HALSPAN® to the core and more...

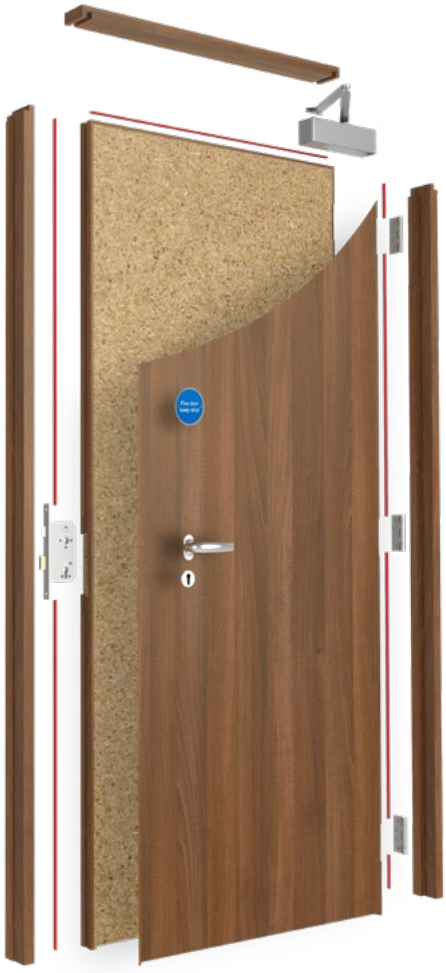
Fire resistance
built in...

A pioneer in its field, Halspan developed an entirely new way of constructing doors in the 1990s using pre-tested fire door blanks made from our unique 3-layer particle board. For the industry, having Halspan at the core of a door has been an assurance of quality and integrity ever since.

Over the years, we've extended our product range so that today Halspan is one of the world's leading suppliers of the complete system of quality door components – everything from door blanks and cores to seals, hardware and steel door frames.

Our industry and the regulations that govern it are changing following recent high-profile fires around the world.

In this brochure, we examine the crucial role that fire doors perform in helping to save lives and protect property. We look at fire door performance and how it's measured, the 'system' of components that make up a fit-for-purpose fire doorset or door assembly, and the importance of fabricating, installing and maintaining door assemblies and doorsets correctly if they're to provide the protection required. Lastly, we introduce Halspan's complete system of fire door components.



to the core and more...

