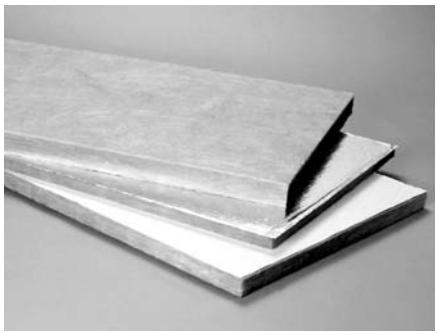
700 Series FIBERGLAS™ Insulation

Product Data Sheet



- ☐ Type 701
- ☐ Type 703
- ☐ Type 705
- ☐ Type 706
- ☐ Type 707

Physical Property Data

Property	Test Method	Value	
Equipment Operating Temperature Limitation[1]	ASTM C411	0 to 450°F (-18°C to 232°C)	
Insulation Jacket Temperature Limitation	ASTM C1136	-20°F to 150°F (-29°C to 66°C)	
Jacket Permeance	ASTM E96, Proc. A	0.02 perm	
Jacket Burst Strength	ASTM D774	FRK: 35 psi; ASJ Max: 100 psi	
Compressive Strength (minimum) at 10% deformation at 25% deformation	ASTM C165	**Type 703** 25 lb/ft² (1197 Pa) 90 lb/ft² (4309 Pa)	**Type 705** 200 lb/ft² (9576 Pa) —
Water Vapor Sorption	ASTM C1104	<2% by weight at 120°F (49°C), 95% R.H.	
Nominal Density	ASTM C167	Type 701: 1.5 pcf (24 kg/m³)	
	ASTM C303	Type 703: 3.0 pcf (48 kg/m³)	
		Type 705, 706: 6.0 pcf (96 kg/m³)	
		Type 707: 7.0 pcf (112 kg/m³)	
Surface Burning Characteristics[2] Flame Spread Smoke Developed	UL 723, ASTM E84 or CAN/ULC-S102	 25 50	

1. Maximum thickness at 450°F (232°C): Type 701: 6" (152mm); Type 703, 705, 706: 4" (102mm).
2. The surface burning characteristics of these products have been determined in accordance with UL 723, ASTM E84 or CAN/ULC-S102. This standard 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.

Description

700 Series Insulations are made of inorganic glass fibers with a thermosetting resin binder and formed into flexible, semi-rigid or rigid rectangular boards of varying densities. Types 703 and 705 are available with factory-applied FRK or poly encapsulated ASJ Max facings. Both facings are vapor retarders and provide a neat, finished appearance in mechanical applications.

Key Features

- 700 Series FIBERGLAS™ Insulations save energy and reduce heat transfer, lowering operating costs.
- Available in five types, providing a selection of products to meet specific performance, appearance and economic requirements.
- The ASJ Max facing is tougher[3] than standard ASJ. It has a polymer coating that helps resist water staining and does not support mold or mildew growth[4].
- The ASJ Max facing can resist short durations of liquid water exposure that can occur during construction.
- Resists damage and maintains structural integrity and efficiency.
- Efficiently reduces sound transmission.
- Lightweight and resilient, 700 Series products are easy to handle, fabricate on the job site and install.
- 700 Series FIBERGLAS™ Insulations are available in:
  - 24"x48" (610mm x 1,219mm) in thicknesses from 1" (25mm) to 4" (102mm) in ½" (13mm) increments
  - Maximum thickness, Type 705, is 3" (76mm)
  - Maximum thickness, Type 706, 707, is 2" (51mm)

Product Applications

701—Lightweight and flexible, it is used as acoustic insulation batts and to insulate items with irregular surfaces where an exterior finish will be supported mechanically.

703—Semi-rigid boards for use on mechanical equipment and air conditioning ductwork.

3. Based on burst strength testing.
4. ASJ Max jacket does not support mold growth when tested in accordance with ASTM C1338.

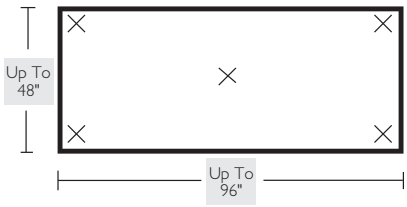
700 Series FIBERGLAS™ Insulation

Product Data Sheet

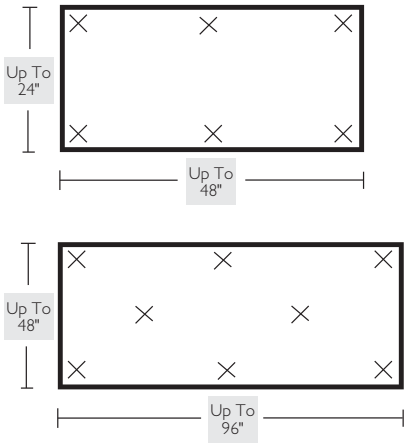
703 and 705 Series Recommended Impaling Pin Patterns

Pins should be located 3-8" from the edges of the board

Walls: 703 and 705 Series Insulation



Ceilings: 703 and 705 Series Insulation



705—A high strength rigid board for use on chillers, other mechanical epuipment, and heating and air conditioning ductwork, where high abuse resistance and good finished appearance is important.

