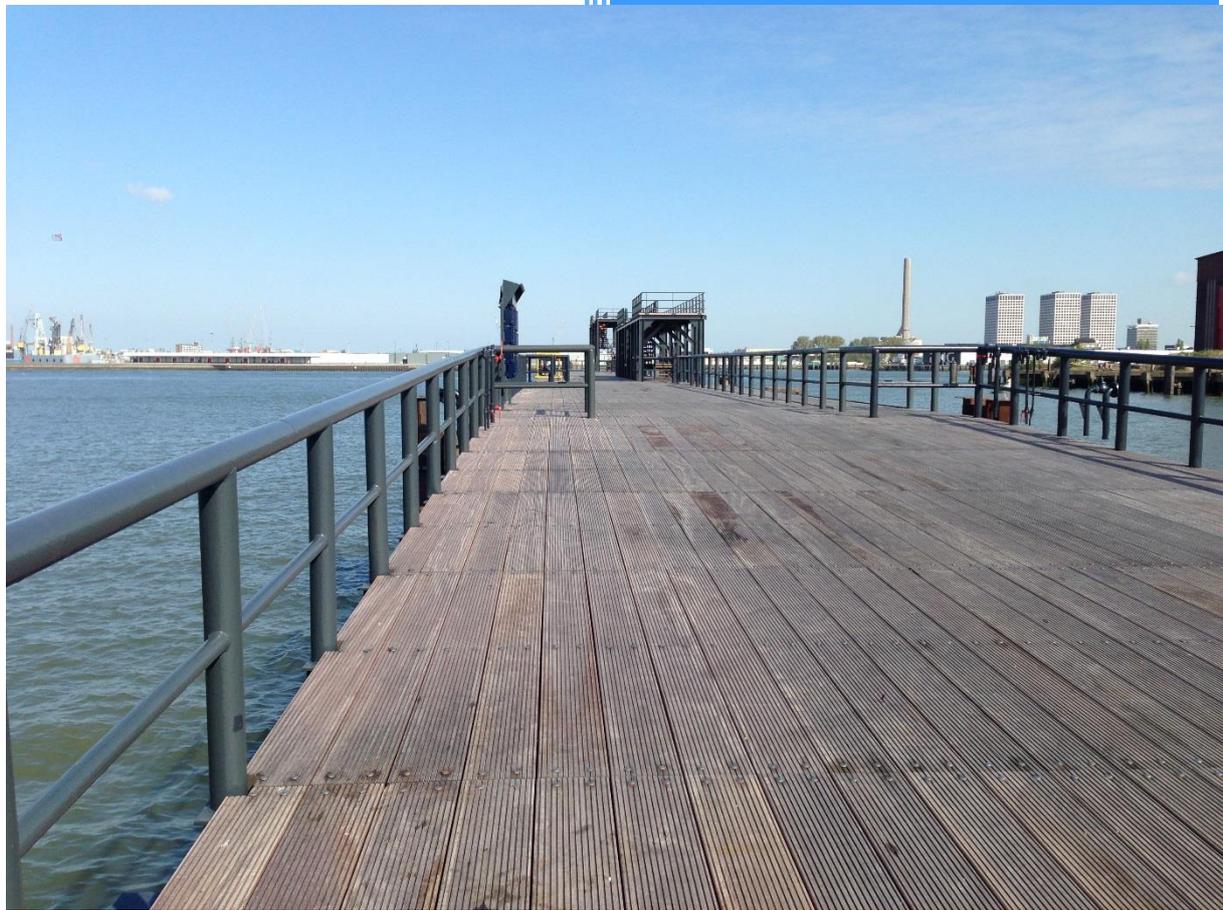




Humidur TC

Application Manual



2015

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1 Product Description

Humidur TC is the topcoat in the Humidur product range. It is UV-resistant and has excellent gloss and colour retention. It is a 2-component, solvent-free modified epoxy siloxane system.

The base or A-component contains epoxy siloxane, lamellar abrasion and impact resistant fillers, and colouring pigments. The B component contains the aminosilane hardener complex.

For more information we refer to the technical datasheets and the product overview tables, which can be found on www.humidur.be.

Table 1 shows the possible application methods for Humidur TC.

TABLE 1

	Roller	Brush	Airless spray	Conventional spray
Humidur TC	✓	✓	✓	✓

Humidur TC can be applied on the Humidur anti-corrosion coatings or other coatings for an aesthetic finish. It can also be applied on concrete.

2 Packaging

The products are delivered in two parts (Part A resin and part B hardener) in pre-dosed labelled containers. The standard packaging for Humidur TC is 4 kg . Smaller or bigger packages on demand.

Part A and B can also be distinguished by colour: A contains the colour pigments and has the final colour. Part B is colourless.

3 Surface Preparation

Before coating application, all surfaces shall be free of oil, grease, dirt or any other contamination.

1. Degrease the surface with acetone or other suitable solvent
2. For concrete, follow the steps described in the document *Instructions for Concrete Surface Preparation*. The concrete surface profile should be CSP 1-2 in accordance with ICRI no. 03732.
3. If needed, the surface shall be roughened with an orbital electric sander or abrasive paper. To this purpose 120-180 grade discs or paper for coatings (no need when applying on top of Humidur anti-corrosion coatings) shall be used and 60-120 grade for concrete
4. Clean with acetone or other suitable solvent

Before coating application, check if surface temperature is above 0°C and at least 3°C above dew point. Ensure that the surface is dry (no condensation) and free of grease, oil, dirt, dust or any other contamination.

