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FireMaster®

Duct Wrap

Product Data

1. Product Description

Basic Use: 3M™ FireMaster® Duct Wrap is a foil-encapsulated, non-combustible, inorganic, flexible fireproofing wrap. It is used in combination with 3M™ Fire Barrier 2000+ Silicone Sealant to fire rate duct assemblies such as: kitchen exhaust grease ducts, HVAC ducts, chemical exhaust ducts, stair pressurization ducts, and trash and linen chutes.

3M FireMaster Duct Wrap is of uniform thickness and density, thus providing specified fire ratings based on the number of wraps applied. 3M FireMaster Duct Wrap is a proven performance alternative to 2-hour fire-resistance-rated shaft enclosures. With its 2300° F (1260°C) insulating capability, it protects combustible constructions at zero clearance for kitchen exhaust grease ducts in tight congested areas. Two layers of 3M FireMaster Duct Wrap applied directly to the duct provide a 2-hour fire-resistive enclosure for both vertical and horizon duct runs. 3M Fire Barrier 2000+ Silicone Sealant is used in combination with 3M FireMaster Duct Wrap to firestop the duct when it penetrates fire walls and ceilings.

Limitations: 3M FireMaster Duct Wrap should be installed in accordance with the distributor's published installation instructions. Multiple steel ducts in a single 3M FireMaster Duct Wrap enclosure system are not permitted. Only individual steel ducts should be wrapped with 3M FireMaster Duct Wrap.

Composition and Materials:

3M FireMaster Duct Wrap is composed of a needled alumina-silica fiber blanket

encapsulated in an aluminum foil scrim, providing a noncombustible flexible wrap encased in foil to provide protection against grease absorption, water absorption and minimizes dusting. The 3M FireMaster Duct Wrap has an extremely low thermal conductivity, resists mild chemical attack, and is unaffected by water and oils while encapsulated.

3M FireMaster Duct Wrap is available as follows:

- Length: 25' (7.5 m) rolls
 - Widths: 2' (0.6 m) & 4' (1.2 m)
 - Thickness: 1.5" (37.5 mm)
 - SF per roll: 50 (for 2' wide material), 100 (for 4' wide material)
- 3M Fire Barrier 2000+ Silicone Sealant is available as follows:

Typical Physical Properties

| Properties | F |
|-----------------------------------|---|
| Sizes | |
| Length | 2 |
| Widths | 2 |
| Thickness | 1 |
| S. F. per Roll | 5 |
| Service Limit | 2 |
| Melting Point | 3 |
| Thermal Resistance | |
| R Value per inch at 70°F, (21 °C) | 4 |
| Thermal Conductivity | |
| Mean Temperature °F (°C) | E |
| 100°F (38°C) | 0 |
| 500°F (260°C) | 0 |
| 1000°F (538°C) | 0 |
| 2000°F (1093°C) | 2 |

- 10.3 oz. caulking tubes
- 2 gal. pails, 4.5 gal. pails

Technical Data: 3M FireMaster Duct Wrap is produced under manufacturing tolerances as covered by Underwriters Laboratories (UL) follow-up service and is tested in accordance with accepted ASTM methods. A full list of testing and properties is shown in Tables A and B. Test reports are available upon requests. 3M 2000+ Silicone Sealant has been tested in accordance to UL 1479 (ASTM E 814) as a fill, void or cavity material for use in through-penetration firestop systems. The duct firestop system is classified as UL System CAJ 7013, CAJ 7015, CAJ 7020, CAJ 7022. For further details refer to the UL Fire Resistance Directory, Vol. II, or contact 3M, St. Paul, MN.

2. Installation

The 3M FireMaster Duct Wrap system should be installed by a qualified contractor in accordance with 3M's published installation instructions.

Storage: The 3M FireMaster Duct Wrap, and 3M 2000+ Silicone Sealant must be stored in a warehouse environment. Pallets should not be stacked.

Preparatory Work: 3M FireMaster Duct Wrap is installed with common tools, such as knives, banders, capacitor discharge guns for applying insulation pins, and wire twisters. In order to install the duct firestop system, the surfaces of all the openings and penetrating items need to be clean and free of dust.

Method: General instructions for installing the 3M FireMaster Duct Wrap include a two-layer wrap construction applied directly to the duct. A 3-inch perimeter and longitudinal overlap are employed on both layers. Fiberglass filament tape is used as a temporary hold until metal banding is in place on the exterior layer. For duct spans greater than or equal to 24 inches, insulation pins are recommended on the bottom of horizontal runs and on vertical runs to prevent blanket sag. For a complete guide covering installation techniques and materials and detailing independent systems contact 3M.

