



## USG STRUCTURAL PANEL CONCRETE SUBFLOOR

### AUDITORIUM/THEATER APPLICATION

- Three easy steps: lay, fasten, finish
- No pouring, no setting, no curing
- An alternative to poured concrete for noncombustible auditoriums meeting ASTM E136-12
- A complete dry application
- Mold-, moisture- and termite-resistant
- Easily transported into building/fits in an elevator
- Fast installation/dimensionally stable/single trade installation

## TYPICAL APPLICATIONS

• Classrooms	• Corporate Training Rooms	(1) Floor Finish: Follow the contract documents and the floor finish manufacturer's recommendations for the application of finished flooring. Note that most floor finishes will require an underlayment. Before the application of floor finish materials, ensure that all panels are properly fastened, with the fastener head driven flush or slightly below the surface of the panels.
• School Auditoriums	• Music Halls	
• Movie Theaters	• Performance Stages	
		(2) Storage, traffic and equipment might be limited based on the concentrated load limitation of USG Structural Panel Concrete Subfloor. <b>A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.</b>

## TEST DATA

Physical and Mechanical Properties	Test Standard	Approximate Values Standard (Metric)
Concentrated load	ASTM E661	550 lb. (2.45 kN) static 0.108 in. (2.7 mm) max. deflection @ 200 lb. (0.89 kN)
Mold resistance	ASTM D3273, ASTM G21	10, 0
Weight (3/4 in. [19 mm] thickness)	ASTM D1037	5.3 lb./ft. <sup>2</sup> (26 kg/m <sup>2</sup> )
Water Absorption <sup>a</sup>	ASTM C1185, Sec. 5.2.3.1	<15 %
Noncombustibility	ASTM E136-12 (unmodified) CAN/ULC-S114	Passed Passed
Surface-burning characteristics (flame spread/smoke developed)	ASTM E84, CAN/ULC-S102	0/0
Termite resistance	AWPA Standard E1-13	9.8
Low VOC emissions	CDPH/EHLB/Standard Method V1.1-2010 <sup>b</sup>	Compliant

(a) Absorption Measured from equilibrium conditioning followed by immersion in water for 48 hours.

(b) Reference Standard: California Department of Public Health CDPH/EHLB/Standard Method Version 1.1, 2010 (Emission testing method for CA Specification 01350).

## LOAD TABLE

The following table represents the load-carrying capacity of USG Structural Panel Concrete Subfloors. For the most up-to-date load tables, see the *Progressive Engineering Inc. Product Evaluation Report* ([PER-13067](#)). For technical questions, email [usgstructural@usg.com](mailto:usgstructural@usg.com). **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

Ultimate Uniform Load for USG Structural Panel Concrete Subfloor			
Joist Spacing - Inches (millimeters)	12 in. (305 mm)	16 in. (406 mm)	24 in. (610 mm)
Capacity - psf (kPa)	1,320 psf (63.2 kPa)	744 psf (35.6 kPa)	330 psf (15.8 kPa)

For SI: 1 inch = 25.4 mm, 1 psf = 47.88 Pa.

(1) **Ultimate Load Values have no safety factor included.**

(2) Two framing spans minimum per panel piece.

(3) Ultimate Uniform Load Table for general reference only.

(4) Ultimate Uniform Load Values are given by engineer analysis. For complete load capacities, consult *Progressive Engineering Inc. Product Evaluation Report* ([PER-13067](#)).

## STRUCTURAL FASTENERS

USG recommends the following fasteners for the installation of USG Structural Panels to structural framing:

Manufacturer	16 ga. Cold-Formed Steel (1/2 in. [13 mm] Min. Edge Distance)		SPF Lumber (5/8 in. [16 mm] Min. Edge Distance)		1/4 in. (6.5 mm) A36 Hot-Rolled Steel (3/4 in. [19 mm] Min. Edge Distance)	
	Part #	Fastener Pull-Through <sup>1</sup>	Part #	Fastener Pull-Through <sup>1</sup>	Part #	Fastener Pull-Through <sup>1</sup>
Grabber Construction Products, Inc.	CGH8158LG	581 lb. (264 kg)	C8200L2M	581 lb. (264 kg)	—	—
Simpson Strong-Tie Company Inc.	CBSDQ158S	581 lb. (264 kg)	WSNTLG2S	581 lb. (264 kg)	TBG1260S	581 lb. (264 kg)
SENCO <sup>2</sup>	—	—	GL24AABF <sup>3</sup>	581 lb. (264 kg)	—	—

(1) Fastener pull-through capacities are based upon the minimum average **ultimate tested capacity** for all tabulated fasteners. The engineer or designer of record shall apply an appropriate safety factor (ASD) or resistance factor (LRFD).

(2) SENCO 8d ring shank nails are manufactured with a length of 2-3/8 in., head diameter of 0.266 in. and a shank diameter of 0.113 in. Equivalent 8d ring shank nails meeting these dimensional requirements may be utilized when approved by the engineer or designer of record.

(3) Minimum edge distance for nails is 1/2 in.

**General Notes:** In accordance with [PER-13067](#), the minimum screw pattern is 6 in. (153 mm) o.c. along the perimeter of the panels and 12 in. (305 mm) o.c. in the field of the panels. Do not use a larger size screw unless specified by the structural engineer. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

**MSRP based upon full truckload delivered to jobsite:  
Subfloor: \$4.50/sf**

SCP32-USA-ENG/rev. 10-18  
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### PRODUCT INFORMATION

See [usg.com](http://usg.com) for the most up-to-date product information.

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### SAFETY FIRST!

Follow good safety/industrial hygiene practices during installation. Wear appropriate personal protective equipment. Read SDS and literature before specification and installation.