FOAMULAR®

XPS Pipe Insulation vs. The Competition

PRODUCT SELECTION GUIDE

FOAMULAR® XPS Pipe Insulation is manufactured from fabrication billets made using Owens Corning's patented Hydrovac® process technology. The unique closed-cell structure of FOAMULAR® XPS Insulation makes it highly resistant to moisture, low in water absorption but high in insulating capability.

Competitive Advantages - the Data tells the Story! (Owens Corning vs. The Competition)

- Better thermal performance; 0.200 vs. 0.259 k factor—23% Owens Corning advantage over competition in ammonia refrigeration systems
- Better Moisture Performance; 3+ times less moisture absorption and 25%+ lower permeability than competitors
- Better Compressive Performance; excellent dimensional stability and better durability over competitors

The following data has been collected from competitors data sheets and compiled to assist in the selection of insulation material.

Typical Physical Properties					
Property	Test Method[1]	Owens Corning Type IV XPS[6]	ITW/Polygaurd Type XIII XPS[8]	Dyplast ISO-CI/2.0[10]	Trymer 2000 XP[14]
Thermal Conductivity, 180 days, Btu•in/ ft²•hr•°F (W/m °C) @ 75°F mean temperature[2]	ASTM C518	0.200 (0.029)	0.259 (0.037)	0.176 (0.025)	0.190 (0.027)
Compressive Strength, psi (kPa)[3]	ASTM D1621	25 (173)	20 (138)	26 (179)[11]	25 (172)[11]
Water Absorption, % by volume[4]	ASTM C272	0.15	0.5	0.04	< 0.7
Water Vapor Permeability, perm-in (ng/Pa-s-m)	ASTM E96	1.1	1.5 (2.2)	1.65 (2.40)	4 (5.8)
Dimensional Stability, @ 158°F, 97% RH, 7 days	ASTM D2126				
Length, % change		1.0	_	< 1.0[12]	1.6[15]
Volume, % change		_	1.0	< 2.0[12]	3.4[15]
Flame Spread[5]	ASTM E84	5[7]	5[9]	25[13]	≤ 25
Smoke Developed[5]	ASTM E84	175[7]	165[9]	195[13]	≤ 450
Service Temperature Range, °F(°C)		-100 to +165 (-73 to +74)	-297 to +165 (-183 to +74)	-297 to +300 (-183 to +149)	-297 to +300 (-183 to +149)
Linear Coefficient of Thermal Expansion, in/in/°F	ASTM E228	3.5×10^{-5}	3.5×10^{-5}	_	_
Material ASTM Designation		ASTM C578 Type IV	ASTM C578 Type XIII	ASTM C591	ASTM C591 Grade 2, Type IV

1. Sample modified as required to meet the applicable test method.
2. The lower the value, the greater the insulating capbility.
3. Value at yield or 10% deflection, whichever occurs first.
4. Data ranges from 0.00 to value shown due to level of precision of test method.
5. This numerical flame spread data is not intended to reflect hazards presented by this or any other material under actual fire conditions.
6. XPS foam core values.
7. Fire performance of Foamular 4" thick product only. Thicker products may have different fire performance characteristics. Due to limits on the equipment used to test per ASTM E84, Owens Corning™ FOAMULAR® XPS Fabrication Billets have not been tested.
8. ITW Insulation Systems XPS Pipe Insulation Billet Data Sheet, XPS TDS, Form No. 10010-0709.
9. Up to 4" thick product tested.
10. Dyplast ISO-CI/2.0 Polyisocyanurate Insulation Data Sheet, Rev ISOCI/20 1010.
11. Compressive Strength parallel to rise.
12. Frequent and severe thermal cycling can produce dimensional changes signicantly greater than those listed here. Special design considerations must be made in systems subject to severe cycling.
13. 4" thick product tested.
14. ITW Trymer™ 2000 XP Polyisocyanurate Insulation Data Sheet, Form No. T2000XP1-011411.
15. Frequent and severe thermal cycling can produce dimensional changes significantly greater than those stated here. Special design consideration must be made in systems that cycle frequently.

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