

Industrial Estate Valdeconsejo, Aneto St., 8-A, 50410
Cuarte de Huerva (Zaragoza)

2023/6678 REPORT

TESTS ON PREFABRICATED BOARDS

<ul style="list-style-type: none">CLIENT
<ul style="list-style-type: none">- Name: ANDARAGON, S.L.U.- Address: Las Norias Industrial Estate, 19-A, Muel (Zaragoza)
<ul style="list-style-type: none">QUOTATION
<ul style="list-style-type: none">- Name: MECHANICAL CHARACTERISTICS OF FIBRE-REINFORCED BOARDS- Quotation No.: 1418
<ul style="list-style-type: none">SPECIMENS
<ul style="list-style-type: none">- Specimen reference: 6678- Date of entry: 13/07/2023
<ul style="list-style-type: none">CARRIED OUT TESTS
<ul style="list-style-type: none">- Bending strength (ambient conditions), UNE EN 12467- Date of test: 17/07/2023
<ul style="list-style-type: none">STANDARDS USED
<ul style="list-style-type: none">- UNE EN 12467. Flat boards of fibre-reinforced cement. Product specifications and test methods.- UNE EN 826. Thermal insulation products for building applications. Determination of compression behaviour.

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1.- PRECEDENTS

The applicant provides the laboratory with 10 TABIHAUS® prefabricated panels of 800 X 300 X 95 mm for a flexural strength test.

The test panel consists of two 8 mm TABIHAUS boards and a 69 mm extruded polystyrene (XPS) core.

TABIHAUS® panel: *Composed of TABIHAUS® boards of 8 mm on both sides, composed of Epsom salt reinforced with double mesh of fibreglass, natural longitudinal fibres dispersed in orientation, spherical foam particles, retardants, and liquid waterproofing, adhered to high density XPS (XPS-EN-13164-T3- CS(10/Y)300 DS(70,90)), leaving it in its inner core, by means of the manufacturing process of ANDARAGÓN S.L.U., with bicomponent glues, and double pressing in vacuum and mechanical pressure, in a controlled process in air-conditioned rooms - temperature and humidity.-.*

Five specimens were tested in transverse direction and five in longitudinal direction.

2.- BENDING STRENGTH

2.1.- Test methodology

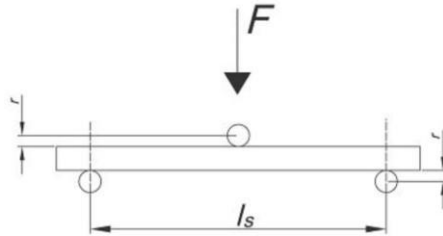
Before the test is carried out, the specimens are conditioned and kept in laboratory conditions for 7-14 days.

Rectangular specimens of suitable dimensions are prepared for the test. These are cut in both longitudinal and transverse directions.

The specimens are placed with their underside resting on two supports and the load is applied by means of a central bar.

The load is applied steadily and is carried out in such a way that breakage occurs between 10 and 30 seconds after the start of the load application.

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Charging device

The Modulus of Rupture MOR, in megapascals, is calculated by the following expression:

$$\text{MOR} = \frac{3Fl_s}{2be^2}$$

Where

- F is the breaking load, in newtons
- L_s is the support spacing, in mm
- b is the width of the specimen, mm
- e is the thickness of the specimen, in mm

The specimen value is calculated as the arithmetic mean of the values, in both directions, of the specimens tested.

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2.2.- Obtained results

Transversal direction						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
T1	700	300	95	497	1,9	10,56
T2	700	300	95	477	1,8	12,76
T3	700	300	95	416	1,6	12,03
T4	700	300	95	519	2,0	10,95
T5	700	300	95	414	1,6	9,50
Average					1,8	11,2

Longitudinal direction						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
L1	700	300	95	603	2,3	13,84
L2	700	300	95	494	1,9	19,74
L3	700	300	95	494	1,9	16,95
L4	700	300	95	507	1,9	12,87
L5	700	300	95	495	1,9	15,56
Average					2,0	15,79

Modulus of rupture MOR	1,9 MPa
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Zaragoza, 3rd June 2022


Jefe de Ensayos de Materiales
Gustavo Royo Lantarón
Lcdo. C.C. Geológicas




Vº Bº del Director del Laboratorio
Arantxa Mendizábal Aguirre
Ingeniero Industrial