The costs of fire

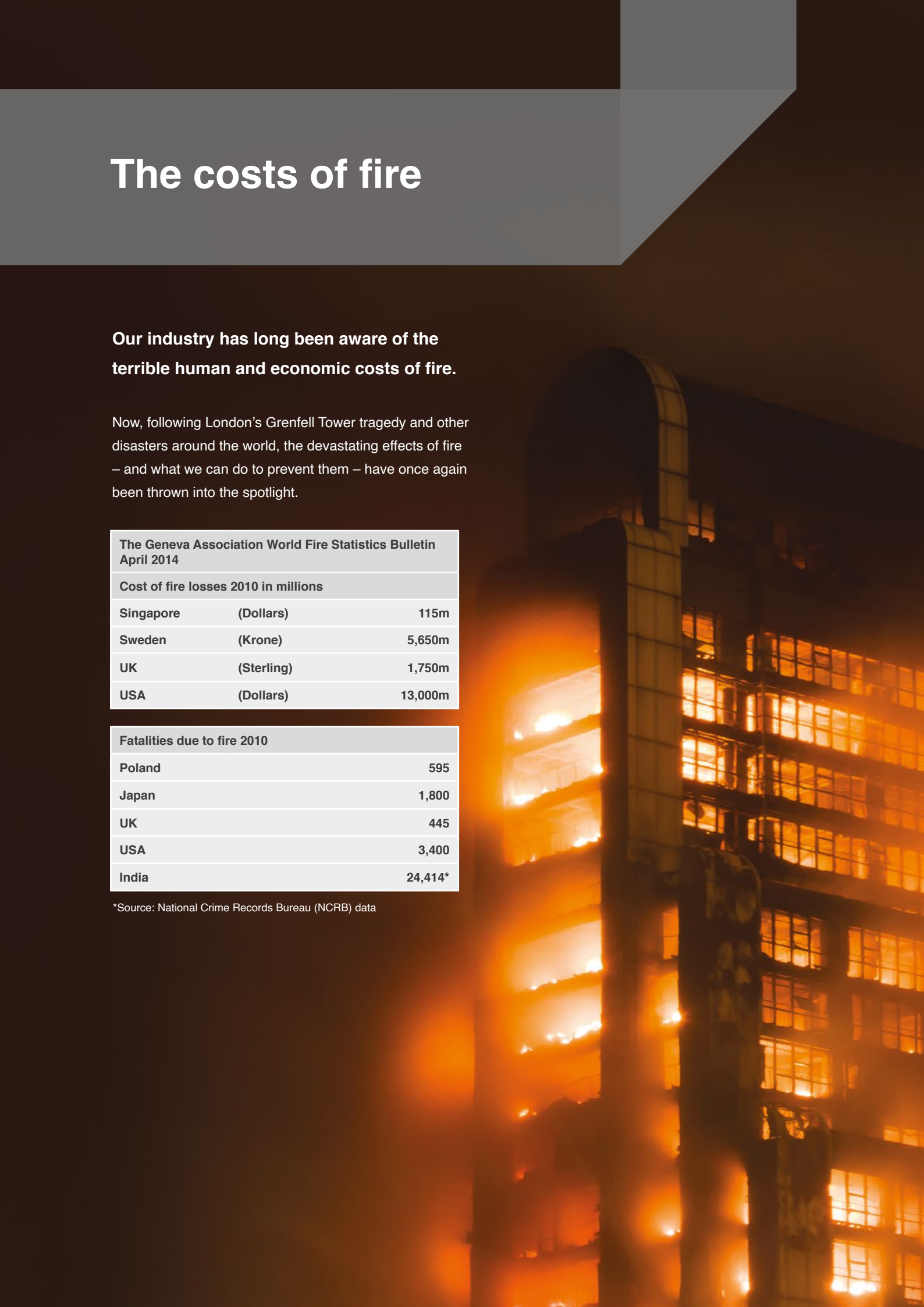
Our industry has long been aware of the terrible human and economic costs of fire.

Now, following London's Grenfell Tower tragedy and other disasters around the world, the devastating effects of fire – and what we can do to prevent them – have once again been thrown into the spotlight.

The Geneva Association World Fire Statistics Bulletin April 2014		
Cost of fire losses 2010 in millions		
Singapore	(Dollars)	115m
Sweden	(Krone)	5,650m
UK	(Sterling)	1,750m
USA	(Dollars)	13,000m

Fatalities due to fire 2010	
Poland	595
Japan	1,800
UK	445
USA	3,400
India	24,414*

*Source: National Crime Records Bureau (NCRB) data



How a fire develops

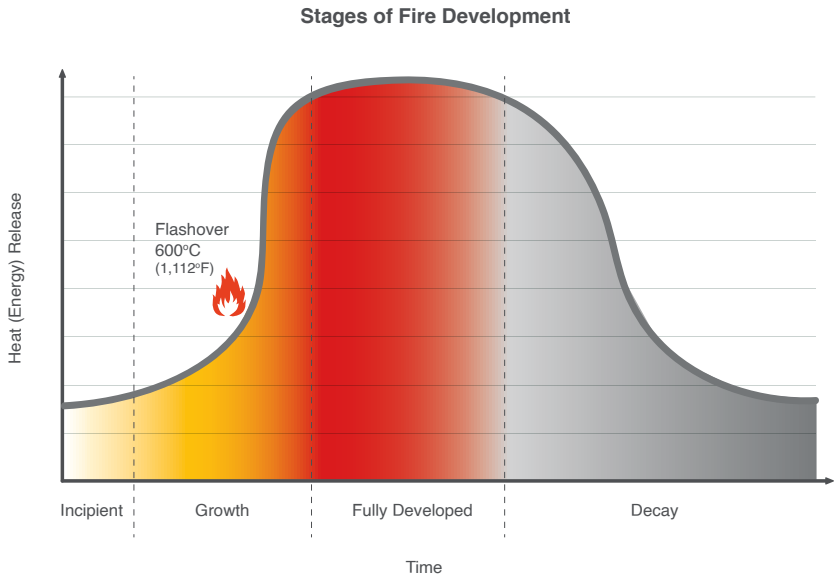
Before addressing prevention and control, let's first examine how a typical fire develops.

