

USG STRUCTURAL PANEL CONCRETE ROOF DECK HIGH PERFORMANCE APPLICATIONS

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

- The only cementitious structural panel approved by Factory Mutual (FM) – FM Approval Standard 4472
- 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 with appropriate dust collection
- Meets the criteria of latest active ASTM standard E136 for use in all types of noncombustible construction
- Made in the USA

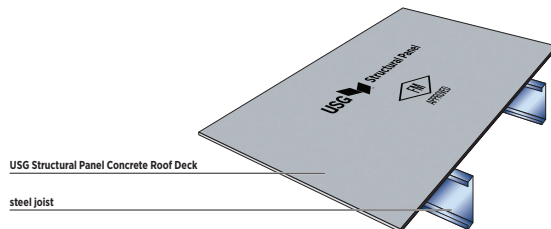
LOW-SLOPE APPLICATIONS

USG Structural Panels Concrete Roof Deck are an innovative technology designed to provide a structural roof sheathing mechanically attached to structural framing, without the need for thermal barriers, pouring, setting or curing.

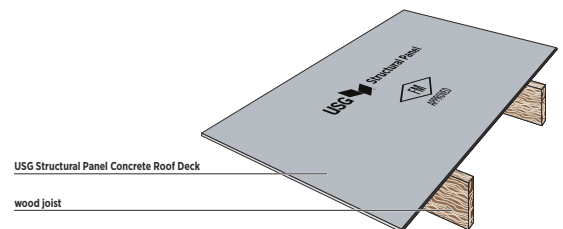
There are five basic components to a low-slope roof assembly:

- Structural framing (or joists), which can be cold formed steel, wood or open web steel trusses
- Concrete Roof Deck, serving as the noncombustible, nonrotting, dimensionally stable, structural sheathing
- Insulation, including polyisocyanurate (ISO), extruded polystyrene (XPS) or expanded polystyrene (EPS)
- Roof cover board installed between the insulation and the roofing membrane to protect the insulation and support the membrane, improving fire protection, traffic and hail resistance, and wind-uplift performance
- A membrane or membrane system, which can be built-up roofing (BUR), single-ply or modified bitumen

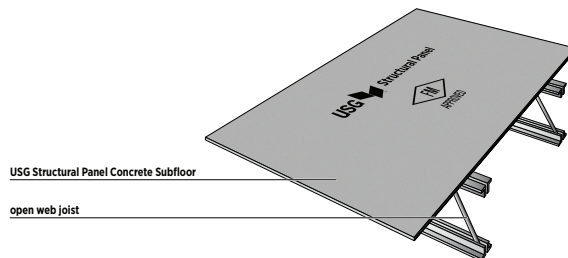
USG Structural Panel Concrete Roof Deck over Cold Formed Steel.



USG Structural Panel Concrete Roof Deck over Wood Frame.



USG Structural Panel Concrete Roof Deck over Open Web Joist.

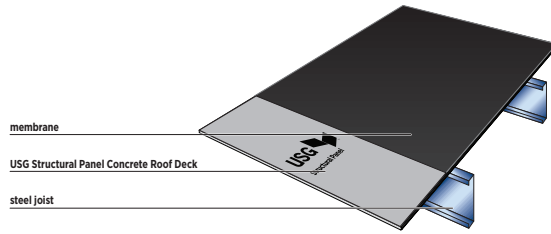


The following are for illustration purposes only. USG Structural Panels and USG Securock® Brand high-performance roof boards are engineered to perform within a properly designed roof system. The use of USG Securock high-performance roof boards as a roofing component is the responsibility of the design professional. Consult roofing system manufacturers for specific instructions on the application of their products to USG Securock high-performance roof boards. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

