Orstech 90
(TECH Slab MT 4.1)
Slab

Specification code: MW – EN 14303 – T4 – ST(+)640 – WS1 – CL10

TECHNICAL SPECIFICATION

Mineral wool slabs Orstech 90 are bonded plane form pieces of rectangular cross-sections, the thickness of which is notably smaller than the other dimensions. The production is based on the defibering of molten raw materials consisting of minerals and different amounts of artificial resins as binders, mineral oils for dust suppression and hydrophobic means dependent on the application.

Behaviour with stainless austenitic steels – AS quality for this application according to AGI Q 132, EN 13468 and ASTM C 795. Fibres are hydrophobic according to EN 1609.

APPLICATION

Slabs Orstech 90 are suitable for appliances and vessels (both ends and cylindrical parts), residential heating systems and ducting with thermal loading. In the construction they have to be protected against moisture and possible mechanical damage by a proper manner. For outdoor application metal steel jacketing is required. Slabs can be manufactured without a facing, with aluminium foil facing (Orstech 90 H) or with glass tissue facing (Orstech 90 NT). When exposure to high temperatures and long-term dynamic loads (vibrations), wired mats Orstech DP are recommended instead of slabs.

Orstech 90 has a maximum service temperature of 640 °C according to EN 14706. If the slab is with a facing then the surface temperature must not exceed 100 °C on the facing; proper thickness of insulation must be designed to fulfil that. Binders and greasing agents in mineral wool products dissolve and evaporate in areas with temperatures > 150 °C. In the outer, colder areas, no dissolution and evaporation take place.

PACKAGING, TRANSPORT, WAREHOUSING

Slabs Orstech 90 are packed into PE foil. They must be transported in covered vehicles under such conditions to avoid moistening or other degradation. They must be stored in covered places, horizontally, piled on top of each other.

BENEFITS

- very good thermal insulation performance (low thermal conductivity)
- fire resistance – non-combustible material
- high temperature resistance (possibility of application up to a maximum surface temperature of 640 °C)
- very good sound attenuation (high absorption coefficient)
- environmental friendly and hygienic
- hydrophoby – Isover insulation materials are made water repellent
- long life span (material is not aging)
- resistant to wood-destroying pests, rodents, and insect
- easy to handle, easy to cut with a sharp knife
- AS quality – suitable for use over stainless steel

RELATED DOCUMENTS

- Certificate of Constancy of Performance 1390-CPR-0313/11/P
- Declaration of Performance CZ0002-015 (www.isover.cz/DOP)

DIMENSIONS AND PACKAGING

Product	Thickness (mm)	Dimensions (mm)	Per package (m²)
Orstech 90	40	1000 x 500	6.0
Orstech 90	50	1000 x 500	4.0
Orstech 90	60	1000 x 500	4.0
Orstech 90	80	1000 x 500	3.0
Orstech 90	100	1000 x 500	2.5

Additional marking of the facing: NT – glass tissue (non-woven glass fibre fabric facing), H – aluminium foil facing reinforced with a glass fibre grid. Thickness tolerance according to EN 823: -3 mm, +5 mm. Other thicknesses and dimensions then stated can be produced at request when fulfilling minimum volume.

TECHNICAL PARAMETERS

Parameter			Unit	Value						Standard					
THERMAL INSULATING PROPERTIES															
Declared value of the thermal conductivity coefficient			°C	10	40	50	100	150	200	250	300	400	500	600	650
λ_D according to EN ISO 13787			$W.m^{-1}.K^{-1}$	0.035	0.039	0.041	0.047	0.055	0.065	0.076	0.089	0.118	0.155	0.201	0.225
Measured value of the thermal conductivity coefficient according to EN 12667			$W.m^{-1}.K^{-1}$	0.034	0.038	0.039	0.045	0.053	0.062	0.072	0.082	0.110	0.142	0.182	0.205
Maximum service temperature / on the facing			°C	640 / max. 100						EN 14706					
Specific heat capacity c_p			$J.kg^{-1}.K^{-1}$	800						-					
PHYSICAL PROPERTIES															
Density			$kg.m^{-3}$	90						EN 1602, EN 13470					
Short term water absorption W_p			$kg.m^{-2}$	<< 1						EN 1609					
Flow resistance Ξ			$kPa.s.m^{-2}$	54						EN 29053					
FIRE SAFETY PROPERTIES															
Orstech 90, Orstech 90NT:Reaction to fire			-	A1						EN 13501-1					
Orstech 90H: Reaction to fire			-	A2-s1, d0						EN 13501-1					
Melting temperature t_t			°C	≥ 1000						DIN 4102 part 17					
ACOUSTIC PROPERTIES															
The practical sound absorption coefficient α_p according to EN ISO 354 and EN ISO 11654	Frequency		Hz	125		250		500		1000		2000		4000	
	Thickness	40	mm	0.10		0.55		0.95		1.00		0.95		0.95	
		60	mm	0.25		0.90		1.00		1.00		1.00		1.00	
		80	mm	0.35		1.00		1.00		1.00		1.00		1.00	
		100	mm	0.55		1.00		1.00		1.00		1.00		1.00	
Definition of single number value according to EN ISO 11654	Single number value		-	α_w				$\alpha_{stř}$				NCR			
	Thickness	40	mm	0.85				0.87				0.85			
		60	mm	1.00				0.97				0.95			
		80	mm	1.00				1.01				1.00			
		100	mm	1.00				1.02				1.00			

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