

Design Criteria for Span Tables:

Values in the maximum allowable rail span tables provided herein are subject to the following general criteria and additional criteria shown on individual span tables sheets. Values in span tables are based on the same engineering methodology and calculation algorithms used for U-Builder and are provided here for reference.

Building Assumptions

- Building Risk Category: II
- Mean Roof Height: 30 ft
- Roof Pitch: 0°-45°
- Site Elevation: 0 ft

Wind Design Assumptions

- Wind loads used are based on ASCE 7-16 Sec 29.4.4 with Provisions from SEAOC PV2-2017
- Exposure Category B, C, or D
- Basic Wind Speed = 90 – 180 mph
- Level terrain. Topographic factor, $k_{zt} = 1.0$
- $\gamma_E = 1.0$ for 'Interior' spans, $\gamma_E = 1.5$ for 'Exposed' spans (ASCE 7-16, Fig. 29.4-7)

Snow Design Assumptions

- Ground Snow Load = 0-100 psf
- Exposure Factor coefficients of Partially Exposed condition
- Thermal Factor = 1.0
- Results based on uniform snow load

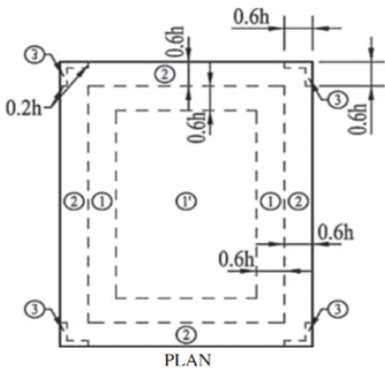
Seismic Design Assumptions

- 0.2-s Spectral Response Acceleration, $SS \leq 3$
- $S_s = 1.25$ and 3 per criteria shown on individual span tables sheets.
- $S_1 = 0.5$
- Seismic site class D

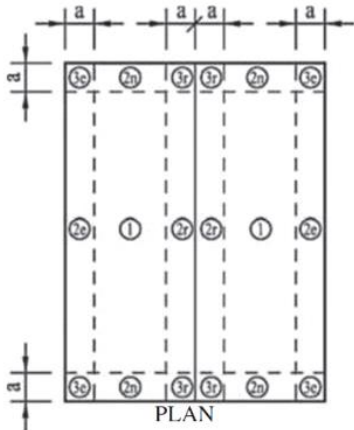
Array Assumptions

- Module orientation and Rail direction per criteria shown on individual span tables sheets.
- Maximum module dimensions of 40.1" x 67" (~19 sq.ft, 47.65 lbs) and 41" x 80" (~23 sq.ft, 58.6 lbs) per criteria shown on individual span tables sheets.
- Minimum distance between modules and roof edge is at least twice the module height above roof surface.
- Modules are parallel to roof surface and maximum height above roof surface is 5" to 10" depending on attachment type.
- Gaps between module rows and columns is 0.25" in to 1" depending on clamp type.
- The most restrictive of all roof zone spans shall be used when any part of the module is attributed to that span.
- 'Exposed' spans as defined in ASCE 7-16 sec. 29.4.4 shall be used when any part of an exposed module or panel as is attributed to that span.

Zone should be considered as per ASCE 7-16, Fig. 30.3-2A to 30.3-2D



Gable Roofs $\theta \leq 7^\circ$



Gable Roofs $7^\circ < \theta \leq 45^\circ$

Grouping of ASCE 7-16 Roof Zones (Gable and Flat)

- **Roof Tilt 0° - 7°**
Roof Zone 1 = 1
Roof Zone 2 = 2
Roof Zone 3 = 3
- **Roof Tilt 7° - 27°**
Roof Zone 1 = 1, 2e
Roof Zone 2 = 2n, 2r, 3e
Roof Zone 3 = 3r
- **Roof Tilt 27° - 45°**
Roof Zone 1 = 1, 2e, 2r
Roof Zone 2 = 2n, 3r
Roof Zone 3 = 3e

Rails can be installed in these possible orientations.

*Flashloc DUO for Rafter	
Y+	
Y-	Alternate orientation not allowed

10 Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.

Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.

