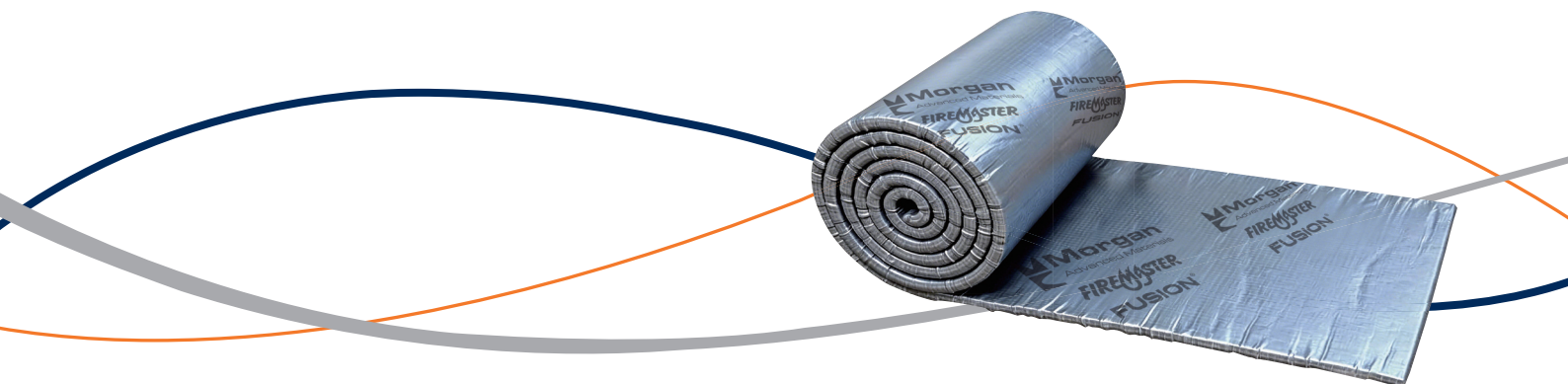




# FireMaster® Fusion™

Flexible 2 & 4 hour Fire Resistant Ductwrap



# FireMaster® Fusion™ Duct Wrap

Slim, single-layer fire-rated wrap for critical duct applications

FireMaster Fusion is a flexible duct wrap system engineered to provide a thin insulation profile that will provide a fire resistance of up to 4 hours integrity and insulation in accordance with the relevant criteria of EN 1366-1:2014.

The system consists of a single-layer wrap only, removing the need for multiple layers typically associated with other flexible wrap solutions.

Designed for ease of installation, it offers a practical alternative to conventional board or multi-layer systems, and is particularly suitable for HVAC applications located within hard-to-access areas of where space is severely constrained.

**FIREMASTER®**  
**FUSION™**

-  Single layer duct wrap system
-  Slim 27mm profile
-  Flexible and easily forms to complex duct shapes
-  Fast and easy installation
-  No special equipment or welding required
-  Fully encapsulated and durable
-  Tested to EN 1366-1:2014 for Ventilation Extract Ducts
-  Fire resistance including insulation for two and four hours



# Innovative Engineered Solution



FireMaster® Fusion™ consists of a proprietary fire-resistant core formulation and high-temperature ceramic fibre insulation, fully encapsulated in a reinforced aluminium foil facing.


It is flexible so can easily wrap around the outer profile of ducts, applied in single layer, requiring no special tools or equipment.

## FireMaster Fusion - Product Details

Product Details	Model	Thickness	Roll Size	Roll Weight
Firemaster Fusion (duct wrap)	FRD – EN003	27 mm	5000 mm x 1100 mm	53 kg
Firemaster Fusion (collar wrap)	FRO – 001	15 mm	5000 mm x 1100 mm	10 kg


## Typical Applications


FireMaster Fusion is suitable for **2 and 4 hours** fire resistant ductwork across a wide range of building services applications, for both fire outside to in and fire inside to out (Duct A and B scenario).

