



FyreWrap®



FyreWrap® stands as the premier passive fire protection option for commercial ducts. Its Insulfrax core is not only lightweight but also provides superior insulation at high temperatures. The core is fully enclosed by a fibreglass reinforced scrim, enhancing its durability, tear resistance, and antibacterial properties. The solution is characterized by its quick, clean, and straightforward application.



Benefits

- Exceptionally Light: Weighs up to 5 times less than conventional system
- Hassle-Free Installation: Mesh-free setup.
- Certified Microbial Resistance: Greenguard listed.
- Fast and Effective Building Process.
- Easy to Repair: Simply tape or replace affected areas.
- Resilient to Seismic Activity and Vibrations.
- Compliant with AS1530.4-2014 for both Internal and External Fire Uses.



FyreWrap® Application Video



Application

- Supply air ducts
- Zone pressurisation ducts
- Smoke exhaust ducts
- Carpark exhaust ducts
- Kitchen exhaust ducts
- Any steel ducts that require fire separation



Trades

- Architects
- Builders
- Passive fire professionals
- Air conditioning and ventilation professionals





Advanced Fire Safety Solutions

FyreWrap®

FyreWrap® is a foil-faced fire protection wrap engineered to boost fire safety in ducts and exhausts, adhering to AS1530.4-2014 for three-hour fire resistance and aligning with AS 1668.1 and NCC standards, inclusive of external fire tests.

At its heart is the Insulfrax® core, a high-temp insulation of calcia, magnesia, and silica, promoting bio-solubility. The aluminum foil and fiberglass scrim add durability and mold resistance, also facilitating easy identification.

Thoroughly vetted for health and eco-friendliness, FyreWrap® is completely bio-soluble and certified for mold resistance by Greenguard.

Versatile Fire Protection

FyreWrap® boasts a versatile range of applications, thanks to its comprehensive collection of certifications and approvals. This makes FyreWrap® an ideal choice for use in various settings, including:

- Hospitals
- Commercial buildings
- Residential buildings
- Commercial accommodations
- Aged care facilities
- Sports and event venues
- Commercial and industrial kitchens
- Educational institutions
- Detention facilities
- External environments*

(*Additional lining is necessary for external applications. For more details, please reach out to shop@fyre-wrap.com)



FyreWrap®

UNIFRAX



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Why Choose FyreWrap® for Fire Safety Advantages Unfolded

Discover why FyreWrap® is not just the safest, but also the most eco-friendly solution for fireproofing ductwork and other services. Beyond these significant attributes, FyreWrap® offers a spectrum of additional advantages, setting it apart as the superior option compared to traditional firebird and fire sprays and similar products.

INSTALLATION	FyreWrap	Conventional Fire Board	Conventional Fire Spray
Fast, clean and easy installation	✓	✗	✗
Lightweight, reduce structure support	✓	✗	✗
No water source needed on site	✓	✓	✗
No dust or waste in nearby drains	✓	✗	✗
No masking for overspray	✓	✓	✗
Off-site installation	✓	✗	✗
Easy certification	✓	Difficult to determine insulation	Difficult to determine thickness
SYSTEM			
Clean simple repair	✓	✗	✗
System weight	up to 5 times lighter	Heavy	Heavy
Easy to use access panels	✓	✗	✗
Vibration/seismic tolerance	✓	✗	✗
Antimicrobial (mould) tested	✓	✗	✗
Ease of identification AS1851 Maintenance of Fire Systems	✓	✗	✗



Specification

Thickness	38mm	
Roll Widths	610mm	1111mm
Surface area	4.65m ¹	9.30m ¹
Roll weight	11kg	11kg
Material density	96kg/m ¹	
Microbial/mould resistance	GREENGUARD certified	
Bio-soluble	Yes	
Green Building Council /LEED Accreditation	Yes	
Contains Volatile Organic Compounds (VOC)	No	
R-Value (Thermal Resistance)	1.2m ¹ .K/W	
Acoustic Rating	11dB	
Ozone depleting manufacture/ composition	No	

