

# Fire Protection Products

## 3M™ Fire Barrier Duct Wrap 615



Technical Data Sheet

October / 2019

### Product Description

3M™ Fire Barrier Duct Wrap 615 is a flexible, fire-resistant wrap consisting of an inorganic biosoluble calcium-magnesium-silica (CMS) fibre blanket, encapsulated with a scrim-reinforced foil. The product is 38 mm (1-1/2 in.) thick and has a density of 96 kg/m<sup>3</sup> (6 pcf).<sup>1</sup>

It is a proven space-saving alternative to traditional fire-rated shaft enclosures, used to fire-rate commercial kitchen grease and ventilation ducts. It also serves as protection for standpipe system piping, when installed in locations where a rating is required. With its excellent insulating capabilities, low weight and thin profile, it is an ideal choice for a fire-rated duct enclosure system. This non-asbestos<sup>2</sup> wrap installs easily due to its high flexibility, low weight and strength.

<sup>1</sup>In accordance with the tolerances in ASTM C892 Standard Specification for High-Temperature Fibre Blanket Thermal Insulation.

<sup>2</sup>Has been demonstrated to be soluble in the lungs according to EU guideline 97/69/EG, for bio-persistence.

### Product Features

- Rated as a shaft alternative
- Two-layer wrap system for grease duct applications
- Zero clearance to combustibles throughout the entire enclosure system for congested spaces, in compliance with NFPA 96 (kitchen exhaust grease duct)
- One-layer wrap system for fire-resistive ventilation ducts per ISO 6944 Type A
- Two-layer wrap system for boiler flue and chemical fume applications
- Widest range of penetration seal systems
- Foil-encapsulated to protect wool-fibre blanket insulation: prevents grease absorption, helps minimize dusting, provides a vapour barrier and increases wrap strength (insulation does not tear when tensioning wrap around duct)
- High flexibility and light weight for ease of installation
- Available in 609.6 mm x 7.62 m (24 in x 25 ft) and 1219.2 mm x 7.62 m (48 in x 25 ft) rolls

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### Applications

3M™ Fire Barrier Duct Wrap 615 is an ideal fire-rated enclosure for commercial kitchen exhaust grease ducts, ventilation air ducts, steel water and drain pipes and standpipes. It is a proven space-saving performance alternative to traditional 1- or 2-hour fire-rated shaft enclosures, providing a zero clearance to combustible construction for grease duct applications.

3M™ Fire Barrier Water Tight Sealants 1000 NS, 1003 SL & 3000 WT or 3M™ Fire Barrier Intumescent Sealants CP25 WB+ & IC 15WB+ are ULC-listed for use in combination with 3M™ Fire Barrier Duct Wrap 615 to firestop wrapped ducts or pipes when they penetrate fire-rated floor or wall assemblies.

3M™ Fire Barrier Duct Wrap 615 also provides a firestop solution where a T-rating is required for penetrations located outside of wall cavities or fire-resistance rated shaft enclosures.

**Two-layer grease duct applications:** conformance with NFPA 96.

**Single-layer air duct applications:** passed ISO 6944-1985 Fire Resistance Tests – Ventilation Ducts – Type A.

**T-rating for metallic through-penetrating items:** used in conjunction with 3M™ Fire Barrier Sealants to achieve up to 2-hour equal F & T-ratings in CAN/ULC-S115 tested through-penetrations.

**Single-layer steel water and drain pipes and standpipes:** enclosure per NFPA 14.

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### Specifications

Installation shall be in strict accordance with manufacturer's written instructions, as shown on the approved listed designs or installation manual. 3M™ Fire Barrier Duct Wrap 615 shall be a high-temperature fibre blanket thermal insulation encapsulated in a fibreglass-reinforced aluminized polyester foil. Duct wrap density shall be nominal 96 kg/m<sup>3</sup> (6 pcf) and have a nominal 38 mm (1-1/2 in) thickness. The fibre blanket shall have a continuous use limit of 1000°C (1832°F).

The blanket thermal resistance (R-value) at ambient temperature shall be minimum  $0.932 \frac{K \cdot m^2}{W}$ . Flame Spread Index and Smoke Developed Index of the bare blanket and of the foil encapsulated blanket shall be 25/50. The foil encapsulation shall be bonded to the core blanket material.

