

General: These are the ideal doors for your industrial hangars or large storage applications such as for aircrafts, ships, minerals, trains, hangars etc. The bespoke doors can go upwards of 300' large and 50' high. They are built on specifications to fit the structure of their host building. Typically they can have four to twelve individual panels, each of which comprises of structural U-profiles of 15" and angles of 8" x 3-1/2" x 3-1/2" with the whole welded together in conformity with strict CSA W47.1 criteria from the Canadian Welding Bureau.

Finish: The structure of each panel receives a primary coating of 1-2 mils at minimum. This is done right at the end of the manufacturing of the panel. After the first coat is applied, an inspection is performed and if it is passed, the exterior plates are installed. They comprise of Accuspeed 4" thick plates that are painted at the customer or his architect's color choice.

Weatherstrip: The vertical slots between the panels are built with sheet metal joints that incorporate rubber weatherstrips. The joints go into each other so that the door is sealed and well insulated when it is closed.

Insulation: The thermal insulation is rated at R-30 thanks to the Accuspeed 4" thick plates that cover the whole height of the panels.

Working principles and mechanisms: Each panel comprise two guiding wheels on the bottom and six wheels on the top. The bottom wheels ride in a specially built rail guide that is typically 2" x 2". These rails are supported by angles 3-1/2" x 3 1/2" at an interval of 6' and are auto-adjustable with threaded shaft that are fixed in the gutter cement that has been built by the contractor for that purpose. The upper guides are made of steel square tubes 5" x 5" x 3/8" and an H-beam 8 x 13 of the needed length. The door is made to be 2" down from the top rails. The steel bottom wheels are machined and the support shafts are 2" of diameter. The guiding upper wheels are mechanical tubes of diameter 4- 1/2" mounted on ball bearings. The device is designed so that it remains possible to remove the wheels without removing its whole panel, for ease of maintenance.

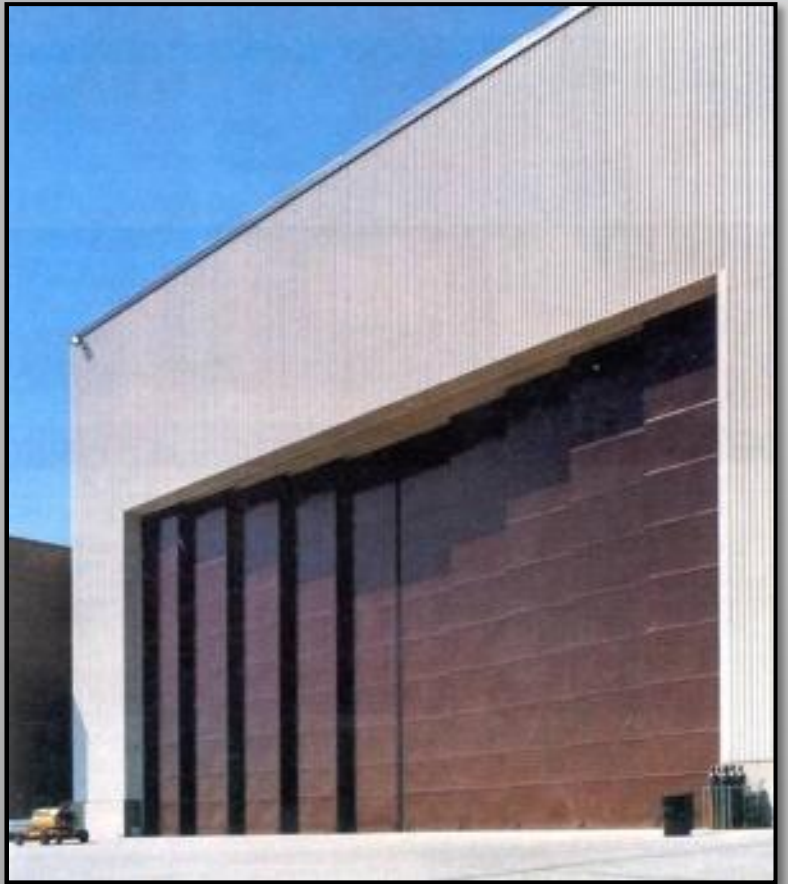
Gutter: The gutter is prepared by the general contractor to allow for the installation and adjustment of the rails. The dimensions are calculated and supplied by us.

