

# Fire Resistance Assembly Chart

# Fire Resistance

Deck Construction Type	UL Design Number	Concrete Thickness	Panel or Tile Size and Type	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (in <sup>2</sup> /100 SF)	Maximum Duct Penetration (in <sup>2</sup> /100 SF)	Suspension Systems
<b>CONCRETE FLOOR/CEILING ASSEMBLIES</b>							
<b>Concrete on Flat Cellular, Fluted, or Blend Deck</b>							
3-Hour – Exposed Grid	A212	2-1/2"	48" x 48"; PC 36" x 60"; PC 30" x 60"; PC	5/8"	25	158	1, 2
	D216	3-1/4"	24" x 24" to 30" x 60"; P 24" x 24" to 36" x 60" or 48" x 48"; PC	5/8" (P or PC)	24	576	1, 2
2-Hour – Exposed Grid	D216	2-1/2"	24" x 24" to 30" x 60"; P 24" x 24" to 36" x 60" or 48" x 48"; PC	5/8" (P or PC)	24	576	1, 2, 3
<b>Concrete on Ribbed or Corrugated Deck</b>							
3-Hour – Exposed Grid	G256	3-1/2"	24" x 24"; P 24" x 48"; P or PC	5/8" (P or PC)	24	255	1, 2
2-Hour – Exposed Grid	G256	2-1/2"	24" x 24"; P 24" x 48"; P or PC	5/8" (P or PC)	24	576	1, 2, 3
	G258	2-1/2"	24" x 24"; P 24" x 48"; P	5/8"	24	113	1, 2
	G214	2-3/4"	24" x 48"; P 20" x 60"; P	5/8"	17	57	1, 2
<b>Concrete on Metal Lath, Ribbed, or Corrugated Deck</b>							
3-Hour – Exposed Grid	G229	3-1/4"	24" x 48"; P or PC	5/8"	20	576	1, 2
2-Hour – Concealed Grid	G022	2-1/2"	12" x 24"; P	3/4"	16	57	4
2-Hour – Exposed Grid	G209	3"	24" x 48"; P or PC 24" x 24"; P or PC	5/8"	8	None	1, 2
	G244*	3"	24" x 48"; P or PC 24" x 24"; P or P 20" x 60"; P or PC	5/8"	24*	576	1, 2, 3
	G210	2-1/2"	24" x 24"; P	3/4"	24	113	1, 2
	G216	2-1/2"	24" x 48"; P or PC 24" x 24"; P	5/8"	8	None	1, 2
	G217	2-1/2"	24" x 48"; P or PC 24" x 24"; P or PC 20" x 60"; P or PC	5/8"	8	57	1, 2
	G229	2-1/2"	24" x 48"; P or PC 24" x 24"; P or PC 20" x 60"; P or PC	5/8"	20	576	1, 2, 3
	G242	2-1/2"	24" x 48"; P or PC	5/8"	8	None	1, 2
2-Hour – Exposed Grid	G243*	2-1/2"	24" x 48"; P 24" x 24"; P 20" x 60"; P	5/8"	16	576	1, 2, 3
	G236	2-1/2"	24" x 48"; P 24" x 24"; P	5/8"	None	None	1, 2
	G250	2-1/2"	30" x 60"; P or PC 20" x 60"; P or PC 24" x 48"; P or PC 24" x 24"; P	5/8"	20	113	1, 2
1-Hour – Exposed Grid	G241	2"	24" x 48"; P 24" x 24"; P	5/8"	None	None	1, 2
<b>WOOD DECK/CEILING ASSEMBLIES</b>							
<b>Double-Plywood (or Plywood), 2' X 10' Wood Joists</b>							
1-Hour – Exposed Grid	L209	NA	24" x 48"; P	5/8"	16	110	1, 2
	L210	NA	24" x 48"; P 24" x 24"; P	5/8"	24	227	1, 2, 3
<b>Double-Plywood (or Plywood), 3' X 8' Wood Joists</b>							
1-1/2-Hour – Exposed Grid	L208	NA	24" x 48"; P or PC 24" x 24"; P	5/8"	None	None	1, 2

NOTE: Numbers in parentheses are original UL design numbers.  
Some unit sizes are no longer available as standard items; some designs include additional sizes.  
\* Allows flat-board fixture protection

## WHAT YOU NEED TO KNOW TO USE THIS CHART

If you are unfamiliar with UL Fire Resistance Ratings, begin with a review of meeting Code Requirements, pg. 482.

As explained there, these ratings are applied to certain types of roof/ceiling and floor/ceiling construction assemblies, which are tested and assigned hourly ratings mandated by building codes or other building safety requirements.

### Reminders:

1. UL tests rate an entire assembly. No ceiling or suspension system product alone constitutes a fire-rated assembly.
2. You can use only the specific type, size, and minimum thickness of Fire Guard™ ceilings or suspension system identified in each assembly.
3. This table is a guide.