4 Component mixing

The components A and B are delivered in pre-dosed sets so that they can be readily mixed. Before mixing, components A and B should have a temperature as described in Table 2. First stir component A. Pour component B in component A and mix the two materials to an even consistency with an electrical mixer at less than 300 rpm to avoid incorporated air. Only mix the components supplied: never add anything else. As the components are delivered in pre-dosed sets, mix one set completely.

Thinners cannot be used

As the product has a limited pot life (see Table 2), application should be done as soon as possible after mixing. When the temperature is increased, the pot life reduces and when the temperature decreases, the pot life increases. The temperature of the product should be high enough to ensure good application and low enough in order to not reduce the pot life. The ideal temperatures of the mixed products before application are given in Table 3.

TABLE 2

	Humidur TC
Temperature before mixing	20°C-25°C
Mixing ratio by weight	7.6:1
Mixing ratio by volume	5.9:1
Pot life at 23°C	4 hours

5 Coating application

Before coating application, check if surface temperature is at least 0°C, at least 3°C above dew point and does not exceed 50°C. Make sure that the surface is dry (no condensation) and free of contamination.

Before application, check if the values in Table 3 are respected. Not respecting this values will result in a more difficult application and an inferior end result.

TABLE 3

	Humidur TC
Temperature before mixing	20°C-25°C
Application temperature of mixture	20°C-25°C
Min. surface temperature	0°C and dew point + 3°C
Max. surface temperature	50°C
R.H.	< 95%
Humidity of surface	No condensation

5.1 Brush and roller application

Before starting spray application, welds and edges are typical areas to be pre-brushed (stripe coating).

Brush application is mainly used for smaller surfaces, for touch ups or when spraying application is too difficult.

Follow the instructions for mixing as described in 4.

5.2 Airless spray application

The pump should have a capacity of at least 35:1. Remove all filters from the pump and gun to prevent any blockage. Remove the elbow from the pump and pump the product directly. It is recommended that the hose has an inner diameter of 1/4" and a minimum length of 5 m. At temperatures below 20°C, the use of heating cables is recommended. Otherwise, problems may occur during the spraying process.

The recommended spray nozzle should have an angle between 30° and 50° and an opening between 0.009" and 0.019". It is recommended that the pressure is at least 210 bar.

Perform a test spray before the actual application: try to spray component A without mixing B to set the right conditions. Spray component A directly back into its pail. When satisfactory, the components can be mixed.

Mix the components first as described in section 4. The temperature of the mixture should be as described in Table 3. Monitor the pot life closely. Make sure that the pump has the right settings regarding the mixing ratio (see Table 2).

Apply the coating preferably by cross-spraying and measure the wet film thickness.

If problems occur: stop spraying, clean the pump and the equipment and contact Acotec NV or your local representative.

5.3 Conventional spray

Humidur® can be applied by conventional spray, both suction and gravity fed. Pressure fed guns can also be used.

Mix the components as described in section 4. The temperature of the mixture should be as described in Table 3. Monitor the pot life closely.

5.4 Film thickness

Always follow recommendations of your Acotec contact concerning the film thickness that should be applied. In Table 4 the practical limitations are given that one can apply in one layer. The minimal overcoating time is 4 hours and the maximum 48 hours.

TABLE 4

	Humidur TC
Min thickness in one layer (µm)	60
Max thickness in one layer (µm)	100
Overcoating window	4 – 48 hours

5.5 Inspection

5.5.1 Layer thickness

During application it is recommended to check the layer thickness by means of wet layer thickness gauges.

5.5.2 Adhesion ISO 4624

Before performing this test the coating should already be sufficiently cured. The optimal delay, in function of the long term properties, amounts to one month, however after about 7 days it can already be tested with sufficient certainty.

Pull-off adhesion values of 5 MPa are required. This is measured with a hydraulic adhesion tester. Failures in the glue or cohesion failures with lower values are rejected. At least three representative measurements are necessary.

5.6 Clean-up

Immediately after application of Humidur, the pump must be cleaned. The solvent cleansing agent (preferably HumiClean) is connected with the pump and recycled into its pail via the spraying gun. By disconnecting the spray nozzle from the gun and continuously pumping up the solvent cleansing agent under low pressure for at least 20 minutes, a good intermittent cleaning will be obtained. The agent is refreshed until a constantly clear solvent comes out of the gun.

If the pump does not need to be re-used and will be stored for a certain period of days or weeks, it is best to open up the paint section of the pump completely for thorough cleaning.

5.7 Water Immersion

Opposed to the other Humidur products, Humidur TC does not have the ability of curing under water.

6 Disposal of Waste and Spillage

After application, the product rest and the packages should be considered as waste.

Product

Incinerate in an appropriate incineration plant. The legal prescriptions should however be taken into account.

Non-cleaned packaging

Soiled packaging should be emptied as thoroughly as possible, after appropriate cleaning it can be reused. Packaging which cannot be cleaned should be disposed of in the same way as the substance.

7 Curing

Full cure at 23°C is achieved after 3 days. The touch-dry time at 23°C is 4 hours. These values are indicative and depend on a number of parameters such as air circulation, film thickness, temperature, etc.

8 Storage

The product should be stored in a dry environment at max. 25°C in the unopened original pails. The shelf life is 12 months.

9 Safety Precautions

Details can be found in the Material Safety Data Sheets for Components A and B.