

TEST REPORT No. 328490

Place and date of issue: Bellaria-Igea Marina - Italy, 20/10/2015

Customer: FAAC S.p.A. - Via Calari, 10 - 40069 ZOLA PREDOSA (BO) - Italy

Date test requested: 12/05/2015

Order number and date: 66562, 15/05/2015

Date specimen received: from 18/04/2015 to 08/07/2015

Test date: from 18/04/2015 to 08/07/2015

Purpose of test: burglar resistance and classification (resistance under static loading, resistance under dynamic loading and resistance to manual burglary) of an automatic door-set with two sliding leaves and two fixed leaves in accordance with standards UNI EN 1627:2011, UNI EN 1628:2011, UNI EN1629:2011 and UNI EN 1630:2011

Test site: Istituto Giordano S.p.A. - Via Erbosa, 72 - 47043 Gatteo (FC) - Italy

Specimen origin: sampled and supplied by the Customer

Identification of specimen received: Nos. 2015/1772 and 2015/1773

Specimen name*

The test specimen is called "INGRESSO AUTOMATICO FAAC SKR35" ("FAAC SKR35 AUTOMATIC ENTRANCE DOOR").



(*) according to that stated by the Customer.

LAB N° 0021

Comp. AV
Revis. RP

This test report consists of 16 sheets.
This document is the English translation of the test report No. 328490 dated 20/10/2015 issued in Italian; in case of dispute the only valid version is the Italian one. Date of translation: 30/12/2015.

Sheet
1 of 16

Description of specimen*

The test specimen is an automatic doorset with two sliding leaves and two fixed leaves whose dimensions are given in the following table.

Specimen overall nominal width	2850 mm
Specimen overall nominal height	2235 mm
Specimen effective width	1320 mm
Specimen effective height	2100 mm
Net width of each leaf	725 mm
Net height of each leaf	2155 mm

The specimen's main components are:

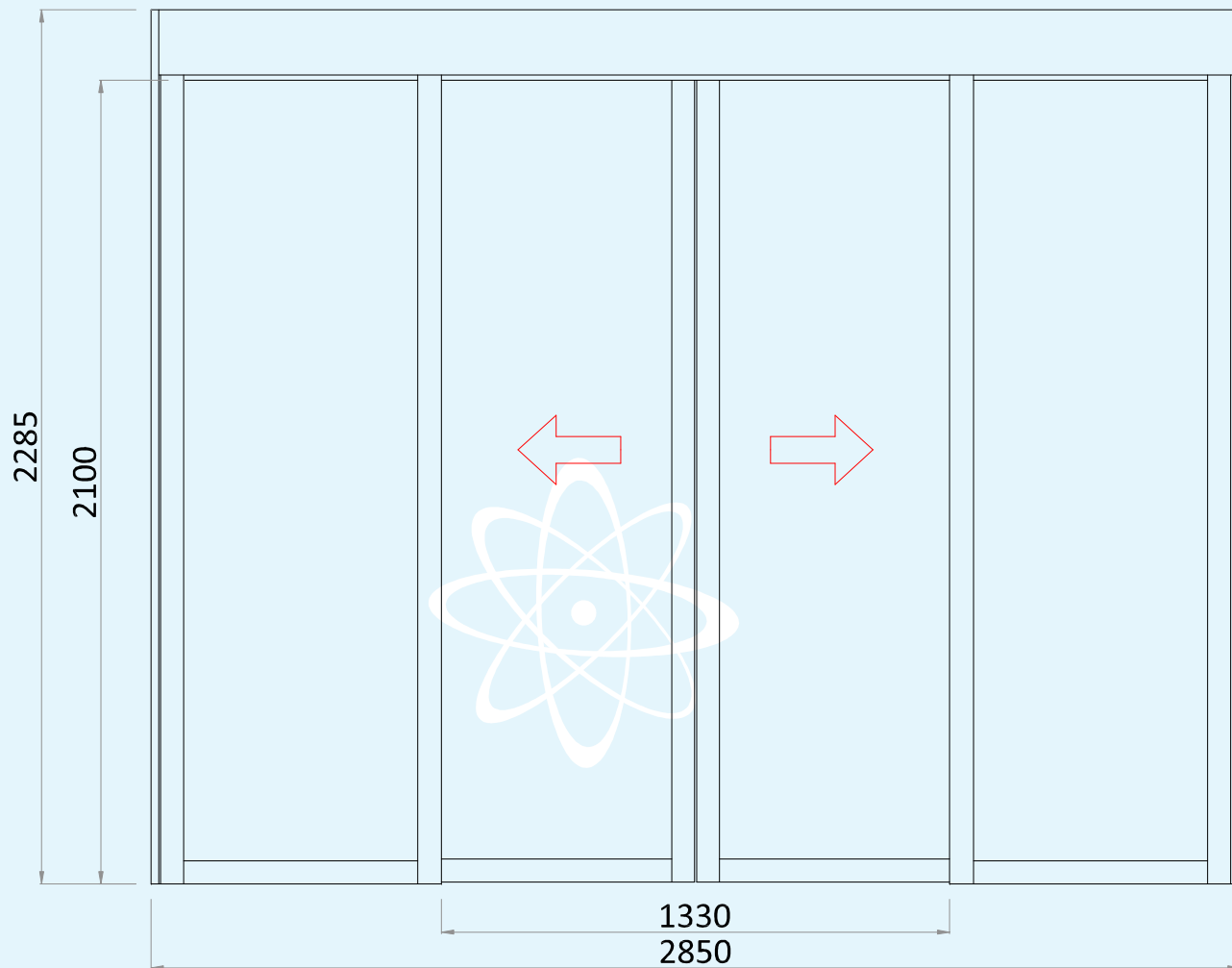
- FAAC SKR35 reinforced profiled aluminium-alloy sections, section thickness 35 mm, for building automatic entrance doors having fixed and sliding leaves and a U-channel glazing system;
- P5A glass;
- recessed floor track with continuous runner extending across the entire width of the sliding leaves;
- 2 steel locks with through bolt fitted to the outside of the leaves;
- sliding leaf/fixed leaf fastener made from special aluminium sections with anti-lift device;
- heat-retaining perimeter brush seals.

Further details of specimen specifications can be seen in the Customer-supplied schematic drawings set out hereafter.

