Product datasheet
Folding door
ASSA ABLOY FD2050FCW

ASSA ABLOY
Entrance Systems

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Technical facts

Features

Max size: (W x H)	5020 mm x 5000 mm
Frame thickness:	50 mm
Frame material:	Aluminium
Filling:	Windows or infills
Colour outside:	Anodised alumiunium
Colour inside:	Anodised alumiunium
Windows:	Options: DH4S, SH4
Infills:	Options: FA, FA1, FA2
Passdoor:	Optional: built in door leaf, built in fixed section, leaf as passdoor
Electrical operation:	Manual operation, Automated operation, Access control, Safety functions Electrical operation

Performance

Life time expectations:	Door: 100.000 door cycles/10 years
Wind load, EN12424	Class 2 *
Thermal transmittance, EN12428	4,3 W/(m².k) **
Water penetration, EN12425	Class 3
Air permeability, EN12426	Class 2

* Higher wind load classification on request

** Door configuration 3000 mm x 3000 mm, 2+2
2 rows window type DH4S
4 rows infills

Contents

1. Description

1.1 General

The ASSA ABLOY FD2050FCW folding door is one of the most stable folding doors specifically designed to cope with the harsh and humid environment in car wash halls or similar applications. The door is made of anodised aluminium tubular profiles with special anti-corrosive features. It is filled with aluminium infills or glass windows. The anti-corrosive features and high light admission makes this door the ideal choice for car wash environments that require maximum lighting. The door is installed on the outside of an external wall, which makes it possible to minimise the size of the car wash hall and prevent drops on cleaned cars. A wide range of options is available to suit the appearance of the existing building. The ASSA ABLOY FD2050FCW folding door has been designed to meet all operational and safety requirements in the European Directives and the standards issued by the European Standardization Committee, CEN.

The ASSA ABLOY folding door has 5 primary parts:

1) Door leaf
2) Seals
3) Track
4) Transmission system (electrically operated door)
5) Operating system (electrically operated door)

1.1.1 Standard

Although every ASSA ABLOY door is custom built, the ASSA ABLOY FD2050FCW folding door is supplied with the following specifications as standard:

Door leaf:	Aluminium frames with infills or windows
Operation:	Manual: Auto lock in open position Electrical: 950 door control system
Locks:	Cremone lock inside (manual operation)
Colours:	Anodised alumiunium
Number of door leaves:	2 door leaves per side.
Safety:	Side cover

1.1.2 Options

ASSA ABLOY provides a wide range of options and accessories to customise the ASSA ABLOY FD2050FCW folding door to any customer‘s needs.

Passdoor:	Built in door leaf Built in fixed section
Windows:	SH4: Single glazed Hardened pane 4 mm DH4S: Double glazed Hardened pane 2 x 4 mm
Infills:	FA: Mill finished stucco aluminium sheet outside and inside FA1: Mill finished stucco aluminium sheet outside, smooth aluminium inside. FA2: Smooth 1 mm anodised aluminium sheets, outside and inside.
Locks:	Assa lock box Euro lock box Kaba lock box Abloy lock box
Operation:	Delivered with or prepared for: Key locks system Automated operation, safety functions.

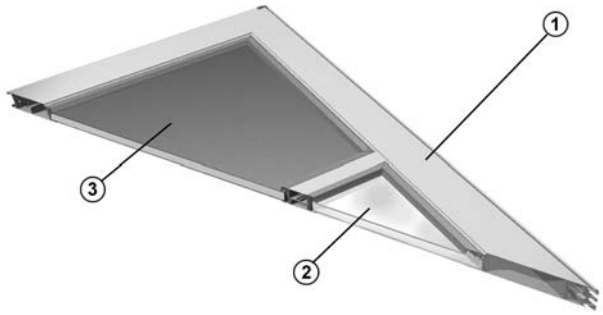
1.2 Door leaves

1.2.1 Construction

The ASSA ABLOY FD2050FCW folding door comprises vertical door leaves, connected together with hinges. Rollers are installed on the top left and right of each door leaf. The rollers run in the top track to enable opening and closing of the door.

1.2.2 Material

The door is made of aluminium profiles, filled with sandwich infills or acrylic/glass windows.



1) Anodised aluminium frame
2) Window
3) Infill

1.2.3 Standard colours

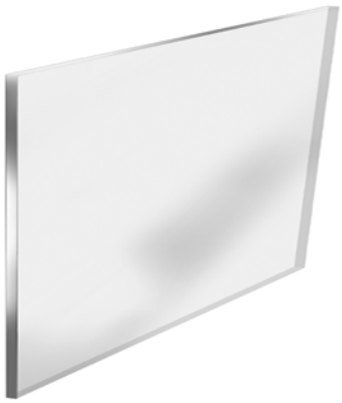
Frames and Infills

- The frames and infills are delivered in anodised aluminium and cannot be painted.