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[illegible]

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																																																																																																																																											
				90												95												100												105												110												115												120												130												140												150												160												170												180											
				Roof Wind Zone																																																																																																																																																											
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3																																																																																																												
0	B	0-7	Interior	102	102	102	102	102	102	102	102	102	100	102	102	95	102	102	91	102	101	87	102	96	83	102	89	77	96	83	72	90	78	60	85	74	53	80	66	46	76	58	41																																																																																																																				
			Exposed	102	102	91	102	99	86	102	95	82	102	90	78	100	86	75	96	83	72	92	80	63	85	74	53	80	64	45	75	56	39	69	49	34	59	43	30	52	38	41																																																																																																																					
		7-20	Interior	102	102	102	102	102	102	102	102	97	102	102	92	102	96	88	102	92	92	84	102	88	80	92	81	74	86	75	61	82	64	53	77	56	46	74	49	41	68	44	36																																																																																																																				
			Exposed	102	96	87	102	91	83	101	86	78	93	82	75	89	78	71	86	74	61	83	71	55	78	57	47	73	49	40	64	42	35	56	37	30	49	32	41	44	29	36																																																																																																																					
		20-27	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	99	103	103	100	94	103	96	90	103	88	82	99	82	76	92	76	66	87	72	53	83	60	45	79	53	39																																																																																																																					
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10	B	0-7	Interior	91	91	91	91	91	91	91	91	89	91	91	85	91	91	81	91	89	77	91	86	74	91	82	71	88	77	57	82	72	49	77	60	42	73	52	37	63	46	33	56	41	29																																																																																																																		
			Exposed	91	91	91	91	91	86	91	89	81	91	82	91	80	78	91	86	75	91	83	72	91	80	63	85	74	53	80	64	45	75	56	39	69	49	34	59	43	30	52	38	41																																																																																																																			
		7-20	Interior	91	91	91	91	91	91	91	91	91	91	91	91	91	91	91	88	91	91	84	91	88	80	91	81	74	86	75	61	82	64	53	77	56	46	74	49	41	68	44	36																																																																																																																				
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		20-27	Interior	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	99	100	100	94	100	96	90	100	88	82	99	82	76	92	76	66	87	72	53	83	60	45	79	53	39																																																																																																																				
			Exposed	100	100	99	100	99	93	100	94	88	100	89	83	100	85	79	98	81	75	94	78	72	87	72	54	82	59	44	78	51	37	74	44	31	68	39	27	59	35	24																																																																																																																					
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		Exposed	100	88	82	100	83	77	95	79	73	91	75	61	87	72	54	84	62	48	81	57	42	76	48	34	72	41	28	61	36	25	53	31	32	47	42	29	42	37	25																																																																																																																						
	7-20	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	99	102	102	94	102	97	87	98	90	81	84	76	85	79	71	80	75	57	75	69	50																																																																																																																					
		Exposed	102	96	87	100	91	82	95	87	78	90	83	75	85	79	72	81	76	60	78	73	54	72	60	44	58	52	37	50	45	31	44	39	27	39	35	35	34	31	30																																																																																																																						
	20-27	Interior	91	91	86	91	91	82	91	90	78	91	86	75	91	82	71	91	79	62	88	76	56	81	71	48	76	58	41	72	50	36	60	44	31	53	39	41	47	34	37																																																																																																																						
		Exposed	91	82	71	90	78	60	86	75	54	82	72	49	79	63	44	76	57	40	73	52	37	61	44	31	52	38	41	45	33	35	39	29	31	35	38	27	31	34	24																																																																																																																						
20	B	0-7	Interior	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78	78																																																																																																		

[illegible]

