

Product Data and Installation Guide



1. Product Description

PlenumWrap and PlenumWrap+ are foil-encapsulated, inorganic high temperature, flexible fireproofing wraps specifically tested for plastic pipe and cable protection from external flame-propagation and smoke generation in return air plenums or other spaces used for environmental air. The difference between the two wrap materials is the core material basic chemistries. PlenumWrap and PlenumWrap+ are a high temperature insulating blankets with service temperatures ranging from 2000°F to 2300°F (1093°C to 1260°C). PlenumWrap+ is a body soluble, low biopersistence, alkaline-earth silicate wool. Both chemistries are free of binders and lubricants. PlenumWrap and PlenumWrap+ are resistant to mold growth in test conditions of 75-95% relative humidity (ASTM D6329). Thermal Ceramics PlenumWrap and PlenumWrap+ are classified by Omega Point Laboratories (division of Intertek) and Underwriter's Laboratories Listing and Follow-up Service Programs to ensure uniform thickness and density specifications, thus providing consistency in end physical properties for required fire ratings. Building codes require that materials exposed within plenums shall have a flame spread index of not more than 25 and a smoke developed index of not more than 50. PlenumWrap and PlenumWrap+ have been tested to UL 1887 and NFPA 262 (UL 910) test standard to provide protection from flame-propagation and smoke generated from electrical cables and plastic pipes installed in ducts (single or multiple), plenums and other spaces used for environmental air. The wrap enclosure is qualified for 1" (25 mm) minimum diameter polyvinyl chloride (PVC), chlorinated polyvinyl chloride (CPVC), acrylonitrile polypropylene (PP) and polyvinylidene fluoride (PVDF). Copper cables insulated with any of the materials listed above may be protected.



Product Features

- Low biopersistent insulation blanket with PlenumWrap+
- Does not contain low temperature fiberglass or mineral wool
- Lightweight and flexible
- Contours easily
- Compact design for single and multiple pipes or cable bundles
- Foil encapsulation minimizes dusting in return air plenums
- Easy to install
- Unaffected by oil or water
- Passive fire proof material does not lose fire fighting capabilities with age
- Product markings on foil ensure proper material identification for easy inspections
- Resistant to mold growth

2. Applications

- PVC Pipes
- CPVC Pipes
- PP Pipes
- PVDF Pipes
- ABS Pipes
- PB Pipes
- PE Pipes
- Electrical Cables

3. Physical Characteristics

Fire Protection Product	Unit	Size	Units/Ctn.	Units/Ctn.
PlenumWrap or PlenumWrap+	Roll	½" x 24" x 50' (13mm x 61cm x 15m)	1	42 lbs. (19 kg)
PlenumWrap or PlenumWrap+	Roll	½" x 48" x 25' (13mm x 120cm x 7m)	2	89 lbs. (40 kg)
Color	White blanket with silver foil encapsulation			

4. Specifications

This specification guide covers the application of Thermal Ceramics PlenumWrap and PlenumWrap+ and does not cover the construction requirements for plastic pipe.

Application	Fire Resistive Rating	Enclosure System	Listing No.
Plastic Pipes	UL 1887	1 layer PlenumWrap or PlenumWrap+, 1" (25 mm) longitudinal and 1" (25 mm) perimeter overlap	OPL 11660-1 OPL 11660-5 OPL PP108 P UL R8418
Electric Cables	NFPA 262 (UL 910)	1 layer PlenumWrap or PlenumWrap+, 1" (25 mm) longitudinal and 1" (25 mm) perimeter overlap	OPL 11660-1 OPL 11660-5 OPL PP109 P UL R8418

5. Performance

PlenumWrap and PlenumWrap+

UL 1887 and NFPA 262 (UL 910) test results covering PVC pipe:

- Optical Smoke Density Peak: 0.03
- Optical Smoke Density Avg.: 0.01
- Flame Propagation (Ft.): 2.6

ASTM E84

- Flame Spread 5
- Smoke Developed 5

C. Listings

Agency	Reference Standard/ File No.
Omega Point Laboratories, Inc	Listing # 11660-1 11660-5
Underwriter's Laboratory	R8418

6. Installation

The PlenumWrap or PlenumWrap+ system shall be installed by a qualified contractor in accordance with the Thermal Ceramics manufacturer's instructions. See figure 1.

