

# OPCORE<sup>®</sup>

RECYCLABLE  
THERMAL  
INSULATION



## Rigid Thermal Insulation



Learn more about rigid thermal insulation products made of OPCORE<sup>®</sup> at [www.opcodirect.com](http://www.opcodirect.com)



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## OPCORE is Rigid Thermal Insulation, done right.

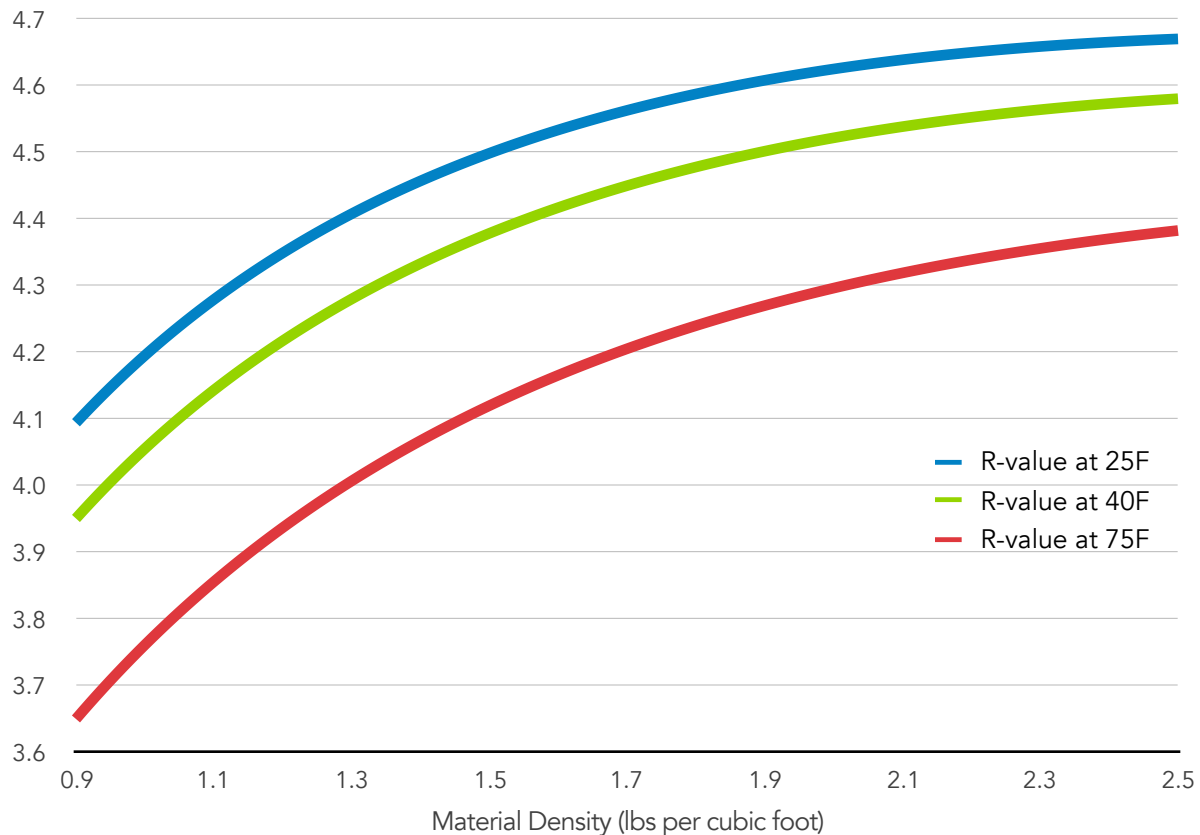
3rd Party  
Recognized  
'Meet or Exceed Code'  
Rigid Thermal Insulation  
Performance



## OPCORE Performs Better when it's Colder and, it's R-value performance is stable over time.

OPCORE is made of small pockets of air surrounded by a recyclable polymer matrix. This means the R-value of the material is stable over time.

Chart illustrates R-value per inch of thickness as a function of density and temperature, measured in accordance with ASTM Test Method C518. R-values can be higher than the minimum R-value for a given ASTM C-578 'Type' because ASTM C-578 Types specify a minimum R-value.





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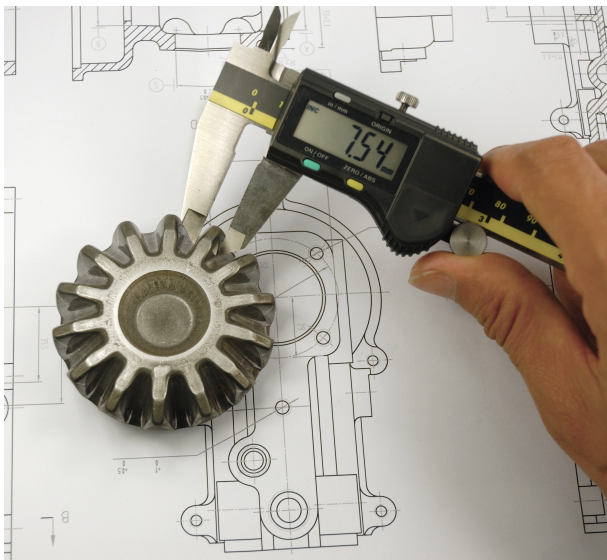
## Expecting Rain?

### OPCORE plays well with Moisture Vapor and Bulk Water

Water and moisture are ever-present, so managing their presence is paramount to a building's longevity. OPCORE can keep bulk water on the outside. Greater water vapor permeability can help reduce the risk of vapor condensation inside the wall.