When the duct penetrates a fire rated wall, ceiling or floor, a UL-classified firestop system must be employed, such as system CAJ 7015. Install pieces of duct wrap under compression (50%), maximum 3" (7.62 cm) annular space and caulk a 1/4" (0.63 cm) thickness of the 2000+ Silicone Sealant completely filling the annular space. Flush with the top of the floor or both surfaces of the wall.

Precautions: Follow approved working practices. Wear government approved respirators as needed, or proper clothing, reading all warning labels, and follow instructions on the MSDS.

3. Availability and Cost

Availability: 3M FireMaster Duct Wrap and 3M Fire Barrier 2000+ Silicone Sealant are available through 3M's network of nationwide distributors.

Cost: All 3M FireMaster Products are competitively priced with other

fireproofing and firestopping products, but show significant cost advantages when the total cost of material and installation is considered. Contact a 3M distributor for specific cost information.

4. Warranty

Important Notice to Purchaser

LIMITATIONS OF REMEDIES AND LIABILITY: If the 3M product is proved to be defective, THE EXCLUSIVE REMEDY, AT 3M'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE 3M PRODUCT. 3M SHALL NOT OTHERWISE BE LIABLE FOR LOSS OR DAMAGES, WHETHER DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, INVESTMENT, GOODWILL, OR BUSINESS OPPORTUNITY), REGARDLESS OF THE LEGAL THEORY ASSERTED, INCLUDING NEGLIGENCE, CONTRACT, WARRANTY, OR STRICT LIABILITY.

Listing & Testing

| Agency | Reference |
|--------------------------------|---|
| Underwriters Laboratories Inc. | Classified YYET, R14229 Firestop S UL YYET UL AWW |
| SBCCI | Compliance |
| BOCA | Report 92- |
| NFPA | Complies |
| California State Fire Marshall | Listing No |
| New York City | MEA #41' |
| North Carolina Mechanical Code | Sections 3 |
| ASTM | E 84 E 119 E 814 |
| ICC Mechanical Code | Section 5C Section 5C Exhaust E Section 5C |

5. Maintenance

No maintenance is required when installed in accordance with distributor's installation guide. Once installed, if any section of the 3M FireMaster Duct Wrap is damaged, the following procedure will apply:

- The damaged section should be removed by cutting the steel banding holding it in place.
- A new section of the same dimensions should be cut from a

roll of 3M FireMaster Duct Wrap, either 24" or 48" (60.96 or 121.92 cm) wide.

- The new section should be placed and fitted ensuring the same overlap that existed previously.
- The steel banding should be placed around the material and tensioned to sufficiently hold the 3M FireMaster Duct Wrap in place.

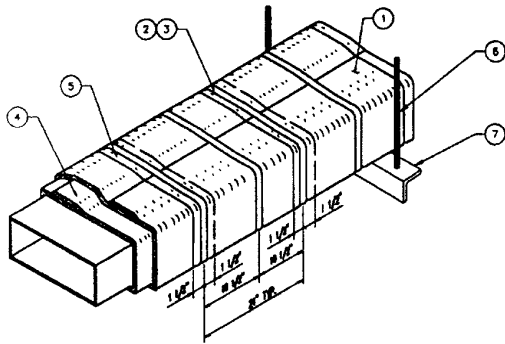
6. Technical Services

3M provides complete technical assistance and service:

- Preparation of estimated Bill of Materials
- Problem solving with architects and engineers on specific projects
- National distribution and warehouse network for prompt order response

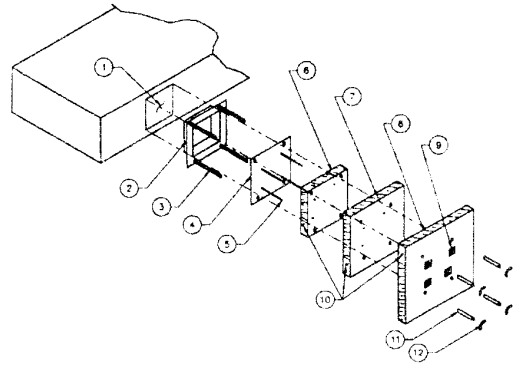
FireMaster Grease Duct System

1 or 2 Hour Shaft Alternative and 30 Minute Zero Clearance to Combustible Construction



| Legend | |
|--------|---------------------------------|
| 1 | Two layers FireMaster Duct Wrap |
| 2 | Filament tape |
| 3 | Banding |
| 4 | 3" perimeter overlap |
| 5 | 3" longitudinal overlap |
| 6 | 1/2" diameter hanger rod |
| 7 | 1 1/2" by 1 1/2" by 1/8" angle |

