



Performance  
Engineered Doors

[rhinodoors.com](http://rhinodoors.com)

Helping to Protect National Assets, Transport Infrastructure and Public Places

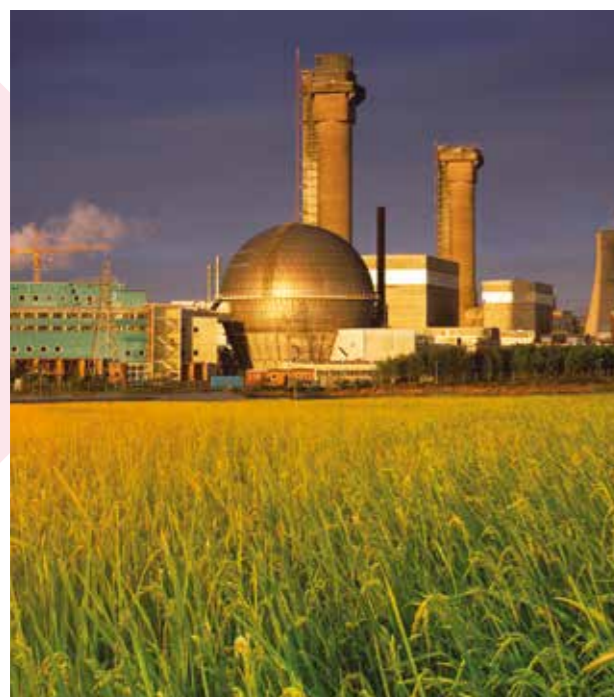
Established in 1983 in the heart of the South Wales steel industry, we design, test, manufacture, install and maintain a comprehensive range of personnel, and oversize, performance engineered steel doors in both standard and purpose-designed constructions.

Our range of door types includes:

- Sliding-Folding
- Folding
- Sliding
- Hinged.

With a range of performance ratings:

- Physical Attack Resistance to UK Government and Commercial Standards
- Fire Resistance to EN1634-1 and BS476: Part 22
- Acoustic Attenuation to BS EN 10140-2
- Blast Resistance
- Ballistic Resistance
- Static and Fluctuating Air Pressure Resistance for Tunnels and Sub-surface Rail Stations
- Vehicle Ram Resistance.



For many years, Rhino Doors have been extensively used for the protection of our national infrastructure. Our long-standing, loyal customer base includes companies operating in the following sectors:

#### Ministry of Defence

- Military bases
- Armouries
- Vehicle storage areas
- Other sensitive installations

#### Utility Providers

- Water treatment facilities
- Electrical generation infrastructure
- National Grid

#### Nuclear

- Operating civil nuclear reactors
- Decommissioned reactors
- Experimental reactor sites
- New build

#### Financial & Postal Services

- Bank of England
- Royal Mail
- Cash handling depots

#### Transport Infrastructure

- Tunnels, surface and sub-surface rail stations



# RHINO-HBL

Blast Resistant Hinged Doors

# RHINO-SBL

Blast Resistant Sliding Doors

We can provide doors with blast resistance ratings, either as discrete products, or in conjunction with physical attack delay and/or vehicle ram resistance performance.

There are two distinct design methodologies for the design of Blast Doors; the method used is dependent upon the design information provided by the client.



15 bar blast door

#### Dynamic Design Blast Load Method

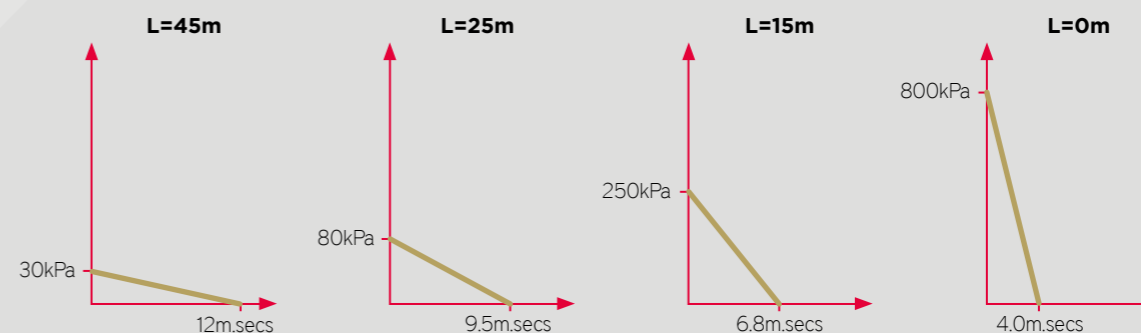
- Dynamic peak blast pressure, impulse and duration defined by the client.
- Door response criteria defined by the client, i.e. Class I (elastic) or Classes II, III or IV (elasto-plastic).
- Door leaf designed for the dynamic blast load using a single degree of freedom (SDOF) numerical analysis such 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; 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.