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

• Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																							
				Roof Wind Zone																																							
				90			95			100			105			110			115			120			130			140			150			160			170			180			
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3				
0	B	0-7	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79				
			Exposed	79	79	72	79	78	63	79	75	53	79	72	45	79	64	39	76	56	34	73	49	31	61	38	26	48	32	23	39	28	19	33	24	17	29	21	23	26	19	20	
		7-20	Interior	79	79	79	79	79	79	79	79	77	79	79	73	79	68	68	79	73	57	79	69	48	74	50	36	64	38	30	53	32	26	45	28	23	38	25	20	33	22	18	
			Exposed	79	76	68	79	72	54	78	63	44	74	52	37	71	44	33	63	37	30	56	33	27	45	28	23	37	24	20	32	21	17	28	18	23	25	24	20	22	22	18	
		20-27	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	
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	C	0-7	Interior	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
			Exposed	80	80	80	80	80	77	80	80	74	80	77	69	80	74	68	79	73	80	78	80	76	66	77	72	51	73	58	40	60	47	33	47	38	28	38	33	25			
		7-20	Interior	79	79	74	79	79	71	79	77	59	79	74	50	79	71	43	78	62	37	75	54	33	69	42	28	54	34	24	43	30	21	36	26	18	31	23	24	28	20	22	
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		20-27	Interior	79	78	72	79	75	62	79	71	51	77	59	42	73	49	35	69	42	32	62	36	30	50	30	25	41	26	21	34	22	18	30	20	24	26	17	22	23	23	19	
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D	0-7	Interior	79	79	79	79	79	76	79	77	73	79	73	64	79	69	52	79	58	44	77	49	37	72	37	29	60	31	24	49	27	20	42	24	17	36	21	14	32	18	19		
		Exposed	79	68	52	79	55	42	75	46	35	72	39	30	66	34	27	59	31	24	52	28	21	42	24	17	35	20	14	30	18	18	26	23	16	23	21	14	21	18	13		
	7-20	Interior	80	80	80	80	80	79	80	80	76	80	79	73	80	76	66	79	73	80	76	66	79	74	56	76	71	48	71	53	37	52	41	30	40	34	25	33	30	22	29	26	19
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	20-27	Interior	79	78	74	79	74	69	79	71	55	79	60	45	77	50	37	74	43	33	71	37	29	58	31	23	47	26	19	40	23	16	34	20	13	30	17	18	26	23	16		
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10	B	0-7	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66			
			Exposed	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66		
		7-20	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
			Exposed	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
		20-27	Interior	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	
			Exposed	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	
	C	0-7	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	
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		7-20	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66
			Exposed	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
		20-27	Interior	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	76	
			Exposed	76	68	52	76	55	42	75	46	35	72	39	30	66	34	27	59	31	24	52	28	21	42	24	17	35	20	14	30	18	18	26	23	16	23	21	14	21	18	13	
D	0-7	Interior	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79	79			
		Exposed	79	79	79	79	79	77	79	74	79	77	69	79	74	58	77	72	50	74	63	43	62	47	33	46	37	28	35	32	23	31	28	20	27	24	17	24	22	15			
	7-20	Interior	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	
		Exposed	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66	66		
	20-27	Interior	77	77	74	77	74	69	77	71	55	77	60	45	77	50	37	74	43	33	71	37	29	58	31	23	47	26	19	40	23	16	34	20	13	30	17	18	26	23	16		
		Exposed	77	50	37	73	41	32	68	35	27	60	31	24	53	28	21	47	26	19	42	24	17	34	20	14	29	17	18	25	22	15	22	19	19	17	17	15	10				
20	B	0-7	Interior	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52			
			Exposed	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52		
		7-20	Interior	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53
			Exposed	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53																						

[illegible]

* Cells with an asterisk indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

Basic Wind Speed (mph)

* Cells with an asterisks indicates that the L-foot must be oriented in the Y- direction as indicated in the image.

10 Highlighted cell indicate 3-rail system span. Contact Unirac Engineering Services for support.

10 Highlighted cell with strikethrough indicate 3-rail system span and module clamp allowable capacity exceeds with 3-rails. 4-Rail system required. Contact Unirac Engineering Services for support.

[illegible]

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[illegible]

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ASCE 7-16
Design Standard

II
Risk Category

30 ft
Roof Height

Ss = 3.00
Seismic

19 sq.ft
Module Area

LANDSCAPE
Orientation

CROSS-SLOPE
Rail Direction

NXT
Rail Type

NXT COMBO
Clamp

Flashloc DUO Rafter
Attachment

SPAN TABLES

Maximum Allowable Rail Spans for Rooftop Solar Panels Parallel to the Roof Surface (inches)

