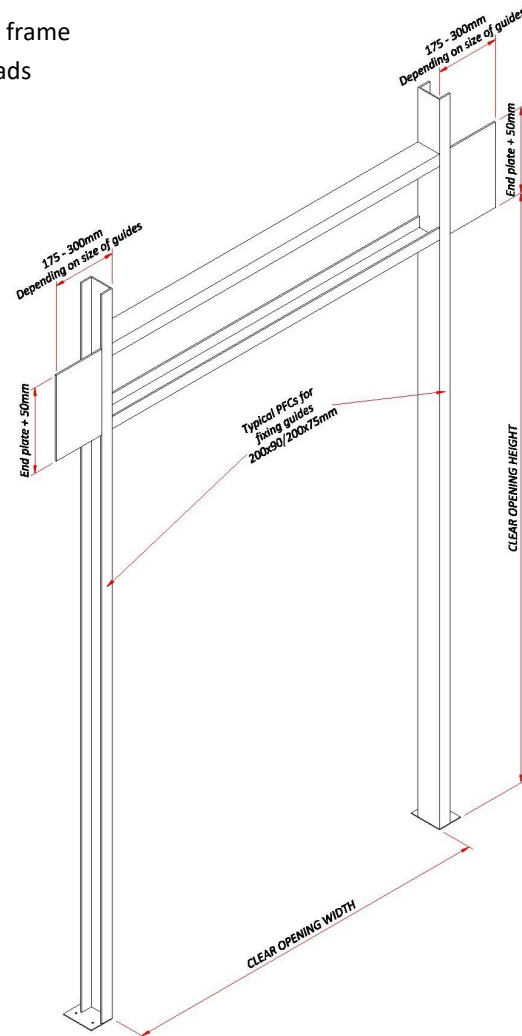


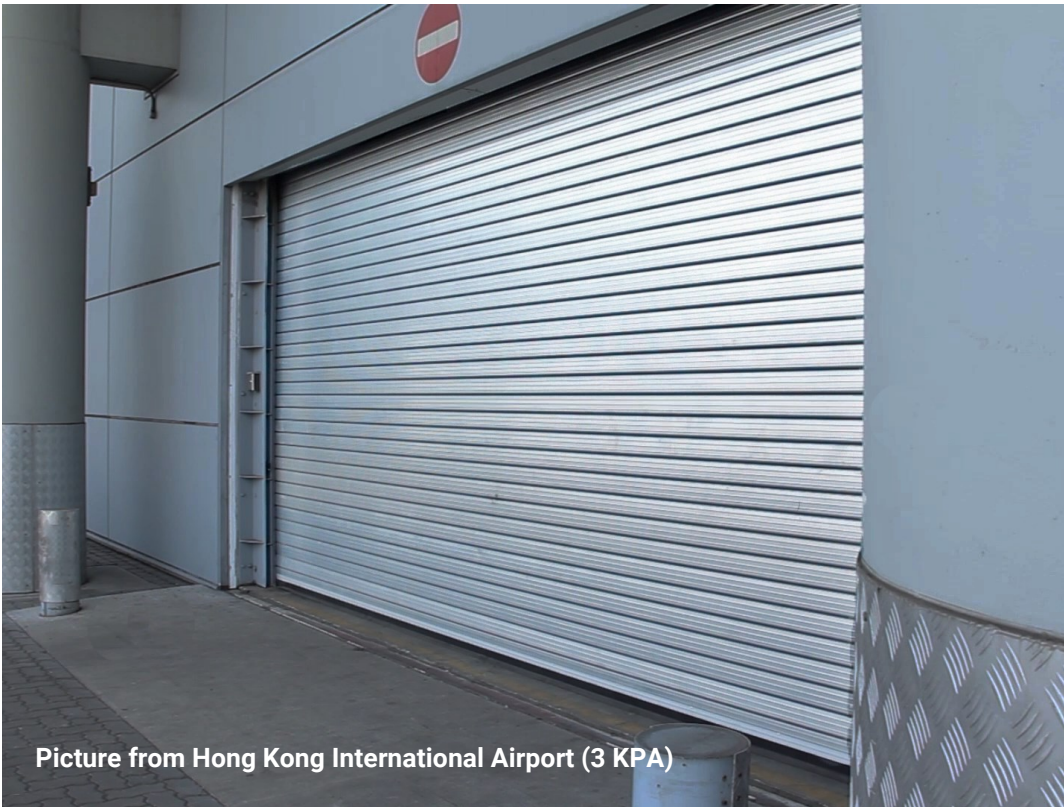
Typical Door support frame  
upgraded to carry loads