#### Vehicle bombs of 100kg of TNT at various standoff distances L

pr = Peak Reflected Load      1kPa = 1kN/m<sup>2</sup>



# RHINO-SFC

CPNI Rated Sliding Folding Doors

# RHINO-SC

CPNI Rated Sliding Doors

# RHINO-FC

CPNI Rated Folding Doors

Available with manual, semi-automatic and fully automatic operation for structural opening sizes up to 48m wide by 11m 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 prime requirements.



Key features:

### 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 Inverter motor

**For minimum wear**

- Box section steel frame

**For strength and durability**

### Vertical Door Panels:

- U values of 0.35 to 0.45 W/m<sup>2</sup>K

**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:

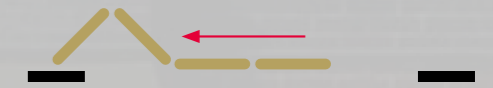
- Guide rail manufactured from heavy gauge steel

**For withstanding the weight of heavy vehicles**



## Door Configurations

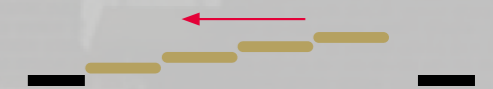
**Rhino-SFC** Sliding Folding Door



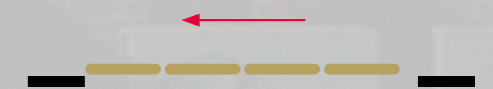
**Rhino-SFC** Sliding Folding Bi-Parting



**Rhino-SC** Sliding door



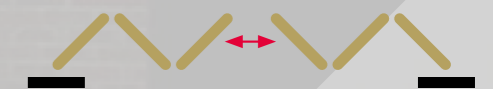
**Rhino-SC** Sliding door



**Rhino-FC** Folding Door



**Rhino-FC** Bi-Parting Folding Door



**Rhino-FC** Bi-Folding Door



## Safety

- Failsafe leaf leading edge sensors
- Infra-red beam to halt door during closing cycle
- Optional safety mats
- Programmable logic control to interface electrical systems

