

## TEST REPORT No. 347962

**Place and date of issue:** Bellaria-Igea Marina - Italia, 27/12/2017

**Customer:** AKOS DIŞ TICARET LIMITED ŞİRKETİ - Fevzi Çakmak Mahallesi, Ayyıldız Caddesi No: 4 -  
42050 KARATAY - KONYA - Turkey

**Date test requested:** 01/11/2017

**Order number and date:** 74808, 06/11/2017

**Date sample received:** 08/11/2017

**Test date:** 15/12/2017

**Purpose of test:** resistance to horizontal static loading in accordance with standard NF P01-  
013:1988 of a railing

**Test site:** Istituto Giordano S.p.A. - Strada Erbosa Uno, 72 - 47043 Gatteo (FC) - Italia

**Origin of sample:** sampled and supplied by the Customer

**Identification of sample received:** No. 2017/2558

### Sample name\*

The test sample is called "ALUSMART A30 SERIE".

(\*) according to that stated by the Customer

Comp. MB  
Revis. AB

This test report consists of 6 sheets.

Sheet  
1 of 6

### **Description of sample\***

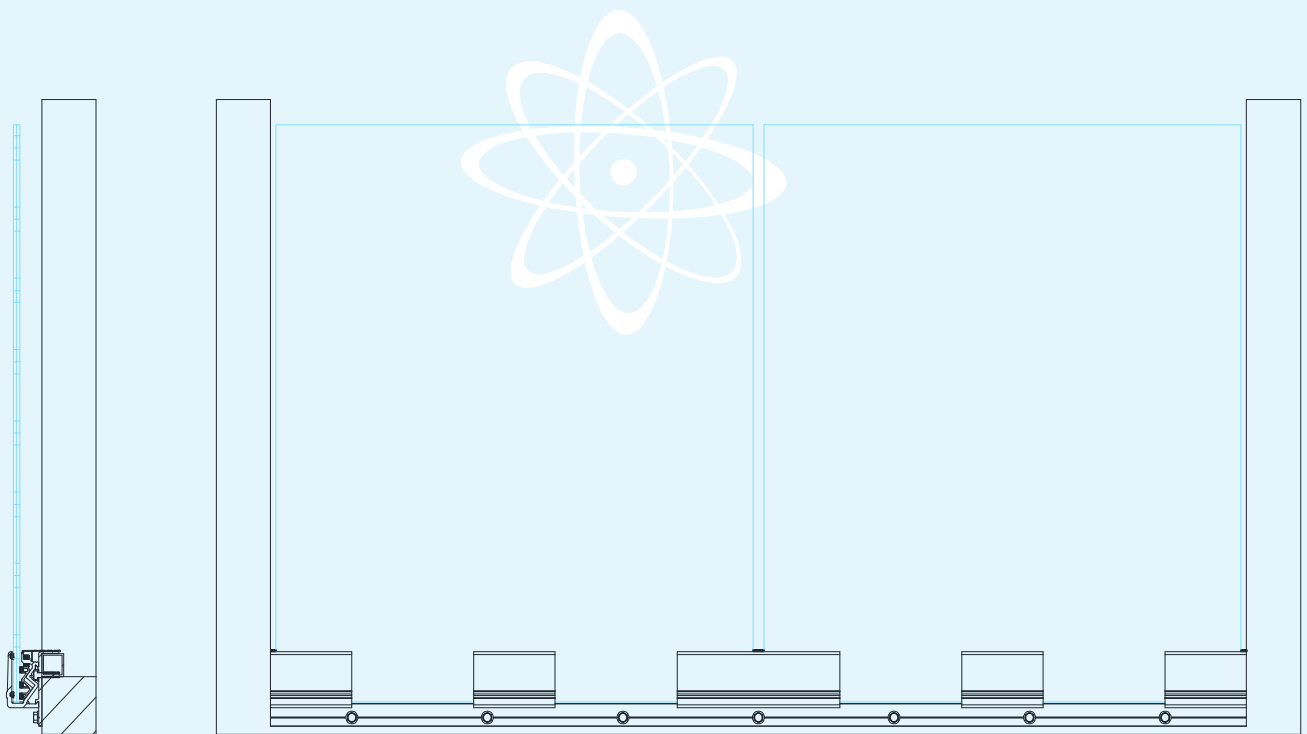
The test sample consists of a glass railing with the following characteristics:

- measured overall width = 1760 mm;
- overall height = 1000 mm.

