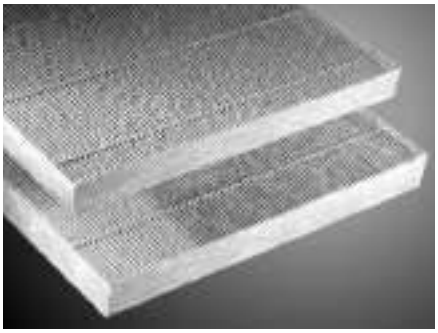
Submittal Sheet

High Temperature Industrial Board Insulations

1240, 1260, 1280, 1210, 1212



☐ **Type 1240** ☐ **Type 1210**
☐ **Type 1260** ☐ **Type 1212**
☐ **Type 1280**

Description

Owens Corning High Temperature Industrial Board Insulations are made of inorganic fibers derived from basalt, a volcanic rock, in semi-rigid to rigid board form, with a thermosetting resin binder. Advanced manufacturing technology ensures consistent product quality for excellent performance in high temperature thermal control and fire resistance applications.

Uses

Owens Corning High Temperature Industrial Board Insulations provide excellent thermal insulation performance for boilers, precipitators, ducts and mechanical equipment and systems operating at continuous use surface temperatures from sub-ambient to 1200°F (649°C). These insulation boards are easily fabricated, cutting cleanly and easily with a knife. Their very low in-service shrinkage helps to prevent gaps from forming at joints, preventing costly thermal leaks.

Features/Benefits

Excellent Thermal Performance

Good thermal conductivity values help maximize control of heat loss, contributing to reduced operating costs and greater energy savings. High dimensional stability and low shrinkage reduces the potential for gaps forming at joints.

Good Compressive Strength

These semi-rigid to rigid insulation boards maintain their structural integrity under severe operating conditions. Thickness stays uniform; there is less jacket damage.

Lightweight, Low Dust

Easy to handle and fabricate, these insulations are readily cut with a knife. No sawing is required. Their clean handling properties help reduce irritation and minimize job clean-up time and expense. They may be installed directly to heated surfaces; system shut-down and staged heat-up are not necessary.

Excellent Fire-Related Performance

These high temperature insulation products have flame spread ratings of 5 and smoke developed ratings of 0 when tested in accordance with UL 723, ASTM E 84 or CAN/ULC-S102-M. They are rated noncombustible when tested in accordance with ASTM E 136.

Good Physical and Chemical Properties

There's no loss of thermal integrity from binder burn-out. Low water vapor sorption reduces the likelihood that these insulations will mold or mildew.

Availability

Owens Corning High Temperature Industrial Board Insulations are available in five nominal densities in accordance with ASTM C 612 procedures, and in a range of standard thicknesses, as follows:

Type 1240	3 lb/ft^3	(48 kg/m^3)
Type 1260	4.5 lb/ft^3	(72 kg/m^3)
Type 1280	6 lb/ft^3	(96 kg/m^3)
Type 1210	7.5 lb/ft^3	(120 kg/m^3)
Type 1212	9 lb/ft^3	(144 kg/m^3)
STANDARD SIZE	24" (0.6m) x 48" (1.2m)	
STANDARD THICKNESSES	1" (25mm) to 5" (127mm) in 1/2" (13mm) increments	

Owens Corning High Temperature Industrial Board Insulations are available with FSP reinforced foil facings on a made-to-order basis. Custom sizes are also available on a made-to-order basis.

Specification Compliance

- ASTM C 612, Mineral Fiber Block and Board Thermal Insulation, Types IA, IB, II, III, IVA – all products. Types 1260, 1280, 1210, and 1212 also meet type IVB.
- U. S. Coast Guard Approval No. 164.109/7/0 (Noncombustible Materials)
- CAN/CGSB-51.10 – Type 2, Class 4 – Types 1240, 1260, 1280; Type 1, Class 4 – Types 1210, 1212

For application to austenitic stainless steel, please contact your Owens Corning Representative for lot testing requirements.

Physical Property Data

Property	Test Method	Value				
Maximum service temperature	ASTM C 411	Continuous use to 1200°F (649°C)				
In-service shrinkage	ASTM C 356	0% at 1050°F (566°C) <1% at 1200°F (649°C)				
Water vapor sorption	ASTM C 1104	<1.0% by weight at 120°F (49°C), 95% R.H.				
Shot content	ASTM C 1335	<20%				
Surface burning characteristics	UL 723,* ASTM E 84* or CAN/ULC-S102-M*	Flame spread 5* Smoke developed 0				
Noncombustibility	CAN4-S114-M	Noncombustible				
Compressive strength (minimum) at 10% deformation	ASTM C 165	Type 1240 25 lb/ft^2 (1.2 kPa)	Type 1260 75 lb/ft^2 (3.6 kPa)	Type 1280 120 lb/ft^2 (5.8 kPa)	Type 1210 250 lb/ft^2 (12 kPa)	Type 1212 250 lb/ft^2 (12 kPa)

* The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E 84 or CAN/ULC-S102-M. These standards should be used to measure and describe the properties of materials, products or assemblies in response to heat and flame under controlled laboratory conditions and should not be used to describe or appraise the fire hazard or fire risk of materials, products or assemblies under actual fire conditions. However, results of this test may be used as elements of a fire risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use. Values are reported to the nearest 5 rating.

