



DUOREA® 680 / 686

High reactiv Polyurea-Spray elastomere

DUOREA® products are high-performance polyurea coatings. They are formed in a smooth and very fast reaction from isocyanates and amines, a few seconds after mixing these two components. DUOREA® products are elastic, tough and hard plastics with excellent mechanical properties and excellent chemical resistance.

Application

DUOREA® coatings are used everywhere where highest requirements are requested on seamless, durable and extrem wear-resistant protective coatings/sealings. Practically each thickness is possible because of the very short hardening time, as well layers on vertical surfaces or over head layers.

Coatings made of these spray elastomers are stick free after a few minutes. They follow the surface of the object, therefore each form could be sprayed easily. The adhesion of DUOREA® coatings on nearly each substrate is excellent. On plastic with unpoler structure such as Polyethylen (PE), Polypropylen (PP) and fluorinatedplastic such as PTFE the adhesion is not sufficient.

**.... examples for
the
wide range
of application...**

- **Wear protection for all types of conveyor systems**
- **Surface protection in concrete or steel silos**
- **Seamless sealing of flat roofs, bridges and parking places**
- **Seamless sealing of catch basins in chemical factories**
- **Decontaminable coatings in the food industry**
- **Surface protection in waste water plants and liquid manure tanks**
- **Top Coat on isolation layers made of PUR Spraying foam**
- **Coatings in swimming pools and steel water constructions**
- **Wear-resistance and corrosion protection in steel pipes (gas, water, oil)**

Processing

DUOREA® products are applicated with high pressure pumps, with a mixing ratio 1 : 1 by volume. Sprayed with impingement spray gun. These pistols work generally without air support (airless) and should be equipped with a mechanical self cleaning mixing head.



Both components are most simply fed directly from the drums to the dosing pump by means of transfer pumps, which delivers the components in the correct ratio and spraying pressure via flow heaters and heated hoses to the spray gun. Only there the components are mixed and the reaction mixture is discharged in a fine atomised form. The actual manual application is then carried out using the same technique as for spraying paints and varnishes, with the difference that the applied layer is almost immediately solid and cannot run off the substrate.

The underground must be dry, clean, stable and free of separating substances to reach the perfect adhesion.

Surfaces made of steel and iron must be pretreated with a suitable corrosion protection. For glazed ceramic surfaces, glass, sucking or humid undergrounds are special DUROREA®-primers available.

DUROREA® systems cure extremely quick. The material hardens even in very thin layers very quick and is mechanical resilient. The complete cross linking reaction is finished after 12 hours and after that fully chemical resilient.



If applied in several layers, the application must be done in less than 12 hours. Otherwise the ground layer must be grinded in advance.

Classic polyurea coatings are made from isocyanates with an aromatic structure. This also applies to our DUROREA® standard types. Like all aromatic compounds, they tend to change colour when exposed to UV radiation (sunlight!), they "yellow". This effect is particularly pronounced with very light colours.

Special DUROREA® formulations with aliphatic isocyanates as the reactive component are also available for applications where high demands are placed on colour fidelity and decorative effect. They are absolutely lightfast. Even pure white pigmented, permanently high-gloss exterior coatings are possible. For economic reasons, however, the aliphatic grades are not recommended for purely technical applications.

DUOREA®680 **Properties**

Polyurea reactive coating
Coloured pigmented

Processing Recommended Data

Processing	: Sprayed
Material temperature	: 65 - 70°C (both components)
Spray pressure	: 100 - 130 bar
Mixing ratio	
- by volume	: A : B = 100 : 100
- by weight	: A : B = 100 : 113
Surface tack-free after	: 5-10 seconds

Properties

Tensile modulus (N/mm')	: 235 DIN 53457
Elongation	: > 120 % (DIN 53455)
Tear resistance (N/mm)	: 137
Bending stress (MPa)	: 21 (DIN 53452)
Shore-hardness A	: 89 (DIN 53505)
Shore-hardness D	: 57 (DIN 53505)

Dimensional stability under heat (0.45 N/mm ²)	: 135°C (ASTM D 648)
Wear resistance (DIN 53516)	: 200 m ³
Abrasion (Taber-Abraser +/-60)	: 338 mg (ASTM D 4060)
Fire behaviour (DIN 4102)	: B-2
Water absorption (DIN 53495)	
-after 15 days	: 2.3 %
-after 28 days	: 2.35 %
Water vapour permeable	: 14.4 (g/m ² /24h)
Water vapour resistance (DIN 53429)	: 3900 μ - on 0,7 mm

*These values are standard values determined on samples in the laboratory.
The conditions during processing can influence the values.

