

MD Facade

Natural materials for technical solutions

Description

MDFACADE expanded insulation cork is a special expanded cork reference of Amorim Cork Insulation, recommended for exterior applications. The product was born, responding to the challenge launched by architects Álvaro Siza and Eduardo Souto Moura, to the project of Portugal Pavilion, at Expo Hannover in 2000. The project is now located in Coimbra since 2002, without any apparent anomaly.

Advantages

- 100% natural and fully recyclable
- Excellent thermal and acoustic insulation
- Mechanical stability
- Healthier natural product
- CO₂ sink (Carbon Negative)
- Visual Cork

Product lines

- Board dimension: 1000x500 (mm)
- Thickness up to 200 (mm)
- Option: Overlapping system

Product specifications

- Density: 140 +/- 10 kg/m³
- Thermal Conductivity: 0,043 W/m.K
- Fire Reaction: Euroclass E



PHOTO: David Grandorge | PROJECT: Matthew Barnett Howland with Dido Milne and Oliver Wilton

Mechanical characterization

Test	Standard	Results
Bending behaviour; σ_b [kPa]	EN 12089: 2013	σ_b : 227 kPa Bending at maxforce: 14,54 mm
Dimensional stability:	EN 1604: 2013	Length: Δl (%) = 0.3 Width: Δb (%) = 0.3 Thickness: Δd (%) = 0.40
Tensile strength perpendicular to faces; σ_{mt} [kPa]	EN 1607: 2013	σ_{mt} = 67,81 kPa
Tensile strength perpendicular to faces; Wet conditions; σ_{mt} [MPa]	ETAG 004: 2011 EN 1607: 2013	Set 1 - σ_{mt} = 64.91 * E - 3 MPa Set 2 - σ_{mt} = 64.15 * E - 3 MPa
Deformation under specified compressive load and temperature conditions; ϵ_1, ϵ_2 [%]	EN 1605: 2013	Relative deformation ϵ_1 : 0,949 % Relative deformation ϵ_2 : 4,63 %
Compressive stress at 10% strain; σ_{10} [kPa]	EN 826: 2013	σ_{10} = 185 kPa
Shear strength; τ [kPa]	EN 12090: 2013	τ = 110 kPa
Behaviour under point load; F_p [kN]	EN 12430: 2013	F_p = 0.93 kN
Dynamic stiffness; S^*t [MN/m ³]	ISO 9052-1: 1989 ISO 7626-5: 1994	S^*t = 90 MN/m ³

Application systems

Adhesive

Mechanical fixing



Hygrothermal characterization

Test	Standard	Results
Thermal conductivity coefficient λ [W/m.°C]	EN 12667: 2001	Mean value: λ = 0,0426 W/m.°C
Declared value for thermal conductivity and thermal resistance λ_D [W/(m.°C)] RD [(m ² .°C)/W]	EN 13170: 2012 Annex A	λ_D = 0.045 [W/(m.°C)] RD = 1.55 [(m ² .°C)/W]
Short term water adsorption by partial immersion; W_p [kg/m ²]	EN 1609: 2013	W_p : 0,18 kg/m ²

Water vapour transmission properties [EN 12086: 2013]

Mean value

Water vapour transmission rate g [mg/(h.m ²)]	455.54
Water vapour permeance W [mg/(m ² .h.Pa)]	0.3
Water vapour resistance Z [(m ² .h.Pa)/mg]	3.09
Water vapour permeability δ [mg/(m.h.Pa)]	0.01
Water vapour diffusion resistance factor μ [-]	54.61
Water vapour diffusion equivalent air layer thickness S_d [m]	2.19

Hygroscopic adsorption properties

● Adsorption

Moisture content (kg/kg)

● Desorption

