



# Technical Data Sheet

## BC Poxy 4500 S

### 100% Solids, Flake-Filled, High-Build Epoxy Coating

#### 1. Product Description

BC Poxy 4500 S is 100% solids, high-performance, flake-filled epoxy coating specially formulated for the protection of internal steel and concrete structures. It provides exceptional adhesion, chemical resistance, and impact strength. The product is ideal for use in tanks, pipes, sheet piling, and marine or immersion environments.

This solvent-free formulation allows application in thick films, up to 60 mils in a single coat, providing superior long-term corrosion protection.

#### 2. Features & Benefits

- 100% solids – VOC-free formulation.
- Excellent adhesion to steel and concrete.
- High impact and abrasion resistance.
- Outstanding resistance to a broad range of chemicals.
- Can be applied up to 60 mils (1,524 µm) in a single coat.
- Suitable for single-component airless or plural spray systems.
- Complies with ASTM G210 – SWAT (Severe Wastewater Analysis Test).
- NSF 61 & NSF/ANSI/CAN 600 certified for potable water use.
- Excellent mechanical strength and flexibility.

#### 3. Typical Applications

- Internal lining of steel and concrete tanks.
- Pipe linings, pilings, and marine immersion structures.
- Wastewater treatment plants, clarifiers, and sumps.
- Potable water tanks and reservoirs.
- Protective coating for steel piling in splash zone.



## 4. Technical Properties

Property	Test Method / Standard	Typical Value
Generic Type	—	100% Solids, Flake-Filled Epoxy
Color	—	Light Grey (U74P), White (U80P), other colors on request
Volume Solids	—	100%
VOC Content	ASTM D3960	0.0 g/L
Dry Film Thickness (per coat)	—	20–30 mils (508–762 µm)
Maximum Film Build	—	60 mils (1,524 µm) per coat
Pot Life @ 24 °C (75 °F)	—	45–60 minutes
Bond Strength (Steel)	ASTM D4541	1,700 psi
Flexural Modulus of Elasticity	ASTM D790	$5.9 \times 10^6$ psi
Flexural Strength	ASTM D790	10,800 psi
Tensile Strength	ASTM D638	7,000 psi
Hardness (Shore D)	ASTM D2240	70 +
Curing Schedule @ 24 °C (75 °F)	—	Touch Dry: 18 h Hard Dry: 24 h Chemical Service: 36 h Full Cure: 7 days

## 5. Substrates & Surface Preparation

### Steel

- Surface must be clean and dry.
- Achieve a minimum 3 mil (75 µm) sharp anchor profile.
- Repair all defects before coating.



## Concrete

- Concrete must cure at least 28 days @ 21 °C.
- Remove laitance and create surface profile ICRI CSP 4–7.
- Fill voids and cracks with suitable epoxy filler.

## 6. Mixing

1. Pre-mix Part A and Part B individually until homogeneous.
2. Combine Part A : Part B = 4 : 1 (by volume).
3. Mix using a mechanical mixer for 2–3 minutes until color and consistency are uniform.
4. Avoid excessive air incorporation.
5. No thinner is required.

Pot Life: 45–60 minutes @ 75 °F (24 °C).

## 7. Application Guidelines

Method	Equipment Recommendation
Airless Spray (Single Component)	Ratio 45:1 pump, 3/8" I.D. hose ( $\leq$ 30 m), tip 0.019"–0.035", pressure 55–65 psi
Plural Component Spray	Fixed ratio 4:1 pump, heated hoppers (Part A = 110 °F, Part B = 90–100 °F), reverse-a-tip 0.019"–0.035"
Brush / Roller	Not recommended except for welds, edges, or stripe coating

## 8. Application Conditions

Condition	Minimum	Maximum
Material Temperature	24 °C (75 °F)	27 °C (80 °F)
Surface Temperature	10 °C (50 °F)	38 °C (100 °F)
Ambient Temperature	10 °C (50 °F)	38 °C (100 °F)
Relative Humidity	0%	90%

Substrate must remain 5 °F (3 °C) above the dew point during application and curing.



## 9. Curing

Temperature	Touch Dry	Hard Dry	Chemical Service	Full Cure
10 °C (50 °F)	48 h	72 h	5 days	14 days
24 °C (75 °F)	18 h	24 h	36 h	7 days

## 10. Packaging

Part A	16 kg
Part B	4 kg
Set	20 kg kit

## 11. Storage & Shelf Life

- Store in tightly closed original containers between +4 °C and +43 °C.
- Keep away from direct sunlight and ignition sources.
- Shelf Life: 24 months (Part A & B).

## 12. Health & Safety

- Contains epoxy resins—avoid skin and eye contact.
- Use protective gloves, goggles, and clothing.
- Ensure adequate ventilation during application.
- Keep away from heat, sparks, and open flame.
- Refer to the Material Safety Data Sheet (MSDS) for detailed handling information.

### 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.

