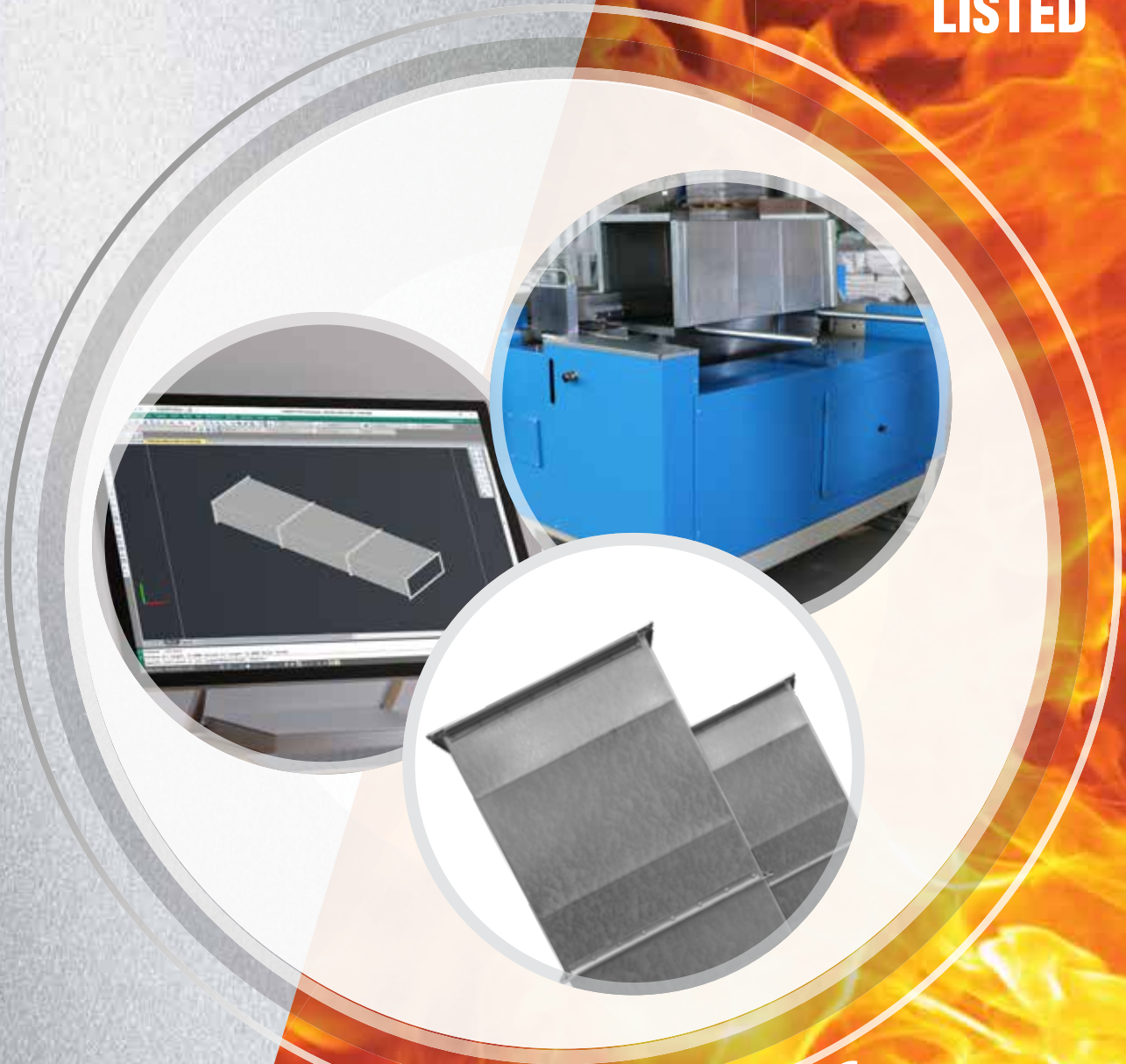
ENGINEERED FIRE RATED DUCTWORK

SERIES NFRD 1000 VS (E)

- FIRE RESISTANCE
- SMOKE EXTRACTION
- VENTILATION

NAFFCO
PASSION TO PROTECT

UL LISTED



CAD-CAM SOLUTIONS

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NAFFCO Fire Rated Ductwork

INTRODUCTION - MODEL: NFRD 1000 VS (E)