 Ventilation and air conditioning

 Natural smoke extract

 Fan assisted smoke extract

 Pressurisation of escape routes and firefighting lobbies

 Kitchen Extract ducts

Less Thickness  
Equal Performance

# Performance Criteria in Fire Rated Ducts

**Fire resistant duct** systems must meet the criteria of fire inside and outside the duct for fire temperatures up to 1150°C for multi-compartment fire exposures of two hours and above.



**Smoke extraction ducts** are critical life safety ducts designed to transport smoke and hazardous gases to the outside of the building.

**Ventilation ducts** circulate air within the building. Fire resistant ventilation ducts restrict the spread of heat and hot gases from fire between the compartments while maintaining positive pressure. It is important to maintain the structural integrity and insulation during a fire, preventing smoke spread and reducing risks of heat conduction and radiation and ensuring escape routes remain safe.



**Kitchen extract ducts** have specific requirements and additional testing criteria to address the fire risk caused by grease accumulation within a duct to prevent grease ignition internally when exposed to external fire and for the duct remain intact.

## Tested & Certified Performance

FireMaster® Fusion™ is fully tested to EN 1366-1:2014 for ventilation ducts and meets the relevant requirements of BS 476 : Part 24 : 1987 for smoke extract and kitchen extract systems. The system is certified to achieve:

- Stability
- Integrity
- Insulation
- Smoke leakage control



# FireMaster® Fusion™ Design Considerations

The following design considerations are some of the factors for determining the correct specification to ensure a ductwork system will provide the required fire performance. Ductwork systems which are located in more than one compartment should always be tested or assessed for their performance when exposed to the heating conditions described within EN 1363-1:2014 or BS 476 : Part 24 : 1987.

The performance of a ductwork system will vary depending on whether a fire could have direct access to the inside the duct through an unprotected opening. As part of the standard fire test for ducts, the systems are exposed to external fire (also referred to as Duct type A) and one specimen to both external AND internal fire (also referred to as Duct type B). Fans are used to create a standard negative pressure differential (Duct A) and air flow to extract the hot gases through the duct (Duct B) with the duct fire performance being subjected to both fan-on and fan-off situations. If in doubt, one should assume direct access, i.e. the Duct B scenario.

It is a general requirement that the ducts must satisfy all the relevant performance criteria of stability, integrity and insulation (and cross-sectional area if used as a smoke extraction duct).

**Supporting Structure:** Any structural element (e.g. beam, floor or wall), must have as a minimum the same fire resistance as the duct system itself and must be able to support the load of the duct under fire conditions.

**Duct Support system:** Hangers, supports and their fixings should be capable of bearing the load of the complete ductwork system including any applied insulation material or other services suspended from it. It is normally not advisable to use unprotected supports if the stress exceeds the value of 10N/mm<sup>2</sup> for 120 minute ducts or 6N/mm<sup>2</sup> for 240 minute ducts and/or if hanger lengths exceed 1500mm.

**Steel Ductwork:** Steel duct must be constructed in accordance with the requirements of DW/144 – Specification for sheet metal ductwork – low, medium and high pressure/velocity air systems (published by the Heating and Ventilating Contractors' Association UK.), or equivalent specification, e.g. SMACNA. The steel ducts must be constructed with rolled steel angle-flanged cross joints. It is recommended that longitudinal seams be formed using the Pittsburgh lock process.

**Penetrations Through Walls & Floors:** Care should be taken to ensure that movement of the duct in ambient or in fire conditions does not adversely affect the performance of the wall, partition or floor, or any penetration seal. Penetration seals are part of the tested duct system, and the use of untested third-party products are not permitted.

**Movement Joints:** Movement joint details may be required for long lengths of duct, particularly where the duct spans across a movement joint in the floor or wall, or passes through floors and roof that may deflect at different rates. Please consult your local Morgan Technical Support office for details of such joints.