Imagine a fire starting in a wastepaper basket in one corner of a room. It will take some time to grow, but fuelled by the oxygen in the room, the flames will begin to spread and a smoke layer will develop. As the temperature rises, this smoke layer deepens and becomes more toxic. At the point of flashover, which is 600˚C, everything that can burn ignites.

Fire, as we know, is responsible for thousands of deaths and millions of pounds' worth of damage every year. But it's smoke that causes most of those fatalities. Why? Because when a fire develops in a confined space, there is a rapid depletion of oxygen. This leads to inefficient combustion, which in turn produces large quantities of carbon monoxide.

Known as the 'silent killer', as little as 1% carbon monoxide in the atmosphere can be fatal. Even with levels as low as this, people become disorientated in about 20 seconds and fall unconscious in around a minute, with death following soon after.

Anyone who is sleeping doesn't stand a chance!



Creating an effective fire strategy

So what can be done to combat fire and smoke?

Every building needs its own fire strategy and fire protection systems.

Fire protection systems fall into two categories: active fire protection and passive fire protection, both of which need to work together in the event of a fire.

Active fire protection measures include equipment like fire extinguishers and sprinkler systems, which require some degree of action, either manual or automatic, to operate. Providing they work properly, these active fire protection measures can help to slow the spread of fire or put it out altogether.

Passive fire protection measures include fire doors, fire-resistance rated walls and floors, and dampers for ducts. These help to slow or stop the spread of fire and smoke between rooms and different floors by separating a building into individual compartments. Providing they work properly, these passive fire protection measures buy occupants valuable time for evacuation.

As well as helping to compartmentalise a building, fire doors also provide a crucial means of escape, making them a key component of passive fire protection and the overall fire strategy of a building.

A shared responsibility

When active fire protection and passive fire protection systems work together, in unison, they save lives and protect property. Unfortunately, as statistics show, this doesn't always happen.

To reduce the human and economic costs of fire, it's vital that governments around the world set clear regulations, which call for the highest standards of fire safety in buildings. This is already happening, with ever more stringent requirements being introduced for companies and products to conform to international standards.

The onus of responsibility isn't only on governments and their regulatory bodies though. If building owners, specifiers and contractors are to achieve and maintain the standards being set, they need to understand every aspect of active and passive fire protection measures, including fire doors – from the levels of protection they can provide to the need to ensure they are fit for purpose.

Similarly, the fire door industry as a whole – from suppliers and fabricators through to installers – must strive to meet the highest standards possible. Only by doing so will we deliver quality fire doors that can be trusted to perform.

Fire door performance

Given how crucial a role fire doors play in the overall fire strategy of a building, how can you ensure they are fit for purpose?

There are three elements:

- quality assurance
- comprehensive testing
- clearly defined supply chain.

