



Technical Data Sheet

BC AR Polyurea (Food Grade)

100% Pure Polyurea, Instant-Curing, WRAS Certified Potable Water Membrane

1. Product Description

BC AR Polyurea (Food Grade) is 100% solids, two-component, instant-curing pure polyurea waterproofing and protective membrane. It is spray-applied, seamless, flexible, and designed for the most demanding environments requiring potable water approval, hygiene, and long-term durability.

With outstanding impact, abrasion, and tear strength, the membrane remains flexible across extreme temperatures and will not crack, peel, or become brittle. It is VOC-free, solvent-free, and safe for contact with potable water.

2. Uses

BC AR Polyurea (Food Grade) is ideal for:

- Potable water tanks, reservoirs & water networks
- Drinking water storage structures (BS 6920 approved)
- De-salination plants & filtration facilities
- Fish farming & aquaculture tanks
- Food-processing water storage systems
- Canals, viaducts & water conveyance structures
- Bottling plants, washing & cleaning facilities

3. Features & Benefits

- WRAS Certified – safe for potable water
- Instant curing – tack free in 10–20 seconds
- Seamless application to unlimited thickness
- Fast return to service – Walkable in 5 minutes
- High durability – excellent impact & abrasion resistance
- 100% solids, VOC-free, solvent-free
- No humidity sensitivity during spraying or curing
- UV, chlorine, and saltwater resistant



4. Technical Information

Chemical & Material Characteristics

Property	Standard	Value
Chemical Base	–	100% Pure Polyurea
VOC Content	DIN EN ISO 11890-1 / ASTM D1259	0%
Solids Content	DIN EN 827 / ASTM D2697	100%
Density (A)	DIN EN ISO 2811-2 / ASTM D1217	1.11 ± 0.02 g/cm ³
Density (B)	DIN EN ISO 2811-2 / ASTM D1217	0.98 ± 0.02 g/cm ³
Mixed Density	EN ISO 1183	1.02 ± 0.02 g/cm ³
Viscosity (A)	DIN EN ISO 2884-2	500–700 mPa · s
Viscosity (B)	DIN EN ISO 2884-2	350–700 mPa · s
Tensile Strength	ISO 37 / ASTM D638	≥ 20 MPa
Modulus @ 100%	ISO 37 / ASTM D638	≥ 10 MPa
Elongation at Break	ISO 37 / ASTM D638	Very High
Impact & Abrasion Resistance	–	Excellent
Crack Bridging	–	Excellent

5. Application Conditions

- Ambient Temperature: –10°C to +50°C
- Substrate Temperature: –10°C to +50°C
- Material Temperature (Spraying): 65–75°C
- Maximum Relative Humidity: 98%
- Substrate must be 3°C above dew point



6. Surface Preparation

- Surface must be clean, dry, and free of contaminants.
- Remove oil, grease, dust, coatings, laitance and loose materials.
- Concrete substrate must be fully cured and structurally sound.
- Moisture content should be controlled; avoid standing water.
- Steel substrates must be prepared to SA 2.5 finish.

7. Mixing

BC AR Polyurea (Food Grade) is supplied in two components (A & B), mixed automatically at the spray gun.

- Mixing Ratio: 1: 1 by volume
- Mixing occurs in high-pressure, heated plural-component spray equipment
- No manual mixing required

8. Application

- Apply only with high-pressure, heated plural spray equipment.
- Tack-free time: 10–20 seconds
- Overcoat window: 0–12 hours (no prep)
- Typical consumption: 1–1.2 kg/m²/mm
- Typical DFT:
 - Steel: Minimum 1 mm
 - Concrete: Minimum 2 mm

Curing / Return to Service

- Walkable: 5 minutes
- Mechanical load: 1 hour
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9. Coverage

Thickness	Consumption
1 mm	1.0 – 1.2 kg/m ²
2 mm	2.0 – 2.4 kg/m ²

Actual rate may vary depending on substrate profile.

10. Packaging

Supplied in standard polyurea spray-grade sets:

- Component A (ISO) – 220 kg Drum
- Component B (Polyol Food Grade) –196 kg Drum



11. Clean-Up

- Clean equipment with approved system flush solvents.
- Do not allow material to cure inside hoses or gun.

12. Storage & Shelf Life

- Store drums in a cool, dry, and shaded area.
- Avoid long exposure to direct sunlight or high temperatures.
- Keep tightly sealed to prevent moisture absorption.
- Shelf Life: Minimum 12 months when stored at 15–30°C in original sealed containers.
- Do not store near food or potable water sources.

13. Health & Safety

- All applicators must be trained & approved by BCI.
- Avoid inhalation of vapors during spraying.
- Avoid skin and eye contact.
- Ensure good ventilation.
- In case of skin contact: wash with soap and water.
- In case of eye contact: rinse immediately and seek medical help.
- Refer to the SDS for detailed safety guidelines.

DISCLAIMER

The data presented in this sheet are based on laboratory testing and practical experience. Variations in substrate, application method, and environmental conditions may impact performance. Users are advised to carry out tests under their own conditions. Building Chemistry Industry's responsibility is limited to the product replacement in cases of proven manufacturing defect.