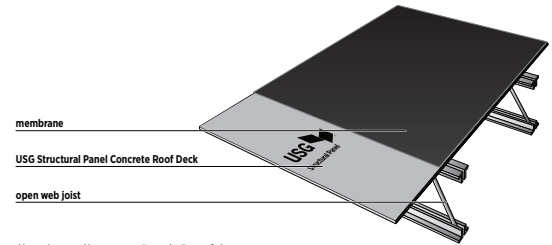
**DIRECT APPLIED
(MEMBRANE DIRECT)**

USG Structural Panel Concrete Roof Deck is a substrate for direct applied roof systems. Whether Hot Asphalt (Hot Mop), or Adhesively applied, Concrete Roof Deck will serve as a noncombustible structural sheathing. Concrete Roof Deck is a dimensionally stable panel that does not need to be gapped. As an inorganic, termite-resistant per AWPA Standard E1-13, nonrotting, substrate, its ideal for membrane direct applications.

USG Structural Panel Concrete Roof Deck over Cold Formed Steel.



USG Structural Panel Concrete Roof Deck over Open Web joists.

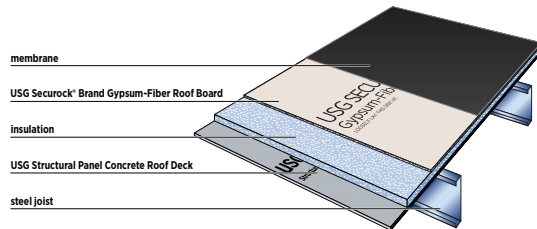


Refer to Table 2 in our Assembly Report: [AER-17108](#) for approved membranes and adhesives direct to Deck Roof Systems

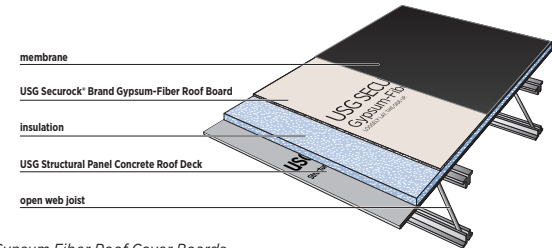
INSULATED SYSTEMS

Concrete Roof Deck is a structural substrate when using ISO, XPS or EPS insulations, and does not require the use of a thermal barrier. The use of USG Securock high-performance roof board placed directly below the roofing membrane, providing primary support for the membrane and protecting the underlying insulation layer from damage during installation, foot traffic and hail.

USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock® Gypsum-Fiber Roof Board recommended for fully adhered membrane.

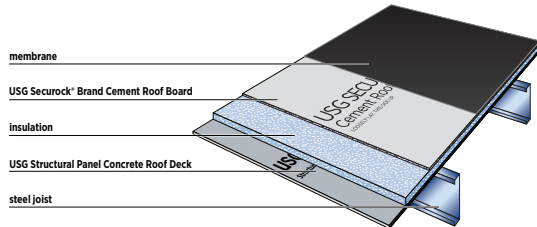


USG Structural Panel Concrete Roof Deck over Open Web joists with USG Securock® Gypsum-Fiber Roof Board recommended for fully adhered membrane.

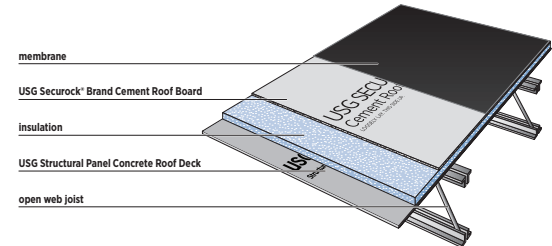


Refer to Table 6 and Table 7 for approved membranes and adhesives to Securock Gypsum Fiber Roof Cover Boards

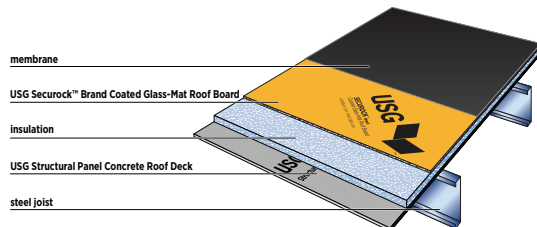
USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock® Cement Roof Board recommended for fully adhered membrane.