Driving mechanism: The upper guide wheels are also machined as well as the bottom wheels. The driving motors are mounted on the bottom and will be bespoke for. The power can range from 2 to 3-1/2 HP and can accommodate voltages such as 240, 440, and 600V. The motors are rated NEMA premium for efficiency, and are three phase induction squirrel cage closed enclosure type. The power units also comprise helicoïdal conic gears with clutch and electromagnetic brake. There is a manual disconnect function that allows the hoisting of the panels manually in the event of a power outage. Also included are two control panels with in-built pre-wiring. On the cover of those control panels there are two constant pressure pushbuttons for "Open" and "Close" motions. The power is also supplied via a flat festoon cable. The motion speed of the panels and the door is 8 ips. Finally, The electrical wiring between the control panels is also included.

Heating cables: The optional heating cables are installed on the outside of the rails and comprise a thermostat that allows the control of the system. The heating cables are installed in galvanised steel tubes of 1" diameter. The system helps with clearing any snow or ice from the guiding rails.

Electrical wiring: All electrical wiring of high and low voltage, from the motor to the power source near the embrasure and all the connections of electrical accessories such as limit switches and detectors shall be made by an electrician from two splitters of 30 amps on the opening wall at a distance of more or less than three feet.

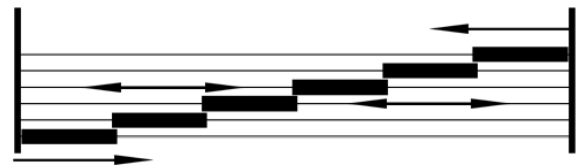
Shop drawings: Shop drawings are supplied upon award of the contract and initiation of manufacture. They describe the building of the panels and indicate the symbols and dimensions of the welds at each joint. They also clearly refer the welding procedure.





Bi-Parting

Bi-parting doors have a number of leaves that divide in the center. To open, half of the door leaves roll to the left and the other half to the right. Each leaf is limited in travel as noted by the rail positions on the drawing. When the doors are motor operated the power leaves are the two center leaves. The power leaves move the trailing leaves by using a variety of available gathering devices to position all the leaves.



Group Operation

Group operating doors can be any number of leaves. They are interconnected to each other and can be opened from either direction. The leaves can also be grouped next to each other and moved as a group to stack anywhere along the hangar door opening. As shown on the drawing all rails go the full width of the opening. The motor operators are located in each end leaf and are connected to the floating group in between.



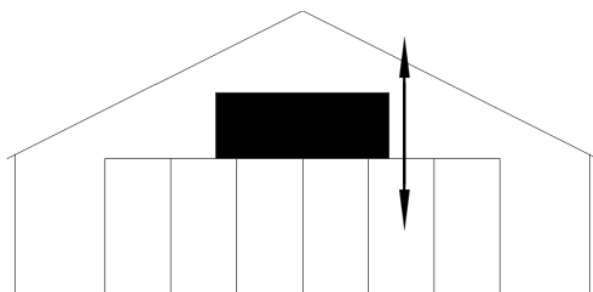
Uni-Directional

Unidirectional; doors have any number of leaves, with all the door leaves travelling in one direction to open or close the opening. Each leaf is limited in travel, as noted by the rail positions in the drawing. When the door system is motor operated, the power leaf is in the ending leaf. The power leaf moves then trailing leaves to the open or closed position by many different types of gathering devices, depending on the height and weight of the system.



Independent

Independent door leaves operation can have any number of leaves. Because the rails go the full width of the opening, as outlined in the drawing, each leaf can move to any position along the rail. This type of door system provides the most flexible use of a hangar and allows fast access to any position of the hangar opening. Each leaf has its own motor operating system and moves independently to the other leaves.



Tail Door

Tail doors are located in the center of the hangar above bi-parting horizontal rolling doors. The tail door will provide for the clearance of larger aircraft into a lower profile hangar. For ease of operation the tail door is motor operated. There are several types of tail doors and careful consideration needs to be given to the functional requirements of the hangar before a tail door is selected.