

**OPCORE<sup>®</sup>** **G<sup>+</sup>**



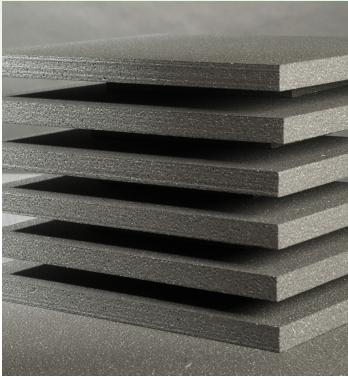
**R-5**  
**THERMAL**  
**INSULATION**  
*for* **NEW AND**  
**EXISTING**  
**BUILDINGS**





**R-5 THERMAL INSULATION**  
for NEW AND EXISTING BUILDINGS

## What if your insulation became more powerful when you needed it most?



Dimensional accuracy and consistency means a superior thermal envelope...and fewer callbacks.

OPCORE-G+ is dimensionally accurate to 1/32 of an inch in thickness and 1/16 of an inch on width and height. This means your product will consistently fit and thermal and impact protection is maximized.



Moisture vapor and bulk water? OPCORE-G+ can manage both.

OPCORE-G+ can keep bulk water on the outside. And, OPCORE-G+ lets water vapor move through it at a higher rate than rigid foam boards of equivalent R-value made from other materials.



Recyclability is just the beginning of the sustainability story for OPCORE-G+.

OPCORE-G+ is recyclable as a #6 polymer compound. Comprised of up to 98% air and containing no ozone-depleting CFC's, OPCORE-G+ is always at work reducing energy expended for heating and cooling interior spaces.



Find the OPCORE-G+ ICC-ES ESR in our website library at [www.opcodirect.com](http://www.opcodirect.com).

Quality matters. OPCORE-G+ meets current building code requirements and is certified for quality by 3rd party laboratories.

**OPCORE-G+: Simply Better Insulation.**

## R-value Performance

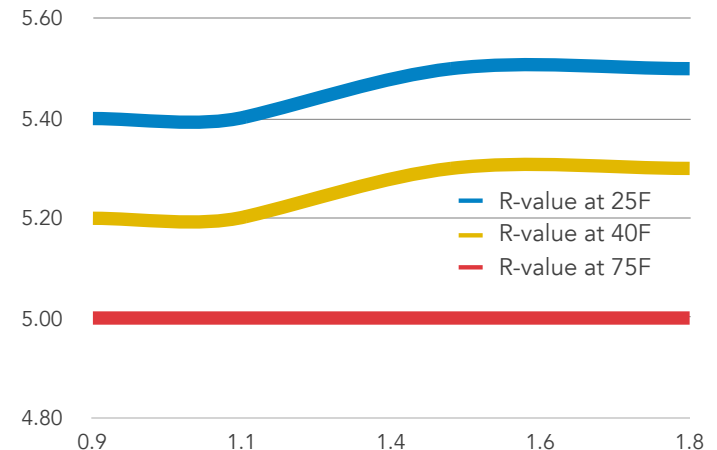
OPCORE-G+ powers up when it gets colder outside

By absorbing radiant energy, high purity graphite wholly contained in the polymer matrix of OPCORE-G+ rigid foam slows the flow of heat through the material.

As shown in the chart below, the effect of high-purity graphite on the rate of radiant energy transfer through the material is even more pronounced at lower mean temperatures.

Summer or winter, OPCORE-G+ Recyclable Thermal Insulation helps keep heat where it belongs.

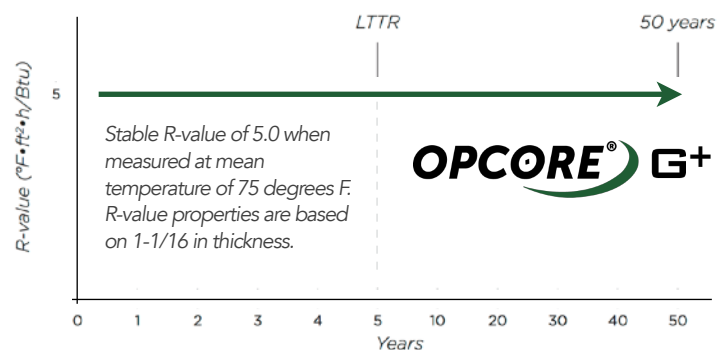
### R-value\* vs Material Density



\*R-value means resistance to heat flow. The higher the R-value, the greater the insulating power. The R-value properties are based on 1-1/16 in thickness. Material density = pounds per cubic foot.

