damages caused by this product or its use. *This information and all further technical advice are based on our present knowledge and experience.*

*The customer is not released from the obligation to conduct careful inspection and testing of supplied goods.*