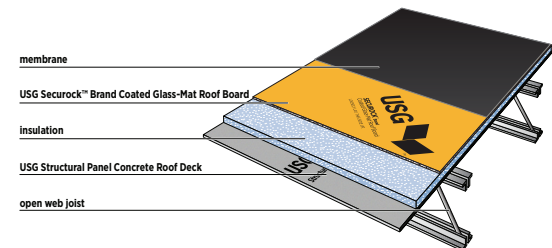
USG Structural Panel Concrete Roof Deck over Open Web joists with USG Securock® Cement Roof Board recommended for fully adhered membrane.



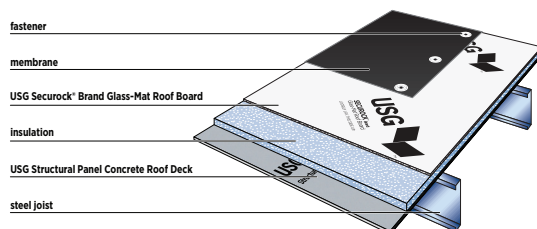
USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock® Brand UltraLight Coated Glass-Mat Roof Board recommended for fully adhered membrane



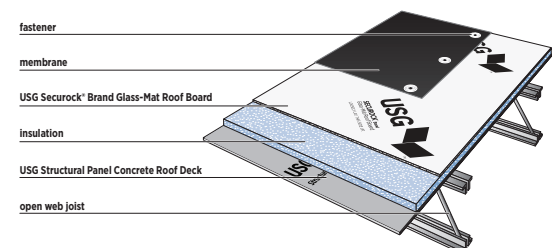
USG Structural Panel Concrete Roof Deck over Open Web Joists with USG Securock® Brand UltraLight Coated Glass-Mat Roof Board recommended for fully adhered membrane



USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock® Glass-Mat Roof Board recommended for mechanically attached membrane.



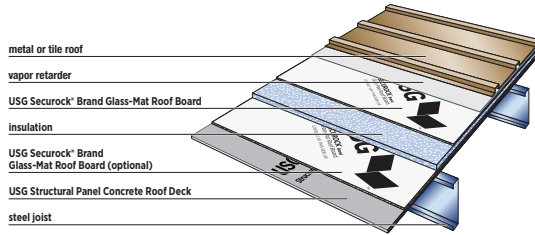
USG Structural Panel Concrete Roof Deck over Open Web joists with USG Securock® Glass-Mat Roof Board recommended for mechanically attached membrane.



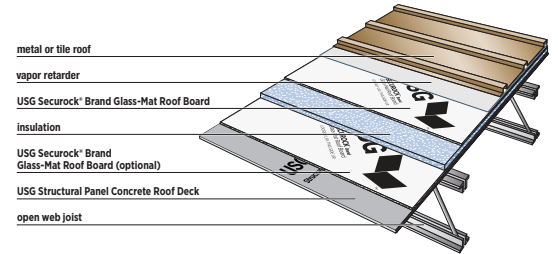
METAL OR TILE ROOF

Concrete Roof Deck provides the structural sheathing over Cold Formed Steel or Open Web Joists, without the need for a thermal barrier. USG Securock high-performance roof board provides an optional thermal barrier in conjunction with a standing-seam metal or tile roofing system. It also provides noise reduction and hail resistance. Thermal barriers reduce thermal "shock" and slow heat escape from building and act as a fire barrier for internal fire.

USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock Glass-Mat Roof Board recommended for mechanically attached Metal or Tile Roof.



