



## PROPERTIES

**COLOR:** Black

**COMPOSITION:** Rubber modified asphalt with cross-laminated polyethylene

**SERVICE TEMPERATURE:**  
(Temperature at membrane surface)  
-25° F to 160° F (-32 to 71° C)

**STANDARD ROLL SIZE**  
4" x 75' (10 cm x 22.9 m)  
35.5" x 75' (0.9 m x 22.9 m)\*

**TOTAL FILM THICKNESS:**  
50 mils (1.3 mm)

**TENSILE STRENGTH AND ELONGATION (ASTM D 412)**  
Tensile Strength >400 psi  
Elongation >300%

**WATER VAPOR PERMEANCE:**  
ASTM F 1249: < 0.015 perms. Tested at 100°F (38°C) and 90% RH.  
ASTM E 96, Procedure A: < 0.01 perms

**PUNCTURE RESISTANCE (ASTM E 154):**  
50 lbf (222 N) minimum

**OVERLAP ADHESION: (ASTM D 1000)**  
10 lb/in. width (18 N/cm)

**SURFACE BURNING CHARACTERISTICS (ASTM E 84):**  
Flame Spread: 0  
Applied to 1/4 inch (6.4 mm) inorganic reinforced cement board. The flame spread may vary when applied over other surfaces.

**RESISTANCE TO DETERIORATION FROM CONTACT WITH SOIL (ASTM E 154):**  
Pass. No loss of performance

**PLIABILITY AT LOW TEMPERATURE (ASTM D 146)**  
No cracking, remains pliable at -25°F (-32°C)

\* Actual width cut to 23.5" or 35.5" for convenient application when C.I. Wrap is pre-applied to insulation in-shop

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## Vapor Retarder Sheet Membrane

**Foster C.I. Wrap™ 50** is a heavy duty 50 mil flexible vapor retarder sheet membrane. It is comprised of synthetic, rubber modified asphalt laminated to a tough polymer film and a treated peel and stick release liner. It is available in 4" and 35.5"\* widths.

**C.I. Wrap™ 50** is used to provide a protective moisture retarder and vapor retarder film over cold and cryogenic piping and equipment insulation. It may be used over thermal insulation including cellular glass, polyurethane, polyisocyanurate, polystyrene, rigid fiberglass and others.

**C.I. Wrap™ 50** is used for direct burial underground and jacketed above ground applications. It provides a factory controlled film thickness and fast, labor saving application. The membrane is elastomeric allowing for expansion and contraction of the insulation system. It is self-healing and forms a strong bond to the substrate and the sheet overlaps.

**C.I. Wrap™ 50** has a Class 1 flame spread when tested by ASTM E-84.

**C.I. Wrap™ 50** is also used to protect insulation on buried hot service pipelines.

### LIMITATIONS

Apply below 125°F (52°C). Sheet should be stored at 70° F for at least 24 hours before applying in temperatures below 60°F. Keep rolls warm until used. See application guide for applying in temperatures below 50°F (10°C).

Do not apply to damp, frosty or contaminated surfaces.

Membrane should not be left exposed to UV for more than 14 days. Cover with jacketing as specified. If jacketing is not to be applied for longer than 14 days, cover temporarily with black plastic sheeting.

Membrane is not to be used for banding or mechanical fastening. Standard fastening of insulation is required.

Over polystyrene insulation on exterior applications, the membrane should be jacketed immediately with a white or light reflective jacket. If left exposed to sun, C.I. Wrap 50's black color may heat up enough to melt insulation.

Maximum temperature at C.I. Wrap surface is 160°F (71°C). On hot lines ensure that excess heat does not escape through insulation joints and exceed upper temperature limit.

For application by skilled professionals only.

# APPLICATION GUIDE FOR FOSTER® C.I. WRAP 50

## PREPARATION

Insulation must be properly secured in place per insulation manufactures instructions. Remove any loose insulation, dust or other contaminants. Prime dusty insulation with Foster 85-45 Fos-Stik™ Adhesive to improve adhesion of C.I. Wrap. Ensure insulation is dry and free of frost or condensation. Blistering of sheet may occur if wrap is applied over wet insulation.

