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

21AH07624 REPORT

TESTS ON PREFABRICATED BOARDS

• **CLIENT**
- Name: ANDARAGON, S.L.U. - Address: Las Norias Industrial Estate, 19-A, Muel (Zaragoza)
• **QUOTATION**
- Nombre: MECHANICAL CHARACTERISTICS OF FIBRE-REINFORCED BOARDS - Nº de presupuesto: 21AH0428
• **SPECIMENS**
- Specimen reference: 2021/02143-3 - Date of entry: 27/05/2021
• **CARRIED OUT TESTS**
- Bending strength (ambient conditions), UNE EN 12467 - Fecha de ensayo: 18/06/2021
• **STANDARDS USED**
- UNE-EN 12467. Flat boards of fibre-reinforced cement. Product specifications and test methods.

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1.- PRECEDENTS

The applicant provides the laboratory with a TABIHAUS® prefabricated panel of 2,600 X 1,200 X 60 mm for a flexural strength test.

The test panel consists of two 8 mm TABIHAUS boards and a 50 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.-.*

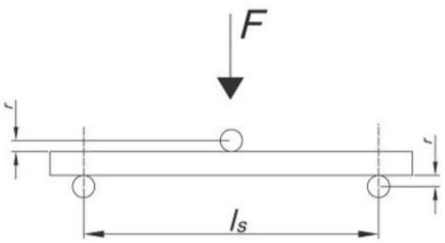
2.-TEST METHODOLOGY

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.



Charging device

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

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

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.

3.- OBTAINED RESULTS

The test was carried out with the board placed at the bottom and at the top.

Transversal direction. Board at the bottom.						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
T1	800	300	58,4	100	**1,1**	46,7
T2	800	300	58,8	101	**1,1**	47,2
T3	800	300	58,5	101	**1,2**	49,6
Average	800	300	58,6	101	**1,1**	47,8

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Longitudinal direction. Board at the bottom.						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
L1	800	300	58,7	48	**0,5**	67,3
L2	800	300	58,7	50	**0,6**	71,2
L3	800	300	58,7	50	**0,6**	62,3
Average	800	300	58,7	49	**0,6**	66,9

Modulus of rupture MOR (Board at the bottom)	**0,9 MPa**

Transversal direction. Board at the top.						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
T4	800	300	58,6	171	**2,0**	35,1
T5	800	300	58,5	171	**2,0**	34,5
T6	800	300	58,7	173	**2,0**	35,9
Average	800	300	58,6	172	**2,0**	35,2

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Longitudinal direction. Board at the top.						
Specimen	L (mm)	b (mm)	e (mm)	Load (kg)	Bending Strength (MPa)	Breakage d. (mm)
L4	800	300	58,8	99	**1,1**	52,2
L5	800	300	58,8	91	**1,0**	59,2
L6	800	300	58,7	102	**1,2**	55,1
Average	800	300	58,8	97	**1,1**	55,5

Modulus of rupture MOR (Board at the top)	**1,6 MPa**

Zaragoza, 21th June 2021

Jefe de Ensayos de Materiales

Gustavo Royo Lantarón
Lcdo. C.C. Geológicas

LABORATORIO DE ENSAYOS TECNICOS, S.A. ENSAYA

Vº Bº del Director del Laboratorio

Arantxa Mendizábal Aguirre
Ingeniero Industrial