

# ICC-ES Evaluation Report

## ESR-4522

Issued November 2019

This report is subject to renewal March 2020.

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A Subsidiary of the International Code Council®

**DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION**

**Section: 07 21 00—Thermal Insulation**

**REPORT HOLDER:**

**OPCO, INC.**

**EVALUATION SUBJECT:**

**OPCORE® EXPANDED POLYSTYRENE (EPS) AND OPCORE-G™ GRAPHITE POLYSTYRENE (GPS) FOAM PLASTIC INSULATION**

## 1.0 EVALUATION SCOPE

**Compliance with the following codes:**

- 2012 and 2009 *International Building Code®* (IBC)
- 2012 and 2009 *International Residential Code®* (IRC)

**Properties evaluated:**

- Surface-burning characteristics
- Physical properties
- Thermal resistance

## 2.0 USES

### 2.1 General:

**2.1.1** OPCORE® and OPCORE-G™ insulation boards are foam plastic boards used as nonstructural thermal insulation in wall cavities and roof and floor assemblies. OPCORE® is a registered trademark of OPCO, Inc. The OPCO logo and OPCORE-G™ are trademarks of OPCO, Inc.

**2.1.2** OPCORE® and OPCORE-G™ insulation boards may be used as the core of sandwich panels when the sandwich panels are specifically recognized in a current evaluation report.

### 2.2 Construction Types:

OPCORE® and OPCORE-G™ shall be considered combustible building elements when determining the Type of Construction in accordance with 2012 and 2009 IBC Chapter 6. The use of OPCORE® and OPCORE-G™ in exterior walls of buildings of Type I, II, III or IV construction of any height shall be approved by the authority having jurisdiction.

### 2.3 Fire Resistive Assemblies:

OPCORE® and OPCORE-G™ shall be used as part of a fire-rated assembly only when suitable evidence and details

are submitted and approved by the authority having jurisdiction.

## 3.0 DESCRIPTION

**3.1.1 General:** OPCORE® and OPCORE-G™ are molded, closed-cell expanded polystyrene boards complying with ASTM C578 and have a flame-spread index not exceeding 25 and a smoke-developed index not exceeding 450 when tested at a thickness of 4 inches in accordance with ASTM E84.

**3.1.2** OPCORE® EPS boards are manufactured at a minimum density of 0.90 pcf and comply with ASTM C578, Type I specification.

**3.1.3** OPCORE-G™ GPS boards are manufactured at a minimum density of 0.90 and 1.15 pcf and comply with ASTM C578, Type I and Type VIII specifications, respectively.

## 4.0 DESIGN AND INSTALLATION

OPCORE® and OPCORE-G™ shall be fabricated, identified and erected in accordance with this report, the approved construction documents and the applicable code. In the event of a conflict between the manufacturer's published installation instructions and this report, this report shall govern. Approved construction documents shall be available at all times on the jobsite during installation.

## 5.0 CONDITIONS OF USE

The OPCORE® and OPCORE-G™ described in this report comply with, or are a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** Product is produced and labeled in a manufacturing location identified in this report.
- 5.2** OPCORE® and OPCORE-G™ shall be separated from the interior of a building by an approved thermal barrier of ½ inch gypsum wallboard or equivalent, unless suitable evidence and details in accordance with 2012 IBC Section 2603.10 or 2009 IBC Section 2603.9, as applicable, are submitted and approved by the authority having jurisdiction.
- 5.3** OPCORE® and OPCORE-G™ may be installed in cooler or freezer walls only where suitable evidence and details are submitted and approved by the authority having jurisdiction.
- 5.4** Within an attic or crawl space where entry is made only for service of utilities, repairs or maintenance, OPCORE® and OPCORE-G™ shall be protected by an

ignition barrier in accordance with IBC Section 2603.4.1.6, IRC R316.5.3 or IRC R316.5.4.

**5.5** *OPCORE*® and *OPCORE-G*™ may be used as part of a roof-covering assembly only where suitable evidence and details are submitted and approved by the authority having jurisdiction.

**5.6** *OPCORE*® and *OPCORE-G*™ insulation boards are produced under a quality control program with inspections by ICC-ES.