Ground Snow Load (psf)	Wind Exposure Category	Roof Tilt Angle (deg)	Panel Exposure	Basic Wind Speed (mph)																																																																													
				90						95						100						105						110						115						120						130						140						150						160						170						180					
				Roof Wind Zone																																																																													
				1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3																																							
0	B	0-7	Interior	102	102	102	102	102	102	102	102	100	102	102	95	102	102	91	102	101	87	102	96	83	102	89	77	96	83	72	90	78	60	85	74	53	80	66	46	76	58	41	29																																						
			Exposed	102	102	91	102	99	86	102	95	82	102	90	78	100	86	75	96	83	72	92	80	63	85	74	53	80	64	45	75	56	39	69	49	34	59	43	30	52	38	41																																							
		7-20	Interior	102	102	102	102	102	102	102	97	102	102	92	102	96	88	102	92	96	88	102	88	92	81	74	86	75	61	82	64	53	77	56	46	74	49	41	68	44	36																																								
			Exposed	102	96	87	102	91	83	101	86	78	93	82	75	89	78	71	86	74	61	83	71	55	78	57	47	73	49	40	64	42	35	56	37	30	49	32	41	44	29	36																																							
		20-27	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	99	103	100	94	103	96	90	103	88	82	99	82	76	92	76	66	87	72	53	83	60	45	79	53	39																																								
			Exposed	103	103	99	103	99	93	103	94	88	103	89	83	103	85	79	98	81	75	94	78	72	87	72	54	82	59	44	78	51	37	74	44	31	68	39	27	59	35	24																																							
	C	0-7	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	99	103	103	94	103	97	87	98	90	81	84	76	85	79	71	80	75	57	75	69	50																																						
			Exposed	103	103	103	103	103	97	103	103	92	103	98	88	103	93	84	98	89	81	93	86	77	85	79	72	79	74	56	74	64	47	62	56	40	55	49	35	49	44	30																																							
		7-20	Interior	102	102	94	102	102	89	102	98	85	102	93	81	102	89	77	99	86	74	95	82	71	88	77	57	82	72	49	77	60	42	73	52	37	63	46	33	56	41	29																																							
			Exposed	102	89	77	98	85	73	93	81	65	89	77	58	85	74	53	82	71	48	79	62	44	73	53	37	62	45	32	54	39	42	47	34	37	41	30	32	37	40	29																																							
		20-27	Interior	102	100	91	102	94	86	102	89	81	98	84	77	92	81	74	89	77	65	85	74	59	80	61	50	75	52	43	71	45	37	60	39	33	53	35	29	47	31	39																																							
			Exposed	92	80	73	88	76	63	84	72	57	81	62	51	78	56	47	75	51	43	72	47	39	61	40	33	52	34	43	45	30	37	39	39	32	35	35	29	31	31	25																																							
D	0-7	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103																																									
		Exposed	103	88	82	100	83	77	95	79	73	91	75	61	87	72	54	84	62	48	81	57	42	76	48	34	72	41	28	61	36	25	53	31	32	47	42	29	42	37	25																																								
	7-20	Interior	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103	103																																									
		Exposed	103	96	87	100	91	82	95	87	78	90	83	75	85	79	72	81	76	60	78	73	54	72	60	44	58	52	37	50	45	31	44	39	27	39	35	35	34	31	30																																								
	20-27	Interior	102	100	86	102	95	82	102	90	78	100	86	75	95	82	71	91	79	62	88	76	56	81	71	48	76	58	41	72	50	36	60	44	31	53	39	41	47	34	37																																								
		Exposed	95	82	71	90	78	60	86	75	54	82	72	49	79	63	44	76	57	40	73	52	37	61	44	31	52	38	41	45	33	35	39	29	31	35	38	27	31	34	24																																								
10	B	0-7	Interior	102	91	83	101	86	78	93	81	74	89	78	70	86	74	60	82	69	55	80	60	50	75	51	42	68	44	36	58	38	31	51	33	41	45	29	37	40	39	33																																							