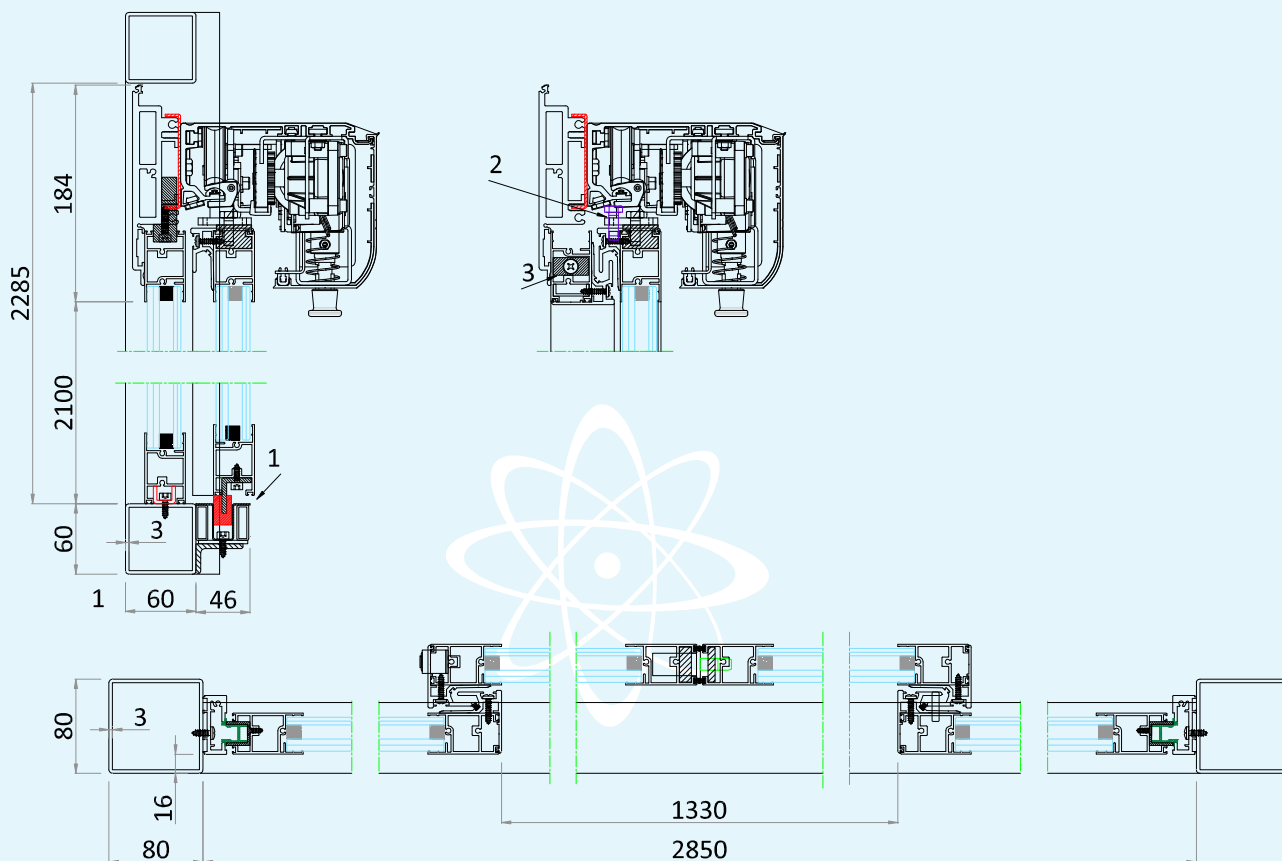
Finally, the specimen has a surrounding steel frame used to hold the test installation securely in place.

(*) according to the technical documentation supplied by the Customer and on the basis of checks carried out by staff from this Institute.

SPECIMEN ELEVATION



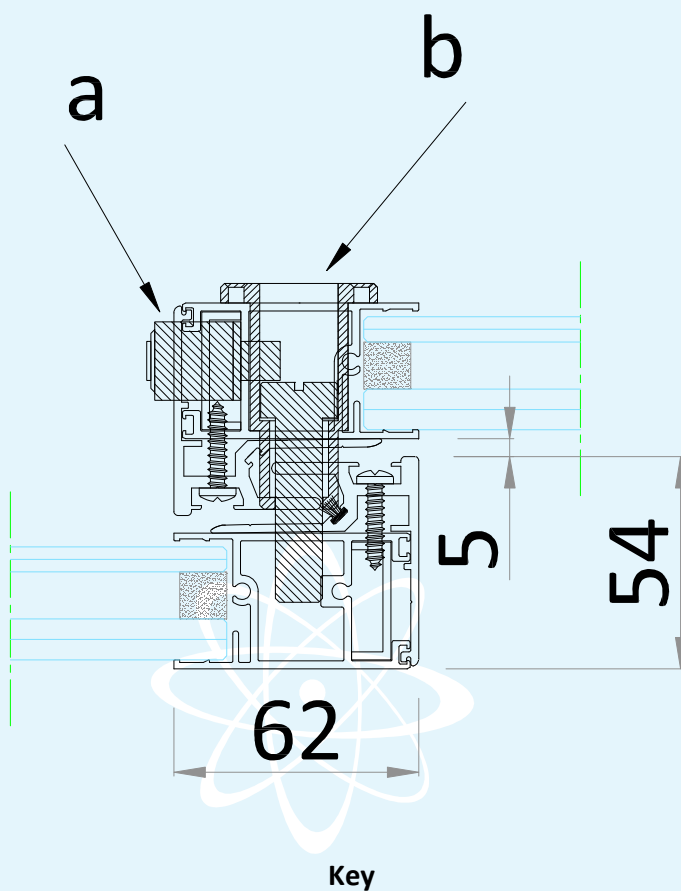
SPECIMEN SECTIONS



Key

Symbol	Description
1	Steel track
2	Anti-lift bolt
3	Head locking device

LOCKING SYSTEM



Symbol	Description
a	lock
b	bolt



Specimen photo



Locking system close-ups

Normative References

The test was carried out in accordance with the requirements of the following standards:

- UNI EN 1627:2011 dated 16/06/2011 “Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Requirements and classification”;
- UNI EN 1628:2011 dated 16/06/2011 “Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under static loading”;
- UNI EN 1629:2011 dated 16/06/2011 “Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance under dynamic loading”;
- UNI EN 1630:2011 dated 16/06/2011 “Pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance - Test method for the determination of resistance to manual burglary attempts”.

Test method

The test was performed in accordance with the requirements of the standards mentioned under the heading “Normative References” using detailed internal procedure PP009, revision 13 dated 08/01/2014 “Doors, pedestrian doorsets, windows, curtain walling, grilles and shutters - Burglar resistance: Test methods and classification”.

Checking the documentation supplied and test specimen

In accordance with the provisions of standards UNI EN 1627:2011, UNI EN 1628:2011, UNI EN 1629:2011 and UNI EN 1630:2011, the presence of the following documentation was verified:

- specimen description (product type, profile specifications, materials utilised and thickness of infill or glazing);
- mechanical properties of constituent materials;
- specimen date of manufacture;
- declared classification of glazing;
- declaration of hardware classification;
- attack side;
- dimensioned drawings including tolerances and list of parts;
- installation instructions.

Static loading in accordance with standard UNI EN 1628:2011

A series of static loads were applied to the specimen in order to verify compliance with resistance class 3. The loads were applied using a pressure pad connected to a pneumatic ram, diameter 250 mm, actuated by a motor-operated reduction valve capable of applying the load with a preset gradient. Loads were measured using a load cell, capacity 25 000 N.

Deformation was evaluated using a set of gap gauges meeting the requirements of clause A.10 of standard UNI EN 1628:2011.

The equipment utilised meets the accuracy requirements specified by 4.8 "Tolerances" of standard UNI EN 1628:2011, therefore compliance with the class is awarded without considering the effect of the uncertainty range on the deformation value, in line with clause 2.6 of ILAC-G8:03/2009 "Guidelines on the Reporting of Compliance with Specification".

Dynamic loading in accordance with standard UNI EN 1629:2011

In accordance with figure A.21 "Hinged doors, with or without infillings, single or double leaf doors and sliding doors" of standard UNI EN 1629:2011, the specimen received a set of impacts with an impactor of mass 50 kg in order to verify compliance with resistance class 3.

Manual burglary test in accordance with standard UNI EN 1630:2011

A series of pre-tests were carried out on the specimen in question in the following areas in order to assess compliance with security rating 3:

- leaf meeting stiles;
- sliding leaf/fixed leaf contact area;
- lower section of sliding leaves.

The pre-tests were carried out using tool sets A1, A2 and A3.

The main test for resistance class 3 was then carried out on the specimen with an attack on the vertical rebate between sash and frame with the same tool sets A1, A2 and A3 used during the pre-tests.

Test apparatus

The following equipment was used to carry out the test:

- burglar resistance test rig (apparatus in-house identification code EDI048) fitted with load device (apparatus in-house identification code FT481) and 25 kN load cell and meter complete with calibration report issued by Istituto Giordano S.p.A.;
- set of load devices (apparatus in-house identification codes EDI074a, EDI074b, EDI074c, EDI074d, EDI074e, EDI074f and EDI074g);
- set of calibrated gap gauges (apparatus in-house identification codes EDI075a, EDI075b, EDI075c and EDI075d);
- set of calibrated test blocks to verify access (apparatus in-house identification codes EDI079a, EDI079b and EDI079c);
- mechanical device to apply dynamic loads consisting of a fully electromechanical lifting and height adjustment system, mechanical lateral positioning system and impactor (apparatus in-house identification code EDI012);
- digital tape measure to measure sizes and soft body drop height (apparatus in-house identification code FT364);
- digital calliper (apparatus in-house identification code: EDI066);
- chronometer to measure resistance time (apparatus in-house identification code FT462);
- thermo-hygrometer to measure environmental conditions (apparatus in-house identification code FT231);
- video camera to record testing;
- tools for the manual attack test (apparatus in-house identification code FT341), chosen according to test class and listed in the following table.