1.2.4 Windows

The frame construction allows windows in all door leaves. The light opening depends on the dimensions of the door leaf. Other materials than described below are available on request.

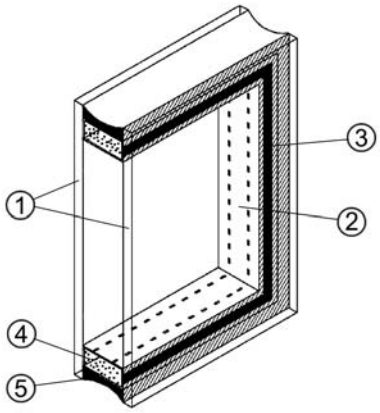
1.2.4.1 SH



- SH4: Single hardened glass 4 mm

1.2.4.2 DH4S

Double glazed hardened glass 4 + 4 mm. Double sealed.



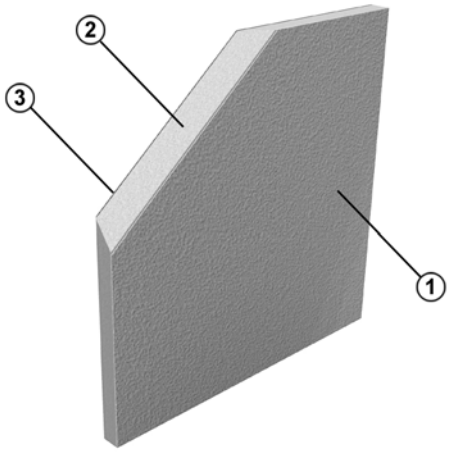
1) 4 mm hardened glass
2) Aluminium distance frame
3) Butyl sealing
4) Absorbing siccative
5) Silicone sealing

1.2.5 Infills

The frame construction allows infills in all door leaves. Other materials than described below are available on request.

1.2.5.1 FA

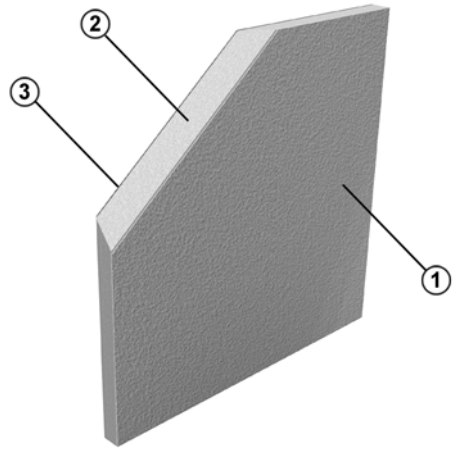
Mill finished stucco aluminium sheet outside and inside.



1) Stucco aluminium
2) Polystyrene foam
3) Stucco aluminium

1.2.5.2 FA1

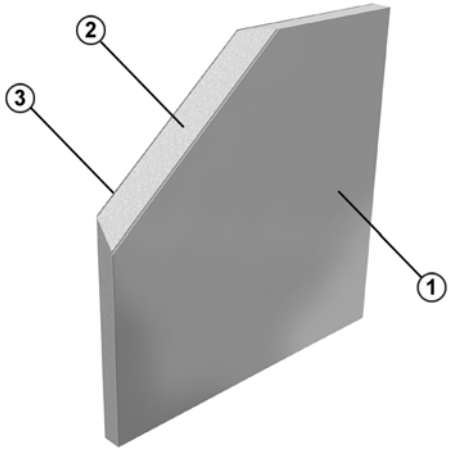
Mill finished stucco aluminium sheet outside, smooth aluminium inside.



1) Stucco aluminium
2) Polystyrene foam
3) Smooth aluminium

1.2.5.3 FA2

Smooth 1 mm anodised aluminium sheets, outside and inside.



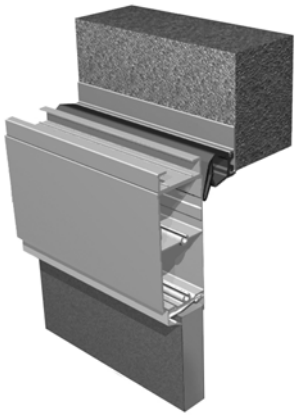
1) Smooth aluminium 1mm, anodised
2) Polystyrene foam
3) Smooth aluminium 1mm, anodised

1.2.6 Seals

The door is equipped with well designed seals on all sides that gives the door its excellent sealing abilities.
The seals are made from chloroprene rubber, a durable material that is suitable for a harsh car wash environment.

