polyguard
PIPELINE

RD-6®, X-Wrap and RD-6® UVO Coating System Application Specification for Air-to-Soil Transitions

DESCRIPTION:

POLYGUARD RD-6® COATING SYSTEM consists of a geotextile backed protective pipeline coating applied over a companion liquid adhesive along with the outerwrap applicable to the installation. Application by machine permits the coating to be installed under higher tension.

POLYGUARD X-Wrap (Formerly IRO) products are designed to protect field joint coatings and mainline coatings from abrasion damage during directional drilling, HDD and boring. X-Wrap creates an abrasion resistant, sacrificial outer layer which protects pre-approved field joint coatings and mainline coating such as RD-6, Fusion Bond Epoxy (FBE), liquid epoxies, or any other coatings.

POLYGUARD SP-6™ UNBONDED OUTERWRAP is an integral part of the RD-6® Coating System. It consists of a strong non-woven, felt like polypropylene fabric. Its high tensile strength and low elongation properties provide a slip-plane that results in an outerwrap which mitigates soil stress. **(Optional: if X-Wrap is used SP-6 is not needed.)**

POLYGUARD RD-6® UVO™ Overcoat is a single component, low VOC UV resistant, water-based liquid coating that is highly resistant to the damaging effects of UV light rays. RD-6 UVO™ protects the RD-6® anticorrosion coating from harmful UV rays. Direct exposure to sunlight will result in degradation of the RD-6®.

APPLICATION SPECIFICATION:

1. **HANDLING & STORAGE OF MATERIALS:**

1.1. System and accessory products should be hauled and stored in such a manner as to prevent damage to the packaging.

1.2. Product must be stored in its original packaging, in a dry place, kept from contact with the ground, and protected from weather at all times.

2. **SURFACE PREPARATION:**

2.1. Surface preparation of steel substrate

2.1.1. All metal surfaces shall be free of rust, moisture, weld spatter or foreign contaminants. SSPC-SP 1 Solvent Cleaning is recommended to provide a clean contaminant free surface (suggested solvents include MEK, Toluene, Acetone, Alcohol). Use solvents that will not deposit residual contaminants on the surface being cleaned, such as those that contain heavier hydrocarbons (e.g. mineral spirits, kerosene, diesel fuel).

2.1.2. Minimum surface preparation shall be wire-brushed by hand per SSPC-SP 2 or power-brushed per SSPC-SP 3. If an abrasive blast is specified, the minimum surface preparation should be NACE No. 3/SSPC-SP 6 commercial blast.

2.1.3. The substrate shall be at least 5°F (3°C) above the dew point temperature before and during the application process. Preheating of the pipe may be required to meet these conditions.

2.1.4. Surface preparation contaminants must be removed prior to liquid adhesive application.

PO BOX 755
ENNIS, TEXAS 75120-0755
PH: (1) 469-334-4238

2.2. Surface preparation of adjacent anti-corrosion coatings (e.g. cutbacks, repairs)

2.2.1. The mainline, factory applied, or existing coating shall be prepared by abrading the surface prior to application of the 600 Liquid Adhesive.

2.2.2. Prepare to a NACE No. 6/SSPC-SP 7 brush-off blast (ISO Sa 1 Light blast cleaning) or use 60-80 grit sandpaper until surface is well scratched.

3. **LIQUID ADHESIVE APPLICATION:**

3.1. Preheating of the application area is recommended when pipe temperatures are below 70°F (21°C). Optimal surface temperature of the substrate during application is 70-100°F (21–38°C).

3.2. Do not thin liquid adhesive.

3.3. Stir or shake 600/601 liquid adhesive for 30-60 seconds before using.

3.4. Apply a thin, even coat of liquid adhesive with brush or roller to a clean and dry substrate.

3.5. It is recommended that the liquid adhesive extend 1-2 inches beyond the leading and trailing edges of the RD-6® Coating.

Note: The extension of the liquid adhesive beyond the RD-6® coating is solely to provide visual confirmation of proper application of the liquid adhesive for inspection purposes.

3.6. Allow the liquid adhesive to dry prior to application of RD-6.

4. **RD-6 APPLICATION:**

4.1. It is recommended to apply RD-6® using a Polyguard-approved machine such as the Wrapster. Hand-application may be used when machine application is not practical.

4.2. Coating is spirally wrapped with compound side applied directly onto the dry/tacky liquid adhesive.

4.3. Begin and end the application of the RD-6® a recommended 12 inches below and 12 inches above the air-to-soil transition. The RD-6® shall start from below the surface and end above ground. It is important that the ending of the RD-6 above ground be applied with tension. A 50% overlap is recommended with 1inch being the minimum. Sufficient tension should be used to conform to the surface being coated and provide a smooth wrinkle-free application with no voids.