Amount [No.]	Description	Tool code
1	Multiple slip joint gripping pliers; maximum length (250 ± 10) mm	1.1
1	Screwdriver; total length (260 ± 20) mm, shaft diameter of (8 ± 2) mm and blade width (10 ± 1) mm	1.2
1	Set of small screwdrivers; with different blade forms, shaft diameter max. (6 ± 2) mm and total maximum length 250 mm	1.3
//	Hexagonal Allen keys; maximum length 120 mm	1.4
//	Spanners; maximum length 180 mm	1.5
1	Engineer pliers; maximum length 200 mm	1.6
1	Tweezer	1.7

Amount [No.]	Description	Tool code
1	Knife; maximum length of blade 120 mm, thickness of blade max. 3 mm	1.8
1	Torch	1.9
//	Hooks	1.10
//	Steel wire	1.11
//	Adhesive tape	1.12
//	String	1.13
1	Rubber hammer Shore hardness (90 ± 10) Shore; weight: head (100 ± 20) g, total (145 ± 20) g, length (260 ± 20) mm	1.14
1	Universal lock key	1.15
1	Screwdriver; total length (365 ± 25) mm, blade width (16 ± 2) mm	2.1
1	Pipe wrench; length (240 ± 20) mm	2.2
2	Plastic wedges; length (200 ± 25) mm, width (80 ± 10) mm, height (40 ± 5) mm	2.3
2	Wood wedges; length (200 ± 25) mm, width (80 ± 10) mm, height (40 ± 5) mm	2.4
1	Compass saw; 2 blades (bimetal or HSS metal cutting), length (310 ± 25) mm	2.5
1	Pad saw; 2 blades (bimetal or HSS metal cutting), dimensions (300 mm × 13 mm × 0,65 mm)	2.6
1	Hacksaw, 2 blades (bimetal or HSS metal cutting), length (330 ± 25) mm	2.7
1	Steel extension tube, length (500) mm, diameter (30) mm, thickness max. 3 mm	2.8
1	Screwdriver; total length (365 ± 25) mm, blade width (16 ± 2) mm	3.1
1	Crowbar, length (710 ± 10) mm	3.2
1	Locksmiths hammer; weight (200 ± 20) g, length (300 ± 20) mm	3.3
1	Set of pin punches	3.4
1	Hand drill; length (330 ± 25) mm	3.5
1	Set of drill-bits; HSS or HS/CO, diameters 1,0 mm to 6,0 mm in steps of 0,5 mm	3.6

Test team

The team who carried out the final test was composed of the persons listed in the following table.

Function	Name
Team Leader	Geom. Roberto Porta
Timekeepers	Geom. Roberto Porta / Per. Ind. Alessandro Bonini
Testing operative	Mr Ulisse Mari

Environmental conditions during test

Atmospheric pressure	1000 - 1013 mbar
Ambient temperature	(23 ± 6) °C
Relative humidity	(45 ± 25) %

Test results

Checking the documentation supplied and test specimen

The result of the checks carried out on the documentation and the specimen after it has been closed and locked is given in the following table.