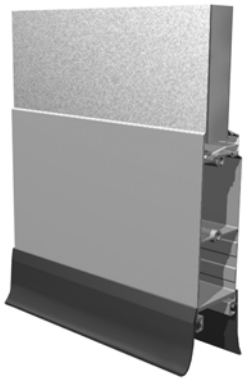
1.2.6.1 Top seal

Installed on the frame at the top of the wall, the top seal provides continuous pressure on the top of the door leaves when the door is closed, ensuring maximum sealing.



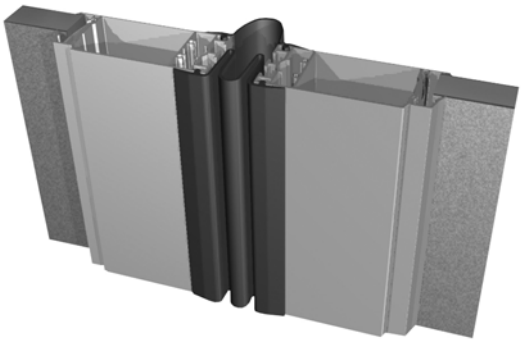
1.2.6.2 Bottom seal

Installed on the bottom edge of each door leaf, the bottom seal provides continuous pressure on the floor, ensuring maximum sealing.



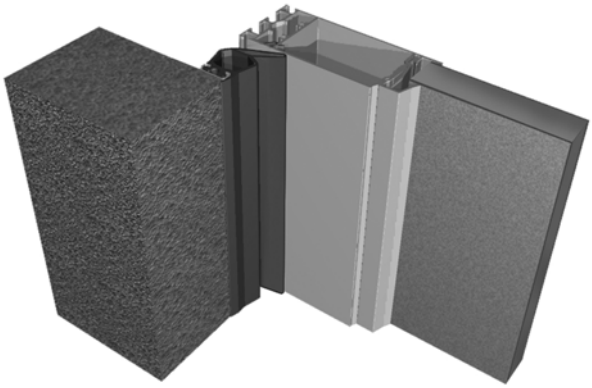
1.2.6.3 Seal between door leaves

Installed between each pair of door leaves. The flexible rubber material permits maximum movement of the door assembly and permanent sealing between the door leaves.



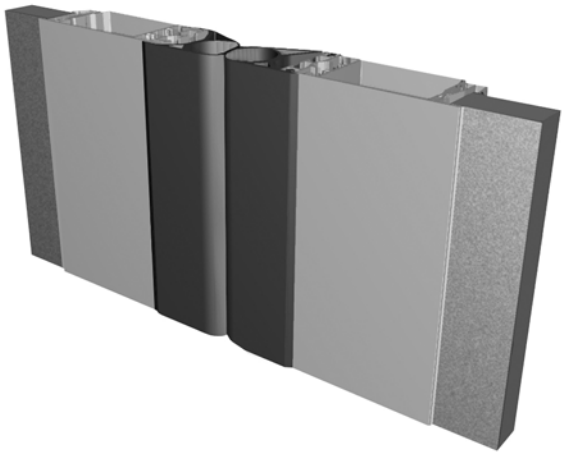
1.2.6.4 Side seal

Installed between the outer door leaves and the wall. The flexible rubber material permits maximum movement of the door assembly and provides permanent sealing between the door leaves and the walls.



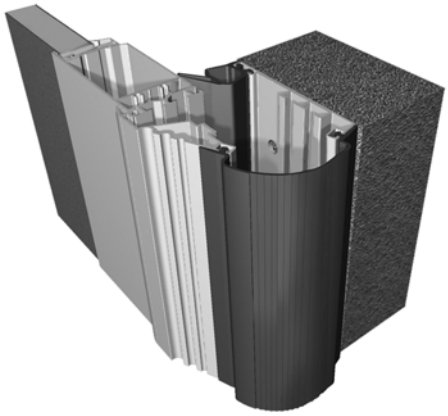
1.2.6.5 Safety edge seal

Installed on the edge of the two centre door leaves, the safety edge seal provides continuous pressure when the door is closed, ensuring maximum sealing. On electrical doors the sealing has a function as safety edge sealing.



1.2.6.6 Side cover

In combination with an installation frame the side cover works as a cover of and a protection from the frame hinges. Standard on all doors.