## 6.0 EVIDENCE SUBMITTED

**6.1** Reports on surface burning tests in accordance with ASTM E84.

**6.2** Reports of tests on physical properties in accordance with ASTM C578

**6.3** Reports of thermal resistance testing in accordance with ASTM C177.

## 7.0 IDENTIFICATION

**7.1** The *OPCORE*® and *OPCORE-G*™ insulation boards are identified with the following information:

**7.1.1** The ICC-ES Evaluation Report number (ESR-4522), or NTA, Inc. certification mark (either NTA's NER No. OPCO082511-42, or NTA's NER No. NER-1056)

**7.1.2** Manufacturer's name or Trademark

**7.1.3** ASTM C578 Type

**7.1.3.1** *OPCORE*®: Type I

**7.1.3.2** *OPCORE-G*™: Type I or VIII

**7.1.4** Minimum R-Value

**7.1.4.1** *OPCORE*® or *OPCORE-G*™ (Type I): 3.6

**7.1.4.2** *OPCORE-G*™ (Type VIII): 3.8

**7.1.5** Flame Spread Index less than 25

**7.1.6** Smoke Developed Index less than 450

**7.2** The report holder's contact information is the following:

**OPCO, INC.**  
**205 HARRISON AVENUE WEST**  
**LATROBE, PENNSYLVANIA 15650**  
[www.opcodirect.com](http://www.opcodirect.com)

TABLE 1—RECOGNIZED PRODUCT PERFORMANCE

Product Name	ASTM C578 Specification	Flame Spread Index / Smoke Developed Index
<i>OPCORE</i> ®	Type I	< 25 / 450 <sup>a</sup>
<i>OPCORE-G</i> ™	Type I, VIII	< 25 / 450 <sup>b</sup>

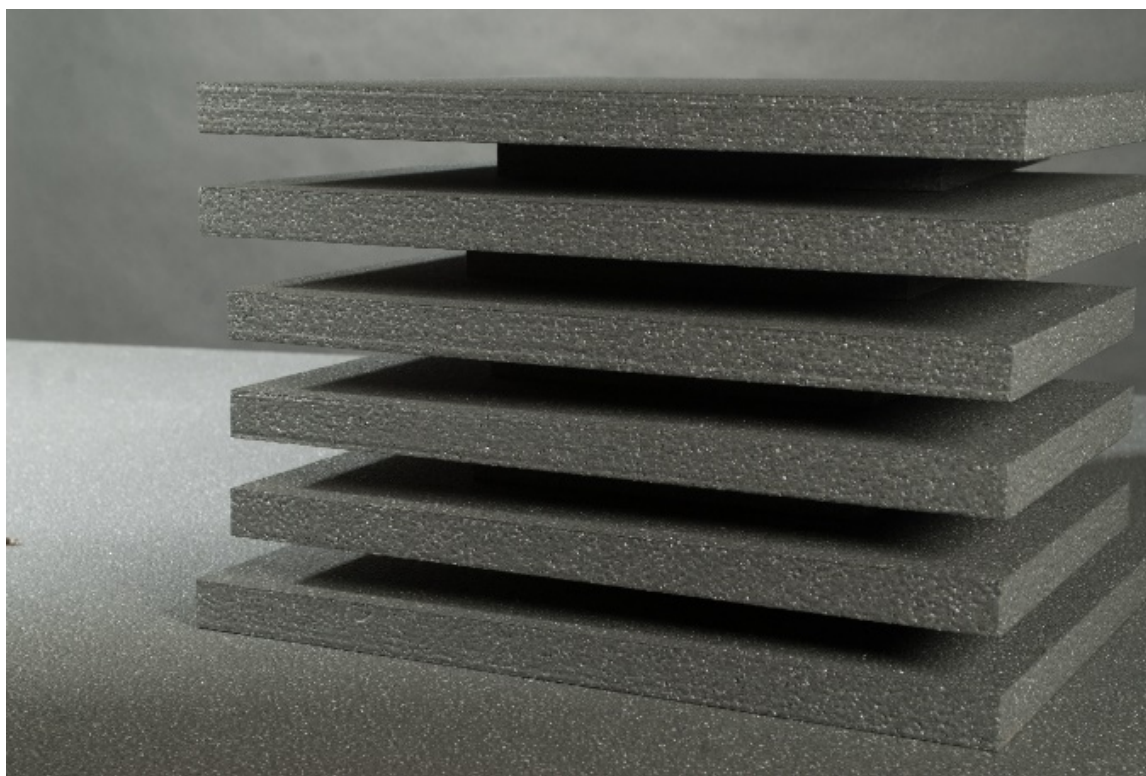


FIGURE 1—*OPCORE-G*™ GPS FOAM