1. NAFFCO fire rated ductwork system is quality ductwork with economy features and is most sought after in the market due to its economic advantage when compared.
2. NAFFCO producing over 2000 tons per annum of rectangular galvanized steel ductwork from its factory located in Jebel Ali Free Zone, Dubai, UAE.
3. **NAFFCO fire rated ductwork system with external flanges is a non-coated and does not require any kind of intumescent or fire-resistant paint coating for fire rating.**
4. With over 40 years of experience in manufacturing of fire-fighting and fire safety equipment's, NAFFCO has retained the title of the best solution provider in UAE & GCC in all areas of Fire Rated Ductwork Systems, Engineered Smoke Control systems and Smoke management system.
5. NAFFCO adheres strictly to standard operating procedures for manufacturing, stage-wise quality checks, Installation Instructions and Regular Site Inspections.
6. Ductwork is fabricated on state of art CNC machines and supplies are with quick turnaround times.

NOTE: Refer to UL certificate for more information.

NAFFCO Fire Rated Ductwork

PREVENT SMOKE & FIRE SPREAD

Approximately, 85% of deaths in fire situations caused by smoke inhalations. The prevention of fire and smoke spread through ducted systems is of critical importance. Non-fire-resisting ductwork systems should be responsible for allowing the initial spread of fire & smoke between components. The use of suitable Fire Rated ductwork will maintain fire compartmentation and assist in the safe dispersal of hazardous smoke and fumes.

Antimicrobial Coating

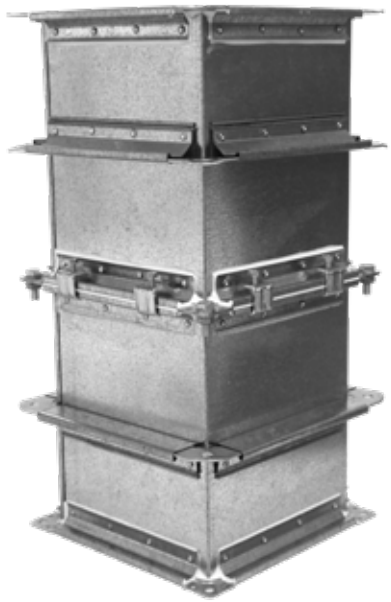
Antimicrobial coating of high-level disinfectant is provided as an option at cost.

It is a powerful BIOCODE that kills all Bacteria, Viruses, Fungus, Moulds, etc.

NAFFCO Fire Rated Ductwork Model: NFRD 1000 VS(E)

NAFFCO Fire Rated Ductwork system with external slide-on flanges and stiffeners for joining ducts comprehensively tested and certified by Underwriters Laboratory (UL) for 2 Hours of Fire Rating as per British Standard - BS476 Part 24 1987 (ISO6944-1985).

Fire Tests carried out at International NAMAS/UKAS accredited Laboratory.



ADVANTAGES

1. NAFFCO fire rated ductwork is UL Tested & Certified system and duly approved by all UAE Civil Defence Authority.
2. Ductwork has 'No coating' or Intumescent painted surfaces, which are prone to damage.
3. Highly efficient ductwork system when used in conjunction with Smoke Control OR Smoke Management application OR Engineered Smoke Extraction systems.
4. NAFFCO Fire ductwork ensure continuity of airflow for the rated period in the event of fire in the compartment and maintains its Integrity and Stability.
5. NAFFCO ductwork system is cost effective to installers due to its lightweight construction and design.
6. In-house manufacturing facilitated with state of art CNC machines, ensures great quality & consistency.
7. NAFFCO ductwork manufactured to DW144 class C (2000 Pa) and include both Duct 'A' & Duct 'B', there is no need to specify these when ordering.
8. NAFFCO fire rated ductwork system include fully tested Volume Control Dampers also.
9. Every Fire-duct order, receives Installation Instructions, mentioning all installation steps clearly with pictures and photos.

NOTE: Refer to UL certificate for more information.

NAFFCO Fire Rated Ductwork

BUILDING REGULATIONS

BS5588 Part 9 consist of three methods of fire protection for ventilation ductwork.

Method 1: Protection using fire dampers.
Fire is isolated in the compartment of origin by the automatic actuation of fire dampers.
The damper closes and cuts off the passage of the air.
This method is not acceptable where continuous air ventilation has to maintain or where fire damper not permitted.