1.2.7 Passdoor

For easy access the ASSA ABLOY FD2050FCW folding door can be delivered with a passdoor. The passdoor can either be build in a door leaf or in a fixed section.

1.2.7.1 Passdoor in doorleaf

The passdoor is designed with a handle that ensures easy opening and closing of the passdoor. The passdoor is not designed to be an emergency exit, as it has a threshold.

Features:

- Always opening outwards, min. 90 degrees opening
- Hinged left or right
- Seals in passdoor frame reduce air permeability.
- Integrated passdoor switch if electrically operated
- All commonly used cylinder locks are available: Euro, Kaba, Abloy, Assa.

1.2.8 Fixed sections

Fixed sections can advantageously fill space around new doors that are smaller than the wall opening. Fixed sections are available in top and side sections. Fixed sections are supplied in the same color and construction as the door leaf.

A fixed section can be provided with a passdoor for two reasons: Safety and energy cost reduction.

- Safety: Putting a separate passdoor in a fixed section next to the industrial door separates pedestrian and vehicle traffic.
- Energy cost reduction: The opening space for frequent pedestrian traffic is minimized.

1.3 Manually operated door

The ASSA ABLOY FD2050FCW folding door can be opened and closed by hand, using a solid, easy to grip handle and a cremone lock.

1.3.1 Handle

For manual operation the ASSA ABLOY FD2050FCW folding door is supplied with a solid, easy to grip handle, installed in combination with an auto lock. The auto lock secures the door in the open position and must be released to close the door.

1.3.2 Locks

1.3.2.1 Cremone lock

The standard cremone lock has an inside handle and can lock the door without the use of a key. Optionally an outside cremone handle can be installed on the cremone lock.

1.3.2.2 Cylinder lock

For extra security a cylinder can be installed in combination with the cremone lock.

1.4 Electrically operated door

1.4.1 Electrical operation

The ASSA ABLOY FD2050FCW folding door can be supplied or upgraded with an electrical operating system. The system consists of a mechanical transmission unit with an electrical operator and a control unit. Electrical operation gives access to the full program of Access and Automation functions, that can fulfill many operational needs related to traffic type and frequency, door weight, and temperature control.

1.4.2 CDM9 FD Operating system

The CDM9 FD operating system is a combination of the CDM9 FD Operator and a 950 door control system.

1.4.2.1 CDM9 Operator

The CDM9 FD Operator is an electric motor that drives the door via a mechanichal transmission unit. It can be retrofitted to an existing ASSA ABLOY FD2050FCW folding door if the door is configured for electrical operation. The CDM9 FD Operator is installed directly on the mechanical transmission unit and does not require any special wall reinforcement. The transmission unit is built from anti-corrosive parts to ensure a long life, even in a humid environment.

Key features:

- Smooth and silent
- Soft start and stop
- Life time: 100.000 - 300.000 door cycles.

1.4.2.2 950 door control system

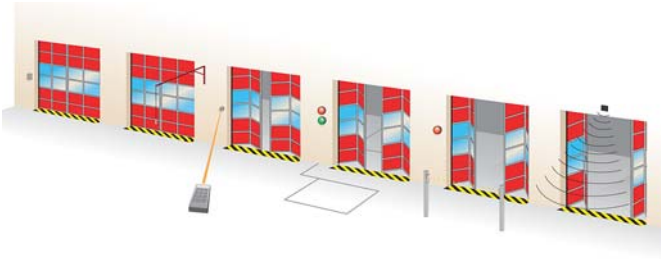
The standard 950 door control system is fully prepared for one or more physical upgrades from the entire range of automation systems. An automation system allows door operation by sensors or remote control.

This control unit contains a 3-digit diagnostics display that allows efficient troubleshooting and displays the number of door cycles completed. The number on the display shows numbers of door openings x1000. Yellow led in the lid indicates that the maintenance interval has been achieved. Factory setting is 20 000 cycles/365 days. A lit dot in the lower right corner of the display indicates that automatic closing is activated. A flashing dot in the lower right corner of the display indicates that the door has reversed five times in a row during automatic closing on force/main safety edge. Together with the service indicator, this extra feature allows advanced maintenance planning for users where the door is an essential element of internal logistics.

Additional functions such as magnetic loop, photocells, radar and radio are available.

1.4.3 Access and automation

ASSA ABLOY offers a wide range of functions that allows advanced opening and safety control.



1.4.3.1 Basic control functions

Interlocking

Developed for climate control or safety; If door A is open, door B cannot be opened. If door B is open, door A cannot be opened. An interlocked door can remember an open-command, if selected via a micro switch.