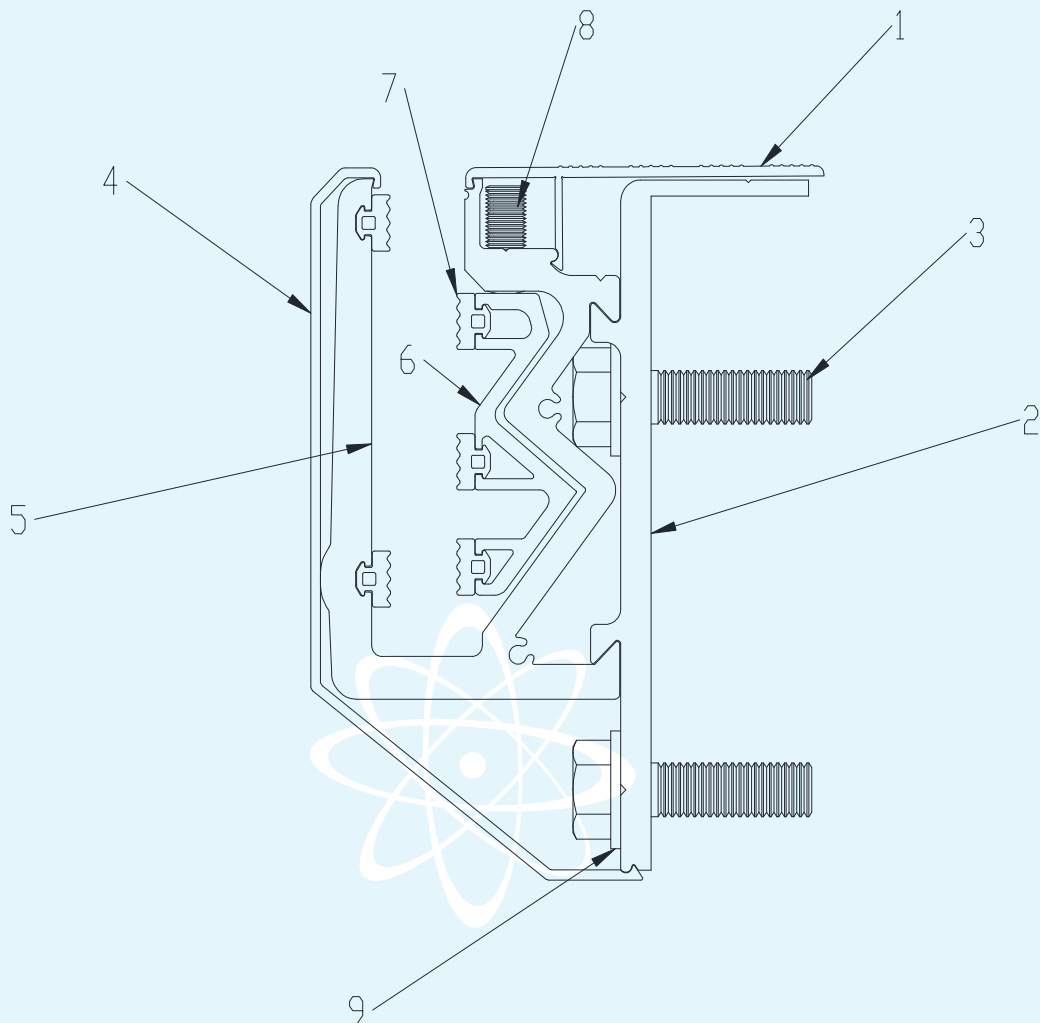
The glass sheet consists of a laminated glass 66.4 (PVB).