#### Typically Specified Division or Section

|                  |   |
|------------------|---|
| Division 7       | Thermal and Moisture Protection           |
| Section 23 07 13 | Duct Insulation                           |
| Section 07 21 00 | Thermal Protection                        |
| Section 07 21 16 | Blanket Insulation                        |
| Section 07 84 00 | Firestopping                              |
| Section 23 00 00 | Heating, Ventilation and Air Conditioning |
| Section 23 31 13 | Metal Ducts                               |

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### Codes and Standards

3M™ Fire Barrier Duct Wrap 615 has been tested and is compliant with the following: CAN/ULC-S102, CAN/ULC-S115, NFPA 14, NFPA 92A, NFPA 92B, ASTM E136, ASTM C518, ISO 6944-85.

3M™ Fire Barrier Duct Wrap 615, when installed per tested Kitchen Exhaust Grease Duct Design Listings, meets the following code requirements for field-applied grease duct enclosures: NFPA 96 and the International Mechanical Code®.

### Performance and Typical Physical Properties

|   |  |   |                       |
|---|--|---|-----------------------|
| <b>Scrim Colour</b>                                   | Aluminum with black text   |   |                       |
| <b>Blanket Colour</b>                                 | White  |   |                       |
| <b>Blanket Weight</b>                                 | 3.66 kg/m <sup>2</sup> (0.75 lbs/ft <sup>2</sup> )   |   |                       |
| <b>Surface Burning Characteristics (CAN/ULC-S102)</b> | <b>Foil Encapsulated Blanket:</b><br>Flame Spread Index: <25<br>Smoke Developed Value: <50 |   |                       |
| <b>Thermal Conductivity</b>                           | Temperature  | $\frac{Btu \cdot in}{hr \cdot ft^2 \cdot ^\circ F}$ | $\frac{W}{m \cdot K}$ |
|   | 260°C (500°F)  | 0.48  | 0.07                  |
|   | 537°C (1000°F)   | 0.97  | 0.14                  |
|   | 815°C (1500°F)   | 1.57  | 0.23                  |
|   | 982°C (1800°F)   | 1.98  | 0.29                  |
|   | 1093°C (2000°F)  | 2.23  | 0.33                  |
| <b>R-Value @ Ambient</b>                              | 0.932 $\frac{K \cdot m^2}{W}$ or 5.29 $\frac{^\circ F \cdot ft^2 \cdot hr}{Btu}$           |   |                       |
| <b>Linear Shrinkage 24 Hour @ 1100°C (2012°F)</b>     | 1.2%   |   |                       |
| <b>Noise-Reduction Coefficient (ASTM C423)</b>        | 0.80   |   |                       |
| <b>Mould and Mildew Resistance (ASTM C1338)</b>       | Devoid of growth   |   |                       |

### Listed Designs

Consult a 3M Authorized Fire Protection Products Distributor Sales Representative for applicable UL, ULC, Intertek or other third-party drawings and system details.

Installation: Tested and listed system details must be followed for each specific application. Firestopping through-penetration information is contained in listed designs.

#### Grease Duct Listing – NFPA 96

| Fire-Resistive Rating | Enclosure System  | Third-Party Listed System | Maximum Duct Size  |
|-----------------------|---|---------------------------|--|
| 1 and 2 hour          | 2 layers of 3M™ Fire Barrier Duct Wrap 615.<br>76 mm (3 in) perimeter and longitudinal overlaps on both layers. | ULC/FRD-19                | 0.93 m <sup>2</sup> (10 ft <sup>2</sup> )<br><br>762 mm x 1219 mm<br>(30 in x 48 in) |

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### Ventilation Duct Listings – ISO 6944 Type A

| Fire-Resistive Rating          | Enclosure System  | Third-Party Listed System | Maximum Duct Size   |
|--------------------------------|---|---------------------------|---|
| 1 and 2 hour                   | 1 layer of 3M™ Fire Barrier Duct Wrap 615.<br>76 mm (3 in) perimeter and longitudinal overlaps. | ULC/FRD-17                | 1.32 m <sup>2</sup> (14.25 ft <sup>2</sup> )<br>610 mm x 2159 mm<br>(24 in x 85 in) |
| 1 and 2 hour<br>(2 or 3-sided) | 1 layer of 3M™ Fire Barrier Duct Wrap 615.<br>76 mm (3 in) perimeter and longitudinal overlaps. | ULC/FRD-23                | 1.32 m <sup>2</sup> (14.25 ft <sup>2</sup> )<br>610 mm x 2159 mm<br>(24 in x 85 in) |

