bergami
cladding solution systems

VENTILATED FACADES AND CLADDING

The only system with closed-gap vertical gasket and staggered panels

04/05

BT1 SYSTEM CALCULATIONS, TABLES AND STRUCTURAL CHECKS

BERGAMI
CLADDING SOLUTION SYSTEMS

Via Mazzini 15, Cormano (MI) - IT
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Dear Customer,

The choice of façade cladding is an essential aspect that will allow you not only to make the building more aesthetically pleasing, but above all to protect it over time, to increase the value of the property, energy performance and indoor comfort and, above all, to zero the impact of routine maintenance that over time affects classic plaster-clad buildings. Offering great creative freedom, our company's systems allow designers to create any type of ventilated façade, as well as cladding even for false ceilings, transforming buildings into real architectural jewels.

Andrea Bergami

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THE BERGAMI COMPANY

Bergami is a company operating for almost 40 years in the field of ventilated façades and, more generally, of façade coverings that can be defined as "hi-tec."
Through the experience gained first as a direct operator on the end customer and, later, as a service provider for companies in the sector, **we have come to develop, patent, use and refine our substructure systems, completely different from the conventional form adopted by the market and the technical evolution concerning them.**
Our philosophy is based on the aesthetic result and practicality of use.
Offering Bergami systems today, means differentiating yourself from all others and standing out for uniqueness and fine finishes from the standard market offerings.

2 SIZING AND VERIFICATION METHOD

The following overview provides general and non-binding guidance on certificates related to the fastening system.

The information contained in the following tables is intended merely as a recommendation regarding installation commonly used by BERGAMI customers, based on BERGAMI's experience. For all countries, BERGAMI expressly recommends that clients or project owners to seek advice from a construction professional in order to verify the compliance of the project with the national and/or local construction regulations regarding of fastening systems. The technical specifications and info in the brochures-tables-technical specifications - website, are subject to constant updates. We recommended periodic verification of both updates and versions of all documentation released via the section(s) downloads of www.bergami.it and on the social networks, where info on new versions available will be released.

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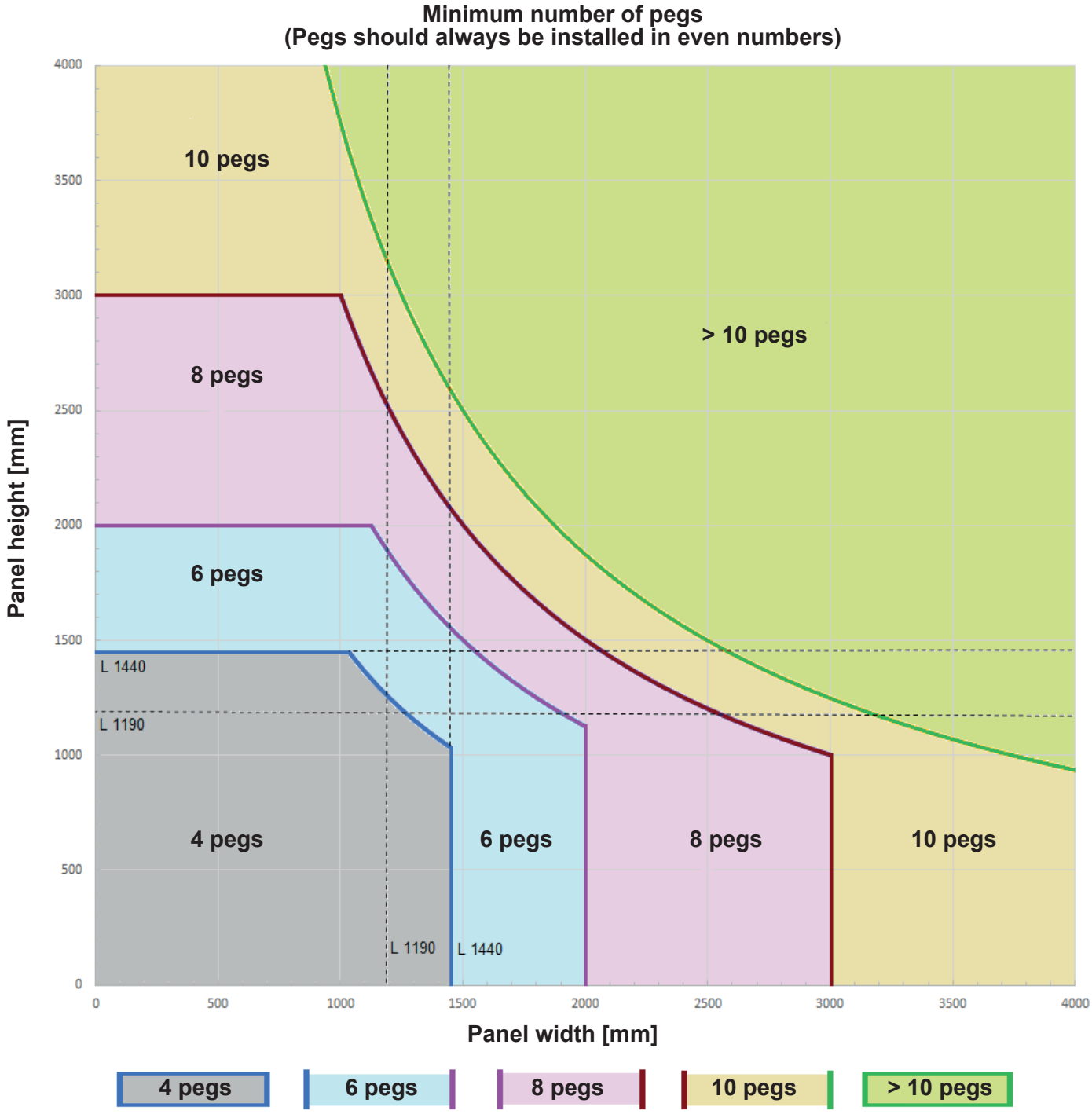
Sizing: minimum number of pegs

