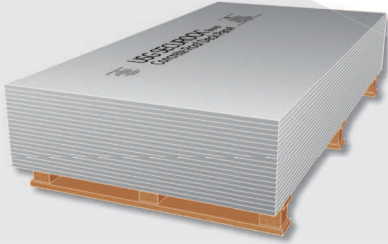


USG SECUROCK® BRAND CONCRETE ROOF DECK PANEL



DESCRIPTION

A structural concrete roof deck panel that can be combined with other noncombustible materials to create one- and two-hour fire-rated roof-ceiling assemblies.

- Strong, durable concrete panel; great uplift ratings
- Dimensionally stable; panel will not buckle or warp like wood sheathing; no moisture issues like structural concrete
- Installs fast and easy: circular saw for cutting; screws for fastening
- Meets the criteria of ASTM E136-04 for use in all types of noncombustible construction

USG Securock® Brand Concrete Roof Deck Panels are mechanically fastened to cold-formed steel joists or framing members. This roof system is designed to carry gravity and lateral loads. Roof membranes may be applied directly over USG Securock Concrete Roof Deck Panels.

USG Securock Concrete Roof Deck Panels can carry a total load, live and dead, of 50 psf on cold-formed steel framing spaced 48".

USG Securock Concrete Roof Deck Panels have a linear variation with change in moisture content of less than 0.10%. This means that the panels will not buckle or warp like wood sheathing.

Cutting USG Securock Concrete Roof Deck Panels require a carbide-tipped saw blade and a circular saw equipped with dust collection or suppression to lessen airborne dust. Fastening is also conventional, using a screw gun and self-drilling No. 8-gauge screws. Because these panels are so durable, they may be installed in most weather conditions, including mild precipitation (rain or snow) and temperatures from 0°F to 125°F.

LIMITATION

USG Securock Concrete Roof Deck Panels should not be left in service without an appropriate roof membrane covering.

INSTALLATION

To perform in the expected manner, USG Securock Concrete Roof Deck Panels must be installed according to USG specifications, using only the listed materials and components. For a complete set of specifications, email securockroofing@usg.com.

As with all types of construction, appropriate safety procedures must be followed to protect installers from personal injuries resulting from lifting incorrectly, falling, and eye, hand and lung irritation.

Care must be taken when placing pallets of USG Securock Concrete Roof Deck Panels on roof framing. A pallet of USG Securock Concrete Roof Deck Panels (20 sheets, 3/4" x 4' x 8') weighs approximately 3,400 lbs. Do not exceed limits when loading pallets or panels on open framing or completed roof assemblies. Store units next to structural walls where the joists meet the wall.

Use a structural concrete panel screw #8 x 1-5/8" (minimum length) with a thin wafer head (or bugle) and GRABBERGARD® finish to attach the USG Securock Concrete Roof Deck Panels to the cold-formed steel. For mechanically attaching the roof system, use only corrosion-resistant fasteners that are compatible with concrete.

FRAMING

The steel roof framing must be designed to meet the strength and deflection criteria specified in the contract documents. The attachment flange or bearing edge must be a minimum 1.625" (41 mm) wide with at least 3/4" of the panel bearing on the supporting flange. Metal framing must be a minimum 16 gauge and spaced no greater than 48" o.c. Follow the contract documents and the steel framing manufacturer's recommendations for the proper installation and bracing of the framing.

APPLICATION

Cut panels to size with a circular saw equipped with carbide-tipped blade and a dry dust collection device or a water-dispensing device that limits the amount of airborne dust. Wear safety glasses and a NIOSH-approved N95 dust mask when cutting this panel. Dispose of collected dust in a safe manner and in compliance with local, state and federal ordinances.

Install USG Securock Concrete Roof Deck Panels with the long edges perpendicular to the framing. Apply the panel with the print markings facing up toward the installer. Fasten each panel after it has been placed following the fastening schedule listed in the contract documents. Install panels in a running bond pattern so that end joints fall over the center of the framing members and are staggered by at least two supports from where the end joints fall in the adjacent rows. Tongue and groove joints should be fitted tightly without any gapping. For all panels less than 24" wide, all edges must be supported by blocking. Blocking must be cold-formed from steel complying with AISI General, with a minimum 54 mils (1.37 mm) base metal thickness (no. 16 gauge) and a minimum G60 galvanized coating. The attachment flange or bearing edge must be at least 1.625" (41 mm) wide and at least 3/4" of the panel must bear on the supporting flange or edge.

Installed panels shall not be exposed to weather for more than 90 days. Care must be taken to avoid accumulation of snow and/or ice on installed panels. Brooms should be used for snow removal whenever possible. Excessive shoveling or scraping may damage installed panel surface.

In the event of significant accumulations of snow and/or ice, use indirect heat from temporary space heaters to melt the affected areas. To prevent damage to USG Securock Concrete Roof Deck Panels, never expose the panels to direct flame for the purpose of snow removal and/or deicing efforts. At no time should salts, fertilizers or other chemicals be used on the panels for anti-icing and/or deicing purposes.

ROOFING SYSTEM

Follow the contract documents and the roof system manufacturer's recommendations for the application of roof materials. Before the application of roof materials, ensure that all panels are properly fastened, with the fastener head driven flush or slightly below the surface of the panels.

PRODUCT DATA

Sizes and Packaging: 3/4" x 4' x 8' panels. Each panel weighs approximately 170 lbs. and is intended to be handled by two people. USG Securock Concrete Roof Deck Panels are packaged in 20-piece units.