Further details of sample specifications can be seen in Customer-supplied schematic drawings shown hereafter.

### **SAMPLE ELEVATION AND VERTICAL SECTION**



(\*) according to that stated by the Customer

**VERTICAL SECTION****Key**

Symbol	Code	Description
1	2983	top cover profile
2	2977	base carrier profile
3	500-014	8 metric anchor 15 cm
4	2979	front cover profile
5	500-301 / 500-302	glass base set 15 cm / 30 cm
6	20-500-002	15 cm / 30 cm glass clamp
7	10-002-007	rubber for glass holder
8	10-001-017	M8 / 25 mm stay bolt
9	10-001-020	flat washer



Photograph of the sample

### **Normative references**

The test was carried out in accordance with the requirements of standard NF P01-013:1988 dated August 1988 “Essais des garde-corps. Méthodes et critères” (“Railing tests. Methods and criteria”).

### **Test apparatus**

The following equipment was used to carry out the resistance to static loading test:

- steel frame simulating actual installation of the sample on the floor (apparatus in-house identification code: EDI048);
- set of steel masses for static load test;
- 3 GEFTRAN S.p.A. electronic displacement transducer model “PZ-34-S150” for measuring deflection, (apparatus in-house identification codes: FT451/1, FT451/2 and FT451/3);

- Mitutoyo IDF Digimatic Indicator complete with calibration report issued by Istituto Giordano S.p.A.;
- AEP Transducers 100 kg load cell (apparatus in-house identification code: EDI107);
- metric ruler (apparatus in-house identification code: EDI083);
- digital thermo-hygrometer (apparatus in-house identification code: EDI111).

### **Test method**

The sample, secured frontally to the floor, was subjected to outward horizontal static loading (without up-rights).

With just underside secured to the floor, the sample was subjected to a load distributed uniformly over three points on the handrail in accordance with figure 2 “Garde-corps sans potelets, ancrés au niveau de l’appui” (*“Railings without posts anchored at the base”*) of standard NF P01-013:

- 1,3 kN preload applied gradually until reaching the present value and maintained for 3 min;
- removal of load and resetting of gauge;
- 1,3 kN horizontal static load applied gradually until reaching the present value and maintained for 60 s, following which deflection whilst loaded was measured;
- removal of load and recording of permanent deflection after 3 min;
- 2,21 kN horizontal static safety load with aluminum coefficient 1,7, applied and maintained for 5 min, following which deflection whilst loaded was measured;
- removal of safety load and recording of permanent deflection after 3 min and verification of permissible permanent deflection “a” in mm following removal of safety load using the following equation:

$$a \leq \frac{8 \cdot X}{1000}$$

where: X = height of sample from fixing point in mm.

### **Environmental conditions at the time of testing**

<b>Room temperature</b>	(20 ± 2) °C
<b>Relative humidity</b>	(43 ± 5) %

**Test observers**

The test was attended by Mr. Osman Özgül for Akos.

**Test results**

Applied load (clause 2.2.1.2 of standard NF P01-013)	Deflection whilst loaded	Permanent deflection	Maximum permanent deflection**	Result
[kN]	[mm]	[mm]	[mm]	
1,30	70	4	//	//
2,21*	115	6	8	pass

(\*) safety load with aluminum coefficient 1,7;

(\*\*) permissible permanent deflection "a" calculated in accordance with 2.2.1.2.4 "Déformation admissible des garde-corps métalliques" ("Permissible deflection of metal railings") of standard NF P01-013.



**Photograph of the sample during resistance to horizontal static loading test**

Test Technician  
(Dott. Andrea Bruschi)

*Andrea Bruschi*

Head of  
Security and Safety Laboratory  
(Dott. Andrea Bruschi)

*Andrea Bruschi*

Chief Executive Officer

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