Please note that the number of pegs required for panels is such as to ensure the strength of the frames.



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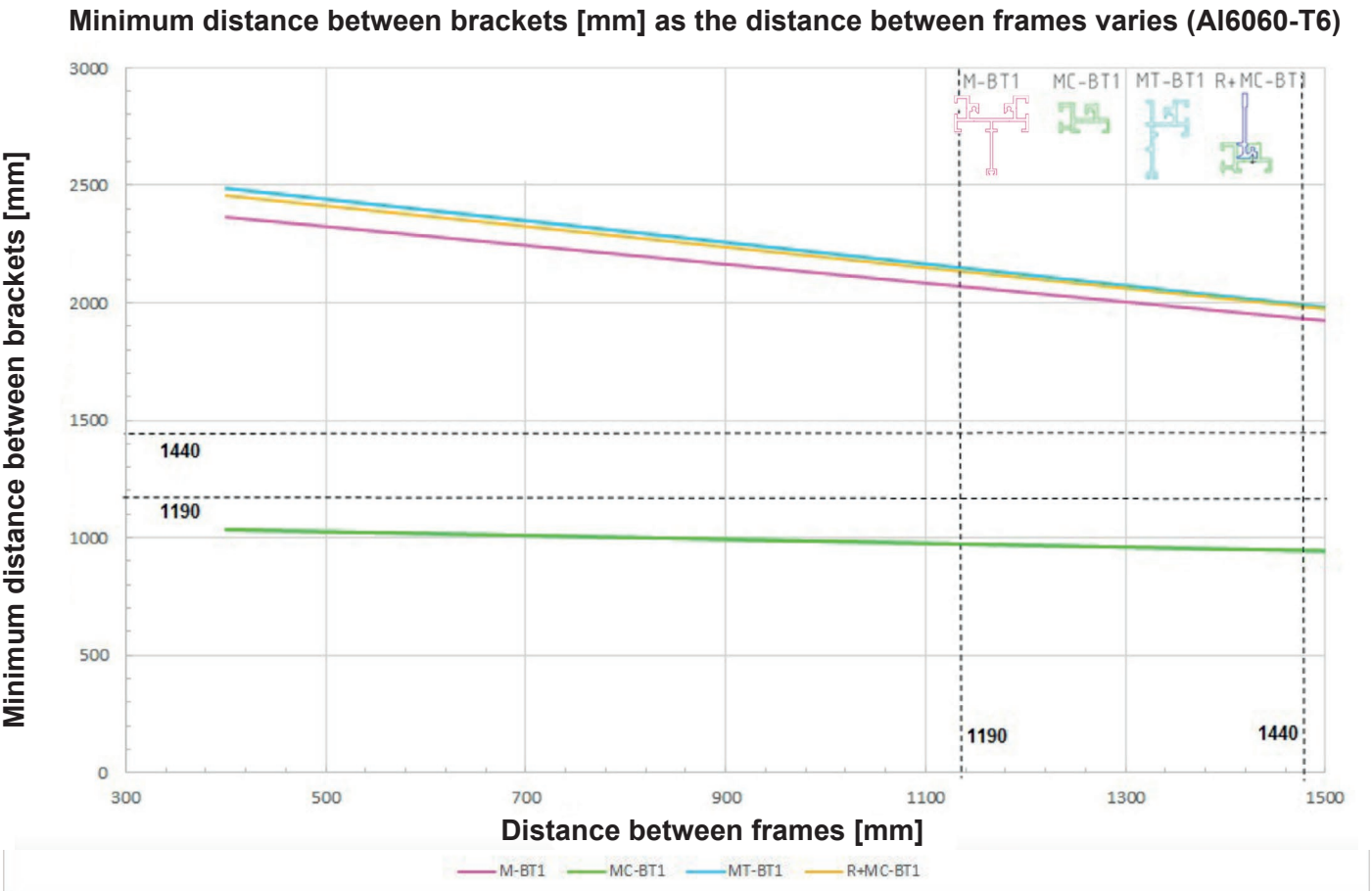
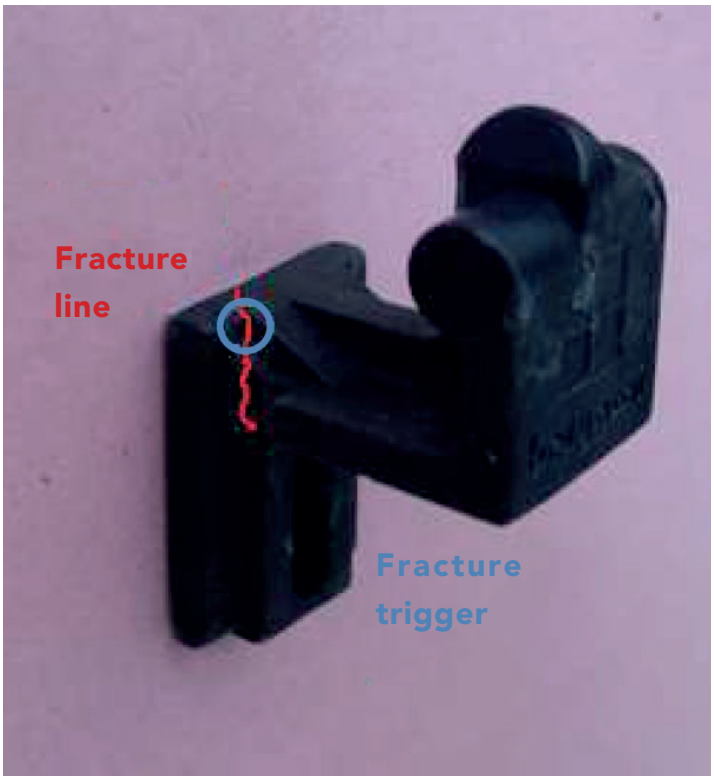
Sizing: brackets distance

Distance between system brackets. AL6060 T6 material.