### The R-value of OPCORE-G+ is stable over time

OPCORE-G+ is made of small pockets of air surrounded by a recyclable polymer matrix. There are no chemical blowing agents inside the cells of the rigid foam. This means the R-value of the material is stable over time because the insulating gas in the cells starts as, and stays as, air.



# OPCORE-G<sup>+</sup> Physical Properties

Insulation Density

| Property  | Method                    | Units   | 0.90   | 1.00     | 1.15     | 1.35     | 1.45     | 1.80     |
|---|---------------------------|---|--|----------|----------|----------|----------|----------|
| Sustainability / Environmental                    | Opco and BASF Corporation |   | Recyclable as #6 Plastic. Can reduce carbon emissions as a result of lower energy load to heat and cool buildings. 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. |          |          |          |          |          |
| Compressive Resistance                            | ASTM D1621                | at yield of 10% deformation in psi (kPa)                            | 10 (69)  | 10 (69)  | 14 (97)  | 15 (103) | 20 (138) | 25 (172) |
| Thermal Resistance (R-value*), 75F <sup>(1)</sup> | ASTM C518                 | °F•ft <sup>2</sup> •h/BTU (K•m <sup>2</sup> /W) 75 ±2°F (23.9 ±1°C) | 5.0  |          |          |          |          |          |
| Thermal Resistance (R-value*), 40F <sup>(1)</sup> | ASTM C518                 | °F•ft <sup>2</sup> •h/BTU (K•m <sup>2</sup> /W) 40 ±2°F (4.4 ±1°C)  | 5.2  |          |          | 5.3      |          |          |
| Thermal Resistance (R-value*), 25F <sup>(1)</sup> | ASTM C518                 | °F•ft <sup>2</sup> •h/BTU (K•m <sup>2</sup> /W) 25 ±2°F (-3.9 ±1°C) | 5.4  |          |          | 5.5      |          |          |
| Flexural Strength                                 | ASTM C203                 | psi (kPa)   | 25 (172)   | 25 (172) | 32 (221) | 39 (269) | 40 (276) | 50 (345) |
| Water Vapor Permeance <sup>(2)</sup>              | ASTM E96                  | For 1" (25.4 mm), perm (ng/PA•s•m <sup>2</sup> ), max               | 4.0  |          | 3.1      |          |          | 2.5      |
| Water Absorption by Total Immersion               | ASTM C272                 | Volume % absorbed, max  | 1.1  |          |          |          |          |          |
| 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 5, Smoke Developed 25   |          |          |          |          |          |
| 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  |          |          |          |          |          |
| ASTM C578 Classification <sup>(3)</sup>           |                           |   | I  | I        | VIII     | II       | II +     | IV       |
| ICC-ES ESR <sup>(4)</sup>                         |                           |   | ESR available at <a href="http://www.opcodirect.com/library">www.opcodirect.com/library</a>  |          |          |          |          |          |

<sup>(1)</sup> 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-G+ R-values. The R-value properties are based on 1-1/16 in thickness.

<sup>(2)</sup> 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 specifiers option. Values are from data provided by BASF AG for NEOPOR F5300 PLUS.

<sup>(3)</sup> OPCORE-G+ made of NEOPOR meets and exceeds ASTM C578-14 "Standard Specification For Preformed, Cellular Polystyrene Insulation"; published by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959.

<sup>(4)</sup> OPCORE-G+ rigid thermal insulation foam, and its use and application requirements per building code, are described in ICC-ES ESR 3463 available at [www.opcodirect.com/library](http://www.opcodirect.com/library) and from ICC-ES.

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 may vary with normal manufacturing variation.



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**Structural Insulated Panel Association**

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