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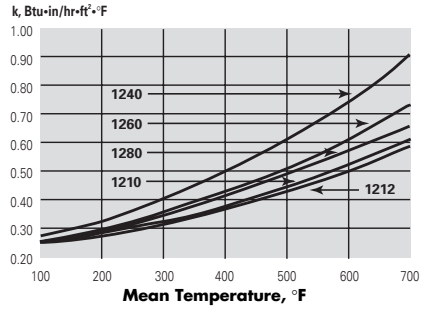
High Temperature Industrial Board Insulations

Thermal Conductivity



Apparent thermal conductivity curve determined in accordance with ASTM Practice C 1045 with data obtained by ASTM Test Method C 177. Values are nominal, subject to normal testing and manufacturing tolerances.

Mean Temp.˚F	k, Btu•in/hr•ft²•°F 1240	1260	1280	1210	1212	Mean Temp.˚C	λ, W/m•˚C 1240	1260	1280	1210	1212
75	0.24	0.23	0.23	0.23	0.24	25	0.035	0.034	0.033	0.034	0.034
100	0.26	0.25	0.24	0.25	0.25	50	0.040	0.038	0.037	0.037	0.037
200	0.33	0.31	0.30	0.30	0.30	100	0.050	0.046	0.044	0.044	0.043
300	0.42	0.38	0.36	0.35	0.34	150	0.060	0.055	0.052	0.050	0.049
400	0.51	0.45	0.42	0.40	0.39	200	0.073	0.064	0.060	0.057	0.056
500	0.62	0.53	0.49	0.46	0.44	250	0.086	0.075	0.068	0.065	0.062
600	0.75	0.62	0.56	0.52	0.49	300	0.102	0.086	0.078	0.073	0.069
700	0.90	0.73	0.64	0.59	0.55	350	0.121	0.099	0.088	0.081	0.076

Thermal Performance, ASTM C 680

Industrial Board Type	Thickness, in.	(mm)	Operating Temperature, °F (°C) 450 (232) HL	ST	600 (316) HL	ST	750 (399) HL	ST	900 (482) HL	ST
1260	2	(51)	62	109						
1280	2	(51)	59	108						
1260	3	(76)			69	111				
1280	3	(76)			65	110				
1260	4	(102)					78	114		
1280	4	(102)					72	112		
1260	5	(127)							88	118
1280	5	(127)							79	115

The above table provides approximate heat loss values (HL), Btu/hr•ft², and Surface Temperature (ST), °F, for flat surfaces. Values are based on horizontal heat flow, vertical flat surface, 80°F ambient temperature, 8 mph wind speed, weathered aluminum jacket. To convert heat loss values to W/m², multiply values by 3.15. To convert surface temperatures, use the formula: °C = (°F-32)/1.8.

Acoustical Performance, ASTM C 423

Type	Thickness, in.	(mm)	Sound Absorption Coefficients, Hz 125	250	500	1000	2000	4000	NRC
1240	1.5	(38)	.13	.48	1.02	1.08	1.02	1.01	.90
	2.0	(51)	.20	.61	1.07	1.06	1.04	1.07	.95
	4.0	(102)	.88	1.14	1.17	1.08	1.06	1.10	1.10
	6.0	(152)	1.32	1.14	1.11	1.09	1.06	1.07	1.10
1260	1.5	(38)	.18	.62	1.08	1.08	1.03	1.07	.95
	2.0	(51)	.25	.85	1.15	1.10	1.04	1.06	1.05
	3.0	(76)	.80	1.07	1.11	.99	.98	.96	1.05
	4.0	(102)	.99	1.01	1.10	1.03	1.03	1.05	1.05
1280	1.5	(38)	.13	.64	1.08	1.08	1.04	1.07	.95
	2.0	(76)	.32	.90	1.11	1.07	1.01	1.05	1.00
	4.0	(102)	1.11	.91	1.07	1.03	1.06	1.07	1.00

Values given are for design approximations only: production and test variabilities will alter results. Specific designs should be evaluated in end-use configurations. All tests were conducted in accordance with ASTM C 423, Mounting A (material placed against a solid backing).

Application Recommendations

Owens Corning High Temperature Industrial Board Insulations can be installed directly on heated flat and curved surfaces by attaching with welded pins or studs. Unfaced insulations may be finished with sheet metal or metal mesh and insulating cement, then canvassed and painted.

Pins with speed washers or studs and nuts should be installed on 16" (400mm) spacing (max.) and not more than 4" (100mm) from the edge of the insulation. The insulation is normally impaled over the pins or studs and the enclosing sheet metal or metal mesh is secured to the same fasteners. Joints of the sheet metal finish are offset from joints of the insulation.

With faced insulation boards, cover pins and clips with vapor-sealing pressure-sensitive patches matching the FRK facing.

For temperatures over 400°F (204°C), good insulation practice suggests double layer application, regardless of insulation type. Single layer installation of any type of insulation material requires good workmanship to minimize heat loss and hot spots at insulation joints.

These insulations may be installed in either single or multiple layers at all temperatures up to 1200°F (649°C). In multiple layer applications, use faced insulations on outer layer only.

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Pub. No. 5-IN-20929-D Printed in USA, June 2001