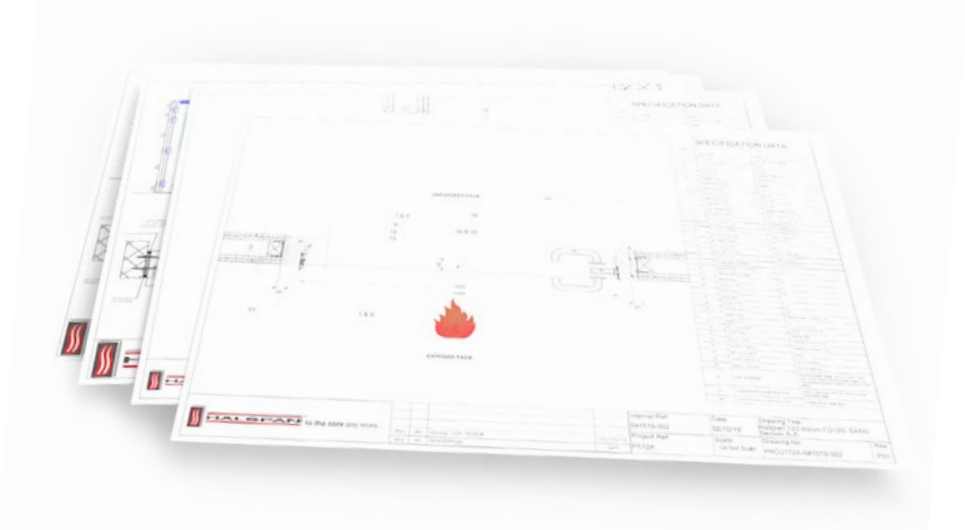
First, the door blank at the core of a fire door must be manufactured to the highest standards, using consistent production techniques and to exact specifications. One of the most widely respected international standards, ISO 9001 certification for Quality Management provides a solid foundation.

Next comes comprehensive testing. Durability is key because unless a fire door is robust enough to withstand daily use – throughout its entire service life – it can't be relied upon to fulfil all or any of its functions. Fire doorsets and door assemblies must also be tested to rigorous international fire test standards to ensure they provide the level of protection they're meant to, whether that's 20 minutes' fire resistance or 120. The results of these tests are reviewed, assessed and awarded third-party certification by recognised international bodies.

Lastly, there's the need for a clearly defined supply chain. For a fire door to be fit for purpose – and remain so – it not only needs to be made up of the right system of components, but to be specified, fabricated, installed and maintained correctly and to a consistent standard. Otherwise, it won't perform as intended.

Reviewing the lessons learned from the Grenfell Tower fire and other disasters, this is why governments are now calling for a more joined-up approach to regulatory compliance, with all the partners in the supply chain taking accountability for the delivery of a quality product.

Developed in response to this, the Halspan Verified quality assurance scheme is a guarantee of quality doors you can trust.



International standards and test methods

While the value of third-party certification is universally recognised, the requirements on fire doors and associated standards vary country by country.

Considering the most widely used standards, both British Standards (BS) and European Standards (EN), for example, focus on 30 up to 120 minutes' fire resistance, while North American Standards (UL) concentrate on the range 20 up to 90 minutes' fire resistance.

The table below shows which standards apply in which countries.

Regulatory standard	Geographical coverage
BS 476 pt 22	UK, parts of the Gulf and India
EN 1634 pt 1	Europe, UK, parts of the Gulf and South East Asia
UL 10c	UAE, Saudi Arabia, Qatar, Oman, Kuwait, Bahrain

Conducted by approved bodies, the tests themselves all follow the same basic principles in regard to fire resistance, although the European test (EN 1634 pt 1) employs different furnace temperature control and pressurisation techniques, while the UL 10c method incorporates an integrity test post burn conducted by means of a hose stream acting on the burnt door surface.

During testing, positive pressure in the upper part of a furnace forces hot gases through gaps and joints in a door assembly, such as those between the door leaf and frame. It is these hot gases that invariably cause integrity failure.

Whether a doorset or door assembly provides 20 or 120 minutes' fire resistance, only a very high standard of both design and specification, right down to the type of seals and intumescent materials used, will pass the rigorous standards of these tests.

Fire Testing

Door integrity maintained beyond 30min


Fire begins to breach door joint


Rear view of door post test

Fire door performance cont.