Eco-Friendly Excellence of FyreWrap®

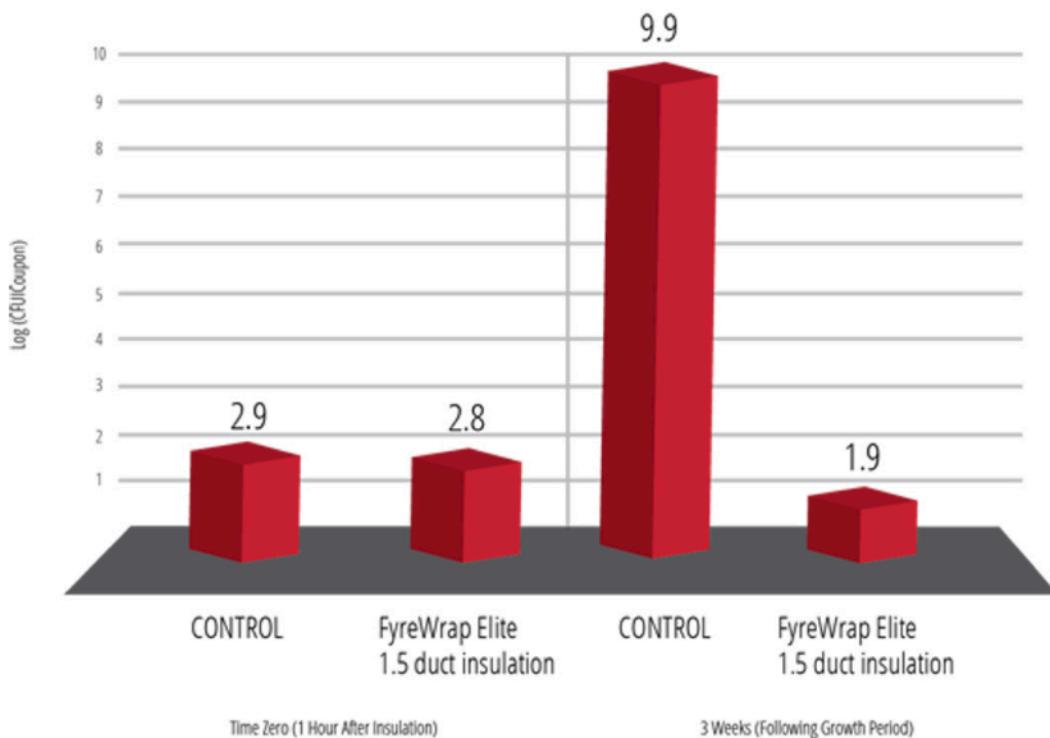
Sustainable Fire

FyreWrap is an environmentally friendly solution



FyreWrap® distinguishes itself as the pinnacle of eco-conscious fire protection. Recognized by the Green Building Council and certified by LEED for its contribution to energy conservation and superior green asset management, FyreWrap® guarantees a safe and health-conscious environment for both occupants and construction professionals. Validated by independent local VOC testing, FyreWrap® is confirmed to have low levels of volatile organic compounds, uses no ODP substances, and avoids chemical blowing.

FyreWrap®'s Commitment to Bio-Solubility and Mold Resistance



Delving into the health and safety aspects, FyreWrap®'s core fibers have been extensively researched for bio-persistence through inhalation during a European Ceramic Fibres Industry Association study (No. 02G97008). This study has affirmed the product's bio-solubility, ensuring its safety for those who install or interact with it. FyreWrap® has also undergone rigorous microbial resistance testing by Green Guard and Air Quality Services, including exposure to Penicillium brevicompactum spores in high-humidity conditions. As a result, FyreWrap® is verified as mold-resistant, an essential quality for sensitive environments like hospitals, care facilities, and restaurant kitchens where mold presence can have critical implications. The following chart illustrates FyreWrap®'s effective mold growth resistance.