Availability: USG Securock Concrete Roof Deck Panels are sold through select USG distributors. Email securockroofing@usg.com for information on availability and a dealer in your area.

Storage: USG Securock Concrete Roof Deck Panels are shipped in 20-piece units. Panels should be stored in a horizontal position and uniformly supported. Panels must be covered when stored in unprotected areas.

Excessive moisture and freezing temperatures may result in panels sticking together within the units. Therefore, care should be taken to ensure units of USG Securock Concrete Roof Deck Panels are not exposed to excessive moisture, ice and snow. In the event that panels do become frozen together within a unit, the unit needs to be brought to a temperature above 32°F to allow the ice to melt naturally. Never physically pry panels apart. Salt, fertilizer or other deicing agents should not be used at any time. Covering the units completely with tarps or similar coverings is an easy way to avoid panels freezing together.

Maintenance: USG Securock Concrete Roof Deck Panels do not require any regular maintenance except to remove standing water and repair damage from abuse. Any cracked or broken panels should be replaced with sound USG Securock Concrete Roof Deck Panels that are secured following the fastening schedule prescribed in the original installation documents. The replacement panels must be a minimum of 24" wide and must span a minimum of two supports. If not, the replacement panel must be fully blocked on all sides.

TEST DATA

Physical and Mechanical Properties	Test Standard	Typical Values Standard (Metric)
Moment capacity (3/4" thick panel)	ASTM C1185, 5.5	1,800 lb.-in./ft. 685
Bending stiffness (3/4" thick panel)	ASTM C1185, 5.5	315,000 lb.-in. ² /ft. (3 kN-m ² /m)
Concentrated load	ASTM E661	550 lbs. (2.45 kN) static 0.108" (2.7 mm) max. deflection @ 200 lbs. (0.89 kN)
Fastener lateral resistance ^a	ASTM D1761, S.10.2	>210 lbs. (0.93 kN) dry >160 lbs. (0.71 kN) wet
Density ^b	ASTM C1185	75 lbs./ft. ³ (1,200 kg/m ³)
Weight at 3/4" thickness	ASTM D1037	5.3 lbs./ft. ² (23 kg/m ²)
pH value	ASTM D1293	10.5
Linear variation with change in moisture (25% to 90% relative humidity)	ASTM C1185, S.8	<0.10%
Thickness swell	ASTM D1037, B	Max. 3.0%
Freeze/thaw resistance	ASTM C1185	Passed (50 cycles)
Mold resistance	ASTM D3273 ASTM G21	10 0
Water absorption ^c	ASTM C1185, 5.2.3.1	<15.0%
Noncombustibility	ASTM E136 (-04) CAN/ULC-S114	Passed unmodified Passed
Surface-burning characteristics (flame spread/smoke developed)	ASTM E84	0/0
Long-term durability	ASTM C1185, S.13	Min. 75% retention of physical properties
Water durability	ASTM C1185, S.5	Min. 70% retention of physical properties

(a) Fastener lateral resistance measured with #8 1-5/8" Hi-Low screw.

(b) Density measured at equilibrium conditioning per Section 5.2.3.1., 28 days after manufacturing.

(c) Absorption measured from equilibrium conditioning followed by immersion in water for 48 hours.

SYSTEM PERFORMANCE

Description	Reference
Code Reports	PER-14076
Allowable Uniform Load ^a (total DL and LL)	50 psf @ 48" o.c.; 80 psf @ 32"; 110 psf @ 24" o.c.; 245 psf @ 16" o.c.
Shear Diaphragm Ratings	>1,300 plf ^b
UL 1-, 1.5-, 2-Hour Fire Resistance Designs	P561, P562
UL Roofing System, Uplift Resistance	TGIK.R25352

(a) On steel framing.

(b) Joists spaced 32" o.c. and fasteners spaced 8" at the perimeter and 12" o.c. in field, fully blocked.

LOAD TABLE

The following table represents the allowable load-carrying capacity of USG Securock Concrete Roof Deck Panels. For the most up-to-date load tables, see the Progressive Engineering Inc. report, PER-14076. For technical questions, visit securockroofing@usg.com. A qualified architect or engineer should review and approve the calculations for all projects.

Allowable Uniform Gravity Loads

Deflection Limit	Allowable Uniform Load (psf) ¹				
	Joist Spacing (inches)				
	16"	20"	24"	32"	48"
L/240	245	170	110	80	50"
L/360	245	170	110	80	50"
L/480	245	170	110	80	50"
L/540	245	170	110 ²	80	50"

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

- (1) These loads represent the load-carrying capacity of the panels spanning between the floor joists. A minimum of two spans is required. This table does not consider the influence of joist deflection.
(2) Load capacity limited by panel deflection. All other values are limited by panel strength.

SUBMITTAL APPROVALS

Job Name	
Contractor	Date

PRODUCT INFORMATION

See usg.com for the most up-to-date product information.

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NOTE

Products described here may not be available in all geographic markets.

NOTICE

We shall not be liable for incidental and consequential damages, directly or indirectly sustained, nor for any loss caused by application of these goods not in accordance with current printed instructions or for other than the intended use. Our liability is expressly limited to replacement of defective goods. Any claim shall be deemed waived unless made in writing to us within thirty (30) days from date it was or reasonably should have been discovered.

SAFETY FIRST!

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

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