

FIRE RATED DUCTWORK SYSTEM

PART 1 GENERAL

1.1 Summary

- A. Provide an Underwriter's Laboratory classified two hour fire resistive assembly as indicated on the drawings. The assembly shall provide the fire rating incorporating a specially enhanced duct construction with a factory applied coating of Flamebar BW11, for shaft, risers and horizontal duct systems. Ducted systems shall include, but not be limited to, utility dryer and toilet exhausts, stair and elevator pressurizing systems, smoke evacuation and make-up air systems and primary air conditioning systems. See plans for specific uses for Flamebar.
- B. Grease duct systems is listed to ASTM E2336 in compliance with IMC, UMC, and NFPA 96 codes.
- C. Grease duct systems tested to ISO 6944 grease exhaust in compliance with NFPA 96.
- D. Ventilation Ducts shall be ISO 6944 (1985) UL Classified (HNLN or HNLJ) V-5, V-18 or V-6
- E. Specifically enhanced duct systems shall be manufactured in accordance with the relevant construction standards as published by Firespray International Ltd and as considered by UL and Intertek ETL Semko in their classification and/or listings of the Flamebar BW11 system. Conquest Firespray LLC manufactures the duct and applies the Flamebar BW11 coating in accordance with the Firespray construction standard. Conquest will train the installing contractor to install the system with the relevant published Firespray standards.

1.2 References

- A. SMACNA (Sheet Metal and Air Conditioning Contractors National Association) Standards: Comply with the detailing required for this ductwork assembly as shown in the Firespray International Ltd, relevant published construction standards.
- B. NFPA (National Fire Protection Association): Comply with ANSI/NFPA 90A "Standard for the Installation of Air Conditioning and Ventilation Systems" and ANSI/NFPA 90B "Standard for the Installation of Warm Air Heating and Air-Conditioning Systems".
- C. Comply with ASTM E 2336 requirements for Grease duct systems
- D. Comply with ISO 6944 Grease duct systems.

- E. NFPA 96A Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.
- F. UL File #18284: “Report on Ventilation Duct and Through-Penetration Firestop System.”
- G. ASTM E-119: Compliance as Intertek ETL Semko test and evaluation number 3114842. This includes compliance with the hose stream test requirements.
- H. ISO 6944 (1985): “Fire Resistance Tests Ventilation Ducts.”
- I. ISO 834 (1975): “Fire Resistance Tests-Elements of Building Construction.”
- J. ASTM E-2336: “Fire Resistive Grease Duct Enclosures Systems”

1.3 Submittals

- A. Shop Drawings.: Submit properly scaled and dimensioned layouts for each fire rated system showing individual identifying marks for each component of the system in accordance with the UL and Intertek ETL Semko classifications and listing requirements.
- B. Record Drawings. At project closeout submit record drawings of installed ductwork systems including accessories, outlets and inlets.

1.4 Quality Assurance

- A. All ductwork to be used on fire rated systems shall be constructed to compliance with the relevant enhanced Firespray International Ltd. construction standards and with the shop drawings. After inspection the ductwork shall be degreased and coated with BW11. After coating and curing, each individual section shall be inspected and labeled in accordance with the UL classification and Intertek Listing requirements. Records of all pieces shall be kept for inspection by the Authority Having Jurisdiction (AHJ).

1.5 Delivery, Storage, and Handling

- A. Protect factory fabricated and coated ductwork, accessories and purchased products from damage during shipping, storage and handling. Prevent end damage, and prevent dirt and moisture from entering ducts and fittings.
- B. Store ductwork indoors and protect from damage from other trades. Where necessary to store outside for a short time period store above grade on skids and enclose with secured waterproof wrapping.

PART 2 PRODUCTS

2.01 Manufacturer of Flamebar BW11 Coating and Ancillaries

A. **Manufacturer:** Conquest FireSpray LLC., 28408 Lorna, Warren, MI 48092
(586)576-7600, www.conquestmep.com.

1. Coating Flamebar BW11
2. Ancillaries including Gasket, Caulk, G-Clamps, etc. as supplied by the Manufacturer
3. Moisture absorption: The system is considered non-hygroscopic with resulting equivalent to sixty years external exposure by artificial weatherometer.
4. Chemical resistance: The coating is chemically resistant to many acids and solvents.
5. Smoke and toxic emissions: Meets NFPA 90 Smoke emissions and toxic fume emission. Tested in accordance with UL 723 (ASTM E84)
6. Cleaning: Smooth monolithic finish cleans easily with soap and water or the manufacturers recommended cleaning solutions.
7. Color and finish: Natural buff finish of the factory applied monolithic coating can be painted with any water-based paint.

2.02 Ductwork Construction

- A. Exposed ductwork materials: Where ductwork is indicated to be exposed to view in occupied spaces, provide materials which are free from visual imperfections including pitting of the finished coating, marks, surface imperfections, including that which would impair painting. Oil based paint shall not be used on Flamebar BW11 coating.
- a. Outer coating: Provide a factory applied coating as per the manufacturer's recommendation. The coating applied and cured in a controlled environment as required by the UL classification and Intertek listing requirements.
 - b. Ductwork Metal and Gauges: Fabricate ductwork from galvanized steel sheet, or Stainless Steel. Thickness shall be as per the relevant Firespray construction standards.
- B. Comply with ASTM A527, Lock forming quality.
- C. Comply ASTM A 525 G60 or G90 Zinc coating, mill phosphate.
- D. Comply with Firespray International Ltd standards (STD's) for rectangular, circular and flat oval ductwork.
- E. Duct Sealant: As supplied by Firespray International Ltd.

- F. Gasketing: As supplied by Firespray International Ltd.
- G. G-Clamps: As supplied by Firespray International Ltd.
- H. Duct Access Doors: Removable access doors where required to be as shown on the relevant construction standard as provided by Firespray International Ltd.
- I. Insulation on Flamebar BW11 Grease Duct Systems shall be 2 layers of Unifrax FyreWrap Max 2.0 or 1.5 Elite applied as required by Unifrax Installation requirements.
- J. Insulation (when required) on Flamebar BW11 Ventilation Systems shall be foil faced mineral density between 6.2 and 7.0 lb/cf.

PART 3 EXECUTION

3.01 Inspection

Examine areas and conditions under which ductwork is to be installed. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the manufacturer.

3.02 Installation of Ductwork

Install in accordance with the relevant Firespray construction standard and any applicable local codes.

3.03 Hangers

Conquest Firespray will provide installing contractor hanger size and spacing based on the duct configuration. All hangers will be sized to hold the fire rated ductwork in vertical and horizontal configuration. Hanging system will conform to the UL classification and ETL listing.