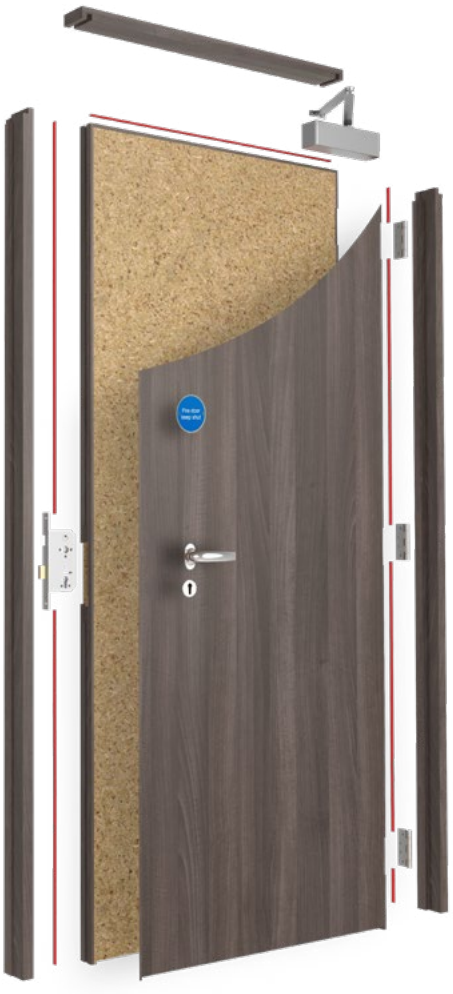
HALSPAN® to the core and more...

Acoustic performance
built in...

A pioneer in its field, Halspan developed an entirely new way of constructing doors in the 1990s using pre-tested 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.

In this brochure, we examine acoustic performance in doors, how to measure it and the various regulatory and other requirements that apply. Lastly, we introduce Halspan's comprehensive range of acoustically-rated door blanks and cores.



to the core and more...

Listen up!

Acoustic protection (or noise reduction) may not have the same life-saving significance as fire and smoke resistance, but it's still important.

From specifiers and fabricators to installers and building owners, we all have a Duty of Care to ensure comfortable sound levels. Living and working conditions should be just as acceptable from a noise point of view as they are from a heating, lighting and ventilation perspective.

For certain types of buildings, this is a regulatory requirement rather than just good practice. Acoustically-rated doors, for example, and minimum acoustic performance levels are stipulated for residential rooms in hotels, care homes and student accommodation, as well as in educational, healthcare and commercial settings.

	dB (A)
Threshold of pain	140
Loud car horn at short range	120
Inside an underground train	100
Inside a bus	100
Traffic noise on street corner	80
Normal speech	60
Business office environment	40
Family living room	40
Bedroom at night	20
Broadcasting studio	20
Threshold of hearing	0

The Decibel Scale (dB) illustrates the human ear's response to sound.

Halspan has the answer

One of the world's leading suppliers of quality door components, Halspan door blanks and cores have been extensively tested for acoustic performance and exceed all the regulatory requirements, providing complete peace of mind.

Sound construction

Sound is caused by the vibration of air particles. When these vibrating air molecules strike a door leaf they cause it, in turn, to vibrate.

The door's construction has a significant impact on its sound reduction properties. A very dense or moderately flexible door leaf – like Halspan – is harder to set into vibration, making it a good acoustic barrier. By contrast, a less dense or excessively stiff door leaf is easier to set into vibration and will be a poor acoustic barrier.

Putting Halspan to the test

Airborne sound transmission is measured by working out the difference in sound pressure levels between two rooms, separated by a test doorset. One is a transmitting room with a loudspeaker; the other a receiving room with a microphone. The difference in sound pressure from one side of the door to the other gives us the sound reduction value.

Tests vary region by region, so in Europe Halspan doors are tested in accordance with BS EN ISO 140-3: 1995 (ISO 717-1 Rw) to determine their sound reduction index or Rw. In the US, doors are tested in accordance with ASTM (American Society for Testing and Materials) E90-09 (ASTM E413-10 STC) to determine their Sound Transmission Class or STC. Comparing the two, Rw typically covers a wider and lower frequency range, with values normally around 3 to 4dB lower than STC.

Halspan door blanks and cores have been extensively tested to both standards for acoustic performance. Crucially, this is done in combination with various perimeter sealing and glazing options, in both single and double door configurations, since these all affect acoustic performance.

Depending on the door blank, sealing and glazing options used, Halspan's acoustic performance ranges from 30 to 38dB/Rw and 30 to 41 STC

Key benefits

- Halspan door blanks and cores exceed regulatory acoustic performance requirements, providing peace of mind
- As well as acoustic performance, Halspan's door components are tested for fire resistance and durability. They also meet stringent environmental standards
- Full system of 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
- Design versatility

Acoustically-rated door blanks, cores & seals

Halspan offers a comprehensive range of fire and non-fire rated door blanks, cores and seals, all of which exceed regulatory acoustic performance requirements. The table below outlines the acoustic performance of our range of door blanks and cores tested in combination with seals. For detailed information, please refer to our Technical Support Guides.

3-Layer Particle Board

Fire Doors	**Tested in accordance with** BS EN ISO 10140 - 2:2010			
	Single Doors		Double Doors	
	Unglazed	Glazed	Unglazed	Glazed
Prima FD30 44mm	33dB/Rw	35dB/Rw	32dB/Rw	35dB/Rw
Prima FD60 54mm	34dB/Rw	36dB/Rw	33dB/Rw	35dB/Rw
Prima Plus FD30 44mm	31dB/Rw	35dB/Rw	32dB/Rw	35dB/Rw
Prima Plus FD60 54mm	34dB/Rw	35dB/Rw	33dB/Rw	35dB/Rw
Prima Plus FD90 & FD120 62mm	34dB/Rw	-	36dB/Rw	-
Prima Plus Enhanced	35dB/Rw	-	34dB/Rw	-
Optima FD30 44mm	34dB/Rw	35dB/Rw	33dB/Rw	35dB/Rw
Optima FD60 54mm	34dB/Rw	35dB/Rw	33dB/Rw	35dB/Rw
Halspan FD90 64mm	35dB/Rw	36dB/Rw	33dB/Rw	35dB/Rw
Halspan FD120 60mm	38dB/Rw	-	37dB/Rw	-
Non Fire Rated - NFR				
Veria	30dB/Rw	-	-	-
Veria Plus	31dB/Rw	-	-	-

Solid Timber Core

Fire Doors	**Tested in accordance with** BS EN ISO 10140 - 2:2010			
	Single Doors		Double Doors	
	Unglazed	Glazed	Unglazed	Glazed
Halspan IT 30 44mm	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw
Halspan IT 60 54mm	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw
Halspan XT 30 44mm	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw
Halspan XT 60 54mm	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw	TBC dB/Rw

Mineral Core

Fire Doors	**Tested in accordance with** BS EN ISO 10140 - 2:2010 & ASTM E336			
	Single Doors		Double Doors	
	Unglazed	Glazed	Unglazed	Glazed
UniversaL STC 45mm	38dB/Rw	-	33dB/Rw	-
UniversaL HD STC 45mm	STC 41	-	STC 39	-
Halspan 45 45mm	STC 32 - 35 (35dB/Rw)	-	STC 30 - 33 (35dB/Rw)	-

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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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