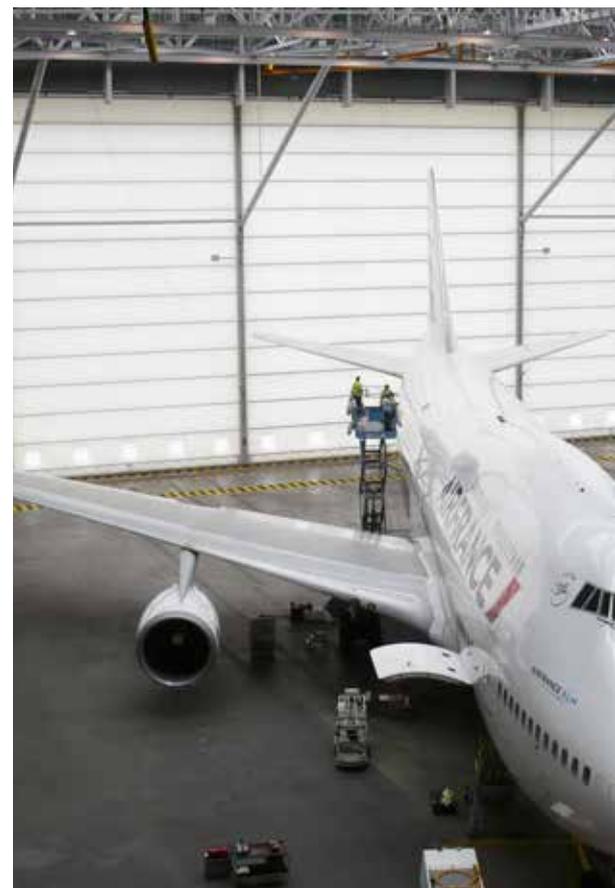


# Complete Entrance Solutions for Aviation

ASSA ABLOY

ASSA ABLOY Entrance Systems

The global leader in  
door opening solutions



# The smart way will help you to grow

As aviation has evolved over the years from piston driven engines to the jet age, so have the facilities and equipment needed to maintain aircraft.



In 1977, Megadoor started a revolution in aircraft support operations by installing the first vertical lifting fabric door system, on a hangar, for the Swedish FAA in Kiruna Sweden, approximately 100 miles from the Arctic Circle. Until this point in history, aircraft hangars traditionally utilized horizontal bottom rolling steel doors, mounted on a track system. However, as aircraft operators modernized aircraft support facilities, they sought a solution to the limitations of their old bottom rolling doors. Megadoor was the answer.

Megadoor has installed over 5,000 aircraft hangar doors around the world and is recognized as an industry leader. For over 30 years, our technology has proven to be more reliable, energy efficient and lower maintenance, in the world's harshest climates, than any other large door system.

Today, Megadoor is a partner of ASSA ABLOY Entrance Systems, which also includes the global, recognized Crawford, Besam and Albany brands.

## Why Megadoor

- Minimize construction costs
- Industry leading energy efficiency
- Proven reliability
- Aesthetics compliment modern designs
- Patented safety systems
- Reduce bird problems
- Reduce life cycle costs
- Comprehensive support
- Design assistance to come up with the most cost effective hangar

## Minimize construction costs- Aircraft hangar design

- Vertical operation – Land and ramp space is a precious commodity at many airports, so facilities must be designed in order maximize operational benefits, while minimizing the building footprint and volume. Since the Megadoor lifts vertically, architects are no longer constrained by the need for space consuming bottom rolling door pockets and tracks. This means you can place more hangars on a piece of property and accommodate larger aircraft, or reduce the size of your hangar resulting in considerable savings.
- Multiple door systems – Large openings can be divided into multiple door leaves with retractable mullions between them. This allows a user to open just one door leaf in a long span, to a minimal height, for movement of ground equipment. In addition, movement of aircraft in and out of a hangar built to accommodate multiple aircraft of different sizes is easily achieved with this design. This minimizes the loss of conditioned air.
- Variable height – Many narrow and widebody hangar doors can be built with a taller center tail door and lower wing doors. This allows architects to minimize the size of a hangar and door system required to accommodate aircraft.
- Shaped hangars – Megadoor systems do not need to operate in the same plane, enabling architects to shape a hangar structure to an aircraft or other space constraints. By shaping a hangar to the aircraft, architects can reduce the volume of a hangar by 50%, dramatically reducing the cost of ownership for the facility.