**Handling and storage:** Installers must be suitably instructed/trained in the handling. Care required to:

- Provide a suitable lay-down area on-site
- Do not accept outside storage
- Any fire-resistant duct stored on site must be covered
- See also guidance in relevant duct specification documents, e.g. Appendix C of DW/144

# Project Installation References



Hospitals



Shopping Malls



Universities

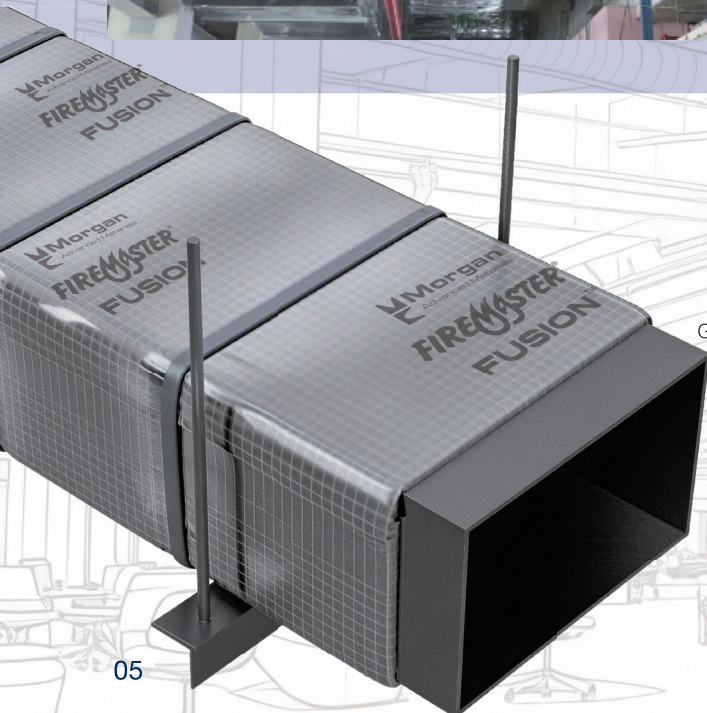


Hotels



Mixed Used Development

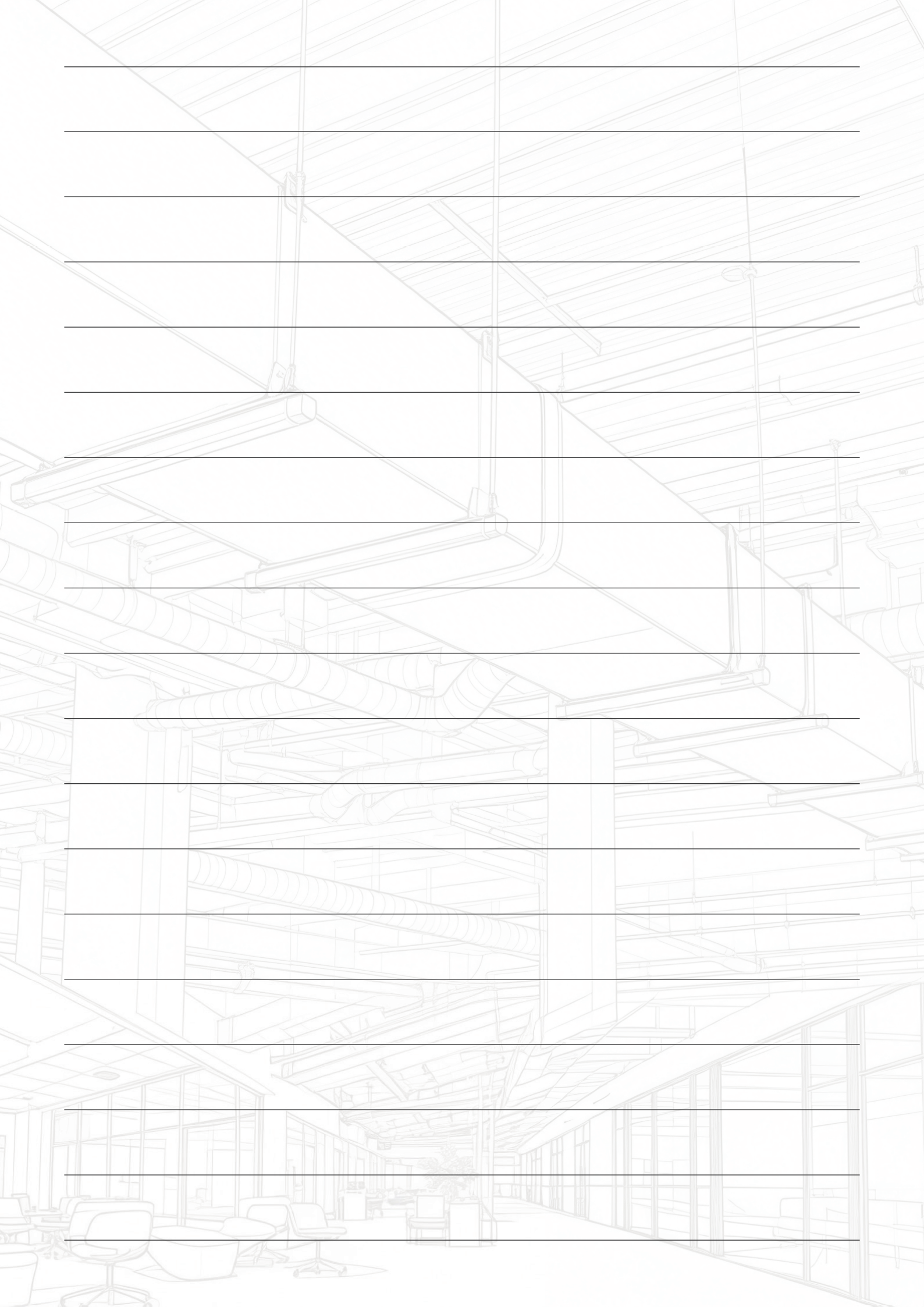
Contact us for specific project reference details