‘System’ of components

When testing their fire-resisting capabilities, it’s important that all the components of a doorset or door assembly are tested together, rather than individually. Why? Because this is the only way to see how they perform as a unit.

This ‘system’ of components, as it’s called, comprises:

- door blank at the core of the fire door
- essential hardware, such as the lock, door closer, hinges and ancillary items like letterplate
- seals, both between the door leaf and frame, and within the lock and hinges.

Provided this same system of components is specified, then fabricated, installed and maintained correctly, it’s guaranteed to perform as intended, in line with the relevant international standard.

Vary the system components or deviate from the installation instructions in any way and there’s no guarantee the door assembly or doorset will perform to the same level.

A name you can trust

Having Halspan at the core of a fire door has been an assurance of quality and integrity for more than 20 years.

Established in the 1990s, we were the first company to supply pre-tested fire door blanks and the first to offer a full range of door testing. Since then we've spent literally millions of pounds on testing everything from durability and acoustic performance to fire resistance, ensuring that our products continue to meet the changing demands of regulatory bodies worldwide. Our products are fire tested to:

- BS & BS EN: 30-120 minute ratings
- UL 10c: 20-90 minute ratings.

1995

First fire test

Prima - the Original door blank

Est.

1999

Halspan Ltd

Over 20 years of excellence

812

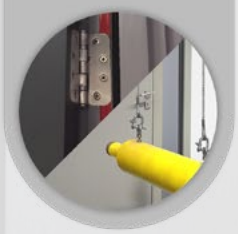
Tests to date

Extensively tested to international standards

1,000,000

Cycle tests

Proven durable throughout service life



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Countries

Sold all over the world

Independent reports and third-party assessments from approved bodies, including Elements BM Trada, Warrington Fire Certifire, IFC Certification, Intertek and CCS Plus, confirm the integrity of Halspan's fire door blanks and cores, seals and hardware.

Halspan ‘system’ components

Fire rated door blanks and cores

Halspan offers a comprehensive range of quality internal and exterior fire door blanks and cores, all tested to international standards.

Rated at 20, and 30 to 120 minutes’ fire resistance, our **Optima**, **Prima** and **Prima Plus** internal fire door blanks feature Halspan’s unique 3-layer particle board. Specifically designed for door manufacture, using a complex combination of chemical and engineering development, this 3-layer particle board produces doors of altogether superior quality, strength and overall performance.

Rated at 30 and 60 minutes’ fire resistance, **Halspan XT** fire door blanks are made from a 3-layer solid timber core faced with Class 3 exterior grade plywood for fully exposed exterior conditions, while **Halspan IT** door blanks are faced with MDF for indoor applications where a superior finish is required.

Our mineral core range, rated at 20 to 90 minutes’ fire resistance, includes **Halspan 45** and **Halspan UniversaL**. Both are manufactured from high density mineral stiles and rails with a low density mineral core.

3-Layer Particle Board

Prima

- Prima FD30 44mm
- Prima FD60 54mm

Prima Plus (NAF - No Added Formaldehyde)

- Prima Plus FD30 44mm
- Prima Plus FD60 54mm
- Prima Plus FD90 62mm
- Prima Plus FD120 62mm
- Prima Plus Enhanced

Optima

- Optima FD30 44mm
- Optima FD60 54mm

Halspan

- Halspan FD90 64mm
- Halspan FD120 60mm

Mineral Core

- UniversaL STC 45mm
- UniversaL HD STC 45mm
- Halspan 45 45mm

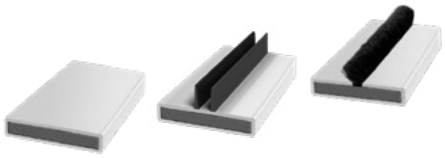
Solid Timber Core

- Halspan IT 30 44mm
- Halspan IT 60 54mm
- Halspan XT 30 44mm
- Halspan XT 60 54mm

Range brochures available

Seals

Complementing our fire door blanks and cores, seals make up a vital part of fit-for-purpose doorsets and door assemblies. Choose from a range of fire and smoke seals designed to meet specific performance requirements.



