



Flexible, self-adhering waterproofing system for duct and pipe

DESCRIPTION

FlexClad-400™ is a patented, pre-fabricated self-adhering, waterproof, protective membrane. On top is an embossed, UV-resistant weathering surface. Under the aluminum is a double layer of tough, high density polyethylene reinforcement. Under the polyethylene is a uniform layer of aggressive rubberized asphalt adhesive which sticks directly to metal, insulation facers and most other clean, dry surfaces. The self-adhesive surface is protected by a disposable release paper.

RECOMMENDED USES

Apply FlexClad-400 over rigid board insulated ductwork, cold pipes, plenums and storage tanks. The product weatherproofs, resists water leaks and vapor transmission, preserves the efficiency of thermal insulation and reflects sunlight to reduce interior temperatures. The FlexClad-400 jacket is designed for exterior or interior use and it may be used in direct burial applications. FlexClad-400 self-seals around punctures.

ADVANTAGES

- All-weather – Use in place of rigid aluminum jacket or fabric/mastic systems
- Exceeds 25/50 Flame/Smoke Rating (0/5 actual test results)
- Self-stick application saves time, labor, materials, and equipment
- Seals at laps, resists moisture, protects metal & insulation
- Self-seals around punctures and fasteners
- Excellent elongation to accommodate structural movement
- Uniform thickness for optimum waterproofing performance

LIMITATIONS

FlexClad-400 is designed to act as a protective waterproofing barrier. Do not use the product as a substitute for banding or other means of securely attaching insulation and other underlying materials. Follow insulation manufacturer's instructions for attaching these products. FlexClad-400 is designed to protect insulation, air handling equipment and pipelines only from the infiltration of outside moisture into the system. It is not designed to handle the effects of pressure-driven moisture caused by differential temperatures, air movement or extraordinary humidity. FlexClad-400 is not designed for permanent emersion in water.

WARNINGS

- Avoid falls by using proper safety equipment and warning devices. FlexClad-400 is slippery when wet.
- FlexClad-400 is reflective and can contribute to sunburn. Protect skin and eyes and avoid prolonged exposure in direct sun.

- Follow instructions carefully. MFM not responsible for failure caused by improper installation, structural faults or failure of underlying or adjacent materials. Surfaces must be clean, dry, and warm. FlexClad-400 is pressure sensitive - roll all surfaces with a hand roller to assure positive adhesion.
- Store material in a dry place. Keep in carton until use - direct sun will reduce adhesion.

TECHNICAL DATA

PROPERTY	ASTM	RESULTS
Heat Aging	D 794	No visible blistering or deterioration
Tear Resistance	D 1424	660 gram(avg)
Elongation	D 412	450% min
Low Temp Flex	MFM test	100,000 cycles@ -10° F 1200 cycles@ -20° F No Cracking
Water vapor transmission	E-96-95	.009 perms
Flame spread index	E 84-97a	0
Smoke density index	E 84-97a	5
Wind-driven rain	SFBC #5683	No Leakage or Failure @100mph
UV stability	MFM test	Excellent

PACKAGING

Rolls of FlexClad-400 are 33.5' in length and are available in the following widths: 4", 6" and 36". All cartons contain 100 ft² and are shipped 30 cartons per pallet.

STORAGE

Store cartons on end. Protect cartons from moisture and physical damage. Keep in a heated building during cold weather and protect from temperatures exceeding 100° F. Do not remove rolls from cartons until applied.

INSTALLATION

FlexClad-400 is a pressure sensitive product. Adhesion is directly related to the amount of pressure applied to the membrane and to the length of time pressure is applied. Always apply concentrated pressure to the entire surface of the membrane with a hand roller. Duct bottoms and certain other areas may require the use of MFM Spray Adhesive. Apply pressure with a hand roller after the membrane has been embedded in the adhesive.

PREPARE SURFACE/ACCEPTABLE SUBSTRATES

Clean, primed metal ductwork and foil-faced rigid insulation boards are preferred substrates. Do not use over non-rigid substrates. Foil-faced (FSK) rigid insulation boards are

required on duct bottoms. Surface shall be free of dirt, dust, oil, moisture, frost or other foreign material. Clean foil facers with acetone to remove grease, hand oils and processing lubricants. Prime metal surfaces as necessary with MFM Prime-a-Seal™. Always prime concrete and other masonry surfaces. In all ductwork applications FlexClad-400 requires a minimum 3" side lap and 6" end lap. Wipe down overlap areas with acetone to remove hand oils.

On duct bottoms over 24" wide MFM Spray Adhesive is required. Apply a light, continuous layer of adhesive to the insulation facer, embed the FlexClad-400 and roll the membrane with a hand roller. Round or spiral insulated ducts require the use of MFM Spray Adhesive on the bottom half of the duct. The bottoms of insulated ducts wider than 36" also require mechanical attachment. Glued perforated pins with self-locking washers or insulated mini-cup pins shall be installed through the FlexClad-400 membrane and insulation and attached to the duct surface with each washer sealed by a 4" square of FlexClad-400 embedded in MFM Adhesive. Pins shall be installed on 12" centers with rows staggered.