Understanding Fire Resistance Level (FRL) Measurement

Fire Performance

The evaluation of fire performance for ducting systems is governed by AS1530.4-2014 section 9, which stipulates distinct fire test methods for scenarios where the fire originates from within the duct or externally. These methods assess the integrity of a duct system as it passes through a wall or floor. The outcome is the determination of a Fire Resistance Level (FRL), denoted by three time-based metrics, reflecting the system's resilience against internal or external fire exposure. The application-specific FRLs for ductwork are outlined as follows:

Structural



Under both internal and external fire scenarios, the duct and its supports are required to retain their structure to ensure the duct functions as intended.

Integrity



External Fire: The protected duct must block flames and hot gases from entering the duct.

Internal Fire: The protected duct should contain the spread of hot gases within the duct.

Both scenarios are tested, including at points where the duct penetrates walls or floors.

Insulation



External Fire: This test involves a 1m/s airflow through the duct, with temperature checks on internal duct walls, external penetration surfaces, and the exit airstream, all of which must not exceed a 180°C temperature increase.

Internal Fire: Temperature monitoring occurs on the exterior of the duct protection material and at the firewall or floor near the duct entry, with a maximum allowed temperature rise of 180°C.

FyreWrap tested for external fires

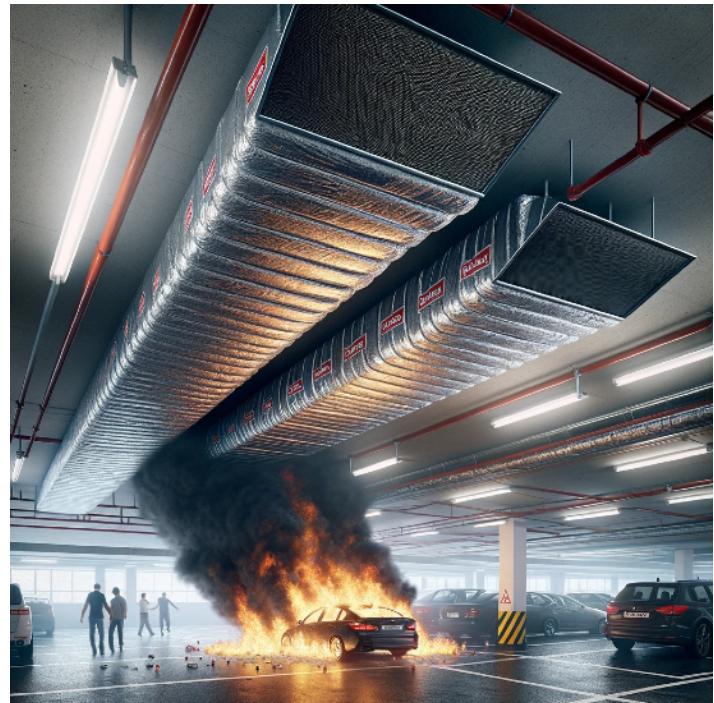


FyreWrap tested for internal fires



Exhaust Ducts

Section 9 of AS1530.4-2014 outlines two distinct fire testing methods to simulate fires originating from within a duct and those from outside it, specifying the appropriate method for different duct applications. While exhaust ducts typically fall under the category of internal fire exposure, AS1668.1 also imposes additional requirements depending on the specific use case. Trafalgar has put together an index of common uses, relevant regulations from AS1668.1, and our analysis of the necessary Fire Resistance Level (FRL) and FyreWrap specifications for these applications.



It's essential to engage with your project surveyor or professional engineer to verify the validity of this interpretation. In case of any discrepancies, the team at Fyre-Wrap.com is eager to provide a tailored solution that satisfies the certifying authority's interpretation for your site.

