HNLN.GuideInfo - Uninsulated Ventilation Duct Assemblies

[Fire-rated Duct Assemblies] Uninsulated Ventilation Duct Assemblies

See General Information for Fire-rated Duct Assemblies

GENERAL

This category covers the fire-protective performance of uninsulated ventilation duct assemblies investigated to ISO 6944, "Fire Resistance Tests - Ventilation Ducts." This test measures the ability of a representative ventilation duct assembly to resist the spread of fire from one compartment to another without the aid of fire dampers.

The individual certifications identify a minimum clearance of 18 in. to combustible items. Combustible materials and combustible assemblies are to be considered those products or assemblies that will ignite, burn, support combustion, or release flammable vapors when subjected to fire or heat. Compliance with ASTM E136 is one method used for determining if a material is considered noncombustible. Unless otherwise stated in the individual certifications, partial application of a field-applied insulation product or system has not been investigated.

ISO 6944 defines performance requirements for ventilation duct assemblies in terms of insulation, integrity and stability. Insulation is the measurement of the ventilation duct assembly's ability to limit the temperature rise on the surface of the ventilation duct assembly in a nonfire environment from reaching an average temperature rise of 140°C (252°F) and a maximum temperature rise of 180°C (324°F). Integrity is the measurement of the ventilation duct assembly's ability to resist the passage of flames and hot gases into a nonfire environment. Stability is the measurement of a ventilation duct assembly's ability to resist collapse which would prevent the ventilation duct assembly from performing its intended function.

Uninsulated ventilation duct assemblies do not limit the temperature rise on the surface of the ventilation duct assembly in a nonfire environment and have an insulation rating of zero hours. Uninsulated ventilation duct assemblies are intended for use in environments where the clearance to combustible materials and combustible assemblies is at least 18 inches.

ISO 6944 is applicable to vertical and horizontal ducts, with or without branches, taking into account the joints, air supply and exhaust openings, as well as the basic duct construction.

ISO 6944 contains requirements for two types of ventilation duct assemblies, identified as Duct A and Duct B. The requirements for Duct A are intended for ventilation duct assemblies that pass through the fire environment without openings. The requirements for Duct B are intended for ventilation duct assemblies where the duct contains openings within the fire environment.

ISO 6944 recommends the ventilation duct assembly tested represent the maximum width-to-height ratio intended for use. ISO 6944 also recommends the tested duct be 250 mm by 1000 mm. The certification for all ventilation duct assemblies is based upon data from fire tests on 250 mm by 1000 mm ducts unless reported otherwise.

Ventilation duct assemblies have been investigated for a flame-spread rating of 25 or less and a smoke-developed rating of 50 or less in accordance with ANSI/NFPA 90A, "Installation of Air-Conditioning and Ventilating Systems."

Ventilation duct assemblies are intended to be installed in accordance with the manufacturer's installation instructions provided with the product.

Where a ventilation duct assembly penetrates a fire-rated floor or wall assembly, the resulting opening around the ventilation duct assembly should be firestopped with a firestop system tested in accordance with ANSI/UL 1479, "Fire Tests of Penetration Firestops." Each individual ventilation duct assembly includes reference to one or more through-penetration firestop systems described in Through-penetration Firestop Systems (XHEZ).

The F and T ratings of the firestop system should be equal to or greater than the hourly insulation rating of the ventilation duct assembly, and the F rating of the firestop system should be equal to or greater than the hourly integrity and stability ratings of the ventilation duct assembly.

Authorities Having Jurisdiction should be consulted before installation.

FACTORS NOT INVESTIGATED

Properties of these ducts, including fire resistance, other than those specifically detailed in ISO 6944, and the degree of fire protection of specific duct assemblies, have not been investigated.
RELATED PRODUCTS

Products related to ventilation ducts investigated for fire resistance are covered under Ventilation Duct Assemblies (HNLJ).

ADDITIONAL INFORMATION

For additional information, see Fire-rated Duct Assemblies (HNKN) and Fire-resistance Ratings (BXRH).

UL MARK

Those materials identified by an (*) in the assembly description text are eligible to be produced under UL's Follow-Up Service Program. The Certification Mark of UL on the product is the only method provided by UL to identify products manufactured under its Certification and Follow-Up Service.

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