



Rhino
DOORS

THE STRENGTH TO PROTECT

Performance
Engineered Doors



PART OF
Rhino
ENGINEERING GROUP

Protecting People, Assets and Public Places

The strength to protect

For many years, when specifiers and contractors operating in the Critical National and Defence Infrastructure sectors require physical attack and blast resistant doors for the protection of people and assets, they turn to Rhino Doors.

From our base in the heart of the South Wales steel industry, we have been at the forefront of the design and manufacture of Government CPNI-rated physical attack resistant doors since 1983.

As our reputation has grown, so too has demand for our products and services from other infrastructure sectors including Rail Transport. Today, Rhino Doors is a leading provider of pre-engineered and bespoke doors.

In addition to our design and build services, specifiers can harness the support of our special projects and product design team. Combining fire, blast, acoustic and structural design expertise with long-term experience in the performance steel door industry, we can assist architects and consulting engineers seeking cost-effective design and specification advice.

When you need doors with the strength to protect, turn to Rhino Doors.

Market Sectors	Building Projects
TRANSPORT	Surface and subsurface rail stations and ancillary buildings, rail and road tunnels, civil airports.
DEFENCE	Military sites – all three branches. Nuclear weapons establishments.
INFRASTRUCTURE	Embassies and other government buildings. Privatised utilities, National Grid, power generation (including civil nuclear), hospitals.

Design and Specification Advice Service

Tap into Rhino Doors' extensive performance-rated door design experience. Our services are available at the pre- and post-award stages for cost-effective bespoke door design solutions covering compliance for:

- Fire resistance to EN1634-1
- Blast resistance
 - Dynamic Design Blast Load Method
 - Static Design Blast Method
- Air pressure resistance
- Physical security to CPNI & LPS1175 standards
- Sound Reduction to ISO 10140-2 and evaluated to ISO717-1
- Anti-ram to PAS 68 (Amended)
- Ballistic resistance to G2/FB4
- Thermal Performance

Our design support service also includes:

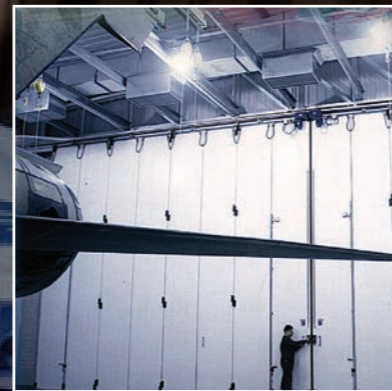
- The prescription, organisation and execution of performance tests for project-specific applications
- Independently verifiable blast and air pressure resistance calculations
- Independently verifiable blast relief calculations
- Structural design advice for door openings supporting heavy and oversized doors
- Feasibility studies
- Analysis and product design to resist long-term fatigue stress damage caused by reciprocating pressures created by rolling stock and vehicles in rail and road tunnels



Security Doors

Rhino Doors' Government CPNI-rated, and LPS1175 physical attack resistant external enveloping doors are available with blast, ballistic and anti-ram options in the following configurations:

Available with manual, semi-automatic and fully automatic operation for structural opening sizes up to 48m wide (special order) by 7m high, these popular heavy-duty doors are ideal for applications where exceptional strength, coupled with an expected working life of 25 years and minimum maintenance, are primary requirements.



Performance Ratings

Product Code	Configurations			Security			Environment				Fire & Blast		Maximum dimensions W x H (m)
	Type	Operation	Schematic	Attack Delay	Ant-Ram (PAS68 amended)	Ballistic	Acoustic	Thermal	Flood	Pressure	Fire	Blast	
Rhino-SFC	Sliding/ Folding	One Way		CPNI Base or Enhanced	✓	-	-	✓				✓	13.8 x 7.0
Rhino-SFC	Sliding/ Folding	Bi-parting		CPNI Base or Enhanced	✓	-	-	✓				✓	27.6 x 7.0
Rhino-SC	Sliding	One Way		CPNI Base or Enhanced	✓	-	-	✓				✓	13.8 x 7.0
Rhino-FC	Folding	One Way		CPNI Base or Enhanced	✓	-	-	✓				✓	2.3 x 7.0
Rhino-FC	Folding	Bi-parting		CPNI Base or Enhanced	✓	-	-	✓				✓	4.6 x 7.0
Rhino-HC	Hinged	Outward opening		CPNI Base or Enhanced	✓	G2/FB4	Up to Rw 43dB	✓				✓	2.6 x 2.3
Rhino-HCFD60	Hinged	Outward opening		CPNI Base or Enhanced		G2/FB4	Up to Rw 43dB	✓			up to 60 minutes integrity	Yes - C15	2.6 x 2.3
Rhino-HF+ ²³⁴	Hinged	Outward opening		LPS1175 up to SR4						✓	240 minutes integrity	✓	2.6 x 2.9
Rhino-WT+ ²³⁴	Hinged	Outward opening		LPS1175 up to SR4					✓ - to 870mm				2.4 x 2.4
Rhino-Multi-Performance/ Oversize	Hinged or Sliding	Multiple options		✓ - multiple options	✓	✓	✓	✓	✓	✓	✓	✓	To suit application

Key features for CPNI Sliding/ Folding Doors:

All Rhino CPNI doors are tested to CPNI-MFES standards.

