

Technical Data Sheet



Humidur® ME



Product Description

Humidur ME is a 2-component solvent-free modified polyamine cured epoxy system offering the following benefits:

- Long term **protection in highly corrosive environments**: life expectancy over 30 years
- **Single coat** system
- **No primers** required
- **Environmentally friendly** (100% solids, no solvents, no heavy metals, no coal tar)
- **Excellent abrasion resistance and impact resistance**
- **Outstanding adhesion** to substrate and interadhesion between layers
- **Surface tolerant**
- Capable of **curing under water**: can be exposed to water immediately after application
- Capable of **curing at freezing temperatures**
- **Unlimited overcoating**
- **Excellent cathodic disbondment resistance**
- **NDT inspection** allowed
- Resistant to temperatures from **-30°C to 90°C**
- Resistant to most fluids between **pH 0 and pH 14** (see Humidur chemical resistance list)
- Approved for **drinking water**
- **Cost-effective** (LCCA conducted by Royal Haskoning)

Manufacturer's Information

Acotec nv, with registered offices at Aalst, Belgium, is the developer and sole manufacturer of the Humidur products, distributed worldwide through a wide network of agents and cooperative companies. The proven lifetime of the Humidur coatings in practice is more than 30 years. Contact Acotec directly or visit www.acotec.be or www.humidur.be for reference projects.

Acotec nv

LET'S FACE CORROSION

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Composition

Humidur ME consists of two components:

A is the base component and contains:

- non-crystallisable epoxy resins,
- high-tech modifying agents and elastifiers,
- lamellar abrasion and impact resistant fillers,
- colouring pigments

B is the hardener and contains:

- polyamine hardener complex

Recommended Use

Humidur ME is generally applied on structures in salt, brackish, fresh, potable and drinking water, and specific markets such as:

- Static Marine Infrastructure (sheet piling, tubular piles, lock doors, dolphins, berths, jetties, etc...)
- Offshore (platforms, cranes, piling foundations, inside and outside pipelines, etc...)
- Renewables (penstocks, turbines, windmills, tidal and river stream energy, etc...)
- Shipping (ballast tanks, cargo holds, etc...)



PRODUCT USE		ME	ME Brush
By Brush	Stripe coat	Yes	Yes
	Thick layers	Yes	Yes
By Spray (heated hoses)	One layer	Yes	/
	Multiple layers	Yes	/



Product Data

SPECIFIC DATA	ME	ME Brush
Density @ 23°C		
Component A	± 1,46 g/cm ³	± 1,33 g/cm ³
Component B	± 1,06 g/cm ³	± 1,06 g/cm ³
Mixture A + B	± 1,36 g/cm ³	± 1,27 g/cm ³
Solid content	100%	100%
Viscosity of the mixture at 23°C and CSS750Pa	6,0 ± 1 Pas	4,5 ± 1 Pas
Flash point mixture A + B	>100°C	>100°C
Hardness	Shore D > 74	Shore D > 74
Colour (gloss) (For colour stability (only esthetic), apply Humidur TC on top of Humidur ME)	Any RAL colour 25 colours immediately deliverable	Any RAL colour 25 colours immediately deliverable
Compatibility with Cathodic Protection Systems (ISO20340)	Yes	Yes
Practical thickness in one layer		
Brush		
Stripe coat	300 µm	200 µm
Thick layer	300 µm	200 µm - 300 µm
Spray		
One layer	300 µm -1000 µm	/
Minimal recommended thickness	400 µm – 600 µm	400 µm – 600 µm
Covering capacity (WFT = DFT)		
Theoretical @ 200µm	/	0,25 kg/m ²
Theoretical @ 300µm	0,41 kg/m ²	0,37 kg/m ²
Theoretical @ 1000 µm	1,36 kg/m ²	/
Mixing ratio A : B		
By weight	4,4 : 1	3,7 : 1
By volume	3,2 : 1	2,9 : 1
Overcoating time	unlimited	unlimited
Standard packaging	22 kg	5 kg
Pot life at 23°C	45 min	45 min
Shelf life max 25°C dry	12 months	12 months



Curing time

Humidur coatings have the ability to cure under water. The curing of Humidur is a chemical reaction and is water repellent. The curing times depend on air circulation, temperature and the film thickness. Humidur is able to cure at sub-zero temperatures.