Application	Fire risk	Compliance requirement	FRL To match the FRL of the compartment e.g. 120/120/120 in a 2 hour requirement		Fire test/assessment report
			External fire (FyreWrap layers)	Internal Fire (FyreWrap layers)	
Kitchen Exhaust Only (ductwork outside of the kitchen)	Fire inside the kitchen and/ or ducting spreading to other compartments, and we need to make sure it stays inside the duct.	AS1668.1 Section 6 AS1668.1 Clause 3.4	Not required as per AS1530.4 FRL definitions (9.1b)	120/120/120 (1x layer)*	FCO3226
Combined kitchen and smoke exhaust system	Fire inside the kitchen and/or ducting, integrity of the smoke exhaust systems of the building.	AS1668.1 Section 6 Clause 6.2.2 AS1668.1 Section 3 Clause 3.7.2	120/120/- (1x layer)	120/120/120 (1x layer)*	FCO3226 & FC 17299
Smoke Exhaust	Fire in compartment causing smoke to rise and fill space quickly, integrity of the smoke exhaust systems of the building.	AS1668.1 Section 3.7.2	120/120/- (1x layer)	120/120/120 (1x layer)*	FCO3226 & FC 17299
Diesel pump ventilation system	Fire in duct spreading to other compartments, or hot products of combustion escaping and igniting.	AS1668.1 3.3.3 e) AS1668.1 Clause 3.4	Not required as per AS1530.4 FRL definitions (9.1b)	120/120/120 (1x layer)*	FCO3226 & FC 17299
Kitchen Exhaust ductwork inside the kitchen compartment	Fires inside the duct spreading to combustible materials within 300mm of the duct.	AS1668.1 section 6 Clause 6.2.3.3	Not required as per AS1530.4 FRL definitions (9.1b)	-/30/30 (1x layer)	FCO3226 & FC 17299
Fire Stair pressurization relief ducts	Fire & smoke passing through to fire escapes preventing safe evacuation.	AS1668.1 Clause 10.4.3	120/120/- (1x layer)	120/120/120 (1x layer)*	FCO3226 & FC 17299
Any other exhaust duct e.g.	Fire in duct spreading to other compartments, or hot products of combustion escaping and igniting.	AS1668.1 Clause 3.4	Not required as per AS1530.4 FRL definitions (9.1b)	120/120/120 (1x layer)*	FCO3226

*Additional layer locally where duct passes through fire barriers

For 3 and 4 hour FRL requirements please contact shop@fyre-wrap.com

Pressurisation Ducts

The table outlining Fire Resistance Levels (FRL) specifies the criteria for pressurization ducts. According to Section 9 of AS1530.4-2014, these ducts are subject to fire risks from external sources (external fire). However, it's crucial to acknowledge that AS1668.1 also prescribes extra requirements that may vary depending on the ducts' specific application.



It's essential to engage with your project surveyor or professional engineer to verify the validity of this interpretation. In case of any discrepancies, the team at Fyre-Wrap.com is eager to provide a tailored solution that satisfies the certifying authority's interpretation for your site.

Application	Fire risk	Compliance requirement	FRL To match the FRL of the compartment e.g. 120/120/120 in a 2 hour requirement		Fire test/assessment report
			External fire (FyreWrap layers)	Internal Fire (FyreWrap layers)	
Stair of fire escape pressurisation ducts	Fire & smoke passing through to fire escapes preventing safe evacuation	NCC2019-C3.9 NC2022-C4D10 AS1668.1 section 10	120/120/60 (2x layers)	Not required as per AS1530.4 FRL definitions (9.1a)	FC 17299
Fire Stair pressurization relief ducts	Fire & smoke passing through to fire escapes preventing safe evacuation	AS1668.1 Clause 10.4.3	120/120/- (1x layer)*	120/120/60 (1x layer)*	FCO3226 & FC 17299
Any other ducts that blow air to pressurise a compartment	Fire & smoke passing through fire compartments via the ducting system where fire dampers are not installed or permitted to be used	AS1668.1 Clause 3.4	120/120/120 (3x layers)	Not required as per AS1530.4 FRL definitions (9.1a)	FC 17299