At the head:

- Heavy-duty top supported tracks with running sections fitted with 'sealed for life' Nylatron bearings
 - For extended life and minimum on-site maintenance
 - Transmission system powered by an AC Invertor motor
 - For minimum wear
- Box section steel frame
 - For strength and durability

Vertical Door Panels:

- U values of 0.35 to 0.45 W/m²K
 - For energy efficiency
- Vertical steel box section panel joints sealed with dovetailed EDPM sections
 - For minimized heat and sound losses
- Solid steel hinges with grease nipple lubricated phosphor bronze bushes
 - For long-lasting ease of movement

Bottom Track:

- Guide rail manufactured from heavy gauge steel
 - For withstanding the weight of heavy vehicles

Rhino-HF+^{2,3&4}

Rhino Doors' 66mm steel reinforced, core leaf door is Certifire and LPS1175 certified to levels SR2, SR3 (opening in both directions) and SR4 (opening outwards). It is a multi-performance door that is suitable for:

- High value infrastructure, government and defence premises, and financial buildings
- Vent shafts in sub-surface rail stations
- BoH and FoH locations in surface and sub-surface rail stations
- Airports
- Retail outlets
- Hospitals
- External enveloping where resistance to physical attack and high winds is paramount

Environment Doors

A range of pre-engineered or bespoke solutions are available, offering as a primary performance:

- Acoustic attenuation (weighted reduction and/or specific frequency performance).
- Air pressure resistance (both static and dynamic).
- Flood resistant.

In addition to the primary environment performance, many of our doors also provide secondary performance features such as fire resistance, attack delay, and blast.



Performance Ratings

Product Code	Configurations			Security			Environment				Fire & Blast		Maximum dimensions W x H (m)
	Type	Operation	Schematic	Attack Delay	Ant-Ram (PAS68 amended)	Ballistic	Acoustic	Thermal	Flood	Pressure	Fire	Blast	
Rhino-HA	Hinged	Inward or outward opening					Up to Rw 40dB	✓				✓	1.9 x 2.3
Rhino-WT ^{2/3/4}	Hinged	Outward opening		LPS1175 up to SR4				✓	✓ - to 870mm	✓			2.4 x 2.4
Rhino-HC	Hinged	Outward opening		CPNI Base or Enhanced		G2/FB4	Up to Rw 43dB	✓				✓ - C15	2.6 x 2.3
Rhino-Multi-Performance/Oversize	Hinged or sliding	Multiple options		✓ - multiple options	✓	✓	✓	✓	✓	✓	✓	✓	To suit application
Rhino-Rail Infrastructure	Hinged or sliding	Multiple options		✓ - multiple options			Up to Rw 53dB	✓			✓	Up to 120 minutes	To suit application
Rhino-FD90SLP	Sliding	One way								✓		Up to 90 minutes	1.1 x 2.1

Rhino-HF+^{2,3&4}

Rhino Doors' 66mm steel reinforced, core leaf door is Certifire and LPS1175 certified to levels SR2, SR3 (opening in both directions) and SR4 (opening outwards). It is a multi-performance door that is suitable for:

- High value infrastructure, government and defence premises, and financial buildings
- Vent shafts in sub-surface rail stations
- BoH and FoH locations in surface and sub-surface rail stations
- Airports
- Retail outlets
- Hospitals
- External enveloping where resistance to physical attack and high winds is paramount

Rhino-HA

Our 45mm insulated core door is suitable for external enveloping applications where acoustic attenuation and thermal insulation performance are required. The Rhino-HA is suitable for:

- Fire exits and external enveloping in general
- External enveloping applications on premises where high noise levels are created
- Stadia, recording studios, and sports halls

Rhino-WT^{2/3/4}

The Rhino-WT door is a flood-resistant door that is also rated to LPS1175 levels 2, 3 and 4. Available in single and double leaf, as well as single swing opening outward only applications, the Rhino-WT is suitable for:

- Isolated or vulnerable locations at risk of flooding

Fire and Blast Doors

A range of pre-engineered or bespoke solutions are available with many already tested to EN1634-1.