PRODUCT LISTING



Product Code	Product Type	Product Application	Physical Attack Delay Ratings	Fire Rating	Sound Attenuation Tested to ISO 10140-2	Optional Blast Rating	Optional Ballistic Rating	Optional Air Pressure Rating	Ram Resistance	Optional Electrically Driven	Maximum Opening Size WxH (mm)
<b>DOOR PRODUCTS</b>											
Rhino-SFC	Sliding-Folding / Bi-Folding / Bi-Parting	Secure External Access	CPNI			Project Specific Calculations	G2/FB4			✓	48000x11000
Rhino-FC	Folding / Bi-Folding / Bi-Parting	Secure External Access	CPNI			Project Specific Calculations	G2/FB4			✓	40000x8000
Rhino-SC	Sliding / Bi-Parting	Secure External Access	CPNI			Project Specific Calculations	G2/FB4			✓	26000x8000
Rhino-HC	Side Hinged	Secure External Access	CPNI			Single Leaf: Tested to C25 & C15	G2/FB4			✓	2800x8000
Rhino-HF	Side Hinged	Fire Resistance - Integrity		Up to E240 - EN1634-1				Project Specific Calculations			3100x3300
Rhino-HFS	Side Hinged	Heavy Duty - Fire Resistance		Up to E240 - EN1634-1	Rw38dB			Project Specific Calculations			2440x2490
Rhino-HA	Side Hinged	Sound Attenuation		Up to E240 - BS 476: part 22	Rw48dB			Project Specific Calculations			3350x3630
<b>PURPOSE DESIGNED DOOR CONSTRUCTIONS</b>											
Rhino-SP	Sliding	Pressure Resistant Rail Tunnel & Station Vent Shafts		E240/I90 to BS476: Part 22				Project Specific Calculations		✓	2600x3000
Rhino-HM	Side Hinged	Multi-Performance External & Internal Access	Up to Level 4	Up to E240 to EN1634-1	Up to Rw55dB			Project Specific Calculations			Bespoke Oversize
Rhino-HFL	Side Hinged	Water Pressure Resistance Up to 10 metres									Bespoke Oversize
Rhino-HCL/SCL	Side Hinged / Sliding	External Cladding Integrated Access				Project Specific Calculations				✓	Bespoke Oversize
<b>ANTI-RAM DOORS</b>											
Rhino-SFR	Sliding-Folding / Bi-Folding / Bi-Parting	External Ram Resistance	Optional			Project Specific Calculations	G2/FB4		PAS68 *		48000x11000
Rhino-FR	Folding / Bi-Folding / Bi-Parting	External Ram Resistance	Optional			Project Specific Calculations	G2/FB4		PAS68 *		40000x8000
Rhino-SR	Sliding / Bi-Parting	External Ram Resistance	Optional			Project Specific Calculations	G2/FB4		PAS68 *		26000x8000
<b>NEW PRODUCTS UNDER DEVELOPMENT</b>											
Rhino-VB	Bollard	External Ram Resistance							PAS68		
Rhino-HFi	Side Hinged	High Performance Fire Resistance - Integrity & Insulation		Up to E1120 EN1634-1	Up to Rw45dB			Project Specific Calculations			TBA
Rhino-HFi-S	Side Hinged	High Performance Fire Resistance - Integrity & Insulation with Attack Delay	Up to Level 4	Up to E1120 EN1634-1				Project Specific Calculations			TBA
Rhino-HP/SP	Side Hinged / Sliding	High Pressure Rail Tunnel & Station Vent Shafts		E120 to EN1634-1		Project Specific Calculations		Up to 16kPa Reciprocal		✓	TBA
Rhino-HBL/SBL	Side Hinged / Sliding	Blast Resistance		E120 to EN1634-1		Project Specific Calculations		Project Specific Calculations		✓	TBA

\*Amended PAS68 Test.

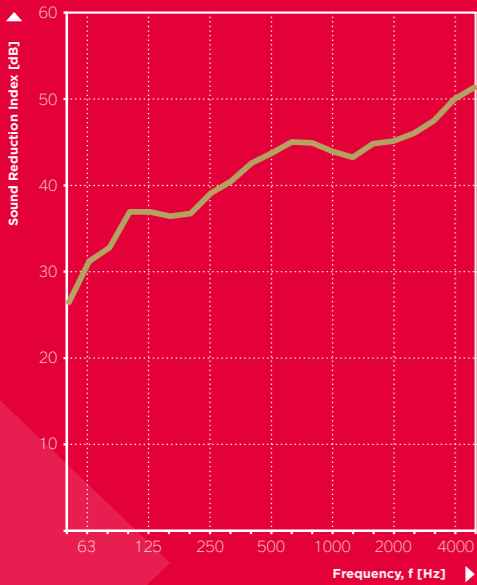
Rhino Doors continuously improves its range of products to conform with UK and European performance test standards



# RHINO-HM

Multi-Function High Sound Attenuating Doors for Rail Stations

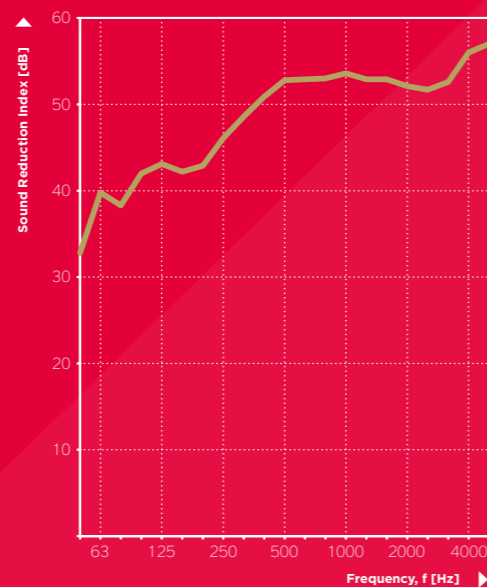
Our bespoke and oversize sound reducing hinged doors combine significant low frequency attenuation performance with fire, physical attack and air pressure resistance ratings.