### Features, Appearance and Performance

<b>Curtain</b>	4kPa Heavy Duty twin skin insulated lath section	<b>Speed of operation</b>	Approximately 100-150mm per second with optional enhanced performance.
<b>Guide</b>	Re-enforced heavy duty wind lock side channels complete with double brush seals.  Steel Restraining plates spaced to give support resistance up to 4KPa	<b>Usage frequency</b>	Between 6 and 20 cycles per hour, dependant on door size.
<b>Seals</b>	Double brush seals on guide channel for smooth operation and rattle prevention	<b>Control Panel</b>	Standard roller shutter control panel - with hold-to-run operation (other operators available)
<b>Finish</b>	Steel Galvanised both sides (Powder coating and Plastisol options available)	<b>Size Range</b>	Maximum 8m wide x 4m high.  Larger sizes can be supplied based on calculation only.
<b>Wind Resistance</b>	Resistance to EN 12424 Wind Class 5. Enhanced design to meet minimum pressure resistance of 4,000 Pa.	<b>Operators</b>	Standard Push Button - Hold to Run (other operators available)

## TYPHOON, 4KPA RATED ROLLER SHUTTERS



Picture from Hong Kong International Airport (3 KPA)

Roller shutters are the most versatile of door systems this model is state of the art. Designed in response to doors experiencing extreme wind pressure, Typhoon shutters have been third party verified to the level of 5000 pascals on a door of 8M wide. The door was fully operable after the test. We claim 4000 pascals giving significant safety factor.

The highest standard for wind resistance is expressed in BSEN 12424:2000 class 5 which is 1000 pascals + 25% tolerance. The test is static and does not reflect buffeting and gusting effects. Doors have not only direct external wind pressure which can be accelerated by local topography and adjacent walls and or buildings, added to this negative pressure from inside the building when a door is opened elsewhere in the building all of this can combine to significant pressure exceeding the class 5 standard.

Doors exposed directly to the sea, estuaries, hillsides with no protection in the form of buildings are particularly exposed to this risk.

The door curtain is available in insulated or non insulated Steel, stainless steel profiles, optionally galvanised, powder coated or pre-finished plastisol coatings

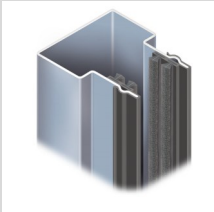
Roller shutter doors are UK designed and manufactured, backed by Hart's over 70 years' experience in roller shutter door systems. The heavy duty construction is suitable for all door openings and will efficiently deliver performance for many years. Roller shutters comply with all required British & European standards and Health & Safety requirements.



**Standards:**  
Typhoon Roller shutters are designed to comply with the British and EEC safety regulations for power operated machinery. Available up to 10M x 10M. Specification can be varied to meet operational requirements. Compliant with EN 13241-1:2003 etc. Manufactured & installed to ISO9001/20015 UKCA mark.

**Operation:** Electrically operated via locally located push buttons (hold to run) or automatically activated by sensors all located to maximise efficiency and compliant to safety in use regulations. Emergency override in hand crank or ground floor hand chain

**Door Guides & Wind Resistance**  
The side guides are fabricated in steel sections with internal gusseted webs in a fully welded construction incorporating a rolled steel wind guide with seals for noise reduction. All securely bolted to the building structure. Tested to 5000pa static test. Note Doors will flex under wind pressure.



**End Plates Roller Supports:**  
Steel profile end plate with steel angle fixing to door frame structure. The end plates support the weight of the door and are fixed through the angles to the structure.

**Bottom Rail:**  
Channel section with optional rubber seal. (Note: There must be a fall of the door threshold to the outside as this seal is not sufficient to prevent wind blown water penetration without a step or proprietary drainage system). Class O.

**Roller box, Motor covers and infills:**  
Optionally provided as weather or dust cover for the roller and separately the motor this can be upgraded with heaters and insulation for high humidity or low temperature environments. Supporting frames and infills for doors in combination with other doors or fixing to non flat surfaces designed as appropriate. Optionally galvanised steel, powder coated or stainless steel.