These include:

- Oversized door in either stainless steel or carbon steel, with a 90-minute integrity rating.
- High performance stainless doors with a 120-minute integrity rating.
- Pre-engineered doors with integrity ratings of up to 240 minutes.
- Very high-performance integrity and insulation rated doors of up to 90 minutes.

Blast doors are typically bespoke in nature and are designed to suit client specific requirements when a pre-engineered solution is not suitable.

In addition to the primary fire & blast performance, many of our doors also provide secondary performance features such as acoustic attenuation, attack delay, and pressure resistance.

Rhino-HF Hinged Fire door

- Tested and rated up E240 (integrity) to EN1634-1, Certifire third-party certified and Fire Test House assessed for leaf areas of up to 3.95m²
- Single, unequal, double leaf and latchless configurations, with glazing, and optional over panels and side panels

Pressure-Resistant Fire Doors for Tunnels and Sub-Surface Rail Stations

- Hinged (fixed panel) single and double leaf doors
- Fire Test House assessed for up to E120 (integrity) to EN 1634-1
- Project-specific blast, static and piston pressure resistant supported by independently verifiable calculations
- Acoustic tested to ISO 10140-2 and rated up to RW 55dB to ISO 717-1

Rhino Hinged, Latchless E90 Fire Doors

- A 90-minute integrity fire door, tested in accordance with EN1634-1
- Single swing configuration, available as single leaf, double leaf and unequal leaf
- Clear openings up to 4,000mm wide x 2,640mm high
- Latchless design (no panic bar required)
- Standard smoke leakage control to EN1634-3 (<3.0m³/m/h @ 25Pa)
- Optionally available with 'normally held open' function
- Flush leading edges (no rebate or astragal) allowing independent leaf operation
- Available with or without vision panels
- Manufactured in either stainless steel or carbon steel

Rhino Hinged, Latched E120 Doors

- A 120-minute integrity fire door, tested in accordance with EN1634-1
- Single swing configuration, available as single leaf, double leaf and unequal leaf
- Clear openings up to 2,120mm wide x 2,100mm high
- Concealed panic bar mechanism
- Optionally available with 'normally held open' function
- Flush leading edges (no rebate or astragal) allowing independent leaf operation
- Available with or without vision panels
- Manufactured in either stainless steel or carbon steel

Rhino Sliding Pressure and E90 Fire Resistant Doors

- A 90-minute integrity fire door, tested in accordance with NFPA-252
- Single leaf, sliding configuration – self closing
- Clear openings up to 1,120mm wide x 2,100mm high
- Latchless design
- Optionally available with 'normally held open' function
- Capable of withstanding reciprocating pressures in excess of +/- 7.5kPa (both sides)
- Fatigue loading in excess of 10⁶ cycles per year, + 25-year design life
- Manufactured in carbon steel

Rhino Hinged, Latched EI90 Fire Door

- A 90 minute integrity and insulation rated fire door, tested in accordance with EN1634-1
- Superior radiated heat reduction performance
- Single swing configuration, available as single leaf, double leaf and unequal leaf
- Clear openings up to 2,862mm wide x 3,100mm high
- Rebated leading edge with astragal
- Available with or without vision panels
- Manufactured in either stainless steel or carbon steel

Performance Ratings

Product Code	Configurations			Security			Environment				Fire & Blast		Maximum dimensions W x H (m)	
	Type	Operation	Schematic	Attack Delay	Ant-Ram (PAS68 amended)	Ballistic	Acoustic	Thermal	Flood	Pressure	Fire	Blast		
Rhino-HF	Hinged	Inward or outward opening									✓	240 minutes integrity	✓	2.6 x 2.9
Rhino-HF+234	Hinged	Outward opening		LPS1175 up to SR4							✓	240 minutes integrity	✓	2.6 x 2.9
Rhino-Multi-Performance/Oversize	Hinged or sliding	Multiple options		✓ - multiple options	✓	✓	✓	✓	✓	✓	✓	✓	✓	To suit application
Rhino-Rail Infrastructure	Hinged or sliding	Multiple options		✓ - multiple options			Up to Rw 53dB	✓			✓	Up to 120 minutes	✓	To suit application
Rhino-HBL-SBL	Hinged or sliding	Multiple options									✓	To over 15 bar		To suit application
Rhino-FD90HL	Hinged	Inward or outward opening									✓	90 minutes integrity	✓	4.0 x 2.6
Rhino-FD120HL	Hinged	Inward or outward opening									✓	120 minutes integrity	✓	2.1 x 2.1
Rhino-FD90SLP	Sliding	One way									✓	Up to 90 minutes integrity	✓	1.1 x 2.1
Rhino-FDI90HL	Hinged	Inward or outward opening					✓	✓			✓	90 minute integrity and insulation	✓	2.8 x 3.1
Rhino-HCFD60	Hinged	Outward opening		CPNI Base or Enhanced		G2/FB4	Up to Rw 43dB	✓				up to 60 minutes integrity	✓ - C15	2.6 x 2.3