Acoustic performance achieved by a single modular element, large-scale test door

Initially purpose-designed for reducing excessive noise levels produced in TVF (Tunnel Ventilation Fan) rooms on Crossrail mainline station re-build projects, RHINO-HM doors are available with supporting performance reports and assessments for:

- Modular construction comprising elements that have been performance tested at UK Test Houses
- Designs supported with acoustic test reports carried out on large-scale test doors to BS EN ISO10140-2
- Independent project specific fire and physical attack performance assessments prepared by accredited UK Test Houses
- In-house structural and air pressure resistance calculations



Acoustic performance achieved by a double modular element large-scale test door

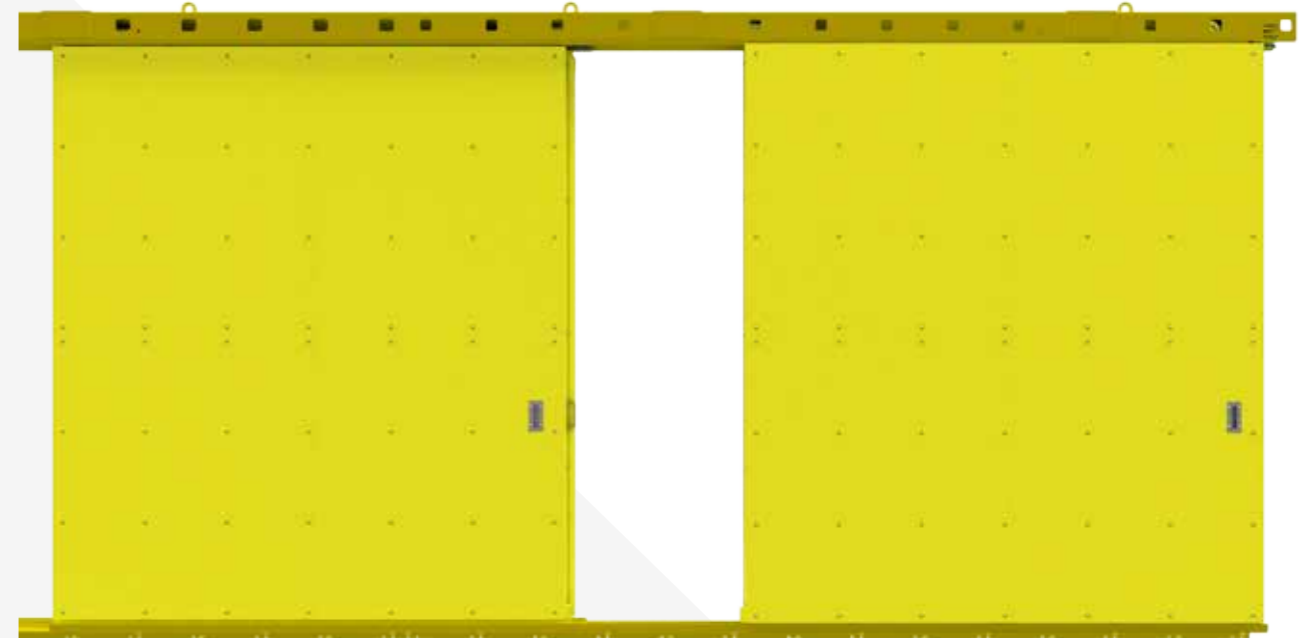
# RHINO-SP

High Pressure Resistant Sliding Fire Doors for Tunnels and Sub-surface Rail Stations

Produced by our strategic partner, Bator AG, RHINO-SP doors are high air pressure resistant sliding fire doors for rail and road tunnels and other trackside applications.

