

**TEST REPORT No. 369102**

Customer

**NIKOU FANI - TEXNH INOX**

Leof. Filis, 76 - 13341 ANO LIOSIA - ATHENS - Greece

Item\*

**glazed railing without handrail named "BALAUSTRAS 3829C"**

Activity

**resistance to horizontal linear static loading of a railing in accordance with Ministry of Infrastructures Decree dated 17/01/2018 and standard UNI 10806:1999 and resistance to dynamic loading in accordance with standards UNI 10807:1999**

Results

Activity	Requirement	Result
horizontal linear static load	1,0 kN/m	compliant
soft body dynamic load	300 mm	compliant

(\*) according to that stated by the customer.

Bellaria-Igea Marina - Italy, 31 January 2020

Chief Executive Officer

Order:  
80375Item origin:  
sampled and supplied by the customerIdentification of item received:  
2020/0197 dated 28 January 2020Activity date:  
30 January 2020Activity site:  
Istituto Giordano S.p.A. - Strada Erbosa Uno, 74 -  
47043 Gatteo (FC) - Italy

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The results relate only to the item examined, as received, and are valid only in the conditions in which the activity was carried out.

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Chief Test Technician:

Dott. Andrea Bruschi

Head of Security and Safety Laboratory:

Dott. Andrea Bruschi

Compiler: Agostino Vasini

Reviewer: Dott. Andrea Bruschi

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**Description of item\***

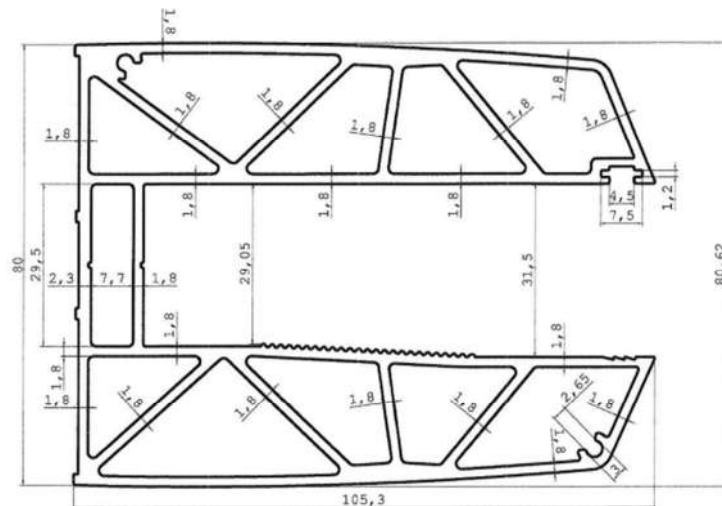
The item consists of a glass/aluminium railing without handrail with the characteristics reported in the following table.

<b>Measured overall width</b>	1000 mm
<b>Measured effective height</b>	1000 mm

The glass type is laminated glass, overall nominal thickness 17,52 mm, made of:

- 8 mm tempered glass;
- 1,52 mm PVB;
- 8 mm tempered glass.

**CUSTOMER-SUPPLIED SCHEMATIC DRAWING OF THE PROFILE**



**Item photograph**

(\*) according to that stated by the customer, apart from characteristics specifically stated to be measurements; Istituto Giordano declines all responsibility for the information and data provided by the customer that may influence the results.



LAB N° 0021 L

### Normative references

Standard	Title
DM 17/01/2018 "Norme Tecniche per le costruzioni" ("Technical standards for construction")	clause 3.1.4 "Carichi variabili" ("Variable loads")
UNI 10806:1999	Ringhiere, balaustre o parapetti prefabbricati - Determinazione della resistenza meccanica ai carichi statici distribuiti" ("Prefabricated railing systems - Determination of the mechanical strength under uniform static load")
UNI 10807:1999	"Ringhiere, balaustre o parapetti prefabbricati - Determinazione della resistenza meccanica ai carichi dinamici" ("Prefabricated railing systems - Determination of the mechanical strength under dynamic load")

### Apparatus

Description	In-house identification code
Steel frame simulating actual installation of the sample on the floor with pneumatic equipment for the simulation of the static load with 5 load actuators	EDI048
AEP Transducers 1 kN load cell model "TS"	EDI104
3 Gefran electronic displacement transducers model "PZ-34-S150", range 0-150 mm	FT451/1, FT451/2, FT451/3
Spheroconical bag, diameter 0,40 m and height 0,60 m, filled with hardened glass beads, diameter 3 mm, until reaching a total mass of 50 kg	EDI062
La Crosse Technology digital thermo-hygrometer model "WS8009"	EDI111
Würth metric ruler model "mEssfix"	EDI083
Borletti electronic gauge model "CDEP15"	EDI066
Mitutoyo Corporation digital tape model "TD-S551D1 216-452"	FT364

### Method

The test was performed using detailed internal procedure PP083 in the revision applicable at time of testing.

### Procedure

Normative reference	Activity	Test parameters
UNI 10806	Linear distributed load	Three gauges were positioned in order to measure the relative displacement of the panel top edge (two at the ends and one at the midpoint between them) and the following test sequence was performed: <ul style="list-style-type: none"> <li>– preload of 50 % of the maximum working load for 5 min</li> <li>– preload removal and gauge reset</li> <li>– maximum working load for 5 min, recording deflections</li> <li>– load removal and recording of permanent deformation after 15 min</li> <li>– ultimate load for 5 min and load removal</li> </ul>
UNI 10807	Impact	– 50 kg soft body impact

### Environmental conditions

Temperature	(19 ± 1) °C
Relative humidity	(55 ± 5) %

### Results

#### Linear distributed load

Load step	Load [kN/m]	Duration [min]	Deflection at the measuring points			Effect
			A [mm]	B [mm]	C [mm]	
preload	0,5	5	//	//	//	no damage
working load	1,0	5	89,3	91,8	91,5	no damage
load removal	0,0	//	11,8	12,8	13,7	//



Photograph of the railing subjected to working load

#### Dynamic loading

Impact type	Impact area	Drop height [mm]	Impact energy [J]	Effect
soft body	100 mm from top edge	300	150	no damage
	at infill centre	300	150	no damage



Photograph of the railing after soft body impact

### Findings

Activity	Requirement	Result
horizontal linear static load	1,0 kN/m	compliant
soft body dynamic load	300 mm	compliant

Chief Test Technician  
(Dott. Andrea Bruschi)

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