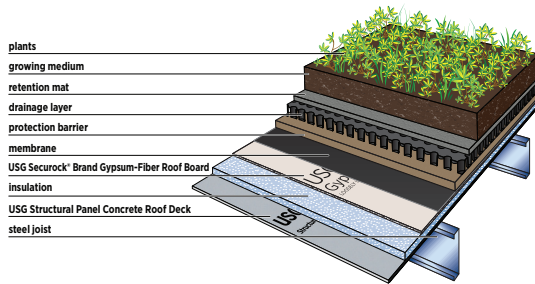
USG Structural Panel Concrete Roof Deck over Open Web Joist with USG Securock Glass-Mat Roof Board recommended for mechanically attached Metal or Tile Roof.



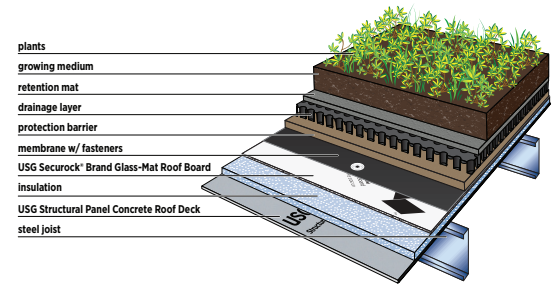
VEGETATIVE OR GREEN ROOF

Concrete Roof Deck provides the structural sheathing over Cold Formed Steel or Open Web Joists, without the need for a thermal barrier. It can be a suitable substructure for Vegetative or Green Roofs.

USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock Gypsum-Fiber Roof Board recommended for fully adhered membrane.



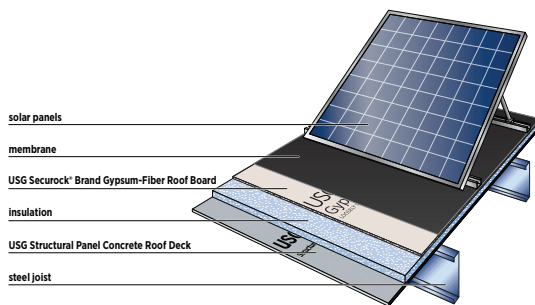
USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock Glass-Mat Roof Board recommended for mechanically attached membrane.



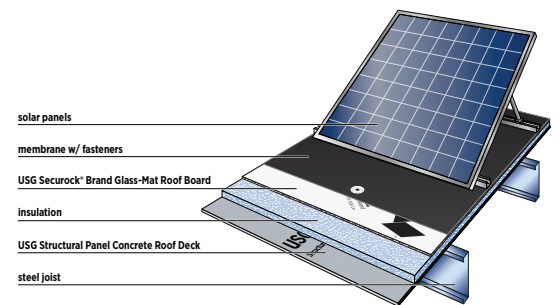
SOLAR ROOF

Concrete Roof Deck provides the structural sheathing over Cold Formed Steel or Open Web Joists, without the need for a thermal barrier. It can be a suitable substructure for photovoltaic or solar panels.

USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock Gypsum-Fiber Roof Board recommended for fully adhered membrane.



USG Structural Panel Concrete Roof Deck over Cold Formed Steel with USG Securock Glass-Mat Roof Board recommended for mechanically attached membrane.

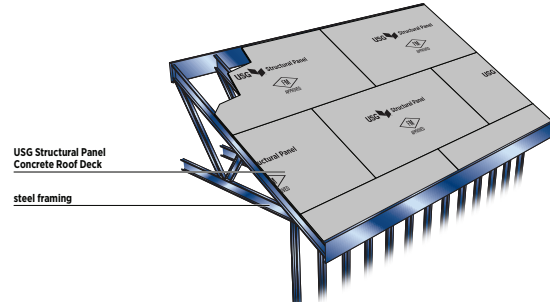


STEEP-SLOPE APPLICATIONS

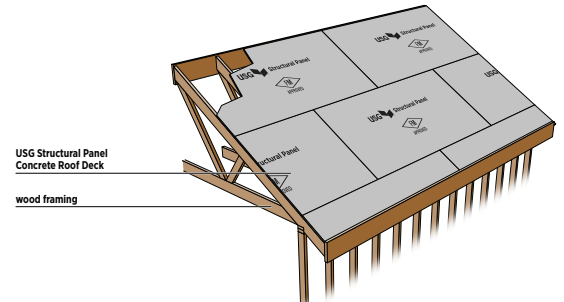
There are four basic components to a steep-slope roof assembly:

- A structural framing (or joists), which can be cold formed steel, or wood trusses
- Concrete Roof Deck, serving as the noncombustible, nonrotting, dimensionally stable, structural sheathing
- Membrane or roof felt and underlayment
- A Exterior Cladding or roof covering, Shingles, Standing-Seem Metal or Clay tile

USG Structural Panel Concrete Roof Deck over Cold Formed Steel Truss.



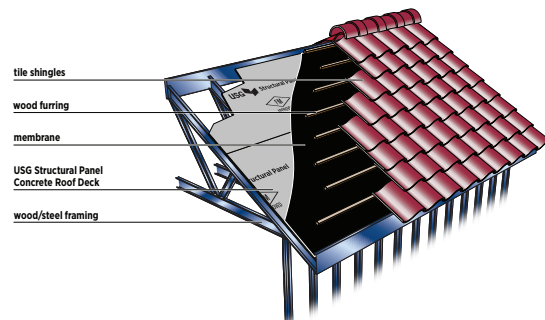
USG Structural Panel Concrete Roof Deck over Wood Truss.



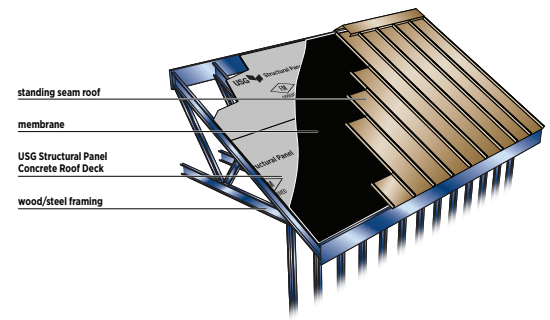
The following are for illustration purposes only. USG Structural Panels are engineered to perform within a properly designed roof system. The use of USG Structural Panel Concrete Roof Deck as a roofing component is the responsibility of the design professional. Consult roofing system manufacturers for specific instructions on the application of their products to USG Structural Panel Concrete Roof Deck. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

Concrete Roof Deck provides the structural sheathing over Cold Formed Steel or wood trusses, without the need for a thermal barrier. Its inorganic core, results in a noncombustible, nonrotting, dimensionally stable substrate ideal for a variety of exterior grade coverings, such as:

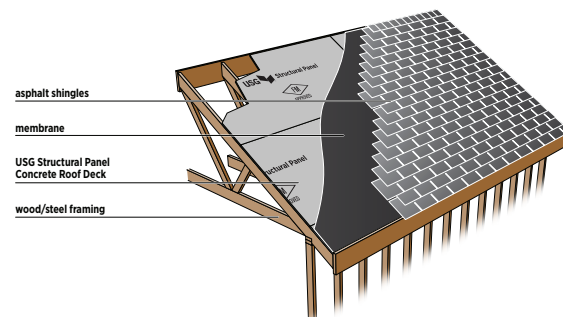
USG Structural Panel Concrete Roof Deck over Cold Formed Steel Truss with Clay Tile.



USG Structural Panel Concrete Roof Deck over Cold Formed Steel Truss with Standing Seem Roof.



USG Structural Panel Concrete Roof Deck over wood Truss with Asphalt Shingles.