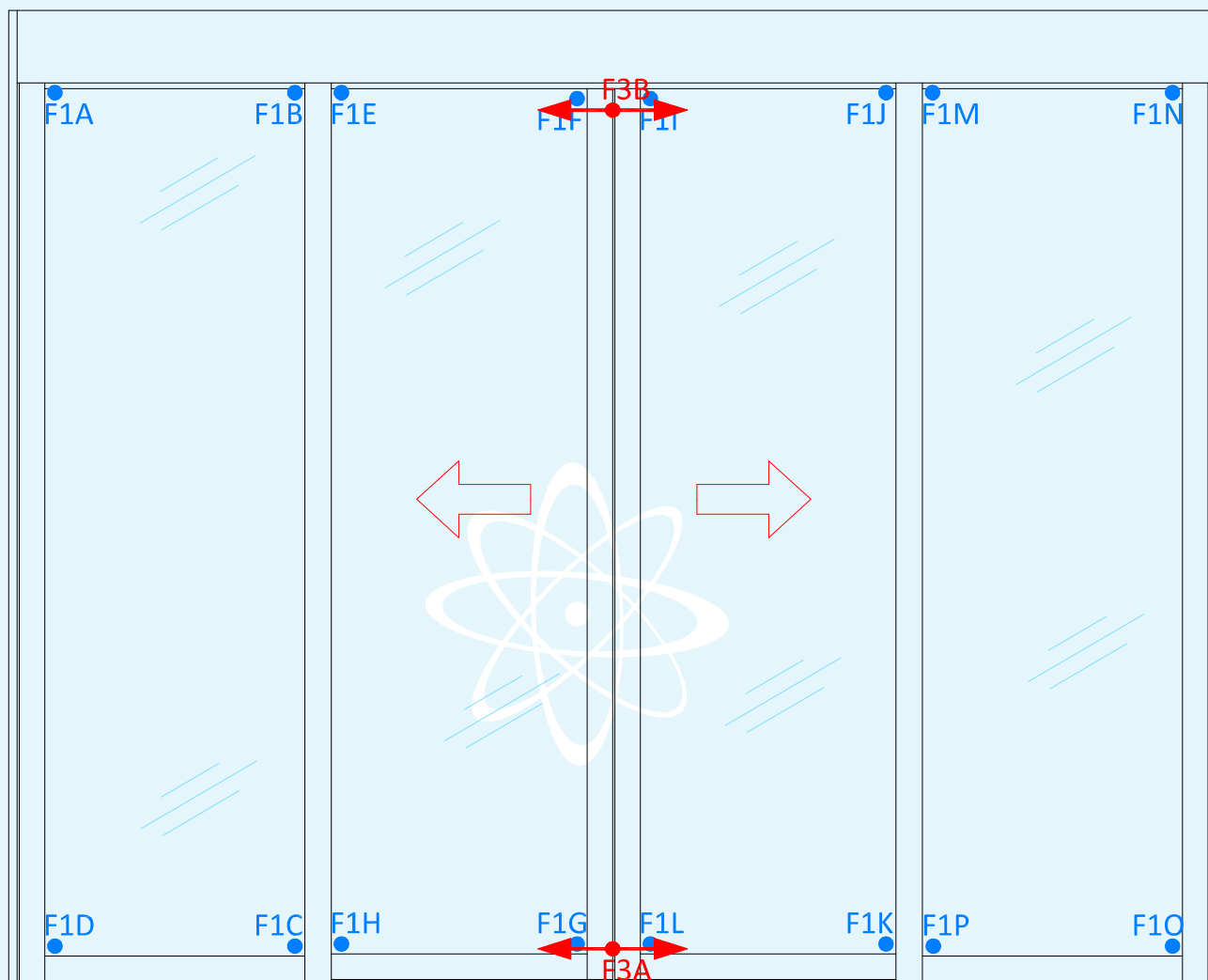
Document to be supplied	Reference supplied	Result
Description of specimen	File named "CAPITOLATO_SKR35.doc"	Compliant
Material characteristics	File named "CAPITOLATO_SKR35.doc"	Compliant
Date of manufacture	Provided	Compliant
Glazing class	Test Report No. 67091 dated 03/07/2003 issued by Stazione Sperimentale del Vetro	Compliant
Hardware class	Not provided	Compliant*
Attack side	Shown on specimen	Compliant
Dimensioned drawings with tolerances	Drawings named "Disegno campione di prova SKR35.dwg"	Compliant
Installation instructions	File named "FAAC SKR35 ISTRUZIONI DI MONTAGGIO.pdf"	Compliant

(*) the locking device is not accessible from the attack side.