Method 2: Protection using fire-resisting enclosures.
Service shaft through which the ventilation ductwork passes, make a protective shaft for ductwork itself when constructed to the highest standard of fire resistance.

Method 3: Fire resisting Ductwork.
The ductwork itself forms a protective shaft having fire resistance. The ductwork, when tested should not be of less fire resistance than the fire resistance required for the elements of construction in the area through which it passes.

The product has to be tested and certified to BS476 Part 24:1987 (ISO6944-1985) OR EN 1366-1.

Testing lab for Duct upto 1000°C

PERFORMANCE CRITERIA

NAFFCO "NFRD 1000 VS(E) Fire Rated Ductwork System has been successfully tested and certified by UL in accordance with British Standard "BS476 part 24:1987 (ISO 6944-1985)" for 2 hours fire and smoke rating. This test enables the following criteria.

Stability	----------	120mm
Integrity	----------	120mm
Smoke Extraction	----------	120mm
Insulation	----------	Nil

Ductwork System under test has to hold its Integrity under a pressure test of 300 to 500 Pa for smoke extraction system.

NAFFCO testing of the fire duct system is a continuous activity for better value-engineered product and we pass on the benefit to customer and clients.

NOTE: Refer to UL certificate for more information.

Stability: Failure shall be deemed to have occurred in Ducts "A "and "B" outside the furnace when the duct collapse in such a manner that the duct no longer fulfils its intended function.
Integrity: The presence and formation of cracks, holes, or other openings, in the specimen, outside the furnace through which the flames or hot gasses can pass shall constitute integrity failure.

Smoke Extraction: When ductwork under fire testing is unable to retain 75% of its original cross-section area inside the furnace or it shrinks to cross-section size more than 25%, hence hampering the flow of flames or hot gases, shall constitute smoke extraction failure.

Insulation: Failure deemed to have occurred when the temperature rises above initial ambient temperature on the unexposed surface of the test specimen, outside the furnace, exceed either. 1400 °C as an average value. 1800 °C as a maximum value read by any surface thermocouple.

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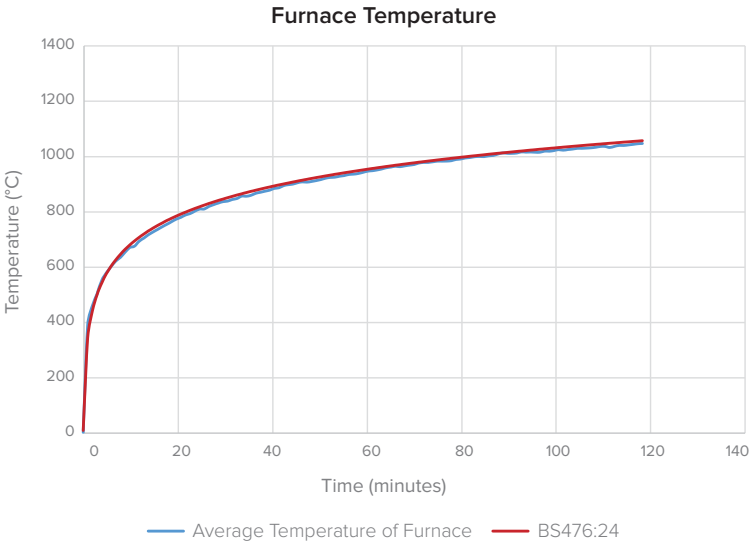


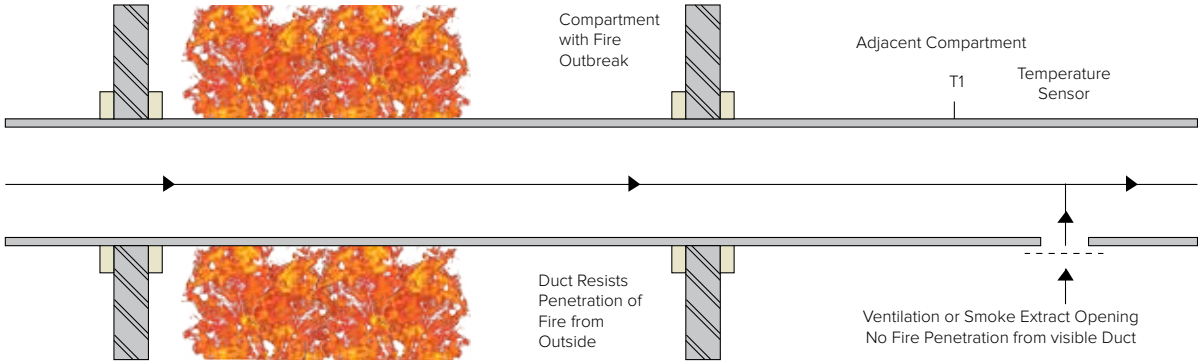
APPLICATIONS

1. Smoke extraction systems.
2. Dual ventilation/Smoke extract systems.
3. Pressurisation systems.
4. Car park extract systems.
5. Non-domestic kitchen extract system.
6. Make up Air Duct.