### Standpipe Protection – ISO 6944 Type A

1 and 2 hour, Schedule 10 steel pipes (diameter = 2 to 6 in)

### Chemical Fume, Boiler Flue & Generator Exhaust Ducts

| Fire-Resistive Rating | Enclosure System  | Third-Party Listed System | Maximum Duct Size  |
|-----------------------|---|---------------------------|--|
| 1 and 2 hour          | 2 layers of 3M™ Fire Barrier Duct Wrap 615.<br>76 mm (3 in) perimeter and longitudinal overlaps on outer layer, butted inner layer. | ULC/FRD-27                | 0.93 m <sup>2</sup> (10 ft <sup>2</sup> )<br>762 mm x 1219 mm<br>(30 in x 48 in) |

### Through Penetration T-Ratings – CAN/ULC-S115

| Fire-Resistive Rating          | Enclosure System  | Third-Party Listed System | Maximum Pipe Size   |
|--------------------------------|---|---------------------------|---|
| 2 hour                         | 2 layers of 3M™ Fire Barrier Duct Wrap 615.<br>Butted perimeter and longitudinal overlaps, both layers. | 3MU/BI 120-04             | 4 in cast iron<br>2 in copper   |
| 1 and 2 hour<br>(2 or 3-sided) | 1 or 2 layers of 3M™ Fire Barrier Duct Wrap 615.<br>Wrap installed in “U” Shape, no seams.              | 3MU/BI 120-05             | 4 – 8 in steel<br>4 – 8 in cast iron<br>4 in copper<br>4 in EMT / RSC |
| 2 hour                         | 2 layers of 3M™ Fire Barrier Duct Wrap 615. Metal Pipe.   | F-A-1057                  | 10 in steel / cast iron<br>4 in copper                                |
| 2 hour                         | 2 layers of 3M™ Fire Barrier Duct Wrap 615. Floor Sink.   | F-A-1160                  | 4 in cast iron  |

#### Maintenance

No maintenance is expected when installed in accordance with the applicable Intertek, UL / ULC or other third-party listed system, and in accordance with 3M™ Fire Barrier Duct Wrap 615 Installation Guidelines. Once installed, if any section of the 3M™ Fire Barrier Duct Wrap 615 is damaged such that the blanket requires repair, the following

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procedure will apply:

1. If the blanket has not been damaged but the foil has ripped, seal the rips with aluminum foil tape.
  2. If the blanket has been damaged:
    - a. The damaged section should be removed by cutting the steel banding or removing the clips holding it in place.
    - b. A new section of the same dimension should be cut from a roll of 3M™ Fire Barrier Duct Wrap 615, either 610 mm (24 in) or 1220 mm (48 in) wide.
    - c. The new section should be placed and fitted ensuring the same overlap that existed previously (i.e., the original installation method).
    - d. The steel banding should be placed around the material and tensioned, ensuring 3M™ Fire Barrier Duct Wrap 615 is held in place.
    - e. If covering with aluminum jacketing for mechanical protection, affix a label that states *Fire-Rated Enclosure* along its length for identification purposes.
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### Storage and Shelf Life

3M™ Fire Barrier Duct Wrap 615 rolls are stable under normal storage conditions. Normal stock practices are recommended. 3M™ Fire Barrier Duct Wrap 615 shelf life is indefinite when stored in original unopened packaging in a dry warehouse environment. Pallets should not be stacked.

**Lot numbering (e.g. 1907200223):** First two digits = last two digits of the year manufactured (2019=19), third and fourth digits = month of manufacture, fifth and sixth digits = day of manufacture, seventh and eighth digits = crew code identification, last two digits = day of foil encapsulation.

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### Availability

Available from 3M Authorized Fire Protection Products Distributors. For additional technical and purchasing information, call 1-800-364-3577 or visit [3M.ca/firestop](http://3M.ca/firestop).

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### Safe Handling

Consult Safety Data Sheet prior to handling and disposing of 3M™ Fire Barrier Duct Wrap 615.

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### Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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### Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a specific application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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### Warranty, Limited Remedy and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

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