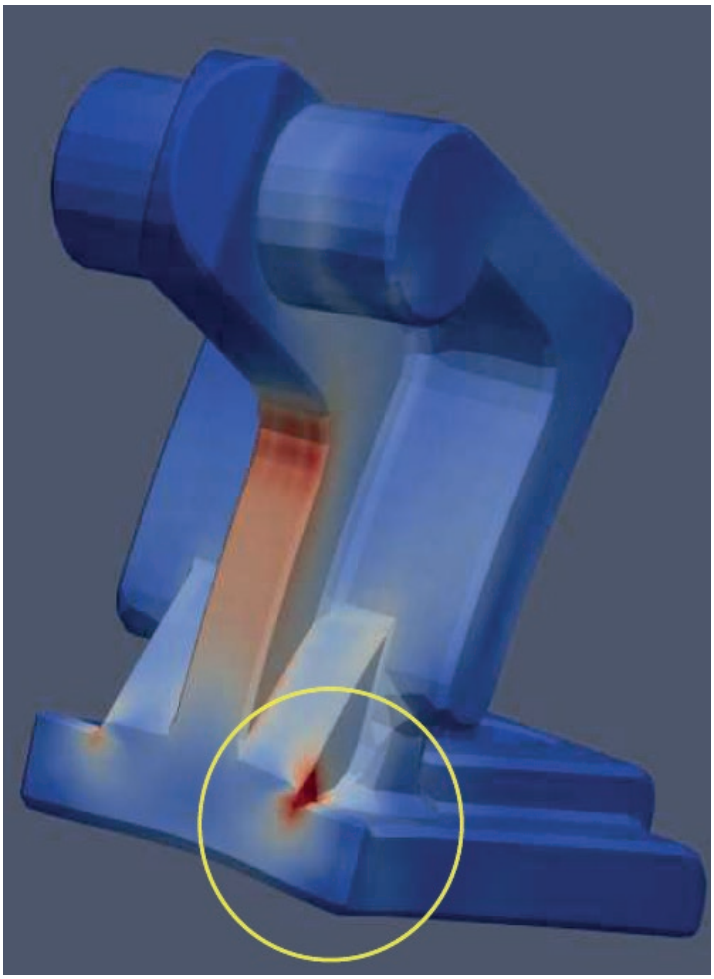


Validation



The self-extinguishing nylon peg PN-BT1 was validated by calculation (with a finite element simulation) and by a simple test practice with similar loading. It could be shown that:

- The stress peak found in the simulation corresponds to the breakpoint in the practical test. The calculation is responsive;
- The peg can withstand a tearing load of 675N and a vertical load of 75N;
- The peg material was simulated as non-linear in the DRY and Conditioned configurations, in the temperature range of -20°C to +80°C.



The salient mechanical features are:

Breaking strenght (23°C):