706 and 707—Smooth surface, high density rigid boards used for acoustical wall panels and specialized ceiling applications.

Technical Information

Type 701 is a lightweight, unfaced, flexible insulation in batt form for use on objects having irregular surfaces, where the compressive strength is not a performance criterion.

Thermal Performance

ASTM C680 (Type 703)

Thickness		Operating Temperature, ˚F (˚C)									
		250 (121)		300 (149)		350 (177)		400 (204)		450 (232)	
in.	(mm)	HL	ST	HL	ST	HL	ST	HL	ST	HL	ST
1.0	(25)	27	98	42	106	57	114	75	123	95	133
1.5	(38)	19	93	29	99	40	105	52	112	66	119
2.0	(51)	15	90	22	95	31	100	40	105	50	111
2.5	(64)	12	88	18	92	25	96	32	101	41	106
3.0	(76)	10	87	15	91	21	94	27	98	34	102
3.5	(89)	9	86	13	89	18	92	23	96	30	99
4.0	(102)	8	86	11	88	16	91	21	94	26	97

The above table provides approximate heat loss values (HL), Btu/hr•ft^2, and Surface Temperatures (ST), °F, for flat surfaces. Values are based on horizontal heat flow, vertical flat surface, 80°F ambient temperature, still air, ASJ Max facing. To convert heat loss values to W/m^2, multiply values by 3.15. To convert surface temperatures, use the formula: °C = (°F-32)/1.8. For similar information using other assumptions, contact your Owens Corning Representative.

Sound Absorption Coefficients

ASTM C423; Mounting: Type A—Material placed against a solid backing.

	Thickness		Octave Band Center Frequencies, Hz						
Product Type	in.	(mm)	125	250	500	1000	2000	4000	NRC
701, unfaced	1	(25)	0.17	0.33	0.64	0.83	0.90	0.92	0.70
	2	(51)	0.22	0.67	0.98	1.02	0.98	1.00	0.90
703, unfaced	1	(25)	0.11	0.28	0.68	0.90	0.93	0.96	0.70
	2	(51)	0.17	0.86	1.14	1.07	1.02	0.98	1.00
705, unfaced and 706 smooth surface	1	(25)	0.02	0.27	0.63	0.85	0.93	0.95	0.65
	2	(51)	0.16	0.71	1.02	1.01	0.99	0.99	0.95
703, FRK	1	(25)	0.18	0.75	0.58	0.72	0.62	0.35	0.65
	2	(51)	0.63	0.56	0.95	0.79	0.60	0.35	0.75
705, FRK	1	(25)	0.27	0.66	0.33	0.66	0.51	0.41	0.55
	2	(51)	0.60	0.50	0.63	0.82	0.45	0.34	0.60
703, ASJ Max	1	(25)	0.17	0.71	0.59	0.68	0.54	0.30	0.65
	2	(51)	0.47	0.62	1.01	0.81	0.51	0.32	0.75
705, ASJ Max	1	(25)	0.20	0.64	0.33	0.56	0.54	0.33	0.50
	2	(51)	0.58	0.49	0.73	0.76	0.55	0.35	0.65

Values given are for design approximations only; production and test variabilities will alter results. Specific designs should be evaluated in end-use configurations.

Types 703 and 705 are board insulations usually impaled over welded pins on flat surfaces. They are cut in segments and banded in place on irregular surfaces. Unfaced boards are normally finished with reinforced insulating cement or weatherproof mastic.

Installation

700 Series Insulation can be easily cut with a knife and fit neatly into irregularly shaped areas.

Boards with ASJ Max or FRK facings shall be applied using mechanical fasteners such as weld pins or speed clips. Fasteners shall be located not less than 3" (75mm) from each edge or corner of the board.

