

AMERICAN COATINGS

SPECIFICATION

For applying a one hundred percent solids reinforced fiberglass laminate with optional finish gel coats.

Recommended for application to internal tank bottoms, tank shells, and exterior cone or floating roofs.

Tank-Lok System #1 – Epoxy Fiberglass Laminate with TL 1 Blue Gel Coat

Tank-Lok System #2 – Epoxy Fiberglass Laminate with TL 47 White Gel Coat

Tank-Lok System #3 – Epoxy Fiberglass Laminate with EP 8505 Green Phenolic Gel Coat

1. SCOPE

This specification includes the surface preparation, materials, and application of a fiberglass reinforced, one hundred percent solids, epoxy coating system for protection and/or repair of steel surfaces, on interior or exterior steel surfaces of floating or cone roof storage tanks, operating at ambient conditions.

2. REFERENCES

The Contractor shall comply with the latest issue of the following standards:

STEEL STRUCTURES PAINTING COUNCIL (SSPC)

PA-1 Shop, Field, and Maintenance Painting

SP-1 Solvent Cleaning

SP-3 Power Tool Cleaning

SP-7 Brush-Off Blast Cleaning

SP-5 White Metal Blast Cleaning

SP-10 Near White Blast Cleaning

3. REQUIREMENTS TO BE COMPLETED BEFORE APPLICATION OF THE FIBERGLASS LINING SYSTEM

3.1 Riveted tanks shall have the following mechanical repairs made prior to coating the tank bottom:

1. All but joints in the bottom curb angle shall be welded solid to provide a continuous curb angle.
2. Install an adequate water stop in all vertical laps or butt joints in the bottom shell course.
3. All welding flux, weld spatter, sharp metal projections, and laminations shall be ground smooth prior to solvent and blast cleaning.

3.2 Steel plates to be installed under support bases.

1. Pre-cut ¼" thick steel plates 18-24 inches square to be precoated and installed under all roof support legs, vacuum breakers, and other equipment projecting below the roof deck which could possibly come in contact with the tank roof when in the down position.

2. Blast clean SSPC-SP-5 and coat one side of the plate and apply hand lay-up application of fiberglass and 100% volume solids epoxy leaving a four-inch wide strip to the entire perimeter of each plate uncoated.
3. Blast clean per SSPC-SP-5 to the entire underside of the coated plate and a corresponding area on the tank bottom. Mix American Coatings TC 7 Epoxy Caulk and spread a coat of the Epoxy Caulk to the two blast-cleaned surfaces. Place plate over the designated area and featheredge the sides of the plate with TC 7 Epoxy Adhesive in order to provide a smooth transition. See Figure 3.

4. COATING AND REINFORCING MATERIALS

The Coating materials specified shall be applied only when the ambient and substrate temperature exceeds 50° F and the relative humidity is below 85%.

1. Delivery and handling of materials.

All coatings and fiberglass materials shall be delivered to the job in original, unopened containers, bearing the name, trademark and batch number of the manufacturer. All fiberglass must be dry at all times.

2. Physical Properties.

Consult manufacturer literature.

5. SURFACE PREPARATION (STEEL SURFACES)

1. All oil, grease and other foreign matter shall be removed prior to blast cleaning by chemical cleaning per SSPC-SP-1 if needed.
2. Surfaces to be fiberglass coated shall be blast cleaned to a white metal sandblast per SSPC-SP-5 standard. Tank bottom blasting shall be done to extend at least 6 to 8 inches above the coating height.
3. Inspection

The surface preparation is subject to inspection prior to primer coating. Apply primer to a dry film thickness of ½ to 1 mil only, using American Coatings EX 8300 primer.

6. PRIMER, SPOT REPAIRS, AND CAULKING

1. Remove dust from all blast-cleaned surfaces prior to prime coating. Apply primer to a dry film thickness of ½ to 1 mil only, using American Coatings EX 8300 primer.
2. The primer coat is applied only as a sandblast “holding primer”. If oxidation occurs before the laminating operation, reblast the areas in accordance with 5.2.
3. Any holes or penetrations of the steel bottom shall be patched with ¼” steel plate extending 4 inches beyond the penetrations in all directions. The plates shall be attached with America Coatings TC 7 Epoxy Caulk and have the edges feathered to provide a smooth transition for fiberglass operation. See Figure 2.
4. Deep pits shall be squeegeed full with American Coatings TC 7 to provide a smooth surface to the same height as tank bottom.
5. Spray apply American Coatings TC7 to all weld seams, lap joints, attached appurtenances, and the curb angle joint to provide a smooth transition for the fiberglass coat. See Figure 1 and 4.

7. APPLICATION OF THE FIBERLASS REINFORCED EPOXY COATING SYSTEM

1. Interior tank bottom and shell

Apply American Coatings TL 1 Blue Epoxy incorporating 1 ½ ounce per square foot of chopped continuous glass roving to the entire tank bottom, and 4 inches over each side of the leg protector plates. Extend the system up the shell a minimum of 18 inches. All surfaces shall be rolled immediately in order to thoroughly wet out the chopped glass roving and to form a 50-55 mil glass laminate. Wet film readings should be taken during this application.
2. Exterior Roof

Same as 7.1 above but 100% solids Epoxy Laminating material is American Coatings TL 47 White.
3. Glass Roving shall be Owens Corning 447 BA-211 or equal.
4. Any projecting glass strands visible after the laminate has cured shall be sanded flush with the adjoining fiberglass surface.

8. GEL COAT APPLICATION

1. Tank-Lok System #1 – American Coatings TL 1 Blue Epoxy Fiberglass Laminate
 1. A 10-mil resin-rich gel coat of American Coatings TL 1 shall be applied within 24 hours of the 50-55 mil fiberglass operation. If 24-hour recoat is not possible, brush blast per SSPC-SP-7 and apply 10 mil TL 1 Blue Gel Coat.
2. Tank-Lok System #2 – American Coatings TL47 White Epoxy Fiberglass Laminate.
 1. A 10 mil resin-rich gel coat of American Coatings TL 47 shall be applied within 24 hours of the 50-55 mil fiberglass operation, If 24-hour recoat is not possible, brush blast per SSPC-SP-7 and apply 10 mils TL 47 White Gel Coat.
3. Tank-Lok System #3 – American Coatings TL 1 Blue Glass Coat with EP 8505 Green Epoxy Phenolic Gel Coat.
 1. A 10 mil resin coat of American Coatings EP 8505 Epoxy Phenolic shall be applied within 24 hours, of the 50-55 mil TL 1 and Fiberglass operation. If 24-hour recoat is not possible, brush blast per SSPC-SP-7 and apply 10 mil EP 8505 Green Gel Coat.

9. INSPECITON

The coating shall be inspected with a high-voltage holiday detector set at a minimum of 100 volts per mil.

10. MATERIALS

Primer	American Coatings	EX 8330
Caulk	American Coatings	TC 7 Blue
Laminating Epoxy	American Coatings	TL 1 Blue
Laminating Epoxy	American Coatings	TL 47 White
Gel Coat	American Coatings	TL 1 Blue
Gel Coat	American Coatings	TL 47 White
Gel Coat	American Coatings	EP 8505 Green