Bespoke Constructions



Our bespoke door constructions are available with:

- Project-specific performance assessments produced by accredited Test Houses in the UK and continental Europe
- Independently verifiable structural, blast and air pressure resistance calculations
- Acoustic test reports describing tests carried out on both pedestrian size leaf elements and complete, large-scale doors

High Blast Rated & Radiation Shielding, Hinged & Sliding Doors

We design and manufacture blast resistant doors rated up to 850 Bar.

There are two distinct design methodologies, with the method used dependent upon the design criteria provided by the client:

Dynamic Design Blast Load Method

- Dynamic peak blast pressure, impulse and duration defined by the client
- Door response criteria defined by the client, i.e. Class I (elastic) or Classes II, III or IV (elasto-plastic)
- Door leaf designed for the dynamic blast load using a single degree of freedom (SDOF) numerical analysis such that the response (leaf deformation) is within the client-defined limits
- Door hinges, latches, shoot bolts and their connections designed for the rebound forces determined by the SDOF analysis

Static Design Blast Load Method

- Static seated and unseated pressure defined by the client. Note that in the majority of cases, the unseated (i.e. rebound) pressure is 50% of the static seated pressure
- Door leaf designed to take the seated blast pressure and remain in the elastic range
- Door hinges, latches, shoot bolts and their connections designed to take the unseated blast pressure

Multi-Performance Oversize Hinged & Sliding Doors

Our purpose-designed, oversize hinged and sliding doors are available with a choice of primary or multiple performance ratings produced as modular constructions. Leaves are constructed from heavy steel sections forming lattice designs that are panelled with leaf elements that have been tested to the required performance standards as pedestrian size doors.

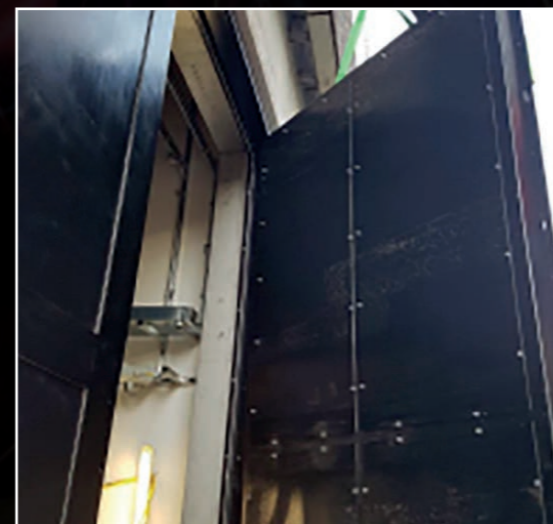
These products are typically used for:

- Attenuating very high noise levels produced in TVF (tunnel ventilation fan) rooms, particularly when they are located on external elevations where physical attack and fire resistance are also required
- Silencing noise entering recording, TV and radio studios, cinemas and performing arts buildings in general
- Reducing breakout noise from stadia

Air Pressure Resistant Hinged & Sliding Fire Rated Doors

Primarily produced for sub-surface rail stations and road and rail tunnels, our pressure resistant door designs are used for:

- Fire escapes from areas that are subject to ventilation pressures. These doors are operationally balanced to allow ease of emergency escape when the fans are in operation, ensuring conformance with Part M of Building Regulations
- Access to vent shafts in sub-surface rail stations
- Carriageway and rail track facing escape and plant room doors in road and rail tunnels, providing long-term resistance to reciprocating pressures created by passing vehicles and trains.



FIRE RESISTANT



ATTACK RESISTANT



BLAST RESISTANT



ACOUSTIC ATTENUATION



AIR PRESSURE RESISTANT



THE STRENGTH TO PROTECT

For doors that can handle all your protection requirements,
speak to Rhino Doors today.



Rhino Doors - via its specialist subsidiary, Rhino Site Systems - can provide you with advice, site surveys, and a comprehensive after-sales service, with 24-hour emergency call-out cover and planned maintenance contracts, backed by the reassurance of extended warranties.

Installation and maintenance of all Rhino Doors is carried out by health and safety-trained and security cleared staff, operating from our fleet of fully equipped vans. Our expertise also extends to the design and manufacture of door control systems.

Rhino Doors

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