*Additional layer locally where duct passes through fire barriers

For 3 and 4 hour FRL requirements please contact shop@fyre-wrap.com



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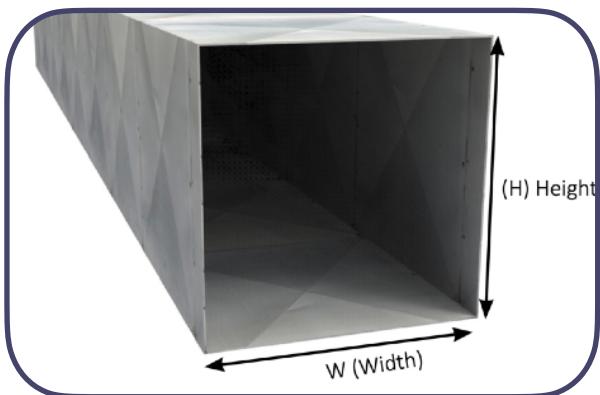
Installation



FyreWrap®
Installation
Video



Measurement

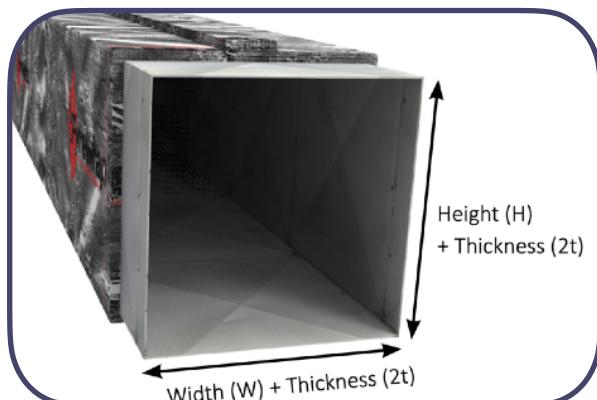


MEASURE

Determine the external measurements of the duct and incorporate an additional 38mm for the FyreWrap® thickness on each side. Include an extra 100mm for the overlap along the length and factor in a slight extra margin to account for any inaccuracies.

CALCULATE

Example: Length to cut in L in millimeters: $L = 2 \times (W+2t) + 2 \times (H+2t) + 100 + 100$



Another approach to calculating the required cut length is to take the duct perimeter and add 400mm.



CUT

Spread out the FyreWrap® to its entire length and give it a gentle end-to-end shake to decompress it from its stored state. Pull the FyreWrap® so it's stretched out, measure the necessary length for cutting, and then use a sharp blade to trim it to size.

SEAL

Right after cutting the FyreWrap®, you should promptly seal all freshly cut edges with reinforced aluminum foil tape to protect the inner material from any harm.



Wrapping

WRAP

Encircle the duct with the FyreWrap®, ensuring a 100mm extension where the material overlaps itself along its length. It's important to note that when multiple layers are applied, an overlap is not required for the first layer. Align the subsequent strip of FyreWrap® so that it extends 100mm beyond the edge of the prior wrapped section (this is the circumferential joint). Secure all overlaps and joints firmly with reinforced aluminium tape.

DUCTS LESS THAN 600MM X 600MM

When dealing with ducts smaller than 600mm x 600mm, use steel banding that measures 12mm in width and 0.4mm in thickness to securely hold the FyreWrap® in place around the duct. Position the steel banding 40mm away from the edge of the FyreWrap® blanket, directly over the overlaps, with an additional band positioned between the overlaps at intervals of 265mm. Secure all overlaps and joints firmly with reinforced aluminium tape.