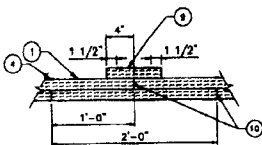
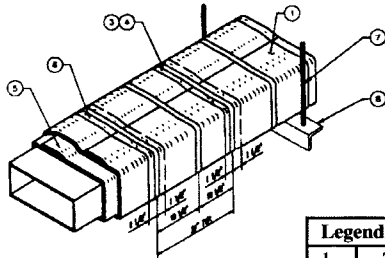
Grease Duct Access Door Enclosure Installation



| Legend | |
|--------|---------------------------------|
| 1 | Door hole |
| 2 | Access frame welded to duct |
| 3 | 1/4" diameter all thread rods |
| 4 | Access cover - 16 gauge |
| 5 | Insulation pins - welded |
| 6 | FireMaster Duct Wrap |
| 7 | FireMaster Duct Wrap 1" overlap |
| 8 | FireMaster Duct Wrap 1" overlap |
| 9 | Speed clips |
| 10 | Aluminum tape at edges |
| 11 | Spool pieces for threaded rods |
| 12 | 1/4" diameter wing nuts |

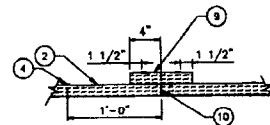
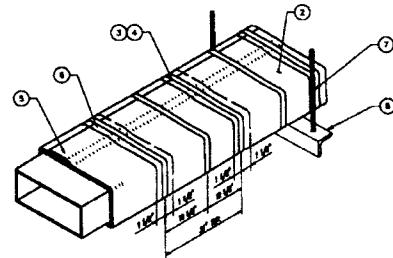
FireMaster Air Duct System

2 Hour Fire Resistive Enclosure



| Legend | |
|--------|---------------------------------|
| 1 | Two layers FireMaster Duct Wrap |
| 2 | One layer FireMaster Duct Wrap |
| 3 | Filament tape |
| 4 | Banding (2 hour - SST, 1 CS) |
| 5 | 3" perimeter overlap |
| 6 | 3" longitudinal overlap |
| 7 | 3/8" diameter hanger rod |
| 8 | 1 1/2" by 1 1/2" by 1/8" angle |
| 9 | 8" wide FireMaster collar |
| 10 | Firmly butted joint |

1 Hour Fire Resistive Enclosure



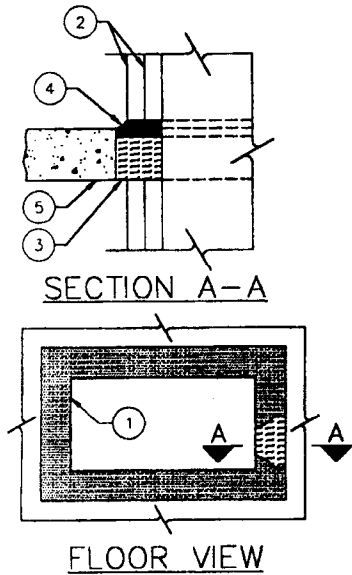
Complies with NFPA 96, 1994 Edition



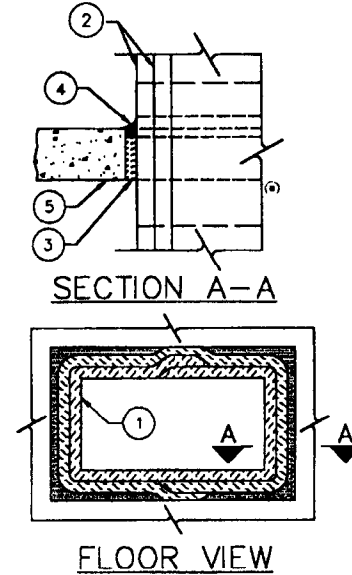
MEA #417-92-M



2-Hr. Grease or Air Duct
System No. CAJ7022



2-Hr. Grease or Air Duct
Systems No. CAJ7008 and CAJ7015



| Legend | |
|--------|---|
| 1 | Duct |
| 2 | Two layers FireMaster Duct Wrap |
| 3 | 4 1/4" scrap FireMaster Duct Wrap |
| 4 | 1/4" 3M Fire Barrier 2000+ Silicone Sealant |
| 5 | Concrete slab |

System No. CAJ7015

| Legend | |
|--------|---|
| 1 | Duct |
| 2 | Two layers FireMaster Duct Wrap |
| 3 | 4 1/4" scrap FireMaster Duct Wrap |
| 4 | 1/4" 3M Fire Barrier 2000+ Silicone Sealant |
| 5 | Concrete slab |



Complies with
NFPA 96,
1994 Edition



MEA #417-92-M



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