

Polyurea Coating

Polyurea Spray Elastomer

BASF
The Chemical Company



Polyurea Advantages

- Fast reactivity, set and cure: rapid return to service, Insensitivity to ambient temperature
- Environment friendly
100% solid content, no solvent, no VOC's & little to no odor, applied with "green" spray technology.
- Excellent physical and chemical properties:
Good water penetration resistance, no joints, good adhesion to substrate. With good performance under temperature of $-45^{\circ}\text{C} \sim 120^{\circ}\text{C}$.
- Excellent mechanical properties
With high tensile, tear and impact strength, impressive elongation, abrasion-resistance, puncture-resistance, rolling-resistance. Unique cracking protection and enhancement on concrete.
- Good weather resistance and aging resistance:
Stable chemical structure grants long life time.
- Good anti-corrosive properties:
Good resistance to acids, alkalis, salts, seawater...

Polyurea Advantages

- Protection without joints or gaps:

High pressure spray pattern, no joints and gaps, limitation of protection dead zones. Liquid material and fast curing make it easy for complex structure area, without cutting and installation. Flexible, seamless and resilient

- Good adhesion to most substrate, for example: concrete, mortar, bitumen, cement, metal, wood..., act as second skin on top of substrate.

- Fast application:

With one machine, experienced applicators can finish thousands square meters under good condition

- Safe and professional application

- Well trained applicators can guarantee process been applied safe and accurately.

- On-site spray process, can save storage and time.

Applications of Polyurea

■ Construction

- mainly water proofing

■ Industry

- Chemical resistance, anti-abrasion

■ Transportation

- Anti-abrasion, energy absorption

■ Decoration

- Easy application, flexible shape



Applications of Polyurea

- Construction Building

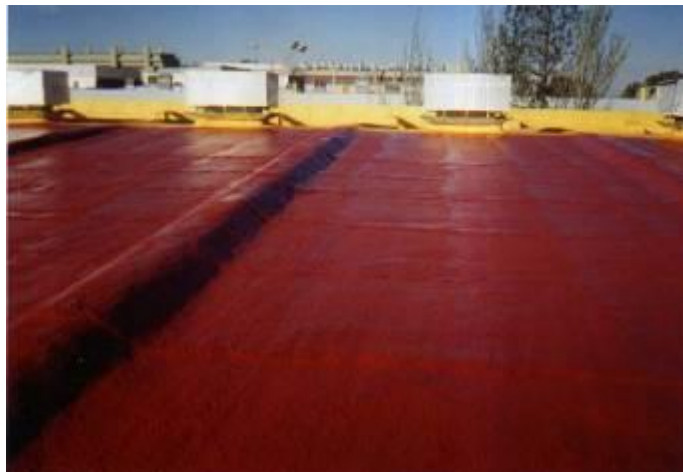
- Bridge deck construction & repair
- Flooring
- Park decks
- Roof coating
- Joint fill, caulking
- Architectural design