Materials and Equipment:

- Plenum Wrap or PlenumWrap+, ½" (12.7 mm) min. thickness, 24" (60.9 mm) wide by 50' (15 m) long, and 48" (121.9 cm) wide by 25' (7 m) long
- Minimum ¾" (19.0 mm) wide filament tape
- Aluminum foil tape for sealing cut edges of foil encapsulated blanket
- Banding material, minimum ½" (12.7 mm) wide, 0.015" (0.38 mm) thick, carbon or stainless steel. Note: One strand of minimum 16 gauge carbon or stainless steel tie wire may be used as an alternative
- Hand tensioning tool and crimping tool

Storage:

PlenumWrap or PlenumWrap+ must be stored in a dry warehouse environment. Pallets should not be stacked.

General:

PlenumWrap and PlenumWrap+ are completely encapsulated in an aluminum foil scrim material protecting the environmental air space from exposed fiber. Aluminum foil tape is used to seal cut edges of the encapsulated blanket during installation. To minimize waste, PlenumWrap or PlenumWrap+ material should be rolled out tautly before measuring. Filament tape is used to hold the wrap in place before mechanical attachment (see Mechanical Attachment Methods section for PlenumWrap and PlenumWrap+).

Installation Method:

- Cut PlenumWrap or PlenumWrap+ to a length sufficient to wrap completely around the perimeter of the pipe or cable, plus provide an overlap of not less than 1" (25 mm).
- Secure the PlenumWrap or PlenumWrap+ blanket in place by using minimum ¾" (19 mm) wide filament tape as an optional temporary hold until banding or tie wire is in place. The tape shall be spaced ¼" (6.35 mm) from the edge of the blanket and at the midpoint of the blanket (11¾" (29 cm) on center). Additional tape may be added if needed.
- Cut the next adjacent wrap of PlenumWrap or PlenumWrap+ to completely wrap around the perimeter of the pipe or cable with enough excess to overlap itself not less than 1" (25mm). A 1" (25mm) longitudinal overlap is required onto the previous adjacent wrap.
- Use filament tape as a temporary hold until the mechanical attachment is secured. See the Mechanical Attachment Methods for PlenumWrap and PlenumWrap+ section and figure 1.

Mechanical Attachment Methods for PlenumWrap and PlenumWrap+

Banding - min. ½" (12.7 mm) wide, 0.015" (0.38 mm) thick carbon or stainless steel banding is placed around the entire perimeter of the insulated pipe or cable on maximum 11¾" (298 mm) centers, and ¼" (6 mm) from each blanket edge. As an alternative, 16 gauge carbon or stainless steel tie wire may be used in place of banding. Tighten the banding or tie wire to hold the wrap firmly in place without cutting or damaging the wrap. Bands or tie wires may be hand tightened.