Data

DUOREA®680 A

-Composition	: Isocyanate prepolymers based on MDI
-Density; 20°C	: 1140 gr/ltr
-Viscosity; 25°C	: 1100-1300 mPa.s
-Aspect	: Liquid, yellow brown, clear
-Odour	: Typical, dull
-Storage stability*	: Max. 6 month (10-30°C)

DUOREA®680 B

-Composition	: Aliphatic Diamine and Polyole
-Density; 20°C	: 1110 gr/ltr
-Viscosity; 25°C	: 700-800 mPa.s
-Aspect	: Liquid, in different colours available
-odour	: Typical, of ammoniac
-Storage stability*	: Max. 6 months * (10-30°C)

*From delivery date in an opened original packaging

DUROREA®686 Properties

polyurea - reactive coating
Natural colours, without colour pigments

Processing recommended data

Material temperature	: 65 - 70°C (both components)
Spray pressure	: 100 - 130 bar
Mixing ratio	
- by volume	: A : B = 100 : 100
- by weight	: A : B = 100 : 113
Surface tack-free after	: 5-10 seconds

Properties

E-Modul (N/mm ²)	: 250 DIN 53457
Elongation	: > 130 % (DIN 53455)
Tear resistance (N/mm)	: 120
Bending stress (MPa)	: 18 (DIN 53452)
Shore-hardness A	: 80 (DIN 53505)
Shore-hardness D	: 52 (DIN 53505)
Dimensional stability under heat (0.45 N/mm ²)	
	: 135°C (ATM D 648)
Wear resistance (DIN 53516)	: 190 m ³
Abrasion (Taber-Abraser +/-60)	: 310 mg (ASTM D 4060)
Fire behaviour (DIN 4102)	: B-2
Water absorption (DIN 53495)	
-after 15 days	: 2.2 %
-after 28 days	: 2.3 %
Water vapour permeable	: 14.9 (g/m ² /24h)
Water vapour resistance (DIN 53429)	: 3900 μ - on 0,7 mm

*These data are identified in laboratory test
The conditions meanwhile processing could be different this could influence the data

Data

DUROREA®686 A

-Composition	: Isocyanate prepolymers based on MDI
-Density; 20°C	: 1140 gr/ltr
-Viscosity; 25°C	: 1100-1300 mPa.s
-Aspect	: Clear, yellow liquid
-Odour	: Typical, dull
-Storage stability*	: Max. 6 month (10-30°C)

DUROREA® 686 B

-Composition	: Aliphatic diamines and polyols
-Density; 20°C	: 1010 gr/ltr
-Viscosity; 25°C	: 700-800 mPa.s
-Aspect	: Slight cloudy, yellow brown liquid
-Odour	: Typical, of Amin
-Storage stability*	: Max. 6 month (10-30°C)

*After delivery date in original packaging unopened

Storage Safety

Both components of DUOREA® coatings are hygroscopic or react directly with water or moisture in the air. They must therefore always be stored in tightly closed containers. We recommend that material in opened drums be coated with dry inert gas (e.g. nitrogen) as a precautionary measure during work interruptions.

The individual components are combustible liquids, but not flammable. They must be stored accordingly. It must be ensured that stored products are inaccessible to unauthorised third parties.

For all DUOREA® products we have safety data sheets - always up-to-date - available from us. There you will find all relevant information for safe handling and disposal of the products. They must be made available to all those who handle the products.

Recommended Accessories :

HydroMoll®522

A highly efficient and cost efficient care and conservation material for PUR and Polyurea machines and tubes. A combination of dissolving additives and special weakeners. The material stays in the machine until next use and avoids glueing of valves and deposits. HydroMoll requires no labelling.

These technical information describe the present-day state of knowledge these product. They should only inform about the possibilities of application and could not release the applicator of his commitment to check the possibility to use the product for the required application. Information for processing can be found in processing instructions of our product. Information about safe handling can be found in our current safety data sheet.

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ARCAN Waterproof

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passion to invent 