Pin spacing along the equipment should be no greater than 12" (300mm) on centers. Additional pins or clips may be required to hold the insulation tightly against

700 Series FIBERGLAS™ Insulation

Product Data Sheet

Thermal Conductivity

k, Btu•in/hr•ft²•°F				λ, W/m•C			
Mean Temp.°F	701	703	705, 706	Mean Temp.°C	701	703	705, 706
50	0.22	0.21	0.22	10	0.032	0.030	0.032
75	0.24	0.23	0.23	25	0.035	0.033	0.034
100	0.26	0.24	0.25	50	0.040	0.036	0.037
150	0.30	0.27	0.27	75	0.045	0.040	0.041
200	0.35	0.30	0.30	100	0.052	0.045	0.045
250	0.40	0.34	0.33	125	0.059	0.050	0.049
300	0.46	0.38	0.37	150	0.067	0.055	0.053

the surface where cross breaking is used for stiffening. Weld pin lengths must be selected for tight fit but avoid "oil-canning."

In multiple layer applications, use faced material on outer layer only.

Where a vapor retarder is required, cover pins and clips with vapor sealing, pressure-sensitive patches matching insulation facing. Rub hard with a plastic sealing tool for a tight bond and a vapor seal.

All insulation joints should be sealed with pressure-sensitive joint sealing tape to match the insulation facing. Rub hard with a plastic sealing tool to effect a tight bond. Recommended practice suggests 3" (76mm) wide tape on flat surfaces or where edges are shiplapped and stapled. Use 5" (102mm) wide tape in lieu of shiplapping. If insulation is being applied to sheet metal duct work, all sheet metal joints must be sealed prior to insulating. Glass fabric and mastic may be used in lieu of pressure-sensitive tape.

For Vertical Applications

700 Series Insulation can be installed between furring strips, hat channels and Z-shaped furring where a finish will be applied. For exposed applications, the product can be impaled on impaling pins or adhered with adhesive.

For Horizontal Applications

700 Series Insulation can be installed on horizontal surfaces by using impaling pins.

On Curtainwalls

700 Series Insulation is easily installed by mounting on impaling pins or holding in place with supporting clips designed for the application. Follow curtainwall manufacturer's instructions for clearance.

On Masonry Construction

700 Series Insulation can be installed between wythes, on the interior face with stick pins, or by using appropriate adhesives.

On Precast Concrete

700 Series Insulation can be installed using impaling pins or appropriate adhesives.

When using adhesive, follow adhesive manufacturer's recommendations for surface preparation and adhesive pattern.

When using impaling pins, follow pin manufacturer's recommendations for surface preparation. Lengths should be selected for tight fit. Protect pin tips where subject to contact. Pins should be located 3"-8" from the edge(s) of the board.

Maintaining the integrity of the vapor retarder is important for effective moisture/humidity control. Repair any punctures or tears in the facing by taping with a matching pressure sensitive tape.

Product should be kept dry during shipping, storage and installation.

Standards, Codes Compliance

- ASTM C553, Mineral Fiber Blanket Thermal Insulation, Type III – Type 701
- ASTM C612, Mineral Fiber Block & Board Thermal Insulation, Types IA, IB – Types 703, 705, 706, 707
- ASTM C795, Thermal Insulation For Use Over Austenitic Stainless Steel[1] (except 701)
- ASTM C1136, Flexible Low Permeance Vapor Retarders for Thermal Insulation, Type I: ASJ Max; Type II: FRK
- Nuclear Regulatory Commission Guide 1.36, Non-Metallic Thermal Insulation[1] (except 701)
- Doesn't contain the fire retardant decabrominated diphenyl ether (decaBDE)
- CAN/CGSB-51.10 – Type I, Class I – Types 703
- NFPA 90A and 90B
- California Insulation Quality Standards CA-T052

1. Preproduction qualification testing complete and on file. Chemical analysis of each production lot required for total conformance. Certification needs to be specified at time of order.

700 Series FIBERGLAS™ Insulation

Product Data Sheet

Certifications and Sustainable Features of 700 Series FIBERGLAS™ Insulation

- Certified by SCS Global Services to contain a minimum of 53% recycled glass content, 31% pre-consumer and 22% post-consumer.
- This product's Environmental Product Declaration (EPD) has been certified by UL Environment.
- 700 Series FIBERGLAS™ Insulation has received the Cradle to Cradle Products Innovation Institute's Bronze Level Material Health Certificate.

Environmental and Sustainability

Owens Corning is a worldwide leader in building material systems, insulation and composite solutions, delivering a broad range of high-quality products and services. Owens Corning is committed to driving sustainability by delivering solutions, transforming markets and enhancing lives. More information can be found at http://sustainability.owenscorning.com.

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

CERTIFIED RECYCLED CONTENT SCS GLOBAL SERVICES

AVERAGE 53% RECYCLED CONTENT
31% PRE-CONSUMER
22% POST-CONSUMER

OWENS CORNING INSULATING SYSTEMS, LLC
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO 43659
1-800-GET-PINK®
www.owenscorning.com

Pub. No. 14775-W. Printed in U.S.A.August 2015.