Talk to Our Fire Protection Specialists

Get in touch today to discuss your project requirements, request technical support, or explore the most effective FireMaster® solution for your steel protection needs.

**FIREMASTER®**



## Morgan Advanced Materials

Significant trends shape our modern world, accelerating the demand for new and more sustainable advanced materials.

At Morgan Advanced Materials, we use advanced carbon and ceramics materials to support the move to a more sustainable world. Our people are driven to solve complex customer problems: from managing heat and enabling greener technologies, to supporting improved medical diagnostics and protecting life.

Our purpose is 'to use advanced materials to make the world more sustainable, and to improve the quality of life'. This purpose is underpinned by our safe, ethical and inclusive culture, embraced by our 7,800 employees spanning over 25 countries. Working across many industries and in a number of markets, we deliver the materials science and technologies the world needs now.

## Our Strategy

We are a global advanced manufacturing organisation with leading capabilities in three areas: materials science, application engineering and customer focus.

## Our Business Model

We operate as two global divisions and three global business units. We empower our global business unit teams, giving them considerable autonomy and enabling them to act quickly and support their customer needs. Our broad manufacturing footprint enables us to supply customers locally from a short supply chain.

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## Morgan Advanced Materials plc

York House, Sheet Street

Windsor, SL4 1DD United Kingdom

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For all enquiries, please contact our specialist sales and marketing offices:

### EMEA

Morgan Advanced Materials  
United Kingdom, Germany,  
France, Italy, Spain, Poland,  
UAE, South Africa  
[sales.tcemea@morganplc.com](mailto:sales.tcemea@morganplc.com)

### Americas

Morgan Advanced Materials  
Thermal Ceramics Inc  
2102 Old Savannah Road  
Augusta  
Georgia 30906  
USA  
**T** +1 (706) 796 4200  
[marketing.tc@morganplc.com](mailto:marketing.tc@morganplc.com)

### Asia

Morgan Advanced Materials  
Morgan Ceramics Asia Pte Ltd  
150 Kampong Ampat  
05-06A, KA Centre  
368324  
Singapore  
**T** +65 6595 0000  
[asiasales@morganplc.com](mailto:asiasales@morganplc.com)