Rhino-SP doors are ideal for cross passage fire escape in Metro and high speed rail and road tunnels. They are available with supporting fire test reports and in-house pressure and structural calculations:

- Static or reciprocating pressure resistance
- BS fire ratings
- Optional blast protection
- Galvanized, or stainless steel constructions
- Manual or automatic operation



PRODUCT DESIGN,  
DEVELOPMENT  
AND TESTING

We continuously invest in development of new products and the improvement of our existing engineered performance rated doors.

In addition to on-going fire, security and acoustic rated design projects, we commit our in-house structural, blast and air pressure design expertise to the development of project-specific, bespoke constructions.



A large scale, 3600x2800mm RW 55dB RHINO-HM TVF room door on test at the University of Salford Acoustic Test Laboratory to BS EN ISO 10140-2



A RHINO-SFC Government attack delay standard door on test to anti ram standard PAS68 (amended) at the Transport Road Research Laboratory

Hinged Doors

# RHINO-HC

CPNI Rated Hinged Doors

UK Government Attack Delay Standard single and double leaf doors with optional blast, ballistic and ram resistance are manufactured to the same 60mm construction as our sliding folding door sets. They are available for installation in personnel or oversized structural openings.



# RHINO-HF

CERTIFIRE Certified Fire Rated Hinged Doors

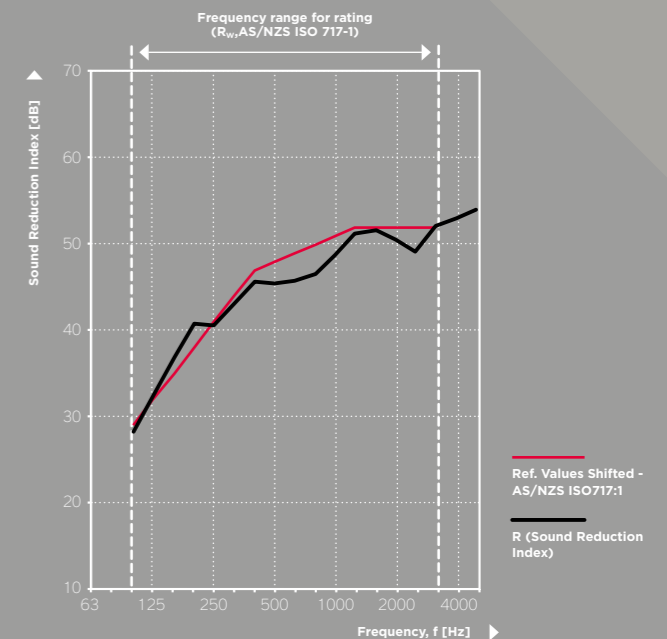
# RHINO-HFS

CERTIFIRE Certified Heavy Duty Fire Rated Hinged Doors

# RHINO-HA

Sound Reducing Hinged Doors

Hinged, 44mm flush edge personnel doors with standard or customer specified architectural ironmongery, available in single and double leaf configurations, and constructed from galvanized steel with PPC finishes in any RAL colour.



We provide free advice, site surveys and a comprehensive after-sales service, with 24-hour emergency call-out and planned maintenance contracts, backed by extended warranties.

Our doors are installed and maintained by Health & Safety trained and security cleared staff operating from fully equipped vans.

We are experts in the design and manufacture of door control systems.

We are a NIC EIC Approved contractor.



**Winner of the Royal Mail Gold Award  
in the First Class Supplier Programme**



**Rhino Doors**

Rhino Doors  
Maritime Road,  
Llewellyns Quay,  
Port Talbot,  
SA13 1RF

Tel: +44 1639 888119  
Fax: +44 1639 898119

[enquiries@rhinodoors.com](mailto:enquiries@rhinodoors.com)  
[www.rhinodoors.com](http://www.rhinodoors.com)

**Rhino Doors (North)**

Office 14 Ground Floor  
Martland Mill  
Mart Lane  
Burscough  
Lancashire  
L40 0SD

T: +44 (0)1704 898584

[info@rhinodoors.com](mailto:info@rhinodoors.com)  
[www.rhinodoors.com](http://www.rhinodoors.com)