## A Decades-Long Stable R-value is just the beginning of OPCORE's Sustainability Story

- OPCORE is recyclable as a #6 polymer compound
- Reduces use of resources in the manufacture, transportation and use of more dense insulation products
- Comprised of up to 98% air
- Contains no ozone-depleting CFC's, HCFC's, HFC's, nor formaldehyde
- Combination of recyclable polymer matrix and air enables the material to exhibit a long-term stable R-value



## Dimensional Accuracy & Consistency means you get a Superior Thermal Envelope

Quality matters. OPCORE meets stringent performance and quality certifications. OPCORE can be sized to your specifications using proprietary processes. Thickness, length and width dimensions can be specified accurate to 1/16 of an inch on dimensions between 4" and 96". This means fewer problems during installation and a more consistent thermal envelope.

| Metric            | Thickness      | Length          | Width          |
|-------------------|----------------|-----------------|----------------|
| Tolerance (in/in) | 1/16"          | 1/16"           | 1/16"          |
| Range             | 1/2" < t < 48" | 1/2" < l < 216" | 1/2" < w < 36" |



# OPCORE® Physical Properties

OPCORE Product

| Property                              | Method              | Units   | 100   | 130      | 150      | 250      | 400      | 600      |
|---------------------------------------|---------------------|---|---|----------|----------|----------|----------|----------|
| Compressive Resistance                | ASTM D1621          | At yield of 10% deformation in psi (kPa)  | 10 (69)   | 13 (90)  | 15 (104) | 25 (173) | 40 (276) | 60 (414) |
| Density                               | ASTM C303           | lbs / ft <sup>3</sup> , minimum   | 0.90  | 1.15     | 1.35     | 1.80     | 2.40     | 3.00     |
| Contribution to Sustainable Practices |                     |   | Recyclable as #6 Plastic. Can contain recycled content per specification. Retains R-value over time. Does not contain chlorofluorocarbons. UL GreenGuard Certified for Indoor Air Quality. Material expansion agent has zero ozone depletion potential. |          |          |          |          |          |
| Compliance with ASTM C578 (1)         | ASTM C578           | Type  | I   | VIII     | II       | IX       | XIV      | XV       |
| Thermal Resistance (R-value*), 75F(2) | ASTM C518           | per inch of thickness in °F•ft <sup>2</sup> •h/ BTU (K•m <sup>2</sup> /W) 75 ±2°F (23.9 ±1°C) | 3.6   | 3.8      | 4.0      | 4.2      | 4.2      | 4.3      |
| Thermal Resistance (R-value*), 40F(2) | ASTM C518           | per inch of thickness in °F•ft <sup>2</sup> •h/ BTU (K•m <sup>2</sup> /W) 40 ±2°F (4.4 ±1°C)  | 3.9   | 4.2      | 4.3      | 4.5      | 4.6      | 4.6      |
| Thermal Resistance (R-value*), 25F(2) | ASTM C518           | per inch of thickness in °F•ft <sup>2</sup> •h/ BTU (K•m <sup>2</sup> /W) 25 ±2°F (-3.9 ±1°C) | 4.1   | 4.3      | 4.4      | 4.6      | 4.7      | 4.7      |
| Flexural Strength                     | ASTM C203           | psi (kPa)   | 25 (173)  | 30 (208) | 35 (242) | 50 (345) | 60 (414) | 75 (517) |
| Water Vapor Permeance(3)              | ASTM E96            | For 1" (25.4 mm), perm (ng/ PA•s•m <sup>2</sup> ), max  | 5.0   | 3.5      | 3.5      | 2.5      | 2.5      | 2.5      |
| Water Absorption by Total Immersion   | ASTM C272           | Volume % absorbed, max  | 4.0   | 3.0      | 3.0      | 2.0      | 2.0      | 2.0      |
| Dimensional Stability                 | ASTM D2126          | max % linear change   | < 1.5   |          |          |          |          |          |
| Oxygen Index                          | ASTM D2863          | volume %  | > 24  |          |          |          |          |          |
| Surface Burning Characteristics       | ASTM E-84 or UL 723 | Flame Spread / Smoke Developed  | Flame Spread <25, Smoke Developed <450  |          |          |          |          |          |
| Biological Behavior                   |                     |   | Will not support growth of mold or mildew.<br>No harmful effects on health known.   |          |          |          |          |          |
| Chemical Resistance                   |                     |   | Insensitive to water, the majority of acids and alkalis;<br>sensitive to organic solvents.  |          |          |          |          |          |
| Application Limiting Temperature      |                     | ° F / ° C   | 165 (73.9) nominal / 180 (82.2) max   |          |          |          |          |          |

(1) OPCORE meets and/or exceeds ASTM C578-11b "Standard Specification For Preformed, Cellular Polystyrene Insulation"; published by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

(2) R-value means resistance to heat flow. The higher the R-value, the greater the insulating power. Ask your seller for the fact sheet on OPCORE R-values. The R-value properties are based on 1 in thickness.

(3) Values quoted are maximum values for 1 inch (25mm) thick samples and are based upon most recent raw material product quality audit data. Actual water vapor permeance data decreases as thickness increases. Where water vapor permeance is a design concern, use of the product is subject to professional engineering review at the specifier's option.

\* The higher the R-value, the greater the insulating power. The physical property data shown above are presented as typical average values as determined by industry accepted and standard test methods, except where noted, and are subject to normal manufacturing variation. ASTM specifications shown are typical for rigid, cellular polystyrene thermal insulation and are published by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.



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