DUCTS 600MM X 600MM TO 1200MM X 1200MM

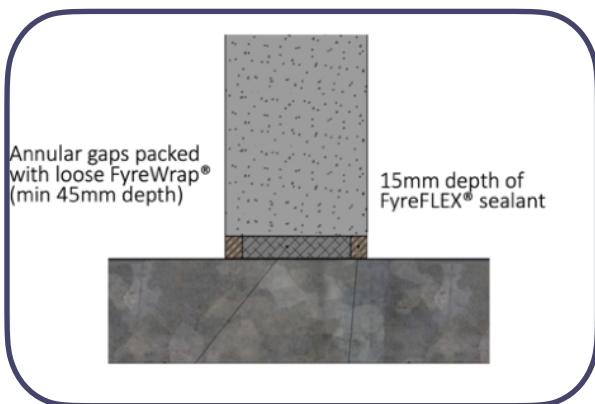
For ducts that exceed 600mm x 600mm but are smaller than 1200mm x 1200mm, employ a banding system paired with either pre-welded pins or cup head style pins on the underside of the duct. Do not use self-adhesive pins. The pins must be placed at intervals of 200mm.

DUCTS OVER 1200MM X 1200MM

When working with ducts larger than 1200mm x 1200mm, utilize either pre-welded pins or cup head style pins on all four sides of the duct. Avoid using self-adhesive pins. The pins should be spaced at intervals of 200mm.



Wall Penetrations



ANNULAR GAPS

Make sure that the circular gaps around the duct are within the permissible range for your duct's dimensions. Consult table 1 on page 23 for detailed information. Fill these gaps with loose FyreWrap® material and then secure them using fire-resistant sealant.

STEEL ANGLE

Mount a steel angle to firmly attach the duct to the wall or floor. Refer to table 1 on page 23, which provides the suitable steel angle sizes corresponding to the dimensions of the duct.



WRAP - ADDITIONAL LAYERS

Encase the duct in two layers of FyreWrap®, extending the length specified in the documentation. Floor penetrations might need an additional, third layer of FyreWrap®, depending on the duct's size.

FIREBOARD STRIPS

Place strips of fireboard along the steel angle, covering the duct's perimeter. Ensure to select the correct size of fireboard strips as per the duct's dimensions.



Overlap Details

Configuration	Drawing	Description
1 layer of FyreWrap®	<p>Telescopic Overlap (most common)</p>	<p>Wrap the next segment of FyreWrap® over the edge of the previous segment with a 100mm overlap. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Checkerboard Overlap</p>	<p>Both edges of one segment overlap their respective adjacent segments. The overlap joints in alternate layers of duct wrap will resemble a checkerboard pattern once complete. This method is ideal when repairs are to be made to segments. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt-joint with Overstrip</p>	<p>Two adjacent segments are butt-jointed at their edges and a 200mm wide cover strip centred at the butt-joint. This allows for a 100mm overlap over each edge segment. Cover strips are to be made using FyreWrap® 1.5 material. All joints are to be taped with FyreWrap® premium tape.</p>
2 layer of FyreWrap®	<p>Double-Layer Telescopic Overlap</p>	<p>Both layers of FyreWrap® are wrapped using the telescopic method as on the previous page. Ensure there is a 100mm overlap in both layers. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt Joint with Telescopic Overlap</p>	<p>The first layer is butt-jointed at its edges and the second layer to be wrapped over the first layer using the telescopic overlap method with a 100mm overlap. All joints are to be taped with FyreWrap® premium tape.</p>
	<p>Butt-joint with cover strip</p>	<p>Both layers of FyreWrap® are butt-jointed at their edges. The layers are staggered to ensure a minimum 200mm overlap over each butt-joint of the first layer. The butt-joints on the second layer are covered with a 200mm wide strip. Cover strips are made using FyreWrap® Elite 1.5 material. All joints are to be taped with FyreWrap® premium tape.</p>



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