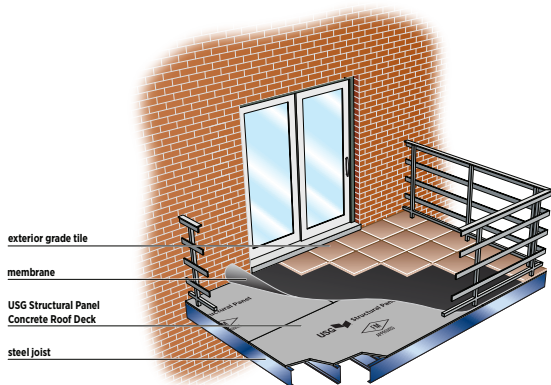


ADDITIONAL APPLICATIONS

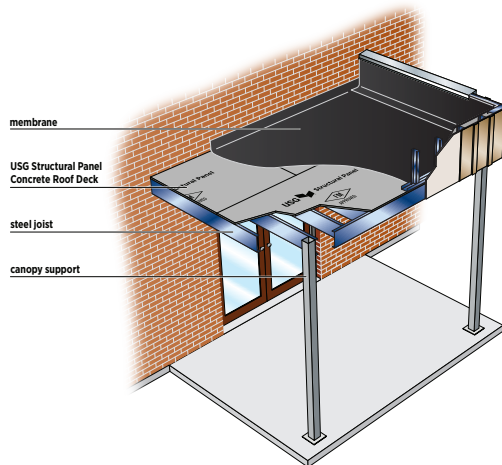
The following are for illustration purposes only. In addition to the previous applications, USG Structural Panels Concrete Roof Deck can be the structural sheathing for balconies and canopies. The use of USG Structural Panel Concrete Roof Deck as a decking component is the responsibility of the design professional. **A qualified architect or engineer should review and approve calculations, framing and fastener spacing for all projects.**

ADDITIONAL APPLICATIONS CONT.

USG Structural Panel Concrete Roof Deck in balcony application.



USG Structural Panel Concrete Roof Deck in canopy system.



LOAD TABLE

The following table represents the uniformly distributed load capacity of USG Structural Panel Concrete Roof Decks. For the most up-to-date load tables, see the Progressive Engineering Inc. report, [PER-14076](#). For technical questions, email 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 Roof Deck

Joist Spacing - inches (millimeters)	12" (305 mm)	16" (406 mm)	24" (610 mm)	32" (813 mm)	48" (1,220 mm)
Uniform Load - psf (kPa)	1,320 psf (63.2kPa)	744 psf (35.6 kPa)	330 psf (15.8 kPa)	240 psf (11.5 kPa)	150 psf (7.2 kPa)

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

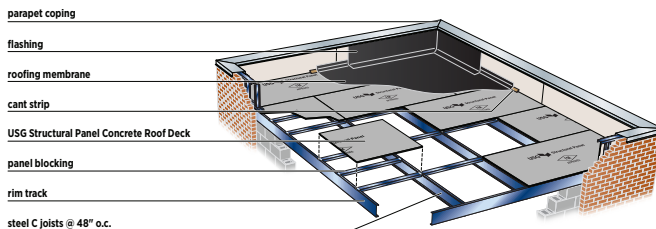
(1) **Ultimate Load Values have no safety factor included.**

(2) Two framing spans minimum per panel piece. See SCP43, page 6 for single span framing recommendations.

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

For complete load capacities, consult Progressive Engineering Inc. Product Evaluation Report [PER-14076](#)

(4) Blocking at all joints perpendicular to framing to be a minimum of 16 gauge 3-5/8" wide track. For sheathing installation where a single span condition exists, additional track blocking is required perpendicular to the framing located mid-way between the edges of the panel.



RECOMMENDED FASTENERS

Reference [USG Structural Panel Recommended Fasteners \(SCP95\)](#) for current fastener information. Visit www.usgscp95.com.

General Note: In accordance with [PER-14067](#), 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:
Roof deck: \$5.40/sf**

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PRODUCT INFORMATION

See usg.com/structural 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.

