DESCRIPTION

Warmotech® 550 is a recycled PU foam board with a density of 550 kg/m^3. The properties of water resistance, compressive strength and thermal conductivity create exceptional application possibilities. Warmotech ® is biologically safe, resistant to any type of microorganisms, it does not rot, does not attract mold and does not contain toxic substances (formaldehyde). It is composed of milled PU-residues (can include other materials e.g. craft paper or aluminium foil) and bonding agents. The residue left after cutting/ processing the board can be milled and reused once more.

SCOPE OF APPLICATION

Warmotech® panels are designed for thermal insulation in buildings and construction applications, including floors, walls and roofs. Warmotech® panels are widely used in the construction sector for building components where the problem of thermal bridging may occur, or as a substitute for other insulation materials that are not strong enough to withstand heavy loads. Products made of Warmotech panels are often used for the installation of windows and doors in the insulation layer.
The panels can be painted, laminated, combined with other materials to create new multi-layer products (Warmotech® board is ideal as a core substrate to different other materials).

PRODUCT COLOR AND STORAGE

The color of Warmotech® panels depend on the origins of the recycled polyurethane (yellow, beige or light green). However, it has no effect on the flammability, mechanical strength, thermal conductivity and other declared characteristics. With prolonged exposure to direct sunlight, the profiles acquire a yellowish tint. It is recommended to protect the profiles from long-term, direct sunlight. Changes in temperature and atmospheric humidity have a significant impact on the panels. Panels with standard dimensions are packed on wooden pallets and additionally wrapped with plastic foil, to protect it from moisture changes. Our company cannot guarantee the complete flatness of the panels, which may occur due to atmospheric fluctuations and temperature differences.

THERMAL RESISTANCE, R_D[(m^2·K)/W]

10 mm thickness	0,113 (m^2·K)/W
15 mm thickness	0,170 (m^2·K)/W
20 mm thickness	0,227 (m^2·K)/W
30 mm thickness	0,340 (m^2·K)/W
40 mm thickness	0,454 (m^2·K)/W
50 mm thickness	0,568 (m^2·K)/W
60 mm thickness	0,681 (m^2·K)/W
70 mm thickness	0.795 (m^2·K)/W

Please take note that these are measured values without correction factors.

λ_{10} = 0,088 W/ (m·K)

R_{si} = 0,13 (m^2·K)/W

R_{se} = 0,04 (m^2·K)/W

HEAT TRANSITION COEFFICIENT, U_D[W/(m2·K)]

10 mm thickness	3,53 W/m^{2}K
15 mm thickness	2,94 W/m^{2}K
20 mm thickness	2,52 W/m^{2}K
30 mm thickness	1,96 W/m^{2}K
40 mm thickness	1,60 W/m^{2}K
50 mm thickness	1,36 W/m^{2}K
60 mm thickness	1,18 W/m^{2}K
70 mm thickness	1,04 W/m^{2}K

Please take note that these are measured values without correction factors.

λ_{10} = 0,088 W/ (m·K)

R_{si} = 0,13 (m^2·K)/W

R_{se} = 0,04 (m^2·K)/W

DIMENSIONS

Standard sizes:	Standard thicknesses:
1150 x 2750 mm	**from 10 mm to 70 mm**
1220 x 3020 mm	
1220 x 3600 mm	

QUALITY CONTROL

Warmotech® panels are compliant with the relevant EU regulations.

Notified body – Statybos produkcijos sertifikavimo centras (SPSC) issued European Technical Assessment ETA 22/0454 on the basis of EAD no. 040419-00-1201. SPSC performed third party tasks under system 3.

Silcert, s.r.o. verified Environmental Product Declaration (EPD) no. RTS_139_21.

FPC (factory production control) in accordance with EAD no. 040419-00-1201 (European Assessment Document).

PROCESSING

Warmotech® boards can be easily processed with standard woodworking tools and machines. Conventional carbide tools are recommended. For screw connections, we recommend pre-drilling and leaving sufficient clearance at the edges. It should be especially noted that this material is more fragile than wood or wood-based materials. We recommend drilling holes in the board before installing the screws. Countersunk head screws can cause cracks in the surface of the board. The screw pull-out force of the screws is greater perpendicular to the panel surface. It is not recommended to screw into boards thinner than 20 mm (trans-verse to the pressing direction) or additional field tests must be performed. When processing the boards (sawing, grinding, milling or drilling) put on appropriate personel protective equipment which should be chosen according to the CEN standards. Avoid breathing dust.

ADHESION TO OTHER MATERIALS

Almost all types of adhesives are suitable for bonding Warmotech® panels. The biggest influence on the choice of adhesive is the type of material to be bonded (PVC, XPS, HPL, metal, wood, etc.). The most suitable adhesives are 1- or 2-component polyurethane adhesive systems (PU). Due to the high temperature resistance of the material, hot melt adhesives can also be used.

PRODUCT DATA SHEET

Warmotech® 550

Thermal insulation board made of pressed rigid polyurethane foam

Essential characteristic		Performance and characteristics	Unit	Test method
Reaction to fire		D-s3, d0		EN 13501
Bending strength		≥ 4,7	MPa	EN 12089
Thermal conductivity, λ_{10}		≤ 0,088	W/ (m·K)	EN 12667
Compressive strength	10 – 60 mm range	≥ 7,1	MPa	EN 826
	61 – 70 mm range	≥ 6,8	MPa	
Water absorption (by short term, partial immersion)		≤ 0,4	kg/m^2	EN ISO 29767
Dimensional stability under specified temperature and humidity (DS 70,90)		1,0	%	EN 1604
Dimensional stability under specified temperature and humidity (DS -20,-)		1,0	%	EN 1604
Density		550 ± 50	kg/m^3	EN 1602
Thickness tolerance Thickness tolerance	not sanded sanded	0.5 0.2	mm mm	EN 823
Length tolerance		5.0	mm	EN 822
Width tolerance		5.0	mm	EN 822
Squareness tolerance		1.0	mm/m	EN 824
Flatness tolerance		4.0	mm	EN 825
Hygroscopic sorption properties [1)]		≤ 3,0	%	EN ISO 12571
Water vapour diffusion [1)] resistance coefficient	10 – 40 mm range	60 – 100	μ	EN 12086
	41 – 70 mm range	25-60	μ	
Swelling in thickness, 24h [1)]		≤ 1,0	%	EN 317
Moisture content [1)]		2 – 4	%	EN 322
Resistance to axial withdrawal of screw		≥ 650	N	internal
Water absorption after 24 h in water		≤ 5,0	%	internal
Temperature resistance		-50 °C to + 100 °C		
Dimensional change after 24 h in water		≤ 5,0	%	internal

1) Laboratory values, not part of FPC (factory production control)