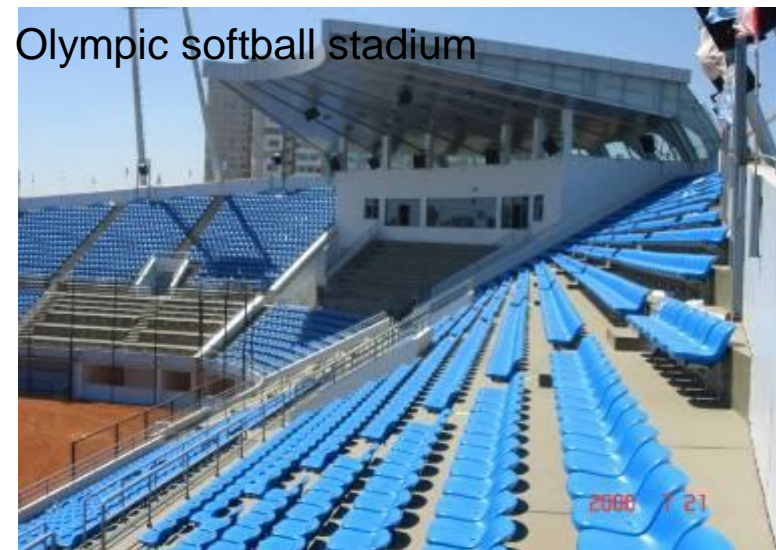
Parking lot



Roof water-proofing



Applications of Polyurea - Construction Building



Olympic center under construction



Applications of Polyurea - Construction Building



Beijing Wanfangting park
Roof water-proofing



National theater water pool protection

Applications of Polyurea - Construction Building

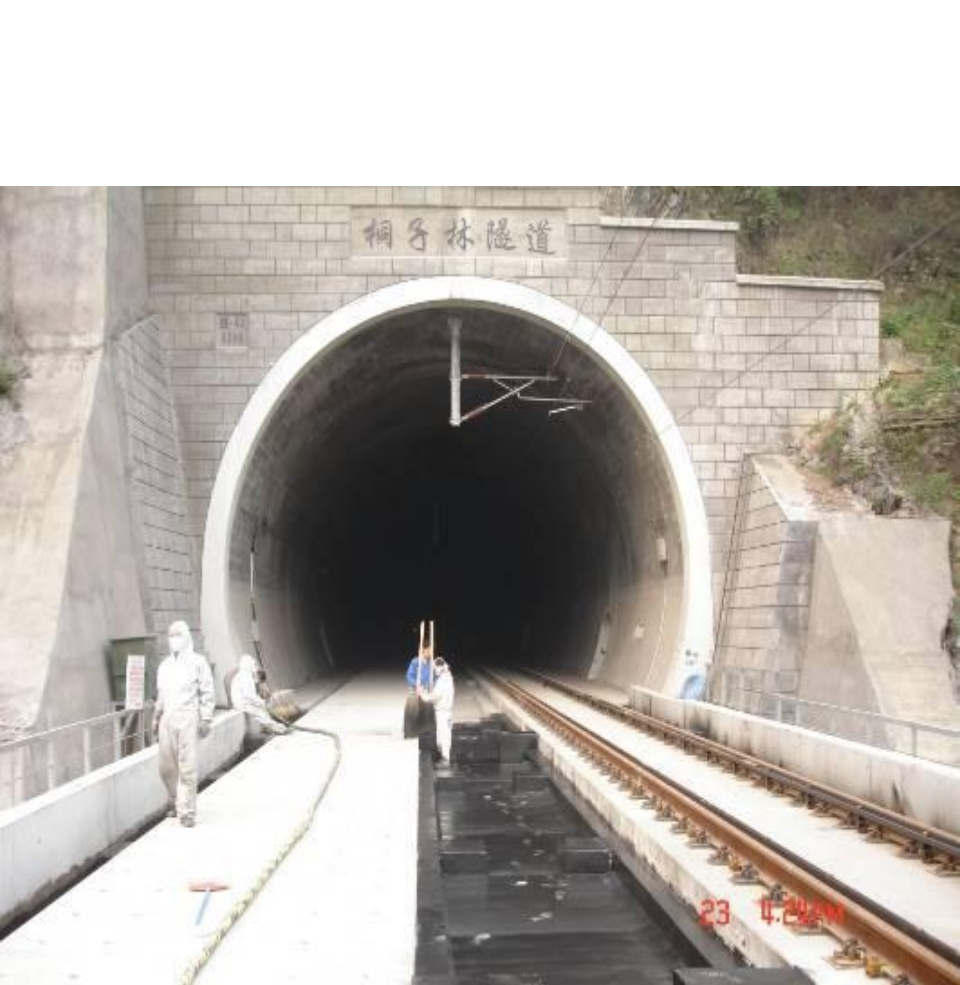


High speed railway



Applications of Polyurea

- Construction Building



Bridge and tunnel

Applications of Polyurea

- Industrial application



Steel protection

Applications of Polyurea

- Industrial application



Tank protection

Applications of Polyurea

- Industrial application



Applications of Polyurea

- Industrial application



Sewage pool & Pipes

Applications of Polyurea

- Industrial application



Anti-abrasion of flood flush in reservoir

Applications of Polyurea

- Transportation

- Truck bed liners
- Railcar lining & track containment
- Conveyor belt lining
- Boat construction