150MPa (Dry) - 100MPa (Conditioned)

Elastic traction module (23°C):
9400MPa (Dry) - 6300MPa (Conditioned)

Deformation at Breakage (23°C):
2,5% (Dry) - 5,2% (Conditioned)

This analysis was performed by Eng. Marco Grassi

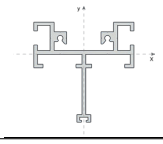
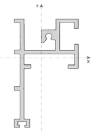
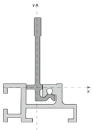
The frames were verified according to De Saint Venant's classical formulas:

1. they were considered embedded "on the ground" at the wall brackets.

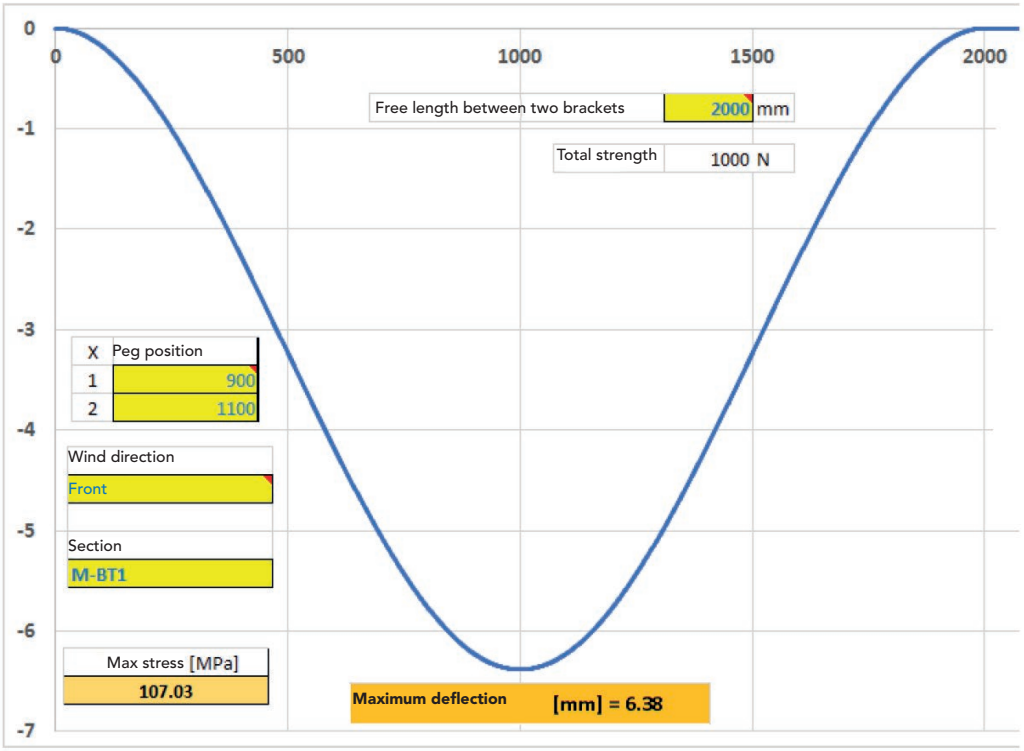
2. possible panel configurations were probed in order to identify the most severe conditions for the frames.