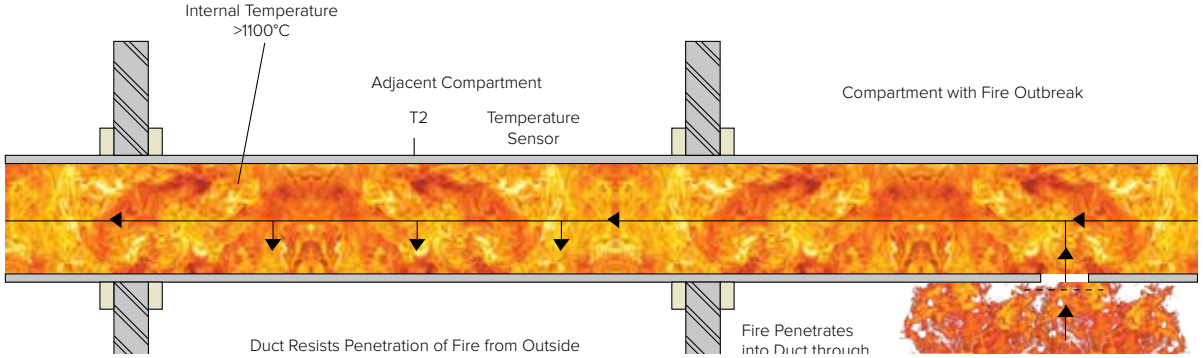
Definitions of Types A & B Fire Exposure

The testing standard differentiates between types of fire exposure; two classifications apply as detailed below

Fire Outside Duct Type A



Fire Outside Duct Type B



NOTE: Refer to UL certificate for more information.

NAFFCO Fire Rated Ductwork

FABRICATION OF FIRE DUCTS

1. NAFFCO provides a wide range of ducts, fittings and services, from normal GI ductwork to Fire Rated ductwork, which serves as an important passive fire protection solution for Smoke & Fire and HVAC Air Flow management in a building.
2. NAFFCO Fire Rated ductwork is manufactured from quality GI sheet steel to ASTM 653A, G90 grade, Un-oiled, Lock-form Quality, CHROMATED and having Zinc Coating of 275gms/SQM (Z-27).
3. Fire-rated ductwork fabrication based on requirements of HVAC DW/144 standard.
4. State of art CNC duct production and cutting machines are used to maximize machine operations to maintain consistency of workmanship and quality.
5. Skilful fabricators use their best expertise to ensure each piece to its correct size and shape.
6. Sealant application is carried out in the factory. TUF brand is a high level of intumescent sealant which is applied.
7. NAFFCO can use its expertise to break down drawings into simplified item lists and quantities for a quotation for only fire duct supplies or total smoke control systems.
8. NAFFCO provides special high-grade fire stopping intumescent gasket tape for Duct Joints. This gasket tape is proven & time tested for fire resistance.

STATE-OF-THE-ART DUCT MACHINERY

NOTE: Refer to UL certificate for more information.

NAFFCO Fire Rated Ductwork

QUALITY ASSURANCE & CERTIFICATE OF CONFORMITY

While manufacturing ducts, every piece is comprehensively checked at each stage of fabrication, adhering strictly to specifications and quality standards, which makes both large and small-scale jobs ensured to be handled with the same care productivity. Well trained and highly experienced workmanship guarantees consistency in Quality Assurance.

Quality for manufacturing & installation, both are important for FRD system hence, inspection is carried out at every stage during installation as well as completion of the site. A detailed report is signed-off before Certificate of Confirmatory is issued. Randomly, a leak test is carried out for a sample lot during ther manufacturing process.

Certificate of Compliance (COC) for Fire Rated Ductwork issued by NAFFCO trained Installation Engineer after successful inspection of ductwork.

NOTE: Refer to UL certificate for more information.

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