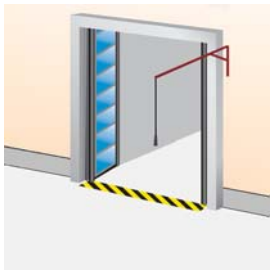
Circuit card Installed in control unit.

1.4.3.2 External control functions

External push button box

An extra control box is installed outside the building or inside close to the door if the main control unit needs to be installed away from the door opening.
Installed on the inside or outside wall beside the door.

Pull-rope switch



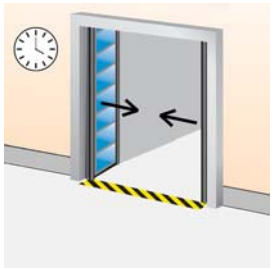
A pull-rope switch above the door opening can be operated from e.g. a forklift truck. Pulling the rope opens a closed door or closes an opened door.
Installed on the inside construction above the door.

Remote control

A hand-held radio transmitter allows door operation from a vehicle or any position within 50-100 meters from the receiver and aerial at the door. For closing, the door can be provided with a photocell beam.
Receiver installed in control unit, antenna installed on the wall beside the door.

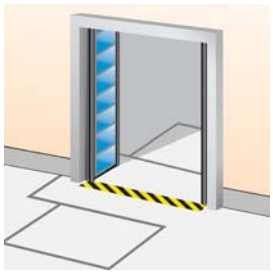
1.4.3.3 Automatic control functions

Automatic closing



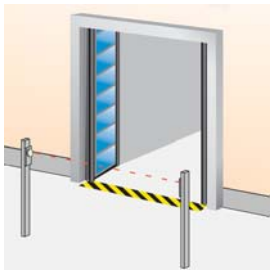
A programmable timer that closes the door after a specified time, counted from either the fully open position and/or from passing through the photocell beam.
Adjustable micro switches in control unit.

Magnetic loop



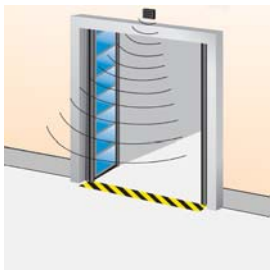
A sensor in the floor detects a metal object (usually forklift trucks, pallet trucks) and opens the door automatically. This is an ideal solution for frequent vehicle traffic.
Installed on the outside, inside or both sides of the door in the floor.

Photocell open door



A set of photocells on pillars, on each side of the door. When a person or vehicle passes between the photocells, the beam is interrupted and the door opens.
Photocells installed on pillars, away from the door.

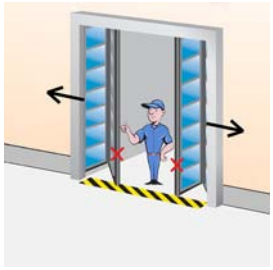
Radar



An infrared sensor above the door detects an object (person, vehicle) within a specified distance from the door and opens the door automatically. This is an ideal solution for frequent vehicle or personal traffic. Often combined with automatic closing.
Installed on the inside or outside wall above the door.

1.4.3.4 Safety functions

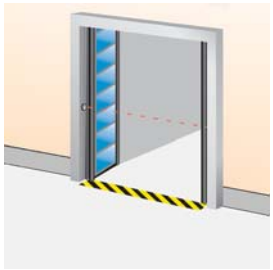
Safety edge



As a standard, all doors that have the impulse-open function or any form of automated closing, are equipped with a safety edge. The pneumatic sensor in the safety edge seal detects any obstruction between a closing door and reverses the door.

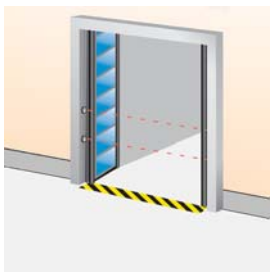
Installed in the safety edge seal.

Safety photocells 1-channel



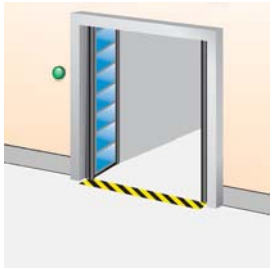
A set of a photocell transmitter and receiver is installed in the door opening. If the photocell beam is interrupted during closing, the door will stop in less than 30mm and reverse to the fully open position.
Installed in the door opening.

Safety photocells 2-channel



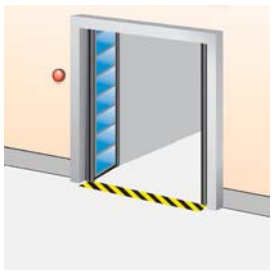
Two sets of photocell transmitter and receiver are installed in the door opening. If one or both photocell beams are interrupted during closing, the door will stop in less than 30mm and reverse to the fully open position.
Installed in the door opening.