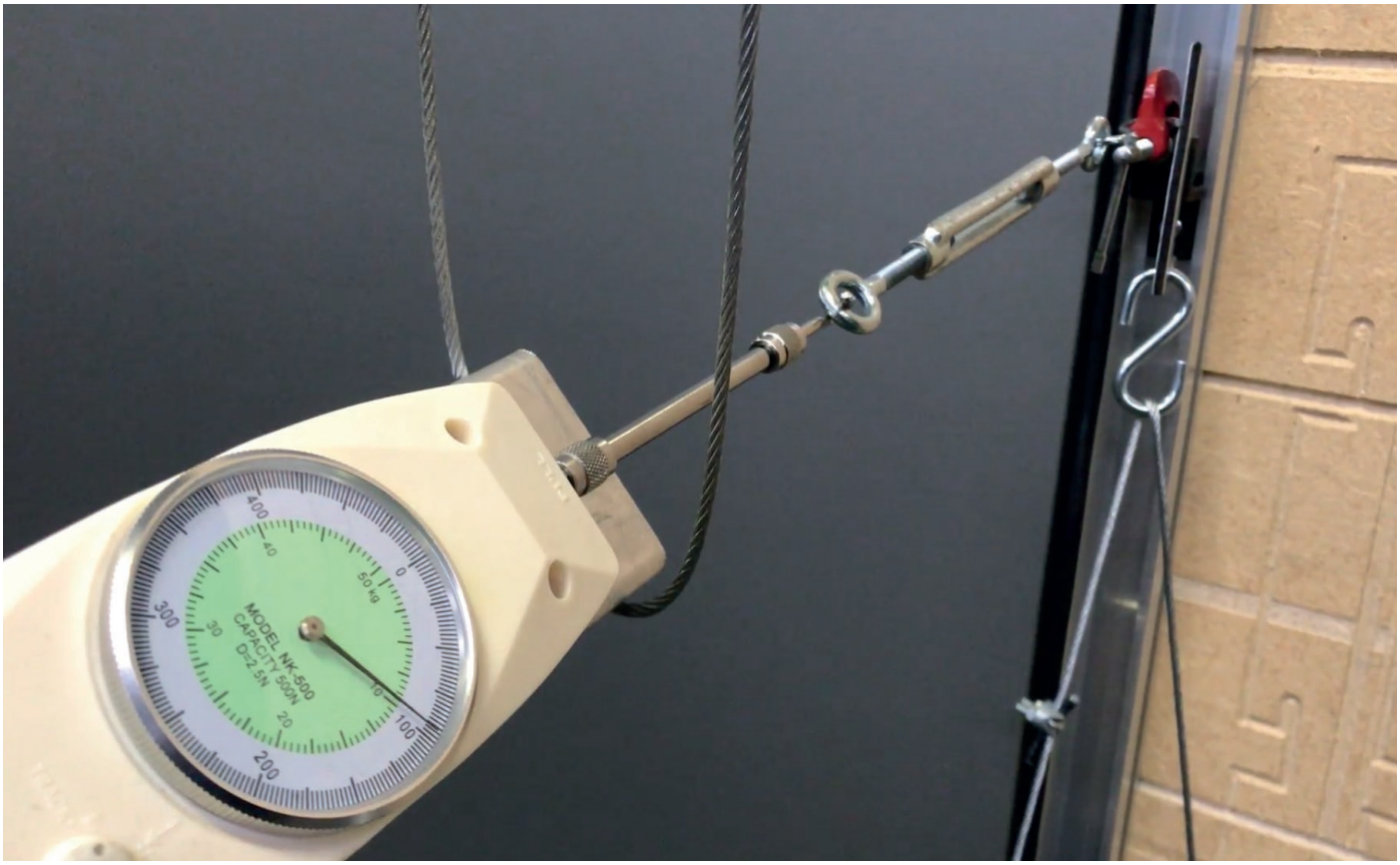
3. the load was considered to be due to wind (1200Pa), acting uniformly on the panels in the direction exiting the wall (suction).

