PC 450 High Yield No Mix
Open Cell Spray Foam Insulation
Technical Data Sheet

Product Design

PolyCon 450 High Yield No Mix Open Cell Spray Foam Insulation is a Class A rated spray foam that provides applicators with high yield, low density cost savings along with reliable and consistent performance with a broad temperature application tolerance. **PC 450** is intended for interior envelopes of Type I-V buildings.

Product Use

PolyCon 450 High Yield No Mix Open Cell Spray Foam Insulation forms an air barrier in wall cavities and can be used to fill a variety of wall cavity stud thickness in a single pass application. **PC 450** adheres tenaciously to most building materials and will provide a seamless barrier against air infiltration for the life of the building.

Recommended Product Applications

- Commercial Interior Walls
- Commercial Exterior Walls
- Attic Floor
- Sound Proofing
- Under Roof Deck
- Residential Interior Walls
- Residential Exterior Walls
- Cathedral Ceilings
- Sealed Crawl Spaces
- Basement Walls

Physical Properties

Properties	Test Method / Requirements	Value
Aged R-Value	ASTM C518	3.9 @ 1"
Core Density	ASTM D1622	0.4 - 0.5 pcf
Open-Cell Content	ASTM D6226	90%
Tensile Strength	ASTM D1623	3.9 lb/in^2
Air Permeance	ASTM D2178	0.011 L/s*m^2@3.5", 75 Pa
Water Vapor Transmission @ 74°F, per inch	ASTM E96	26.76* @ 1" Class III @ 2.7"***
Dimensional Stability: 28 days at 160°F, 100% RH	ASTM D2126 15% max by volume change	5.2%

*Climate Zones that require a Class II Vapor Barrier, apply 1.0 gallons / 100 SF (16 Wet Mils) of **No Burn® Plus ThB Spray Seal** in direct contact of PC 450. This application rate also qualifies as a 15 minute Thermal Barrier.

*** PC 450 has a permeance of less than 10 perms at a minimum thickness of 2.7 inches and qualifies as a Class III vapor retarder.

Material Shelf Life

Six (6) months when stored properly

PolyCon 450 High Yield No Mix Open Cell Cell Spray Foam Insulation can be applied over Spray-applied Fire-resistive Materials (SFRM) assemblies without affecting their performance or rating. *See Jensen Hughes Project Number 1AJP00272.000 Engineering Evaluation.*

ASTM Method E84	Class A (Class I)
Flame Spread (FSI)	<25
Smoke Development (SDI)	<450

NFPA 285 – Exterior Wall Assembly Compliance

Successfully evaluated under NFPA 285 for fire propagation performance in exterior wall assemblies with combustible components.

NFPA 286 - 15 minute Thermal Barriers

Product	Max on Walls	Max on Ceiling	Application Rate
Paint to Protect DC 315	10"	14"	14 Wet / 8 DFT
No Burn® Plus ThB	10"	14"	14 Wet / 9 DFT
Flame Control ® 60-60A	10"	14"	14 Wet / 9 DFT

Attics and Crawlspaces - Appendix X

Product	Max on Walls	Max on Ceiling	Application Rate
Paint to Protect DC 315	10"	14"	4 Wet / 3 DFT
No Burn® Plus ThB	10"	14"	6 Wet / 4 DFT
Flame Control ® 60-60A	10"	14"	6 Wet / 4 DFT

Unvented Attic

Credential	Substrate	
Appendix U - Bare Foam	Max Wall - 14"	Max Ceiling - 14"

Appendix U *was unanimously approved and adopted into The International Residential Code for Unvented Attics. Appendix U provides a clear, concise and transparent path for spray applied foam plastic insulation for use in unvented attics without a code-prescribed ignition barrier.*

Credentials & Approvals

IAPMO UES ER-965

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Recommended Processing Parameters

