

TEST REPORT No. 408212


Customer

BAROS VISION Ltd.
Asenovgradsko Shose - 4000 PLOVDIV - Bulgaria

Item[#]

**glazed parapet named
"RAILING SYSTEM BV4500 ECO 66.2 1000x800
TOP MOUNTING"**

Activity



**resistance to horizontal linear static load according
to standard UNI 10806:1999 and resistance to dynamic
load according to standards UNI 10807:1999
and NF P01-013:1988**

Results

Test	Normative reference	Requirement	Result
horizontal linear static load	UNI 10807:1999	1,0 kN/m	compliant
dynamic load	UNI 10807:1999	300 mm	compliant
	NF P01-013:1988	1200 mm	compliant

(#) according to that stated by the customer.

Bellaria-Igea Marina - Italy, 29 August 2023

Chief Executive Officer

Order:
97348

Item origin:
sampled and supplied by the customer

Identification of item received:
2023/2057/A dated 28 July 2023

Activity date:
from 30 July 2023 to 31 July 2023

Activity site:
Istituto Giordano S.p.A. - Strada Erbosa Uno, 72 -
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: Francesca Manduchi

Reviewer: Dott. Andrea Bruschi

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Description of item[#]

The item under examination consists of laminated tempered glass railing with aluminum structure, having the characteristics shown in the following table.

Overall width	1000 mm
Overall height from the floor	820 mm
Glass type	1000 mm × 800 mm laminated glass 66.2 (tempered + PVB + tempered)
Glass nominal thickness	12,76 mm
Nominal section of aluminum profile	84 mm × 50 mm

Further details of item specifications in annex "A".



Photograph of the item

(#) according to that stated by the customer; 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
UNI 10806:1999	Ringhiere, balaustre o parapetti prefabbricati - Determinazione della resistenza meccanica ai carichi statici distribuiti (<i>Prefabricated railing systems - Determination of the mechanical strength under distributed static loads</i>)
UNI 10807:1999	Ringhiere, balaustre o parapetti prefabbricati - Determinazione della resistenza meccanica ai carichi dinamici (<i>Prefabricated railing systems - Determination of the mechanical strength under dynamic load</i>)
NF P01-013:1988	Essais des garde-corps - Méthodes et critères (<i>Railing tests - Methods and criteria</i>)

Apparatus

Description	In-house identification code
steel frame simulating actual installation of the item on the floor	EDI048
pneumatic equipment for the simulation of the static load	//
3 Gefran digital displacement transducers "PZ-34-S150", range of measurement 0-150 mm	FT451/1, FT451/2, FT451/3
AEP Transducers load cell "TS" with digital indicator "DFI", range of measurement 100-1000 N	EDI104
Borletti digital electronic gauge "CDEP15", range of measurement 0-150 mm and resolution 0,01 mm	EDI066
Mitutoyo Corporation digital meter "TD-S551D1 216-452", range of measurement 0-5,5 m	FT364
steel frame simulating actual installation of the item on the floor	EDI048
soft body consisting of 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
Würth telescopic measuring rod "mEssfix", range of measurement 0-5000 mm and resolution 0,1 mm	EDI083



LAB N° 0021 L

Method

Test was carried out using detailed internal procedure PP083 in its current revision at testing date.

The bottom side of the item was side fixed to the steel frame simulating the actual installation of the item.

Normative reference	Activity	Description/parameters
table 3.1.II of D.M. Infrastructures 17 January 2018	load determination	//
UNI 10806:1999	resistance to horizontal linear static load	<p>The three digital displacement transducers were positioned on the item in order to read the relative displacement of the upper edge of the glazing, two at the ends and one in the middle between them.</p> <p>In particular it has been carried out the following test sequence:</p> <ul style="list-style-type: none"> – pre-load equal to 50 % of the load defined by the customer; – removal of the preload and detection of the initial position of the edge of the plate; – application of the load in a progressive manner with a time ≥ 5 s, with deformations under load recording after 15 min; – load removal and registration of residual deformation after 5 min.
UNI 10807:1999	resistance to dynamic load	<p>All impacts were made by releasing the impactors so that they fall from a specified height with a pendulum movement and without initial velocity. The impactors were hung by an inextensible pendulum wire of negligible mass so that when at rest they made contact with the point of intended impact. After each impact, the impactors were prevented from hitting the item again after bouncing.</p>
NF P01-013:1988		

Environmental conditions

Temperature	$(28 \pm 2) ^\circ\text{C}$
Relative humidity	$(60 \pm 5) \%$

Results

Resistance to horizontal linear static load

Applied load [kN/m]	Deflection whilst loaded at the point of measure			Permanent deflection at the point of measure			Result
	A [mm]	B [mm]	C [mm]	A [mm]	B [mm]	C [mm]	
1,0	58,4	58,3	56,6	4,9	4,7	4,6	no damage



Photograph of the item undergoing horizontal linear static load

Resistance to dynamic load

Standard	Impact area	Drop height [mm]	Nominal energy [J]	Result
UNI 10807:1999	centre of glazing	300	150	no damage
NF P01-013:1988	centre of glazing	1200	600	fragmentation of the external glass, compliant breakage without danger to the user



Photograph of the item after impact according to standard NF P01-013:1988

Findings

Test	Normative reference	Requirement	Result [#]
horizontal linear static load	UNI 10807:1999	1,0 kN/m	compliant
dynamic load	UNI 10807:1999	300 mm	compliant
	NF P01-013:1988	1200 mm	compliant

(#) the compliance has been determined on the basis of values obtained by experimental measurements/calculation without considering the uncertainties in line with clause 4.2.1 "Decision Rules" of ILAC-G8:09/2019 "Guidelines on Decision Rules and Statements of Conformity", having satisfied the requirements on measurements and equipment defined in the reference normative.