(See UL Fire Resistance Directory for complete design details).

To purchase a copy of the UL Directory:

Underwriters Laboratories, Inc.  
Publications Stock  
333 Pfingsten Rd.  
Northbrook, IL 60062  
(Tel.) 847-272-8800,  
ext. 42612 or 42622

### Key to Panel and Tile Types

PC = Ceramaguard®

P = All other products designated Fire Guard™ in this catalog

### Key to Grid System Types

- 1 = AFG and FST 6000 – Prelude® Fire Guard™ and Prelude® XL® Fire Guard™ with steel cap
- 2 = AFG-A and FST 6000A – Prelude® Plus XL® Fire Guard™ and XL Fire Guard with aluminum cap
- 3 = FSLK – Suprafine® Fire Guard™ with steel cap

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<b>ROOF/CEILING ASSEMBLIES</b>							
<b>Standing Seam Exposed Metal Roof</b>							
1-1/2 + 1-Hour – Exposed Grid	P265***	See Design Details	24" x 48"; P or PC 24" x 24"; P or PC	3/4" (P) 5/8" (PC)	24	576	1
<b>Lightweight Insulating Concrete on Ribbed or Corrugated Deck</b>							
2-Hour – Exposed Grid	P215	2"	24" x 48"; PC plus 24" x 48"; Gypsum Bd.	5/8" (PC) plus 1/2" Gypsum Bd.	16	57	1, 2
	P219	2"	24" x 48"; PC plus 24" x 24"; Gypsum Bd.	5/8" (PC) plus 1/2" Gypsum Bd.	16	57	1, 2
	P251	2-3/4" Min. to 6-3/4"	24" x 48"; P or PC 24" x 24"; P or PC 20" x 60"; P or PC	5/8" (P or PC)	24	576	1, 2, 3
1-1/2 Hour – Exposed Grid	P231	3-3/8"	24" x 48"; 24" x 24"; P 24" x 48"; Gypsum Bd.	5/8"	24	255	1, 2
1-Hour – Exposed Grid	P216*	2"	24" x 48"; P	5/8"	16	57	1, 2
<b>Mineral-Fiber, Glass-Fiber, or Composite Roof Insulation on Fluted Metal Roof Deck</b>							
INSULATION THICKNESS							
1-1/2 Hour – Exposed Grid	P225	1" min. to unlimited max.	24" x 48"; P or PC 20" x 60"; P or PC	5/8"	24	255	1, 2
	P227	1" min. to unlimited max.	24" x 48"; P or PC	3/4" (P)	24	255	1, 2
	P250***	1" min. to unlimited max.	24" x 48"; P or PC 24" x 24"; P or PC	3/4" (P) 5/8" (PC)	24	113	1
1-Hour – Exposed Grid	P206	1" min. and max.	24" x 48"; P	5/8"	16	113	1, 2
	P210	1" min. and max.	24" x 48"; PC	5/8"	16	57	1, 2
	P211	1" min. to 2" max.	24" x 48"; PC	5/8"	16	57	1, 2
	P225	1" min. to unlimited max.	24" x 48"; P or PC 24" x 24"; P or PC 20" x 60"; P or PC	5/8" (P or PC)	24	576	1, 2, 3
	P227	1" min. to unlimited max.	24" x 48"; P or PC 24" x 24"; P or PC	5/8"	24	255	1, 2
	P250***	1" min. to unlimited max.	24" x 48"; P or PC 24" x 24"; P or PC	3/4" (P) 5/8" (PC)	24	576	1
<b>Poured Gypsum Concrete Over 1/2" Gypsum Formboard</b>							
1-1/2-Hour – Exposed Grid	P217	1-1/2"	24" x 60"; P	5/8"	16	288	1, 2
<b>IRMA (Inverted Roof Membrane Assembly)</b>							
1-Hour – Exposed Grid	R217 (UL Canada)	2" min. to unlimited max.	24" x 48"; P or PC	5/8"	24	255	1, 2
Deck Construction Type	UL Design Number	Concrete Thickness	Minimum No. of Layers	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (in <sup>2</sup> /100 SF)	Maximum Duct Penetration (in <sup>2</sup> /100 SF)	Suspension Systems
<b>FLOOR/CEILING DRYWALL ASSEMBLIES</b>							
<b>Concrete on Composite Flat Cellular, Fluted, or Blend Deck</b>							
2-Hour	D501	2-1/2"	1	5/8"	None	None	DFR8000 DFR8000SS
	D502**	2-1/2"	1	5/8"	24	144	DFR8000 DFR8000SS
<b>Concrete on Metal Lath, Corrugated, and Ribbed Deck</b>							
3-Hour	G523	3"	1	5/8"	24	144	DFR8000
	G524	3-1/2"	1	1/2"	None	113	DFR8000
	G529	3-1/4"	1	1/2"	24	57	DFR8000
	G529	3-3/4"	1	5/8"	24	57	DFR8000
	G561	2-1/2"	–	–	144	144	DFR8000
	G523	2-1/2"	1	1/2"	24	144	DFR8000 DFR8000SS
2-Hour	G524	2-1/2"	1	1/2"	None	113	DFR8000 DFR8000SS
	G526	2-1/2"	1	1/2"	25	56.5	DFR8000 DFR8000SS
	G527	2-1/2"	1	1/2"	None	None	DFR8000 DFR8000SS
	G527	2-1/2"	1	1/2"	24	57	DFR8000 DFR8000SS
	G561	2-1/2"	–	–	144	144	DFR8000
	G527	2-1/2"	1	1/2"	None	None	DFR8000 DFR8000SS
1 1/2-Hour	G527	2-1/2"	1	1/2"	None	None	DFR8000 DFR8000SS
1 Hour	G561	2-1/2"	–	–	144	144	DFR8000
<b>Concrete on Steel Deck</b>							
2-Hour	G-553	1"	1	5/8"	None	None	DFR8000
1-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS

\* Allows flat-board fixture protection \*\* Concrete plus insulation \*\*\* Square-edge ceiling panels only

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Deck Construction Type	UL Design Number	Concrete Thickness	Minimum Number of Layers	Minimum Panel or Tile Thickness	Maximum Fixture Penetration (in <sup>2</sup> /100 SF)	Maximum Duct Penetration (in <sup>2</sup> /100 SF)	Suspension Systems
<b>FLOOR/CEILING DRYWALL ASSEMBLIES (CONT.)</b>							
<b>Concrete on Composite Steel Joist</b>							
2-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
1-1/2-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
1-Hour	G-531	3"	1	5/8"	144	20	DFR8000 DFR8000SS
<b>Clark Dietrich C-Channel System</b>							
2-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-560	1"	1	5/8"	None	None	DFR8000
	G-566	2"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-579	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-594	1"	1	5/8"	None	None	DFR8000
1-Hour	G-553	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-560	1"	1	5/8"	None	None	DFR8000
	G-566	2"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-579	1"	1	5/8"	None	None	DFR8000 DFR8000SS
	G-591	1"	1	5/8"	None	None	DFR8000
<b>Concrete on Steel Deck and Steel Joists</b>							
3-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
2-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
1-1/2-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
1-Hour	G-561	2-1/2"	1	5/8"	144	144	DFR8000
<b>WOOD DECK/CEILING DRYWALL ASSEMBLIES</b>							
1-Hour	L502	NA	1	1/2"	None	None	DFR8000 DFR8000SS
	L513	NA	1	5/8"	None	None	DFR8000 DFR8000SS
	L515	NA	1	1/2"	None	None	DFR8000 DFR8000SS
	L525	NA	1	1/2"	24	57	DFR8000 DFR8000SS
	L526*	NA	1	5/8"	24	114	DFR8000 DFR8000SS
<b>Plywood (2), 2 x 10 or (1) 4 x 10 Wood Joists</b>							
1-Hour	L508	NA		5/8"	None	None	DFR8000 DFR8000SS
<b>Plywood with Wood Trusses</b>							
1-Hour	L529	NA		5/8"	24	57	DFR8000 DFR8000SS
<b>Structural Cement – Fiber Units Over Steel Joists</b>							
1-Hour	L-564	3/4"	1	5/8"	144	144	DFR8000 DFR8000SS
<b>ROOF/CEILING DRYWALL ASSEMBLIES</b>							
<b>Standing Seam exposed Metal Roof with Batts/Blankets</b>							
1-Hour	P516	NA	2	5/8"	None	None	DFR8000
<b>Mineral Fiber Foam on Cellular, Fluted, Corrugated Metal Deck</b>							
2-Hour	P514	NA	1	5/8"	24	255	DFR8000 DFR8000SS
1-1/2-Hour	P507	NA	1	5/8"	24	57	DFR8000 DFR8000SS
	P510	NA	1	5/8"	24	57	DFR8000 DFR8000SS
	P513*	NA	1	5/8"	24	144	DFR8000 DFR8000SS
1-Hour	P508*	NA	1	5/8"	24	144	DFR8000 DFR8000SS
	P509*	NA	1	5/8"	24	144	DFR8000 DFR8000SS
	P510	NA	1	1/2"	24	57	DFR8000 DFR8000SS
<b>Mineral Fiber/Laminated Gypsum Planks</b>							
1-1/2-Hour	P506	2"	1	5/8"	24	57	DFR8000 DFR8000SS

NOTE: Numbers in parentheses are original UL design numbers.  
Some unit sizes are no longer available as standard items; some designs include additional sizes.

\*Optional acoustical tile may be glue-applied to gypsum.  
DFR8000 – UL designation, Fire Guard™ drywall grid system  
DFR8000SS – UL designation, Fire Guard™ ShortSpan® drywall grid system