Do not apply FlexClad-400 where the surface temperature of the insulation or other substrate will exceed 165° F or will fall below -10° F. Check all insulation joints for temperature extremes.

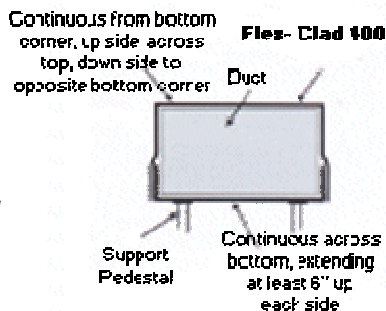
Duct tops shall have sufficient slope to eliminate ponding water. Apply FlexClad-400 shingle fashion to shed water over, not against, the laps. If the bottom of the duct is to be covered, it should be installed first with a continuous length of membrane extending across the bottom and up each side at least 6". Then the top section should be applied to extend from the bottom edge, up the side, across the top, and down to the opposite bottom edge. Do not terminate FlexClad-400 on the bottom of the duct.

As an alternative for larger ducts, after the bottom section of FlexClad-400 has been installed, individual sections may be cut to extent from the bottom edge up each side and onto the top of the duct at least 6". After applying both side sections, the top section may be applied starting 6" below the top edge, extending up and across the top and down the opposite side 6".

Application to duct bottoms is critical as it involves the negative effects of gravity on the membrane. When installing FlexClad-400 on the bottom of a duct, adhere the bottom section only to a properly prepared surface with maximum pressure applied over the entire area with a hand roller. On duct bottoms over 24" wide, embed the FlexClad-400 in a light, continuous layer of MFM Adhesive applied to the surface of the insulation facer and roll the membrane with a hand roller as described. MFM Spray Adhesive should be used on duct bottoms and in other areas where special adhesion requirements exist such as flashings, transitions, joints, elbows, valves, tees and other fittings.

ADHERING THE MEMBRANE

Cigarette wrap: cut into sections which allow for a 3" overlap at sides and ends. Depending upon the size, remove all or part of the release paper and press into place adhering the membrane directly around the unit. *Spiral wrap:* generally used with narrower widths (4", 6") this method can be effective for smaller diameter pipe. Remove a



9" section of release paper and apply around the unit at a 45° angle. Allow for a minimum 1" overlap.

Applying firm, uniform pressure to the entire membrane is an important part of the process and is necessary for good adhesion. Always use a hand roller with special attention to concentrate pressure at the seams and on the underside of ductwork. Use clean gloves during installation to prevent contamination of overlap areas with hand oils.

FlexClad-400 shall be applied in clear weather at temperatures above 50° F. It is possible to install the product in cooler weather by using one or more of the following techniques: store material in a warm area (>70°) until time of application, use an electric hot air gun to heat the substrate and to warm the adhesive surface of the membrane. Do not overheat the membrane. Do not use a torch or other open flame. There is no curing time required for FlexClad-400. Proper adhesion is dependent upon approved substrate, good surface preparation, optimum application temperature and firm pressure uniformly applied using a hand roller. Adhesion should be monitored regularly during installation. Stop if the material is not bonding properly. Do not apply FlexClad-400 over wet or non-rigid insulation.

CONSTRUCTION DETAILS

Refer to engineering plans for recommendations on flashings, supports, expansion joints, wall penetrations, ditching and backfilling.

IMPORTANT NOTICE

Proper adhesion is critical for long term performance. A clean dry surface is necessary. The material and surface to be covered must be warm. Uniform pressure must be applied over the entire sheet, including overlaps, using a hand roller. Pay special attention on the underside of ductwork. Keep checking for proper adhesion throughout the installation process.

LIMITED WARRANTY

MFM Building Products Corporation (MFM) warrants material to be free from leaks caused by defects in materials or manufacturing for a period of ten (10) years from the date of purchase when the membrane is installed according to published directions. This warranty does not apply to misapplication or poor workmanship in the application of FlexClad-400. MFM's only obligation shall be to repair or replace, at its option, that portion of the defective FlexClad-400 membrane where leaks occur, prorated for time of service. MFM shall be liable for no additional remedies, hereby expressly denying any other claims for damages, whether direct or indirect, consequential or incidental, including but not limited to property damage, personal injury to the buyer or to third parties and loss of business or profit arising from the use or inability to use the product. Any implied warranties arising under state law are limited to the duration and terms of the express warranty.

FlexClad-400 is covered by US Patent Nos. 4,936,938, 5,096,759 and 5,142,837