Great design flexibility

Excellent insulation

No dead space

# The smart way answers all your needs

Megadoor is recognized as the most energy efficient hangar door on the market. We have over 100 doors installed above the Arctic Circle, over 100 doors in the deserts of the Middle East and even a hangar door in Antarctica.



Over the last 25 years, we have replaced many traditional doors installed in these environments and our customers confirm the superior energy efficiency of the Megadoor.

In order to understand why the Megadoor is so energy efficient, it is important to understand energy loss as it relates to door openings. There are three primary ways energy is lost due to a door: air infiltration or leakage of air around a closed door, conduction through the door material and mass air flow of an open door.

- Air infiltration – typically accounts for over 80% of the energy loss on a hangar door system. By design, traditional bottom rolling doors are difficult to seal. The rubber seals utilized require constant replacement. Megadoor systems have virtually no air leakage at the head and sill and utilize a unique, exceptionally efficient, double side seal. Megadoor systems seals so well they are used on NASA class 100,000 clean rooms.
- Conduction – typically accounts for less than 20% of the energy loss of a door in the closed position. Megadoor utilizes the dead air space between the interior and exterior layers of fabric to reduce heat loss from conduction.
- Mass Air Flow – Users should look to minimize opening large doors completely, unless absolutely necessary. This is because complete air exchange between two environments may only take minutes. Since heat rises, the vertically opening Megadoor is far more energy efficient than a horizontally opening door which immediately exposes the top of a building, releasing conditioned air.

## Proven Reliability

From remote US Coast Guard facilities on the Aleutian Islands of Alaska to commercial airline maintenance hangars at the world's busiest airports, our exceptional performance track record in the harshest environments on the planet instills confidence in your crews. Immediately after the attacks of 9/11, the US military decided to place fighter jets strategically located around the United States on continuous alert. All these aircraft required weather shelters and Megadoor was chosen to supply the doors on every

one of these hangars. The military knows that when the open button is pressed on a Megadoor hangar door, they will not be delayed.

## Hurricane Winds

Megadoor systems can be designed to meet virtually any wind pressure by varying the quantity, depth and thickness of the horizontal aluminum beams integrated into the door. In addition Megadoor utilizes a hurricane windlock that automatically locks the door every time it is closed, preventing dangerous up-lift which could compromise the building envelope.

All along the hurricane prone coast line of the United States, Megadoor has installed doors in Coast Guard rescue facilities, Navy hardened hangars & Aerospace rocket facilities. Many of these facilities have survived direct hits from some of the most notorious hurricanes including Katrina.

## Aesthetics

Megadoor compliments modern architectural designs and will help you distinguish your facility from other buildings at the airport. We offer eight standard colors that can be combined in a wide variety of ways for unique color schemes. Megadoor can also apply graphics to the door for a truly custom look.

## Natural light

One of the biggest trends in aviation today is utilizing natural light to brighten the hangar. It is well known that a work environment lit with natural light is more productive than a dark environment or one lit by artificial light. The most cost effective way to incorporate natural light into your facility is to specify all, or part of your Megadoor hangar door with translucent fabric. The soft, diffused light creates a stunning atmosphere that your technicians will appreciate and will impress your guests. Lastly, natural lighting will allow you to turn off a portion or all of your lights during the daytime hours, saving you money on your electricity bills and maintenance costs. This will also help you with LEED points.