	-5°C	5°C	10°C	15°C	20°C	25°C	30°C
Touch-Dry	48 hours	7 hours	6 hours	5 hours	4 hours	3.5 hours	3 hours
Full cure	7 days	6 days	4 days	3 days	48 hours	36 hours	24 hours

Application

All surfaces shall be free of oil, grease, dust or any other contamination prior to coating.

SURFACE PREPARATION	Cleanliness	Methods	Roughness	Expected life time	Warranty
Minimum	St 2 - 3 ISO 8501	Hand tool Power tool (wire brush, needle gun, bristle blaster, grind disk)	Original Profile	15 years	On request
Optimal	Sa 2½ ISO 8501	Gritblasting	60 ± 10 µm 2/3 reference ISO 8503	> 30 years	On request

APPLICATION PARAMETERS		ME	ME Brush
Temperature before mixing		18°C - 25°C	18°C - 25°C
Application temperature of mixture		25°C ± 5°C	25°C ± 5°C
Surface temperature*	Minimum	Dew point + 3°C	Dew point + 3°C
	Maximum	50°C	50°C
Humidity*	Relative Humidity	< 95%	< 95%
	Surface	No condensation	No condensation
Spray nozzle	Opening	0,019'' - 0,023''	0,019'' - 0,023''
	Angle	40°-60°	40°-60°

* These criteria are valid to achieve the most durable protection. If a reduced coating lifetime is desired, application can continue outside this window. The existing warranties do not apply in these conditions. Please contact Acotec nv directly for more information on the expected lifetime in these conditions.



Environment

Humidur ME has been designed to fully respect the environment. The product contains:

- No VOC (0%) (100 % solids),
- No solvents or diluents (WFT = DFT),
- No coaltar,
- No isocyanates,
- No heavy metals.

Humidur ME is capable of curing under water without leaching taking place and has no detrimental effect on the sediment, fauna and flora in and out of the water. When using Humidur ME on static marine structures, the biofilm can form itself on top of the Humidur coating without affecting the substrate and without any loss of the anti-corrosion properties.

As Humidur is a one-layer system, it reduces the amount of waste and minimizes loss spray.

All technical reports are available upon request.

Insurance

After application, an adhesion test is performed (according to ISO 4624) for which we commit ourselves to achieve a minimum criterion of 8 MPa.

A corporate warranty can be given under certain conditions. More information upon request.

An insurance policy of 10 years, given by HDI Gerling, is available on all Humidur coatings in case of optimal surface preparation. For the terms and conditions on this warranty, please contact Acotec nv directly.

Approvals/Certificates

- Approved in petrochemical industry and offshore oil and gas market by: Shell, Statoil, ConocoPhillips, Maersk Offshore, Transocean Drilling, Fairfield Energy
- BAW approved: DIN EN ISO 2812-2 , DIN EN ISO 6270-1 , DIN EN ISO 7253
- NIVA Institute: Approved for drinking water applications
- University Ghent: Approval for resistance against Microbially Induced Corrosion (MIC)



Approvals/Certificates

- TÜV Rheinland: Approval for combination with cathodic protection systems
 - Arcelor Mittal: Performance tests executed by Strako, official applicator of Arcelor Mittal, where Humidur shows excellent adhesion onto the substrate.
 - SGS Intron: Proven durability over time
 - TNO: Equivalent acceptance with regard to PSPC (IMO Resolution MSC.215 (82))
 - Approved for pigging application by EnerClear
 - NDT inspections allowed (tested on Talisman Energy assets)
 - Royal Haskoning: Most cost-effective anti-corrosion solution (Life Cycle Cost Analysis)
 - Approved by CCS for above and below ship's waterline and the inside of tanks
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