5. **INSPECTION AND REPAIR:**

5.1. Inspection

5.1.1. The coated pipe should be inspected with a holiday detector before outerwrap is applied.

5.1.2. Polyguard recommends setting the holiday detector at 4000 volts for a single layer application of RD-6® and at 8000 volts when applied with a 50% overlap.

5.1.3. All holidays and damaged or defective coating shall be repaired immediately.

5.2. Repair

5.2.1. Small or pinhole type holidays can be repaired in the RD-6® by applying liquid adhesive over the holiday area and let dry to touch, once dry make a complete wrap of one and a half revolutions around the repair area.

5.3. All coating repairs shall be reinspected as outlined in section 5.1 Inspection above.

6. **X-Wrap APPLICATION:**

6.1. Materials and tools Required for Application of X-Wrap

- X-Wrap sealed foil pouch,
- Compression film (supplied separately),
- Perforator tool (supplied separately)
- Water source

6.2. Surface Preparation over RD-6® Coating System:

6.2.1. Apply IRO directly over RD-6®. No preparation is required.

6.3. Application of X-Wrap

6.3.1

A. Thoroughly wet all areas to be wrapped with water. It is recommended that the X-Wrap extend 1 inch beyond the leading and trailing edge of the RD-6.

B. Remove X-Wrap from foil pouch. Begin application by overlapping bottom edge of RD-6® a minimum 1 inch.

C. Begin wrapping and wetting product with water simultaneously on the surface. All sides of X-Wrap shall be wet during entire application. Start with two complete circumferential wraps on the underground portion of the RD-6®.

D. The X-Wrap shall be held tightly to the pipe surface so to prevent any creases or wrinkles. After the first two 100% wraps of X-Wrap are applied, spiral wrap remaining distance with a 75% overlap. Do not reverse the direction of the wrap before completing the entire application length. At the end of the section, finish the X-Wrap application with two 100% wraps.

E. Immediately after application of X-Wrap is complete, apply compression film to X-Wrap in a spiral wrap fashion with a 50% overlap. Begin in the same direction as the X-Wrap was applied starting 2 inches beyond the starting and finishing edges of the X-Wrap and then reverse direction. This will give you 2 complete passes of compression film with a 50% overlap and 4 layers of film.

F. Upon completion of compression film application use the perforator tool to puncture the film the length and circumference of the X-Wrap application.

G. When X-Wrap has hardened the compression film can be removed.

H. Measure the hardness of the X-Wrap using a durometer directly on the fibers of the weave. A Shore D reading of the X-Wrap must attain 60 before burying the pipe.

Notes

A UV protective topcoat will be required over the X-Wrap to prevent fading. Polyguard RD-6 UVO™ is an approved product for UV protection of X-Wrap.

6.4. Installation Notes

A. Cold weather installations: follow procedures above, however, use ethylene glycol in the sprayer (instead of water) to speed up the curing process, since X-Wrap will not cure on its own at temperatures below 40°F (5°C). Store unopened bags of X-Wrap in a heated truck if possible.

B. Hot weather installations: follow procedures above, however, use ice water in the sprayer to slow down the curing process, thus allowing the installer more working time. Store unopened bags of X-Wrap in an ice chest if possible.

7. **SP-6 OUTERWRAP APPLICATION: (Optional, if X-Wrap is used SP-6 is not needed.)**

7.1. SP-6 OUTERWRAP is recommended over the RD-6 for pipe diameters 4 inches or greater. It is to be applied on the pipe surface below ground where X-Wrap was not used.

7.2. Begin and end the application of the SP-6 starting below ground and ending at the surface. The SP-6 Outerwrap should extend below ground past the RD-6 a minimum of 1 inch (25mm).

7.3. SP-6 Outerwrap is spirally applied with a minimum 1-inch overlap.

7.4. Apply with enough tension to achieve a smooth surface while covering the entire applied section of RD-6 coating.

7.5. Wrap enough 0.5 – 1 inch (13 – 25 mm) wide fiber-reinforced packing tape around each end of the applied SP-6 Outerwrap to hold it in place during backfilling.

8. **RD-6 UVO™ Application:**

8.1. RD-6 UVO™ may be applied with a brush, roller, or airless spray method to cured, clean and dry IRO surface. Surrounding conditions for successful application are humidity less than 85%; and temperature greater than 5°F (3°C) above the dew point. It is recommended the product be kept warm, with a minimum of 65°F (18°C). Stir the RD-6 UVO™ thoroughly to obtain a uniform consistency before applying. DO NOT THIN LIQUID COATING. In the event of cold weather, store inside prior to use. DO NOT FREEZE. Apply the material in two equally thick coats. Allow the material to dry to tacky between coats. The coating shall be uniform with no thin spots.

Technical Service:

Polyguard Products Inc.

Ennis, Texas 75120-0755

PH: 281.580.5700

www.polyguard.com