Mix Chamber	Maximum 02 / 5252
Ambient / Substrate Temp	40 -120°F / 4 - 49°C
Equipment Dynamic Pressure	1,000 - 1,500 psi
Preheat Temperature	115 - 145°F / 46 - 63°C
Drum Temperature	70 - 90°F / 21 - 32°C
Storage Temperature *No Sun Exposure*	60 - 90°F / 15 - 32°C

Thermal Barrier

IBC code requires that spray foam be separated from the interior of the building by an approved fifteen (15) minute thermal barrier, such as ½" gypsum wall board or equivalent, installed per manufacturers specifications, meeting local code requirements, or other protective layers tested as a composite configuration and system, that have passed third party audited testing by an approved laboratory. With the exception of applications to Band Joists / Rim Joists / Mudsills, up to 3.25" without the application of the code prescribed thermal barrier.

R-Value Chart ASTM C518

Thickness (in.)	R-Value Total (ft2h°F/Btu)
1	3.9
2	7.6
3	11
3.5	13
4	15
5	19
5.5	20
6	22
7	26
7.25	27
8	30
9	33
9.25	34
10	37
11	41
11.25	42
12	44
13	48
14	52
15	56
16	59

In case of Fire Extinguishing Media

Use dry chemical extinguishers such as mono Ammonium phosphate, potassium sulphate and potassium chloride. Additionally, use carbon dioxide, high expansion chemical foam or water spray for large fires.

Handling and Safety

Respiratory protection is Mandatory!

All precautions should be taken to avoid occupational exposure as well as protecting the working area to avoid unintended exposure by others. Supplied air and a NIOSH approved full face mask respirator must be used during the application as well as chemical safety goggles, protective, non-absorbent gloves and Tyvek suit properly secured around wrists to avoid any and all skin exposure.

Positive pressure ventilation of the work area is recommended to minimize the accumulation of vapors in the work area during the application. Improper application techniques of this foam system must be avoided. Any interior area, even with proper ventilation, should be considered a Confined Space and be treated with utmost precaution. Atomized vapors should not exceed TLV .02 parts per million of isocyanates. Avoid breathing vapors. Persons with known sensitivities or allergies should avoid exposure completely. If inhalation occurs, remove person from contaminated area and administer oxygen if having difficulty breathing. Call a physician immediately. Avoid contact with skin, eyes and clothing.

Open containers carefully, allowing any pressure in the container to be relieved safely. Any contact with material should be washed thoroughly with soap and water. Wash clothes before reuse.

Applicators should ensure the safety of the jobsite and construction personnel by posting appropriate signs warning all adjacent workers and trades to avoid the area. Ensure warning signs are visibly posted at job site that welding, soldering and torch cutting should take place no less than 45 feet from exposed in situ cured foam. If work must be performed, the polyurethane foam should be properly covered with an appropriate fire or welders blanket and fire watch should be provided.

A protection program developed by the Center for Polyurethanes Industry (CPI) is available for download at www.polyurethane.org. Spray Polyurethane Foam Alliance (SPFA) also provides significant safety resources at www.sprayfoam.org, or can be reached directly at 571-748-5003.

Jobsite Hazards

The potential results of improperly applied materials may include but not limited to excessive heat build-up which could result in a fire or offensive odors which may not dissipate over time and / or poor product performance due to improper density of the applied material.

This includes excessive thickness beyond recommended application passes, off ratio material, and spraying into rising foam. Large masses of sprayed materials should be avoided. If large masses are generated they should be removed from the area, cut into small pieces, wetted down and allowed to cool before disposal. Failure to follow this recommendation may result in a fire. It is recommended that a fire extinguisher be located in the work area to ensure easy access.

In Case of Spills or Leaks

- **Utilize appropriate personal protective equipment (PPE)**
- **Contain and cover spilled materials with loose, absorbent material such as Oil-Dry, Vermiculite, sawdust or Fuller's Earth**
- **Shovel absorbent waste material into proper waste containers**
- **Wash the contaminated area thoroughly with hot and soapy water**
- **Ventilate area to remove vapor**
- **Report sizable spills to proper environmental agencies**