Static loading in accordance with standard UNI EN 1628:2011

RC 3 product classifiable in group 2 - Test date 18/04/2015				
Loading point	Pressure pad	Applied load [kN]	Type of gap gauge	Result of check
F1A	3	6	B	Compliant
F1B				Compliant
F1C				Compliant
F1D				Compliant
F1E				Compliant
F1F				Compliant
F1G				Compliant
F1H				Compliant
F1I				Compliant
F1J				Compliant
F1K				Compliant
F1L				Compliant
F1M				Compliant
F1N				Compliant
F1O	Compliant			
F1P	Compliant			
F3A	1	6	A	Compliant
F3B				Compliant

LAYOUT OF LOADING POINTS DURING STATIC LOAD TEST



Dynamic loading in accordance with standard UNI EN 1629:2011

RC 3 - test date 18/04/2015	
Result of test	localised damage to glazing with no hazard for the user and no loss of burglar resistance

Manual burglary test (attack from outside) in accordance with standard UNI EN 1630:2011

Pre-tests - RC 3 - test date 08/07/2015			
Attack area	Resistance time [min:s]	Tools used	Description of attack operations
leaf meeting stiles	5:00	3.1, 3.2, 2.4, 2.3, 2.1	Attack on the leaf meeting stiles using the crowbar and a large screwdriver. The operator manages to insert first the screwdriver and then the crowbar between the meeting stiles and disengage the central locking point between the leaves. The operator then tries to prise open the leaves at the side but the additional lock and key prevent such operation from being successful
between sliding and fixed leaf	5:00	3.1, 3.2, 2.4, 2.3, 2.1	Attack on the fixed leaf/sliding leaf meeting stiles using the crowbar and a large screwdriver. The operator manages to insert first the screwdriver and then the crowbar between the meeting stiles and attempts to disengage the central locking point and bolt between the leaves but the additional lock and key prevent such operation from being successful
lower section of sliding leaves	5:00	3.1, 3.2, 2.4, 2.3, 2.1	Attack on leaf bottom track using the crowbar. The operator tries to lift the leaf from its housing in order to be able to move it inwards but the depth of the lower slot and the locking device on the head render the attack ineffective.

Main tests - RC 3 Test date 08/07/2015				
Attack area	Resistance time [min:s]	Total test time [min:s]	Tools used	Description of attack operations
fixed leaf side fastenings	5:00	12:50	3.1, 3.2, 2.4, 2.3, 2.1	Attack on the fixed leaf/door frame side rebate using the crowbar and a large screwdriver. The operator tries to insert the screwdriver and then the crowbar in the rebate in order to break the fastenings and move the fixed leaf towards the middle of the doorset but the anchoring system utilised prevents such operation from being successful

Classification

On the basis of the test performed, the results obtained and the provisions of standards UNI EN 1627:2011, UNI EN 1628:2011, UNI EN 1629:2011 and UNI EN 1630:2011, the test specimen, an automatic doorset with two sliding leaves and two fixed leaves called "FAAC SKR35 AUTOMATIC ENTRANCE DOOR" submitted by the company FAAC S.p.A. - Via Calari, 10 - 40069 ZOLA PREDOSA (BO) - Italy, has passed the tests specified therein.

Therefore, as regards standard UNI EN 1627:2011, the specimen can be rated as

RC 3*

The results given refer exclusively to the test specimen itself and are only valid under the same conditions in which testing was carried out.

This test report alone shall not be considered a certificate of conformity.

(*) Classification has been determined in accordance with clause 2.6 of ILAC-G8:03/2009 guidelines. Please see the section "Test method" for further details.

Test Technician:
Geom. Roberto Porta

Head of Security and Safety Laboratory:
Dott. Andrea Bruschi

Chief Executive Officer
(Dott. Arch. Sara Lorenza Giordano)

