

Industrial Applications

Tech Data

ThermalStar® X is designed for extra strength and toptier thermal performance in demanding environments. ThermalStar X is a premium molded expanded polystyrene (EPS) that meets ASTM C578 and is manufactured under an industry-leading quality control program monitored by UL and ICC-ES. ThermalStar X has a stable lifetime R-value, a range of available high strengths, and outstanding moisture resistance. A low Global Warming Potential (GWP), Zero Ozone Depletion (ODP), GreenGuard certification, and an Environmental Product Declaration (EPD) are all available to demonstrate our commitment to sustainability.



Property	ASTM Test Method	10	13	15	25	40	60
Compressive Strength (psi) at 10% Deformation ¹	D1621	10	13	15	25	40	60
ASTM Classification	C578	Type I	Type VIII	Type II	Type IX	TypeXIV	Type XV
R-value per inch at 75°F Mean Temperature (°F·ft ² ·h/Btu)	C518	3.9	3.9	4.2	4.4	4.4	4.5
R-value per inch at 40°F Mean Temperature (°F·ft ² ·h/Btu)	C518	4.2	4.3	4.6	4.8	4.8	4.9
R-value per inch at 25°F Mean Temperature (°F·ft ² ·h/Btu)	C518	4.4	4.5	4.8	5.0	5.0	5.1
Flexural Strength (psi)	C203	25	30	35	50	60	75
Water Absorption (% by volume) 24 Hour Immersion	C272	3.0	3.0	2.0	1.0	1.0	1.0
24 Hour Immersion & 24 Hours @ 50% RH		0.3	0.3	0.3	0.3	0.3	0.3
Water Vapor Permeance at 1" Thick (perms)	E96	5.0	5.0	3.5	2.5	2.5	2.5
Surface Burning - Flame Spread Index	E84	<25	<25	<25	<25	<25	<25
Surface Burning - Smoke Developed Index	E84	<450	<450	<450	<450	<450	<450
Maximum Use Temperature	-	Short Term (10-15 minutes) 180°F Long Term 165°F					

¹ThermalStar X is elastic up to 1% deformation. A safety factor of 3 is recommended for long term loads to minimize long term deflection.



Code Compliance

ThermalStar X is recognized for compliance with the following standards and code:

- **ASTM C578**
- **ASTM E84/UL723**
- **NFPA 285 Assemblies**
- **IBC** – International Building Code
- **IRC** – International Residential Code
- **IECC** – International Energy Code

See **UL Listings**, **UL ER16529-01**, and **ICC-ES ESR-1962**.

Warranty



**LIMITED LIFETIME
WARRANTY**

ThermalStar X is backed by a limited lifetime warranty for physical and thermal performance, in addition to termite resistance when applicable. See separate ThermalStar warranty for terms and conditions.

Enhancements Available

Depending on the needs of your project, ThermalStar X may be specified with integrated termite resistance for long term protection. Additionally, graphite enhanced ThermalStar G or is available for applications to achieve a higher R-value per inch. Refer to our ThermalStar G or Tech Data Sheet for additional information.

Atlas will also manufacture custom grades of ThermalStar X to meet your specific industrial application.

Resources



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**GREATER COVERAGE
GREATER AVAILABILITY**



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