*Pictured powder coated door curtain with rubber free hanging paint protection.*

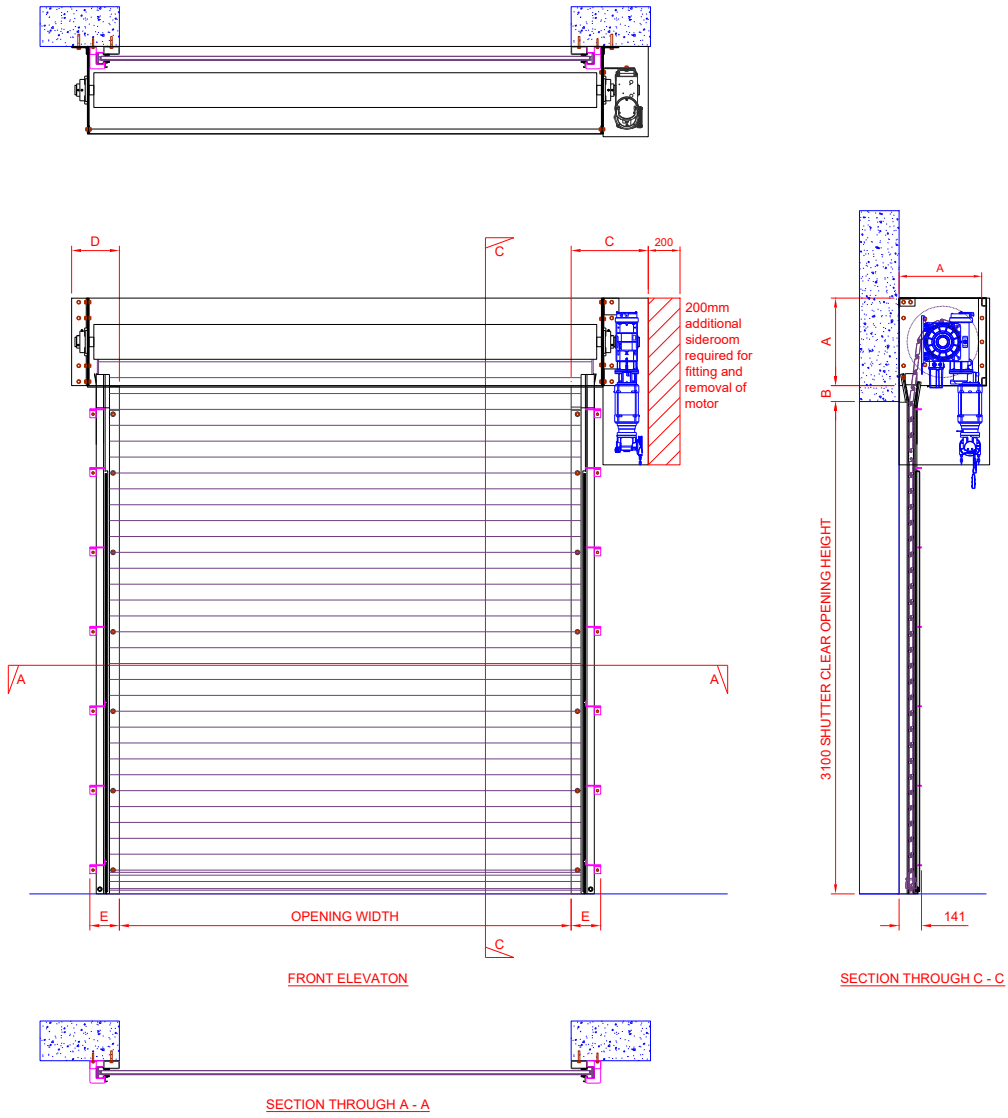
**Typhoon Door Curtains: Profile: 100 heavy duty**  
This twin steel interlocking rolled profile forms a box construction, retained at apposing ends within fabricated heavy duty guide. The thickness of the interlocking dual profile varies with specification.

**Finish:** Galvanised or stainless steel mill finish, upgrade available to pre finished in standard plastisol colours (no max width ) or powder coat up to max 7.5M. Rubber straps provide protection for the paint finish. Non galvanised surfaces such as heavy support angles, additional frames and tube will normally be finished in black undercoat unless a higher specification is required. Can be galvanised after manufacture or powder coated.

**Dimensions:**  
Max normal width is 10M width, **note**, doors will flex under wind pressure.



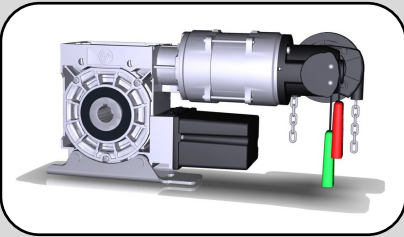
**Typical General Layout Drawing**



Profile 100					
Clear Opening Sizes	A	B	C	D	E
Up to 4m x 4m	500mm	100mm (Standard) 180mm (Safe Edge)	472mm	301mm	186mm
Up to 5m x 4.5m	550mm	100mm (Standard) 180mm (Safe Edge)	476mm	301mm	186mm
Up to 5m x 6m	600mm	100mm (Standard) 180mm (Safe Edge)	487mm	301mm	186mm
5m+ x 6m+	650mm+	100mm (Standard) 180mm (Safe Edge)	487mm+	301mm+	186mm

Typical standard sideroom allowances shown. Refer to job drawings provided to verify dims.

**Motor Direct Drive:**  
Safedrive direct drive geared motor unit including digital limits, limit overrun protection. High precision worm gearbox incorporating safety brake (negates the necessity for auxiliary safety brake). Crank handle , emergency operation optionally with ground floor hand chain , IP 65, remote signalling, and speed options



**Motor Chain Drive:**  
Where side room is at a premium, or very large doors required, a flange mounted chain driven motor and separate safety brake, reducing the side room and potential Access issues. The safety, anti-fall brake is mounted at the apposing end of the roller.



**Both Compliant to BSEN 12453**

**Power supply:**  
Both Single or 3 phase available dependant on door size, frequency and speed operation.

**Control Panel options:**  
State of the art digital panels with increasing functionality across the range . Optionally Press button and or automatic operation. Plug-in & pre wired, ground floor limit adjustment, 24 volt safety systems in a IP65 box, control system with integral digital display of status. A host of readily available software options and panel upgrades for door interface, air locks including traffic lights and signalling confirmation. Connected to mains via plug to power socket provided by others.



Pictured panel 971, inc optional lock off Estop .

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