Applications of Polyurea

- Transportation



Applications of Polyurea

- Decorations

- Aquarium, swimming pools, ponds
- Water parks & playgrounds
- Water reservoirs
- Facades
- Bath tubs, shower cabins



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Applications of Polyurea

- Decorations



BASF Spray Elastomer system



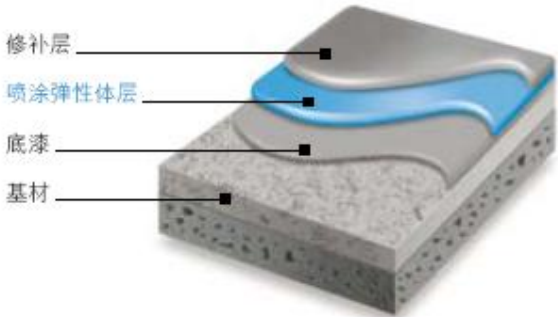
BASF can provide customer system solution

Elastocoat system – spray elastomer

Elastan – primer

Elasturan – repair material

Elastocoat® 喷涂弹性组合料

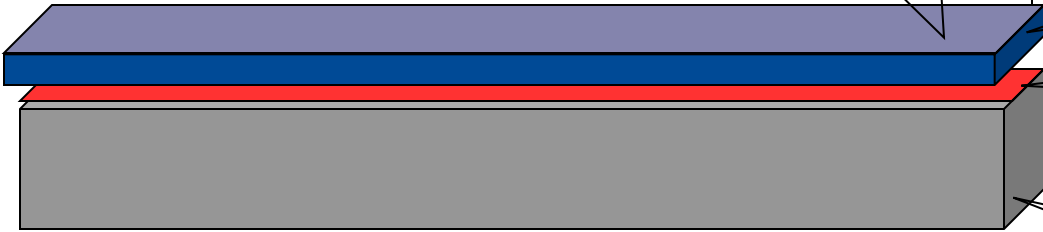


Repair material, hand apply if necessary

Spray elastomer

Primer

Substrate



BASF Spray Elastomer system

- Primers

- Typically required to enhance adhesion
 - Porous substrates
 - Reduce or eliminate pinholes
- Epoxy or polyurethane based
 - Should be matched to the polyurea system
- Only as good as what you are sticking to!

BASF Spray Elastomer system

- Spray elastomer

■ Elastocoat CC 5033

- Typical products, hybrid system with good physical properties

■ Elastocoat CC 5035

- Hybrid system, better physical properties than 5033
- Higher requirement application

■ Elastocoat CC 5038

- Low cost, still with better performance than competitors

■ Elastocoat CC 5051 (Pure polyurea)

- Better operation under low temperature and wet environment
- Excellent chemical resistance

■ Elastocoat CC 5040

- Rigid system, high hardness, for piping application

BASF Spray Elastomer system

- Typical physical properties of Spray elastomer

System	Physical properties				
	Hardness Shore A	Tensile strength (MPa)	Elongation(%)	Tear Strength (N/mm)	Density (g/l)
	DIN 53505	DIN 53504		ASTM D624	DIN EN ISO 1183-1, A
Hybrid					
5033	90	19	550	76	0.992
5035	91	25	600	83	1.034
5038	89	13	400	60	0.967
Urea					
5051	90	18	500	80	1.018
6335/102	66D	20	280	120	1.012
6551/101	92	17	529	73	0.95

Spray equipments

- Plural component spray application
 - Capable of high, continuous flow
 - Heating is required
- Equipment setup to application work
 - Downsize out to spray gun
 - Must have positive feed to unit
- Use the proper spray gun for the work and system