7. Maintenance

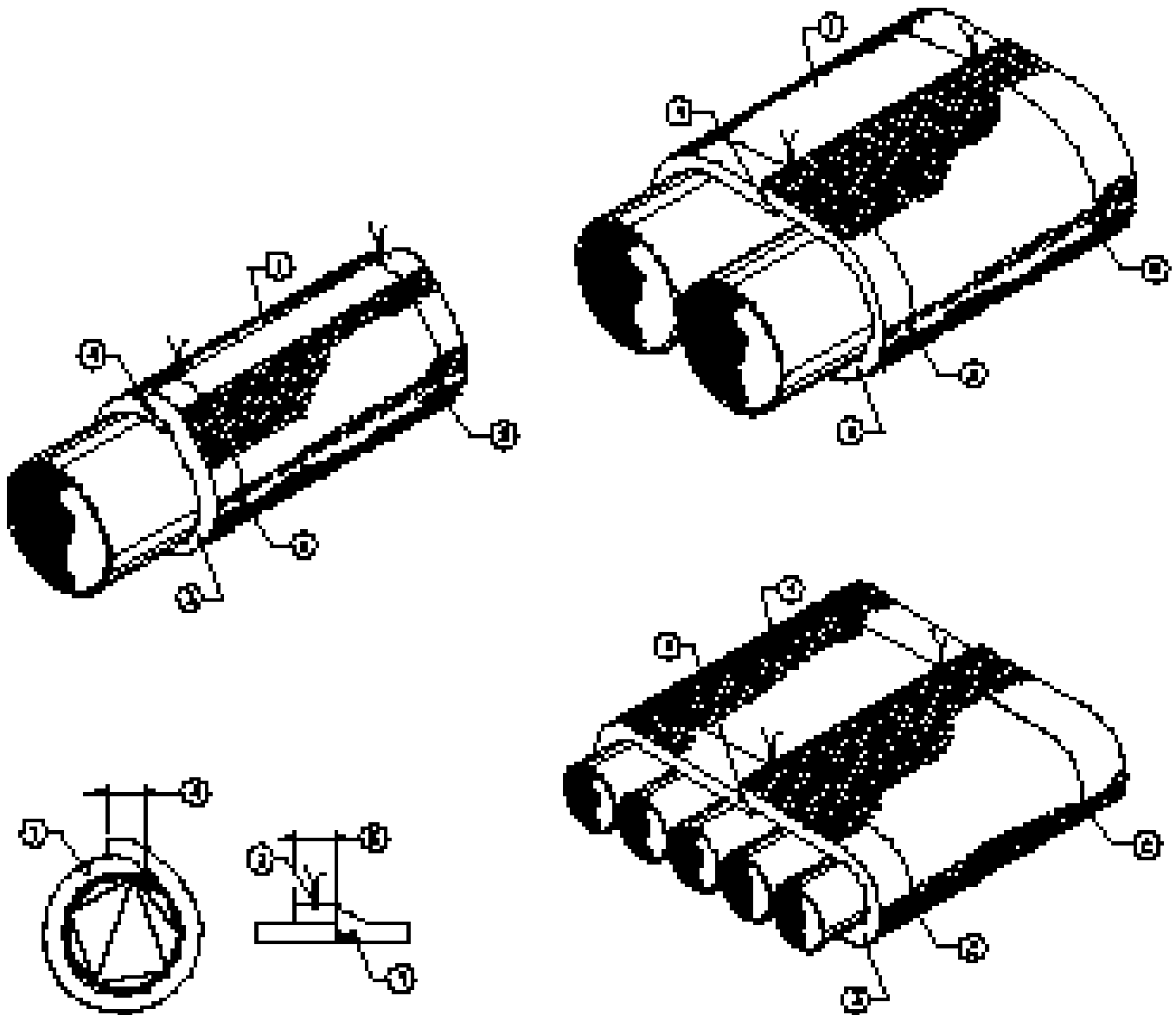
No maintenance is required when installed in accordance with the installation instructions. Once installed, if any section of the PlenumWrap or PlenumWrap+ is damaged, the following procedures will apply:

- The damaged section shall be removed by cutting the steel band or wire holding it in place
- A new section of the same dimension shall be cut from a roll of PlenumWrap or PlenumWrap+, either 24" (60.9 cm) or 48" (121.9 cm) wide
- The new section shall be placed per Thermal Ceramics manufacturer's installation instructions ensuring the same overlap that existed previously
- The steel banding shall be placed around the material and tensioned so as to firmly hold the PlenumWrap or PlenumWrap+ in place without cutting or damaging the blanket
- If the blanket has not been damaged but the foil has ripped, seal the opening with aluminum foil tape

*For personal protective equipment recommendations see the MSDS.

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Thermal Ceramics
FireMaster PlenumWrap and PlenumWrap+
 Plastic Pipe and Electric Cable System



OPL Nos. 11660-1, 11660-5, PP108 P, PP109 P, UL File R8418
 Figure 1 Drawing# FMPW001

1	One layer ½" minimum thick PlenumWrap and PlenumWrap+
2	Tie wire or steel banding
3	Aluminum foil tape to seal cut edges
4	1" minimum perimeter overlap
5	1" minimum longitudinal overlap

Note: The integrity of the duct systems is limited to the quality of the installation.

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