Characteristics of frames sections

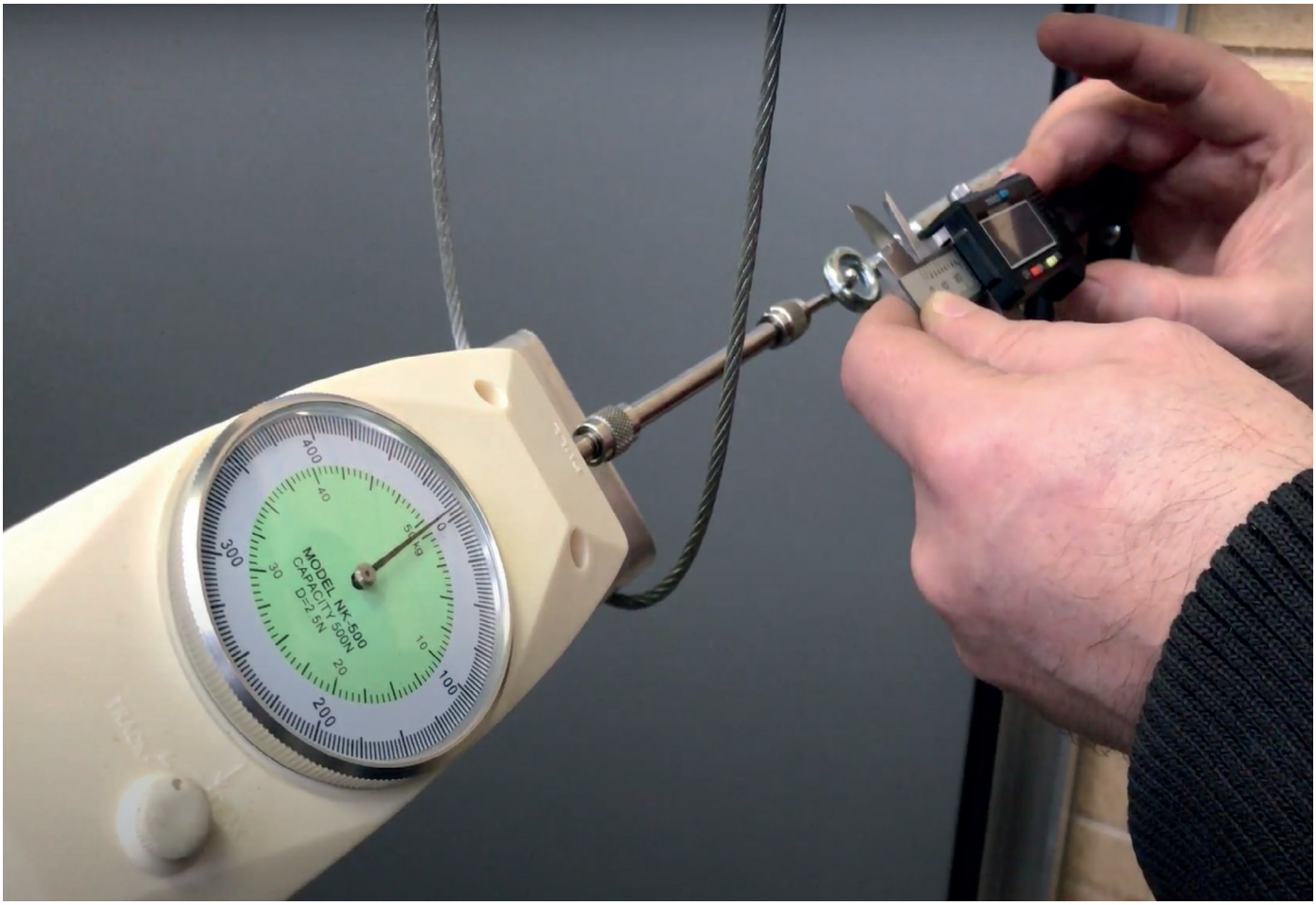
		Area [mm2]	Weight (g/mtl)	Front Ixx [mm4]	Lateral Iyy [mm4]	Maximum distances from the center of gravity X	Y	Wxx [mm3]	Wyy [mm3]
M-BT1		462,9	1249,8	91518,2	123236,3	27,0	39,2	2334,6	4564,3
MT-BT1		330,4	892,0	81875,0	33558,2	17,6	37,4	2189,2	1906,7
MC-BT1		253,9	685,5	10621,9	29559,6	19,9	11,3	940,0	1489,2
R-BT1		155,7	420,4	33988,9	711,7	8,1	25,6	1327,7	87,9
R+MC-BT1		409,6	1106,0	87265,8	30279,0	19,3	38,8	2249,1	1568,9

Example of calculation of deflection and max stresses on frames





Photos of the tensile strenght test phases of the peg element (top) and bracket (bottom).



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Stay tuned to our channels to be constantly updated on new products and technical specifications.

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NOTES

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