

# ICC-ES Evaluation Report

## ESR-1060

Reissued August 1, 2011

This report is subject to renewal in two years.

[www.icc-es.org](http://www.icc-es.org) | (800) 423-6587 | (562) 699-0543

A Subsidiary of the International Code Council®

**DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES**
**Section: 06 50 00—Structural Plastics**
**REPORT HOLDER:**
**ENDURO SYSTEMS, INC.**  
 16602 CENTRAL GREEN BOULEVARD  
 HOUSTON, TEXAS 77032  
 (713) 358-4000

[www.endurocomposites.com](http://www.endurocomposites.com)  
[sales@endurocomposites.com](mailto:sales@endurocomposites.com)
**EVALUATION SUBJECT:**
**TUFF SPAN PFR FIBERGLASS REINFORCED PLASTIC PANELS: SERIES 150, 250 AND 300**

### 1.0 EVALUATION SCOPE

**Compliance with the following code:**

 2006 *International Building Code*® (IBC)

**Property evaluated:**

Approved plastic

### 2.0 USES

Tuff Span PFR Fiberglass Reinforced Plastic Panels are intended for use where approved plastics are allowed by the code.

### 3.0 DESCRIPTION

Tuff Span PFR fiberglass reinforced plastic panels are manufactured in ribbed, corrugated, and flat sections in a range of series or weight classifications. The panels are furnished as either opaque or light-transmitting. The material consists of continuous, straight glass fiber reinforcements embedded within a polyester resin system. Glass fiber reinforcements are aligned bidirectionally and make up 47 percent to 50 percent of the material weight. Material descriptions and plastic classifications are set forth in Table 1.

### 3.1 Self-ignition Temperature:

When tested in accordance with ASTM D 1929, Tuff Span Series 150, 250 and 300 have self-ignition temperatures of more than 650°F.

### 3.2 Smoke-developed Index:

When tested in accordance with ASTM E 84, Tuff Span Series 150, 250 and 300 have smoke-developed indices of less than 450.

### 4.0 INSTALLATION

The installation of this product must follow the manufacturer's published installation instructions. If the manufacturer's published installation instructions differ from this report, this report governs.

### 5.0 CONDITIONS OF USE

The Tuff Span panels described in this report comply with the code indicated in Section 1.0 of this report, subject to the following conditions:

- 5.1 The products are manufactured and identified in accordance with this report.
- 5.2 The products have not been evaluated for structural and durability requirements of the code.

### 6.0 EVIDENCE SUBMITTED

- 6.1 Product literature.
- 6.2 Reports of tests in accordance with ASTM E 84, ASTM D 1929 and ASTM D 635.
- 6.3 A quality control manual.

### 7.0 IDENTIFICATION

Each panel bears a label that includes the Enduro Systems, Inc., name, plant location (Houston, Texas), product name, panel series, evaluation report number (ESR-1060) and plastic classification (CC1).

**TABLE 1—FIBERGLASS REINFORCED PLASTIC PANELS: MATERIAL DESCRIPTIONS AND PLASTIC CLASSIFICATIONS**

PANEL SERIES	WEIGHT (ounces per square foot ±10%)	THICKNESS (inch)	FIBERGLASS CONTENT (% by weight)	PLASTIC CLASSIFICATION
Tuff Span Series 150 PFR	8	0.045 - 0.055	47 to 50%	CC1
Tuff Span Series 250 PFR	10.5	0.055 - 0.065	47 to 50%	CC1
Tuff Span Series 300 PFR	12	0.070 - 0.080	47 to 50%	CC1

 For SI: 1 inch = 25.4 mm, 1 ounce/square foot = 305.1 g/m<sup>2</sup>.