// METHOD STATEMENT · SPRAY COATINGS

PETROUREA Polyurea Spray Application

Hot-spray pure polyurea on concrete and steel: waterproofing, tanks, bunds and industrial surfaces

DOCUMENT	REVISION	ISSUE DATE	SYSTEM
PS-MS-05	Rev 01	04 Nov 2026	PETROUREA 300–800

1. Purpose & scope

This method statement covers surface preparation, priming, plural-component hot-spray application and quality control of PETROUREA pure polyurea coatings on concrete and steel. Uses include roof and deck waterproofing, tanks and bunds, and industrial surfaces.

The PETROUREA grade, thickness and primer are selected per project for immersion, chemical, temperature, UV and mechanical exposure. Chemical media and immersion limits must be confirmed for each project.

2. Reference documents

- PETROUREA Coatings System Brochure
- PETROUREA grade and primer product data
- ISO 8501-1 (steel cleanliness), ICRI 310.2R (concrete surface profile)
- ASTM D4541 / D7234 (pull-off adhesion), ASTM D4787 / NACE SP0188 (holiday testing)

3. Responsibilities

ROLE	RESPONSIBILITY
Project manager	Confirms grade selection and approves method statement.
Spray operator (trained)	Operates proportioner and gun. Controls temperature, pressure and ratio.
QA/QC inspector	Environmental readings, surface prep acceptance, thickness, adhesion and holiday tests.
Helpers	Masking, material handling, housekeeping.

4. Materials

- PETROUREA polyurea, A (isocyanate) and B (resin) components, grade as specified
- Primer / sealer compatible with the substrate
- Repair materials: epoxy mortar for concrete, filler for steel pits
- Optional aliphatic top coat for UV colour stability
- Masking tape and polythene for protection

5. Tools & equipment

- Heated plural-component proportioner and heated hose
- Impingement-mix spray gun
- Drum heaters / band heaters and drum mixers for B side
- Shot blaster (concrete) or abrasive blasting set (steel)
- Dew point meter, surface thermometer, moisture meter
- DFT gauge (steel) / ultrasonic gauge or witness panels (concrete)
- Holiday detector, pull-off adhesion tester

6. Health, safety & environment

- Isocyanate exposure: spray operators wear a supplied-air respirator, full chemical suit and gloves. Others keep out of the spray zone.
- Barricade and sign the spray zone. Mask or move vehicles and equipment against overspray.
- Ventilate enclosed spaces (tanks). Use confined-space permits and gas testing.
- Hot-hose hazard: hoses run at about 70–85 °C and high pressure. Never point the gun at anyone.
- Abrasive blasting: blast suit, helmet with air supply, hearing protection.
- Read the SDS for A and B components. Keep the spill kit at the proportioner.

7. Conditions before starting

- Grade, thickness and primer approved for the exposure.
- Concrete cured at least 28 days and within the moisture limit of the primer product data.
- Substrate temperature at least 3 °C above dew point, measured and recorded before and during spraying.
- Equipment serviced. Ratio check / test spray on a sample panel done at the start of each shift.

8. Surface preparation — concrete

1. Shot-blast to an open texture (ICRI CSP 3–5, or as specified). Remove laitance fully.
2. Fill blow holes, cracks and defects with epoxy mortar. Treat joints as detailed.
3. Vacuum clean.

9. Surface preparation — steel

1. Remove oil and grease with a solvent clean.
2. Abrasive blast to ISO 8501-1 Sa 2½, with a sharp angular profile as specified.
3. Remove dust. Prime the same day before any flash rust appears.

10. Priming

1. Apply primer / sealer by roller or spray at the TDS rate.
2. Spray polyurea within the primer's recoat window. Re-prime if the window is exceeded.

11. Equipment set-up

1. Pre-heat drums. Mix the B side as required by the TDS.
2. Set the proportioner and hose temperature (typically 70–85 °C) and pressure per the PETROUREA grade data and the equipment manufacturer.
3. Mixing ratio 1:1 by volume, unless the PETROUREA TDS states otherwise.
4. Spray a test patch on polythene or a panel. Check cure, colour uniformity and mix before going onto the work.

12. Spray application

1. Spray in a cross-hatch pattern, holding the gun at 45–60 cm and perpendicular to the surface, with each pass overlapping the previous by 50%.
2. Build to the specified dry film thickness in multiple passes. Monitor thickness continuously.
3. Detail edges, corners and penetrations first, then spray the field.
4. If application stops for longer than the recoat window, abrade and prime the edge before restarting.
5. Apply UV top coat where specified.

13. Testing and return to service

1. Measure thickness on a grid (steel: DFT gauge. Concrete: ultrasonic gauge or witness panels).
2. Holiday-test immersion service areas (tanks, bunds) and repair every holiday.

3. Pull-off adhesion tests at the frequency specified.
4. Return to service after the cure time on the TDS. Tanks should not be filled before full cure.

14. Inspection & test plan (hold points)

#	STAGE	CHECK	ACCEPTANCE	RECORD
01	Environment	Dew point, substrate temperature, RH	Substrate ≥ 3 °C above dew point	Environmental log (each 2 h)
02	Surface prep	Profile, cleanliness	CSP 3–5 / Sa 2½ as specified	Inspection report + photos
03	Equipment	Temperature, pressure, ratio test	Within TDS, good test patch	Shift start record
04	Thickness	DFT readings	≥ specified DFT, no low spots	Thickness map
05	Holidays	Spark / wet-sponge test	No holidays (immersion areas)	Holiday test report
06	Adhesion	Pull-off	As per project specification	Adhesion report

15. Common defects to avoid

- Spraying below dew point margin, causing blisters and pinholes
- Off-ratio mix (soft or brittle, colour streaks)
- Inadequate surface profile, so the coating peels
- Pinholes from concrete outgassing when the sealer is skipped
- Thin film on edges and corners
- Return to service before full cure

16. Handover records

- Environmental and equipment logs
- Batch numbers of A, B and primer
- Thickness map, holiday and adhesion reports
- Photo record of prep and each area

PREPARED BY	CHECKED BY (QA/QC)	APPROVED BY (CONSULTANT)
Name / signature / date	Name / signature / date	Name / signature / date

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