## APPLICATION

C.I. Wrap 50 is best applied by cigarette wrapping. Cut membrane to desired length. Ensure length includes a minimum 2" (50 mm) overlap. Start by positioning the membrane such that the finished overlap will allow for water to drain over and not into the lap. Peel back six to twelve inches of the release liner taking care not to allow any exposed adhesive to touch itself. Firmly press exposed edge of sheet in place and continue removing release liner and smoothing sheet to substrate. Avoid wrinkling.

All longitudinal and circumferential seams must be overlapped a minimum of 2" (50 mm). Ensure complete contact at the laps and to the substrate using a roller or firm pressure throughout. Stagger laps of subsequent pieces. When C.I. Wrap is applied to the insulation in the shop, finish butted up seams in the field using 4" (100 mm) wide C.I. Wrap evenly spaced over the joint and wrapping all the way around the pipe overlapping a minimum of 2". Any fish mouths or wrinkles in the sheet shall be slit to allow for smoothing and wrapped with a 4" strip that covers the entire seam with a minimum 2" overlap.

All penetrations, insulation supports, valves, expansion and contraction joints and other protrusions must be properly flashed to ensure complete seal between the protrusion and the membrane's polymer film. Foster Elastolar® Sealant, 95-44 may be flashed directly over the C.I. Wrap facing. Consult engineers application instructions for recommendation on proper flashing.

Use 4" wide C.I. Wrap to spiral wrap elbows or cut gores using appropriate templates. Overlap all seams by 50%. If a mastic is preferred to cover elbows or fittings adjacent to C.I. Wrap membrane do so by extending the mastic and reinforcing mesh a minimum of 2" over the C.I. Wrap facing. Foster C.I. Mastic® 60-25 may be used for this purpose with no concern for bleed through. Where white, solvent based mastics are desired, such as Foster Monolar Mastic 60-38, tape terminations of sheet membrane with an acrylic PSA tape to cover the exposed asphalt cut ends. This will prevent bleed through. Mastic and reinforcing mesh should be extended at least 2" past edge of PSA tape onto membrane facing.

On exterior applications, C.I. Wrap 50 must be protected from the sun within a maximum of 14 days exposure. It is recommended jacketing be applied as soon as possible to protect the membrane from damage.

On low temperature applications where ambient temperatures of the substrates are below 60°F (16°C), the membrane should be stored, until used, at 70°F (21°C) minimum. To ensure good adhesion, the substrate may be heated with a bullet heater or heat gun just before applying warm sheet. Ensure the insulation and sheet are free from frost or condensation. On cold applications, a primer may also be used to improve adhesion. For application below 50°F (10°C) apply Foster Fos-stik Aerosol Adhesive, 85-45, or a compatible roofing underlayment primer to the facing of the sheet on the underside of the intended overlap. Allow the adhesive to tack up before removing the release liner and mating the top of the overlap. When temperatures are cold, but above freezing, a water based primer may also be used. Alternately a heat gun and roller may be used to warm the sheet on the overlap. Caution must be used to avoid melting the facing on the sheet. If both a solvent based primer and heat gun are being used, ensure all solvent vapors are exhausted before applying heat.

Repair damaged sheet by cutting out the damaged section and patching it with new membrane over the empty section, overlapping the existing sheet by a minimum of 2" all the way around the repaired area.

**Underground Direct Burial Applications:** Follow application instructions above. Where sealing around protrusions use Foster C.I. Mastic 60-25 and Mast-A-Fab membrane. On below grade applications it is recommended that longitudinal overlaps be increased to 3" (76 mm) minimum. **Backfilling:** Backfill shall be sand and free of rocks or other objects that may puncture membrane. Fill containing clay or other materials that may result in sticking to the membrane or shrinking and pulling at seams should not be used. Where soil stress conditions are possible, on large pipes, an un-adhered layer of polyethylene or other fabric should be placed over the wrap and taped in place prior to backfilling thus allowing for expansion and contraction of the insulation and C.I. Wrap without pulling at the seams. **Drainage:** C.I. Wrap is not designed for long-term immersion in water. The insulated pipe must be installed above the water line with a gravel and sand or fabric and drain tile drainage system and ditch configuration designed by an architect or engineer.

**CAUTION: Do not burn or over heat membrane as asphalt fumes can be generated.**

## CUSTOMER SERVICE: 800-832-9002

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