			Exposed	85	74	60	82	64	53	78	58	48	75	52	43	72	47	39	66	43	36	60	40	33	51	34	42	44	29	36	38	38	31	33	33	27	29	29	24	39	26	24																																							
		7-20	Interior	103	100	93	103	94	88	103	89	83	102	85	79	97	81	75	93	77	72	90	74	58	84	62	47	79	53	39	75	46	32	70	40	27	60	35	24	53	31	33																																							
			Exposed	97	81	75	92	76	67	88	73	55	85	63	48	81	57	43	78	52	38	76	48	34	71	40	28	59	35	24	51	30	31	45	40	27	39	35	24	35	31	24																																							
		20-27	Interior	103	103	98	103	103	92	103	98	88	102	93	84	97	89	80	92	85	77	88	82	74	81	76	59	75	68	49	64	57	42	56	50	35	49	44	31	44	39	27																																							
			Exposed	97	89	80	91	84	76	86	80	72	82	77	61	78	73	54	75	65	49	71	60	44	56	51	36	48	43	30	42	38	25	37	33	33	32	29	28	29	39	25																																							
	C	0-7	Interior	91	91	91	91	91	89	91	91	85	91	91	81	91	89	77	91	86	74	91	82	71	88	77	57	82	72	49	77	60	42	73	52	37	63	46	33	56	41	29																																							
			Exposed	91	89	77	91	85	73	91	81	65	89	77	58	85	74	53	82	71	48	79	62	44	73	53	37	62	45	32	54	39	42	47	34	37	41	30	32	37	40	29																																							
		7-20	Interior	91	91	91	91	91	86	91	91	81	91	84	77	91	81	74	89	77	65	85	74	59	80	61	50	75	52	43	71	45	37	60	39	33	53	35	29	47	31	39																																							
			Exposed	91	80	73	88	76	63	84	72	57	81	62	51	78	56	47	75	51	43	72	47	39	61	40	33	52	34	43	45	30	37	39	39	32	35	35	29	31	31	25																																							
		20-27	Interior	100	100	100	100	100	96	100	97	91	100	92	86	100	88	82	100	84	78	97	80	75	90	74	59	85	63	48	80	54	40	76	48	34	72	42	29	63	37	26																																							
			Exposed	100	88	82	100	83	77	95	79	73	91	75	61	87	72	54	84	62	48	81	57	42	76	48	34	72	41	28	61	36	25	53	31	32	47	42	29	42	37	25																																							
D	0-7	Interior	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102	102																																										
		Exposed	102	96	87	100	91	82	95	87	78	90	83	75	85	79	72	81	76	60	78	73	54	72	60	44	58	52	37	50	45	31	44	39	27	39	35	35	34	31	30																																								
	7-20	Interior	91	91	86	91	91	82	91	90	78	91	86	75	91	83	72	91	80	63	85	74	53	80	64	45	75	56	39	69	49	34	59	43	30	52	38	41																																											
		Exposed	91	82	71	90	78	60	86	75	54	82	72	49	79	63	44	76	57	40	73	52	37	61	44	31	52	38	41	45	33	35	39	29	31	35	38	27	31	34	24																																								
	20-27	Interior	91	91	83	91	86	78	91	81	74	89	78	70	86	74	60	82	69	55	80	60	50	75	51	42	68	44	36	58	38	31	51	33	41	45	29	37	40	39	33																																								
		Exposed	85	74	60	82	64	53	78	58	48	75	52	43	72	47	39	66	43	36	60	40	33	51	34	42	44	29	36	38	38	31	33	33	27	29	29	24	39	26	24																																								
20	B	0-7	Interior	101	100	93	101	94	88	101	89	83	101	85	79	97	81	75	93	77	72	90	74	58	84	62	47	79	53	39	75	46	32	70	40	27	60	35	24	53	31	33																																							
			Exposed	97	81	75	92	76	67	88	73	55	85	63	48	81	57	43	78	52	38	76	48	34	71	40	28	59	35	24	51	30	31	45	40	27	39	35	24	35	31	24																																							
		7-20	Interior	103	103	98	103	103	92	103	98	88	102	93	84	97	89	80	92	85	77	88	82	74	81	76	59	75	68	49	64	57	42	56	50	35	49	44	31	44	39	27																																							
			Exposed	97	89	80	91	84	76	86	80	72	82	77	61	78	73	54	75	65	49	71	60	44	56	51	36	48	43	30	42	38	25	37	33	33	32	29	28	29	39	25																																							
		20-27	Interior	78	78	78																																																																											

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