Double-skin heavy-duty curtain

Safety arrester

Bottom section with floor seal

Swing-up mullion system

Horizontal sections for rigidity

# The smart way has what it takes

Megadoor uses fail safe, patented, safety arrestors located on the door bottom beam and attached to the lifting belt or wire rope. If any component in the lifting system fails, the safety arrestors are instantaneously activated, locking the door in place.



## Safety

If you choose a Megadoor multiple part door system for your hangar, you will feel confident in knowing that all retractable mullions utilize a secondary wire rope or centrifugal force load arrestor that prevents the mullion from falling due to a failure in the lifting system.

## Bird Abatement

If you work in a hangar, you understand the big problem of birds. Megadoor systems can greatly minimize, or sometimes even eliminate birds inside your hangar. In some cases owners spend hundreds of thousands of dollars on bird netting, spikes, noise systems and exterminators to eliminate droppings on expensive aircraft and workers. Birds typically enter the hangar through poorly sealed gaps at the top of bottom rolling doors or other door systems. By design, Megadoor has no gap at the top the door system, so birds can not enter through a closed door. Birds also enter the top of conventional doors left partially open to provide ventilation for technicians. With a Megadoor, you can open the door a few feet, providing ground level air

## Tight seal

Megadoors are used on paint booths for military jets all the way up to A380 paint hangars. They are the obvious choice for paint operations due to the exceptional door seal which isolates the paint area from the surrounding environment better than any large door system on the market. Megadoor will improve the quality of your paint job by minimizing contaminants introduced from outside the paint booth. HVAC systems will work more efficiently increasing air exchanges per hour. Lastly, you will minimize the release of volatile organic compounds (VOC's) to the exterior, assisting in environmental regulation compliance. Whether you are considering a down draft, cross flow or just a conditioned hangar, Megadoor is the answer.

## Life Cycle Costs

Megadoor is proven to minimize maintenance costs by incorporating high quality components, reducing friction points which produce wear and utilizing materials that resist corrosion. Even though you may only open your door a few times a day, the components in our lifting system, such as door hoists, are designed for continuous usage in other applications such as overhead cranes. Common wear items such as wheels, hinges, hydraulics and counterbalance systems are eliminated. Lastly, the majority of the Megadoor is built with corrosive resistant aluminum beams, side guides and PVC coated polyester door fabric.

## Retrofits

Megadoors are commonly used to replace worn out hangar doors or enlarge openings on existing hangars. If your door has been neglected, is poorly designed, does not seal well or is just worn out, replace it with a Megadoor system. If you bought a new aircraft and can not fit it thorough your existing bottom rolling door due to the pocket(s), replace it with a Megadoor. Since Megadoor lifts vertically, this requires very little side room and provides you with ability to optimize with width of the entire hangar.

## Service

We understand that hangar doors are critical to your operation. If a door malfunctions, and a plane can not exit the hangar, the impact to your customers, schedule and bottom line will be negative.

We support your operations with a comprehensive service department. Factory technicians and our network of strategically located, certified Megadoor service companies are ready to respond. Since service issues can happen any time, we have a 24-hour service hotline. Our parts department can ship many stock parts overnight and will expedite any assemblies that require custom fabrication. Megadoor systems are engineered for low maintenance, but like all machinery should be periodically serviced to increase the product life. This is why we have developed custom preventative maintenance programs for our customers.



Unlimited size

Great design flexibility

Swing-up mullion system

No dead space

ASSA ABLOY Entrance Systems is a leading supplier of entrance automation solutions for efficient flow of goods and people. With our globally recognized product brands Besam, Crawford, TKO, Albany and Megadoor, we offer products and services dedicated to satisfying end-user needs for safe, secure, convenient and sustainable operations.

ASSA ABLOY Entrance Systems is a division within ASSA ABLOY.

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ASSA ABLOY Entrance Systems

Tel: 1-866-237-2687 (US) • 1-888-608-9242 (Canada)

info.na.aaes@assaabloy.com

assaabloyentrance.us • assaabloyentrance.ca

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