Seals
Fire, Smoke and Acoustic Seals
30 and 60min Steel Frame Seals
30 and 60min Timber Frame Seals
Automatic Threshold Seal
Triple Fin & Trident Seal
Seal Kits
Halspan R90 Steel and Timber Frame Seal Kit
Halspan R90 Timber Frame Seal Kit
Halspan R120 Timber Frame Seal Kit

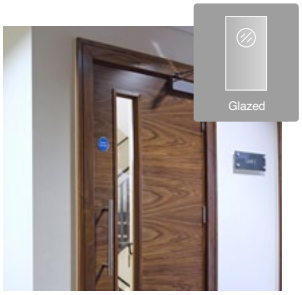
Hardware

Tested in conjunction with our other door components, Halspan now offers an extended range of locks, door closers, hinges and ancillary items you can trust, including PAS 24 tested locks and Hygienilac coated antimicrobial hardware.

Essential Hardware Range
Locks
Halspan® R30 & R60 Lock Case
Halspan® R90 & R120 Lock Case
Closers
Halspan® R6000 Range Eco Closers
Halspan® R9000 Power Door Closers
Hinges
Halspan R30 Hinge FD30
Halspan R60 Hinge FD60
Halspan R90 Butt Hinge
Halspan R120 Hinge

Key benefits

- Choice of fire door blanks and cores to meet every need. Available in BS & BS EN 30-120 minute ratings and UL 10c 20-90 minute ratings
- Full system of fire door components – all backed by third-party certification
- Door components tested together, so certification applies to complete doorset or door assembly
- ISO 9001 certification – door blanks and cores manufactured to highest standards
- As well as fire resistance, Halspan door components are tested for acoustic performance and durability. They also meet stringent environmental standards.
- Design versatility



Together, Halspan's fire door blanks and cores, seals and hardware, and the Halspan Verified quality assurance scheme, help to save lives and protect property.

HALSPAN VERIFIED

quality doors **you can trust...**

Door solutions for the following sectors:

Education

Top of the class for fire resistance, acoustic performance and durability, Halspan products are used in schools, colleges and universities from the UK to China and the Gulf.

Healthcare

Hospitals and healthcare buildings from the UK to China put their trust in our products, relying on Halspan to keep their patients and staff safe.

Hospitality

A superior solution, you'll find Halspan products in some of the world's most luxurious hotels – from Dubai's iconic Burj-Al-Arab and elegant InterContinental Dublin to Donetsk's opulent Donbass Palace.

Airports

Durability is key when you're welcoming millions of passengers through your doors every year. Strong and safe, Halspan products are used by some of the world's busiest airports.

Commercial

Trusted by the world's leading businesses, you'll find Halspan products in landmark commercial buildings around the world – from Microsoft's Dublin offices to Hong Kong's stunning BOC Tower.

Government

Confident in the knowledge they offer enhanced levels of safety, security and durability, law courts, government buildings and embassies around the world put their faith in Halspan products.

Residential

From penthouses in Kiev and the Bahamas to palaces and luxury apartments in the Emirates, you'll find Halspan products in the world's most desirable residences, where quality really counts.

Industrial

Halspan's tried and tested products satisfy the rigorous demands of industrial buildings – from water refineries in Jordan and print works in China to mail sorting offices in the UK.

HALSPAN® to the core and more...

Halspan's **VISION** is to be the world's leading supplier of trusted, high-performance building products, specialising in fire, acoustic and service life excellence.

Halspan's **MISSION** is to be the world's leading supplier of innovative, quality, sustainably-sourced building product solutions, specialising in fire, acoustic and service life performance. Using our trusted Halspan brand and supporting test data to differentiate our portfolio of fire and non-fire rated door blanks, cores and associated doorset system components, we aim to develop existing and new product lines that markets around the world can rely on.

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