Warning lights - Green



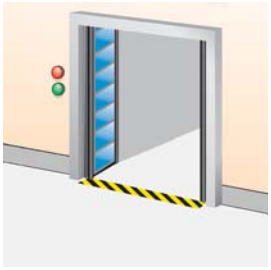
One or two green warning lights indicating the open position of the door by continuous light signal.
Installed on the inside and/or outside wall beside the door.

Warning lights - Red



Two red warning lights giving information on the current door behaviour. Flashing light before or during door movement. Optional: Continuous light before and during door movement.
Installed on the inside and outside wall beside the door.

Traffic lights - Red & Green



If traffic through a door needs to be directed; two red and two green traffic lights can be installed to indicate traffic direction. From the side where a vehicle is first detected to approach the door, the green traffic light comes on. The opposing side shows a red traffic light. Traffic from this direction must give way to the other. Usually installed in e.g. parking garages.
Installed on the inside and outside wall beside the door.

1.4.3.5 Additional functions

UPS battery backup

When mains failure cannot be permitted or an increased risk of mains failure is predicted, the UPS battery backup system can be installed to store enough energy for 5 door cycles.
Installed on the inside wall beside the door.

Relay box

A sealed connection box makes it possible to safely connect external high-voltage equipment.

2. Specifications

2.1 Dimensions

2.1.1 Daylight width and daylight height

The standard ASSA ABLOY FD2050FCW folding door is delivered in the following size range:

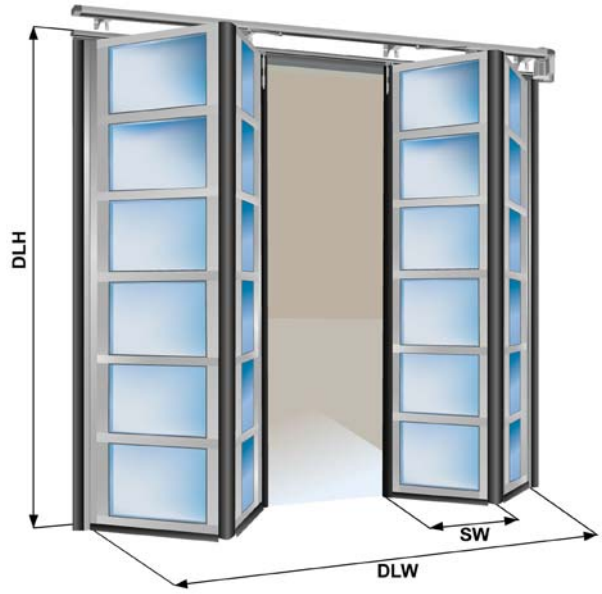
Standard door sizes		
	Daylight width (DLW)	Daylight height (DLH)
Min.:	2200 mm	2000 mm
Max.:	5000 mm	5020 mm

Other sizes available on request.

2.1.2 Section sizes

Leaf width (SW):	553 - 1253 mm*
Thickness:	50 mm

*The total width of the door is equally divided over the leaves.



2.1.3 Windows and infills

Daylight height:	**No. of windows / infills per leaf:**
2000 - 2312 mm	3
2313 - 3009 mm	4
3010 - 3706 mm	5
3707 - 4403 mm	6
4404 - 5000 mm	7

2.2 Configurations

Configuration	**Dimensions (DLW)**	**Manual door**	**Electric door**	**Door assembly**
2 + 2	2200 mm - 5000 mm	■	■	

■ Available

2.3 Passdoor

2.3.1 Passdoor in doorleaf

Specifications

Lock:	Depends on market
Treshold height:	189 mm incl. bottom seal

This passdoor is only available in the second door leaf from the wall.

2.4 Door operation

2.4.1 Selection guidelines for operation type

Door size m²	**Openings / day**			
	1-5/day	5-10/day	10-15/day	>25/day
0 – 10	□ / ■	□ / ■	■ / ■	■ / ■
10 – 20	□ / ■	■	■ / ■	■ / ■
> 20 - 42	■	■	■ / ■	■ / ■
> 42*	□	□	□	□

□ Manual operation
■ Electrical operation
■ Automated operation

2.4.2 950 door control system functions

Functions	950 FD
	
Open (by impulse)	■
Stop	■
Close (by impulse)	■
Safety edge	■
Open function	■
One button function	■
Display (diagnostics)	■
Service indicator	■

2.4.3 950 door control system - Selection guidelines for automation

The “Automation D-kits“ are packages of common combinations. These kits can also be supplemented by “additions to D-kits“.

