

Contact person	Date	Reference	Page
Christian Larsson Division Materials and Production +46 10 516 57 61 christian.larsson@ri.se	2023-08-30	P119000A	1 (5)

Preconal System AB
Linjegatan 5
302 50 HALMSTAD

Test of burglary resistance according to EN 1627:2021

(3 appendices)

Summary

A burglar resistance test of Preconal System AB's Front shield 66 double door has been performed according to SS-EN 1627:2021 RC3. The test object fulfilled the requirements according to SS-EN 1627:2021 RC3 for doors with or without glazing.

1 Introduction

By commission of Preconal System AB a burglar resistance test of door sets has been performed according to SS-EN 1627:2021 RC3. The purpose of the test was to evaluate if the test object fulfilled the requirements for classification RC3.

2 Test object

Manufacturer:	Preconal System AB.
Designation:	Front shield 66 double door.
Description of the sample:	Double door made of Aluminium and glass. Door classed as a group 1 product according to SS-EN 1627:2021.
Technical documentation:	See appendix 2.
Drawings:	See appendix 1.
Test object arrival at RISE:	2023-05-25.
Selection of test object:	The test object has been selected by the client without RISE assistance.
Total width:	1800 mm.
Total height:	2180 mm.
Type of cylinder:	ASSA Scandinavian round.
Type of locks:	2 pieces ASSA 511.
Type of strikes:	Standard Preconal manufactured.

RISE Research Institutes of Sweden AB

Postal address	Office location	Phone / Fax / E-mail
Box 857 501 15 BORÅS SWEDEN	Brinellgatan 4 504 62 Borås SWEDEN	+46 10-516 50 00 +46 33-13 55 02 info@ri.se

Confidentiality level
C2 - Internal

This report may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.



Accred. No. 1002
Testing
ISO/IEC 17025



Type of additional lock:	1 piece ASSA 2239 (day lock, not required for RC 3 classification).
Hinges:	3 pieces DR Hahn series 60 / door leaf.
Security pins:	3 pieces Standard Preconal manufactured / door leaf.
Lever bolts:	2 pieces FUHR VBK344K20A.
Glass:	P5A.

3 Test Method and performance

Test method:	Burglary resistance test according to: <ul style="list-style-type: none">• SS-EN 1628:2021 “Pedestrian door sets, windows, curtain walling, grilles and shutters – Burglar Resistance – Test method for the determination of resistance under static load ”.• SS-EN 1629:2021“Pedestrian door sets, windows, curtain walling, grilles and shutters – Burglar Resistance – Test method for the determination of resistance under dynamic loading.• SS-EN 1630:2021“Pedestrian door sets, windows, curtain walling, grilles and shutters – Burglar Resistance – Test method for the determination of resistance to manual burglary attempts”.
Test date:	2023-05-25.
Test facility:	RISE Applied mechanic laboratory in Borås.
Test leader:	Christian Larsson.
Time keeper:	Christian Larsson and Dennis Sandell.
Tester:	Christian Larsson and Dennis Sandell.
Ambient temperature:	20.5° C.
Relative humidity:	52 %.
Film camera:	Yes.

4 Test results

The results reported relate only to the sample tested and are valid only in conditions in which the test was performed.

4.1 Static load in accordance with SS-EN 1628:2021

Table 1. Static load in accordance with SS-EN 1628:2021

Position	Pressure type	Test load [kN]	Gap gauge type	Result
F3 Locking point ASSA 511 upper	From inside	6	A	OK
F3 Locking point ASSA 511 lower	From inside	6	A	OK
F3 Lower hinge	From inside	6	A	OK
F3 Security pin	From inside	6	A	OK
F1 Corner of active door leaf	From inside	3	A	OK
F3 Lever bolt passive door upper	From inside	6	A	OK
F3 Lever bolt passive door lower	From inside	6	A	OK
F3 Glazing 4 x corners	Toward the glazing side	6	A	OK
F3 Infilling	From inside	6	A	OK

The requirements in SS-EN 1627 for static load, resistance class RC3, were fulfilled.

4.2 Dynamic load in accordance with SS-EN 1629:2021

Table 2. Dynamic load in accordance with SS-EN 1629:2021

Mass of the impactor:	50 kg
Drop height [mm]	750 mm

A pendulum impactor, with a mass of 50 kg, in accordance with SS EN 1629:2021 was dropped from a height of 750 mm once to each corner of both the door leaves and three times to the centre of both the door leaves. Gap gauge D could during the testing not pass through any aperture of the product when using a force of 200 N applied directly to the door. The dynamic load was tested on the attack side of the door.

The requirements in SS-EN 1627:2021 for dynamic load, resistance class RC3, were fulfilled.

4.3 Manual burglary attempts in accordance with SS-EN 1630:2021

Table 3. Manual burglary attempts in accordance with SS-EN 1630:2021

Zone of attack	Used tools	Operative time [min' s'']	Description
Lock side / lever bolt upper	Crowbar, wedge and Screwdriver.	6.04 / <20.00	Nothing forced. Passed.
Lock side / lever bolt lower	Crowbar, wedge and Screwdriver.	5.19 / <20.00	Nothing forced. Passed.
Hinge side	Hack saw and crowbar.	5.43 / <20.00	Door not forced. Passed.
Glazing	Knife and crowbar	5.32 / <20.00	Dorr not forced. Passed.
Infilling	Crowbar	6.26 / <20.00	Dorr not forced. Passed.

The requirements in SS-EN 1627:2021 for manual burglary attempts, resistance class RC3, were fulfilled.

5 Classification

The test specimens was subjected to the described tests defined in SS-EN 1627:2021 and was judged to fulfil the requirements of the resistance class given below. The classification is valid for doors with or without glazing.

EN 1627:2021 RC3

Any additional change in design / construction is only allowed upon written permission and/or testing by the testing laboratory (see SS-EN 1627:2021, Annex C).

According to EN 1627:2021 the allowed size changes without written permission are:

Width +20%, -50% and height +20%, -50%.

6 Measuring uncertainty

The measurement uncertainty of load $\leq 1.3 \%$ and measuring of deformation $\leq 1.6 \%$. Reported uncertainty corresponds to an approximate 95 % confidence interval around the measured value. The interval has been calculated in accordance with EA-4/16 (EA guidelines on the expression of uncertainty in quantitative testing), which is normally accomplished by quadratic addition of the actual standard uncertainties and multiplication of the resulting combined standard uncertainty by the coverage factor $k=2$.

RISE Research Institutes of Sweden AB Chemistry and Applied Mechanics - Transport and Product Safety

Performed by

Examined by



Christian Larsson



Anna Ehn

Appendices

1. Drawings of test object and parts list.
2. Installation manual