

IRO™ (IMPACT RESISTANT OUTERWRAP)

APPLICATION SPECIFICATION FOR IRO

DESCRIPTION:

POLYGUARD IRO (Impact Resistant Outerwrap) consists of a strong fiberglass wrap that is pre-impregnated with a water activated resin that hardens in minutes.

1.1 Impact, Abrasion and Mechanical Protection for Pipe

1.1.1 Material Storage and Handling

A. Do not open or puncture package containing IRO until ready for application. If seal is broken the IRO curing process will begin and product will need to be applied immediately.

B. Storage is recommended at an ambient temperature of 40°F to 83°F (5°C to 28°C). Exposure to temperatures above 110°F (44°C) or below 40°F (5°C) may affect the quality of the product.

1.1.2 Materials and tools Required for Application of IRO

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

1.1.3 Surface Preparation Recommendations for Application of IRO & IRO HD:

Note: Application of IRO assumes that the underlying coatings have been applied correctly and if required the holiday inspection has been completed prior to the IRO application.

A. Surface Preparation over RD-6 Coating System:

- a. Apply IRO directly over RD-6.
- b. Transitions from RD-6 to mainline coatings will require those surfaces to be roughened. Sweep blasting or hand sanding with 80 grit sandpaper will suffice. A 1 - 3 mil anchor profile is required when sweep blasting. For proper anchoring of the IRO it is required that the

surfaces be roughened a minimum 8" on each side of the edges of the RD-6.

B. Surface Preparation over Epoxy Coating:

- a. IRO should be applied within the Epoxy manufacturers re-coat window to minimize additional surface prep requirements.
- b. If re-coat window has passed the surface must be sweep blasted. A 1 - 3 mil anchor profile is required when sweep blasting. For proper anchoring of the IRO it is required that the surfaces be roughened a minimum 8" on each side of the Epoxy Coating.
- c. Hand-sanding with 80 grit is an option if sweep blasting is unavailable.

C. Surface Preparation over Polyethylene Sleeves, Tapes, Etc.:

- a. These coatings systems do not require a sweep blast or abrasion prior to installation.
- b. The mainline coating system shall be abraded a minimum 8" on each side of these coating systems.

1.1.4 Application of IRO

- A.** Thoroughly wet all areas to be wrapped with water.
- B.** Remove IRO from foil pouch. Begin application by overlapping edges of field joint coating 6". Each side of the field joint coating will have 6" of IRO applied and 2" of prepared surface exposed. (If Applicable).
- C.** Begin wrapping and wetting product with water simultaneously on the surface. All sides of IRO shall be wet during entire application. Start with 2 complete circumferential wraps on the side closest to the bore. If application is at an air-to-soil transition begin with application of IRO below ground and proceed above.
- D.** The IRO shall be held tightly to the pipe surface so to prevent any creases or wrinkles. After the first 2 100% wraps of IRO is applied spiral wrap remaining distance with a 75% overlap. Do not reverse the direction of the wrap before completing the entire application length. Additional layers may be required in areas of high mechanical stress. Consult with Polyguard representative to determine appropriate number of layers for the situation.
- E.** Immediately after application of IRO is complete, apply compression film to IRO in a spiral wrap fashion with a 50% overlap. Begin in the same direction as the IRO was applied starting 2" beyond the starting and finishing edges of the IRO 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 IRO application.
- G. When IRO has hardened the compression film can be removed.
- H. Measure the hardness of the IRO using a durometer directly on the fibers of the weave. A Shore D reading of the IRO must attain 60 before pulling the pipe.

Notes

If IRO is installed in an area that is above ground an appropriate UV protective top coat will be required to prevent fading. Polyguard RD-6 UVO is an approved product for UV protection of IRO.

1.1.5 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 IRO will not cure on its own at temperatures below 40°F (5°C). Store unopened bags of IRO 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 IRO in an ice chest if possible.

PRECAUTIONS:

This material is sold by **Polyguard Products, Inc.** only for the purposes described in this literature. Any other use of the products is the responsibility of the purchaser and **Polyguard Products** does not warrant nor will be responsible for any misuse of these products. **Polyguard Products** will replace material not meeting our published specifications within one year from date of sale.

HEALTH AND SAFETY:

All **Polyguard Products** Safety Data Sheets (SDS) and precautionary labels should be read and understood by all user supervisory personnel and employees before using. Purchaser is responsible for complying with all applicable federal, state or local laws and regulations covering use, health, safety, and disposal of the product.

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