Automation D-kits	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**
Interlocking	■	■	■	■	■	■
Magnetic loop		■		■		■
Traffic lights - Green + Red					■	■
Warning lights - Red	■			■		
Additions to D-kits						
Warning lights – Green	□	□	□	□		
Traffic lights - Green + Red	□	□	□	□		
Relay box	□	□	□	□	□	□
Radar	□	□	□	□	□	□

■ Standard
□ Option / Available

The following options can be individually selected to add functionality to the control unit.

Functions optional	950 FD
	
Complete kits	
Automation D-kits	□
Basic control functions	
Interlocking	□
External control functions	
External push-button box	□
Pull-rope switch	□
Remote control open/stop/close	□
Remote control 1-button function	□
Automatic control functions	
Automatic closing	□
Photocell open door	□
Safety functions	
Safety photocells 1-2	□
Additional functions	
UPS Battery backup	□
Relay box	□

■ Standard
□ Option / Available

3. CEN Performance

3.1 Lifetime expectation

100.000 door cycles

3.2 Resistance to windload

EN12424	Manually operated door	Electrically operated door
DLW 7590 mm x DLH 6000 mm	Class 2	-
DLW 3500 mm x DLH 3000 mm	Class 3	Class 4

3.3 Resistance to water penetration

EN12425	Without passdoor
Test result	Class 3

3.4 Air permeability

EN12426	Without passdoor
Test result	Class 2

3.5 Thermal transmittance

EN12428	Double Acrylic	Single Acrylic and Single Hardened
Thermal transmittance	4,3/m²K*	4,9 W/m²K*

* These values are calculated values for a complete, installed door of 3000 x 3000 mm 2 rows FA or 2 rows DH4S and must be confirmed by an official test.

3.6 Operating forces and safe openings

EN12453 & EN12604	Crushing force N	Crushing force N	Crushing force N
Opening gap mm	200 mm from lateral border right from outside	In the middle of the door opening	200 mm from lateral border left from outside
50 N	passed	passed	passed
300 N	passed	passed	passed

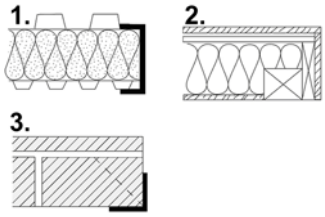
The crushing force is the force needed for the safety edge to be activated. The maximum force allowed, according to EN12453 safety in use of power operated doors, is 400 N within a period of time of 0.75 s.

4. Building and space requirements

4.1 Building preparations

4.1.1 Installation preparations

The ASSA ABLOY FD2050FCW folding door is shipped in parts and installed on-site. All necessary installation material is included. For every building type ASSA ABLOY offers specific installation kits to install the door in the building facade. To install the door a solid installation surface is required; 100-150 mm for the side frame and 150-200mm for top frame, depending on configuration and type of operation.



1) Steel
2) Wood
3) Brick & Concrete

4.1.2 Electrical preparations

The manually operated door needs no electrical supply.
For an electrically operated door, the following environment criteria and electrical supplies are required for the operator to function properly:

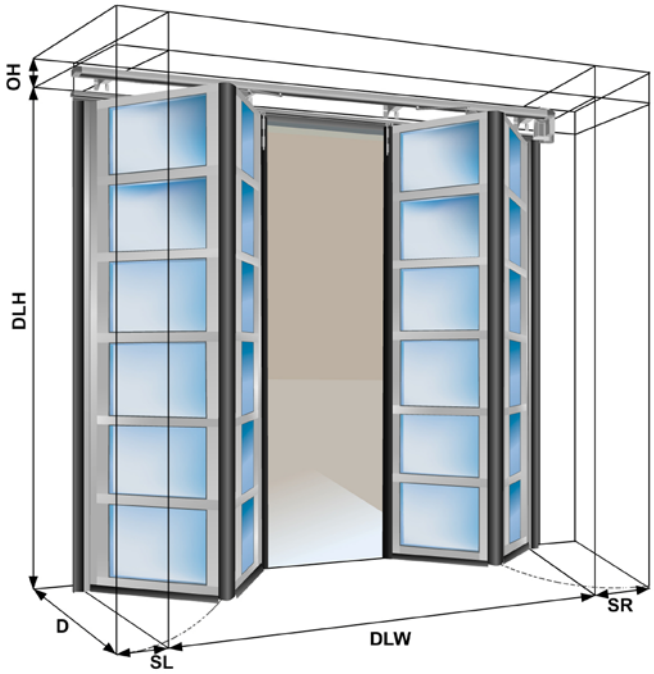
	CDM9 FD
Voltage supply: (+/- 10%)	230V AC 1-phase 50/60Hz, 2 A, fuse 10 A
Power supply:	0,5 kW
Degree of protection:	IP65 mech. Unit, IP55 control unit (Excluding the CEE-plug which is IP44)
Max. allowed total weight of door leaves:	750 kg
Working temperature range:	-20 °C to +60 °C*
Operating factor:	ED = 30% S3 10 min, non-continuous S3 10 min. intermittent
Installation preparations:	-