Chief Test Technician
(Dott. Andrea Bruschi)

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

Andrea Bruschi

Andrea Bruschi

ANNEX "A"
TO TEST REPORT No. 408212

Customer
BAROS VISION Ltd.
Asenovgradsko Shose - 4000 PLOVDIV - Bulgaria

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"RAILING SYSTEM BV4500 ECO 66.2 1000x800
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item technical documentation

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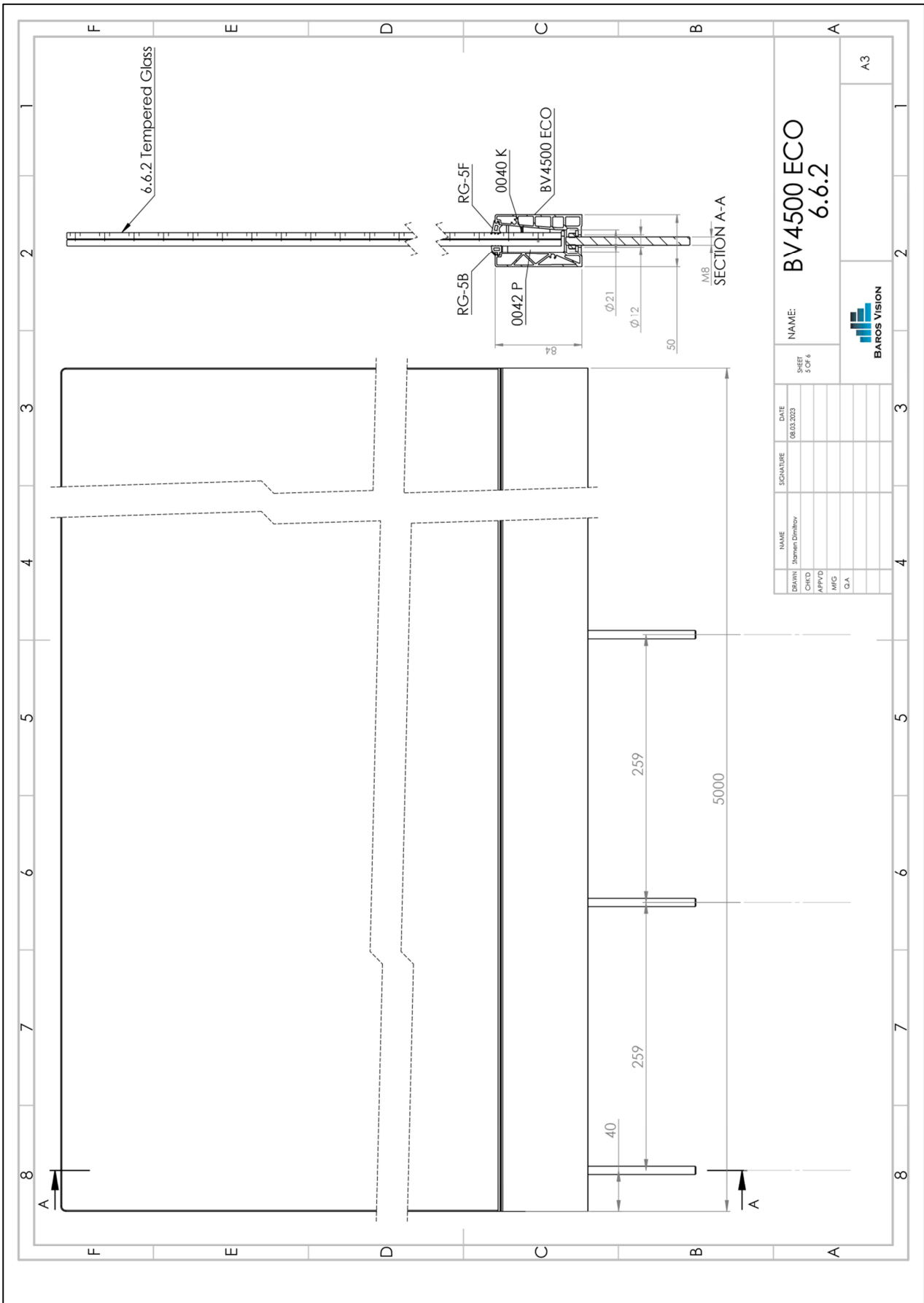
Bellaria-Igea Marina - Italy, 29 August 2023

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BV4500 ECO
6.6.2

NAME	Stamen Dimitrov
DATE	08.03.2023
SHEET	5 OF 6
DRAWN	
CHECK	
APP'D	
MFC	
D.A.	



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