*) Normal opening speed in temperatures down to -8°C. In the temperature range -8 °C to -20 °C the opening speed is reduced during the first cycle in a two-hour period to prolong the operator's lifetime. An optional heating element is available for a working range down to -30 °C

4.2 Space requirements

4.2.1 Dimension terminology

DLW	=	Daylight Width	The width of the clear opening.
DLH	=	Daylight Height	The height of the clear opening.
OH	=	Headroom	The space required above the daylight height.
SL	=	Side space Left	The space required beside the daylight width.
SR	=	Side space Right	The space required beside the daylight width.
D	=	Depth	The space required to move the door leaves.
SW	=	Section / leaf width	The width of a single door leaf.



4.2.2 Space requirements manual doors

Configuration	SL	SR	OH
2+2	185	185	150

4.2.3 Space requirements electrically operated doors

No plastic cover on operator

Configuration	Operator position left			Operator position right			Operator position center		
	SL	SR	OH	SL	SR	OH	SL	SR	OH
2+2	440	300	235	300	500	235	300	300	375

With plastic cover on operator

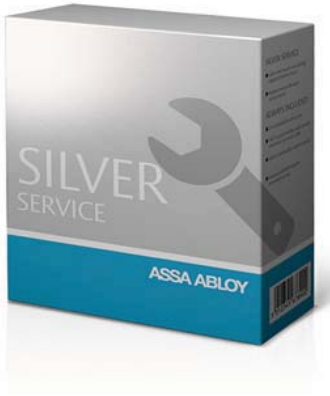
Configuration	Operator position left			Operator position right			Operator position center		
	SL	SR	OH	SL	SR	OH	SL	SR	OH
2+2	460	300	270	300	525	270	300	300	395

* Dimensions in mm.

4.2.4 Depth

The minimal required depth is the width of a door leaf (SW 553-1253mm) + 180 mm

5. Service you can rely on



Gold

The ultimate protection

With full coverage, Gold Service enables you to plan and budget your expenses annually.

- Spare parts for emergency calls
- Labor and travel costs for emergency calls
- Replacement of components according to preventive maintenance schedule and to fulfill legislative and safety requirements

Silver

Added advantages

With cover for all service calls during business hours, Silver Service offers you peace of mind.

- Labor and travel costs for emergency calls
- Preventive maintenance

Bronze

Scheduled Service

With scheduled on site visits, Bronze Service means you know that your doors and docking systems will be regularly serviced and inspected.

- Preventive maintenance

Included in all packages			
1-4 scheduled maintenance visits per year	24/7 priority service hotline and fast response	Safety, compliance and quality control checks	Documentation reports provided on site

Expert service you can rely on

A healthy business enjoys a steady flow of goods, services and people through its entrances every day. But heavy traffic puts entrances under pressure as every component works to keep them running.

ASSA ABLOY Entrance Systems offer the industry's most complete, flexible service solutions. Because even something as robust and well-engineered as an ASSA ABLOY door or docking system needs to be serviced to stay in great working order.

Pro-active care packages

An ASSA ABLOY service agreement gives you service you can rely on. We have specialized local service technicians on call to take care of your service needs. Equipped with a wide range of spare parts and expertise, to keep your industrial doors and docking systems running.

With an ASSA ABLOY service agreement you can ensure reliable, safe and sustainable operations at every entrance under your agreement, including doors and docking systems, independent of brand.

ASSA ABLOY e-maintenance™ (optional add-on)

For an online overview of your entrance systems and history, add ASSA ABLOY e-maintenance™ to your service package for:

- Easy access to real-time data on all your doors
- Planning, order and service information
- Overview that helps you control lifecycle costs

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ASSA ABLOY Entrance Systems provides solutions for efficient and safe flow of goods and people. Our offering includes a wide range of automated pedestrian, industrial and residential doors, loading dock equipment and services.

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