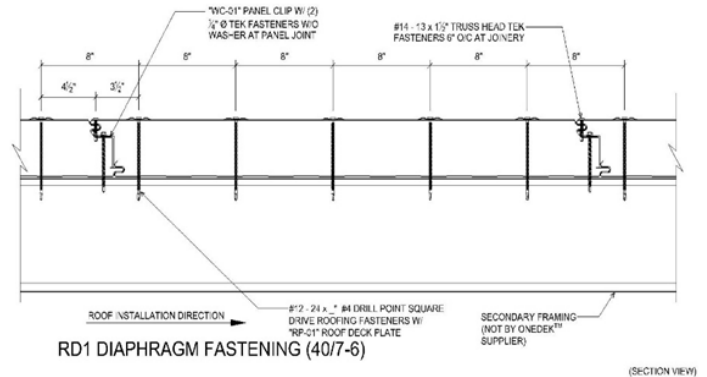
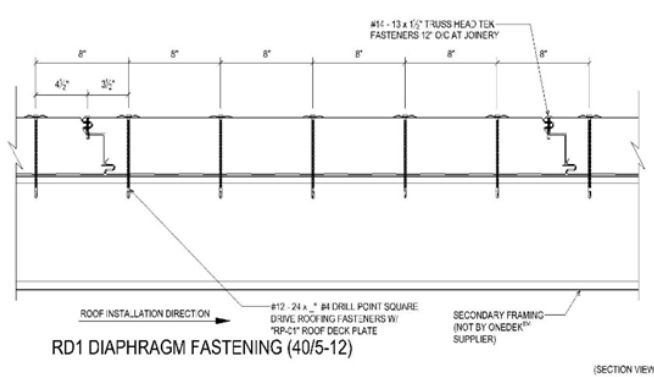


Diaphragm Shear Loads for OneDek® RD1/RD1-M Insulated Roof Deck

Support fastening: #12-24 DP4 Fasteners, 8" on center across 40" panel width
 Support fastening at side joint (where No. 22 gauge panels are required for the loading conditions, optional for other installations):
 ¼-14 DP3 or DP5 Fasteners, (2) per WC-01 clip at side joint
 Side-lap fastening: #14-14 x 1 ½" DP2 Fasteners, 6" or 12" on center along length of panel joint
 Support thickness: 16 gauge - 3/16" steel

Shear Design	ASD Ω_{df}	LRFD ϕ_{df}
Seismic	2.30	0.70
Wind	2.00	0.80

Panel Gauge	Fastening System	Fastener Layout	Side-lap Stitch Along Span	Nominal (Unfactored) Shear Strength, S _{nf} , plf							Shear Stiffness (kip/in)
				5	5.5	6	6.5	7	7.5	8	
26 GA ext - 26 GA int	40/5-12	40/5	12" o/c	844	823	802	781	759	738	717	28.0
26 GA ext - 24 GA int	40/5-12	40/5	12" o/c	856	851	845	840	835	829	824	39.5
22 GA ext - 22 GA int	40/7-6	40/7	6" o/c	1903	1861	1819	1777	1734	1692	1650	84.5



- Notes:
- Design safety factors or resistance factors **shall be applied** to the tabulated nominal shear strength.
 ASD Available Strength (Allowable Service Applied Load) $\leq S_{nf}/\Omega_{df}$
 LRFD Available Strength (Factored Applied Load) $\leq \phi_{df} S_{nf}$
 - Design strength factors specified per requirements of AISI-S310.
 - The diaphragm shear spans shown are based on shear load testing per AISI-S907.
 - Refer to transverse load span table for allowable gravity and wind uplift loads.
 - White single-ply roofing membrane or architectural single skin roof panels must be installed for weatherproofing.
 - Thermal effect due to temperature differentials have not been considered.
 - Structural capacity of steel supports has not been considered.
 - Panel attachment at rake edge or any perimeter edge, including cutouts, parallel to the length of the panels shall be fastened with #12-24 DP4 fasteners with RP-01 Roof Deck Plates at the same spacing used at the panel side lap.
 - All panel ends with straight horizontal cuts or skewed cuts shall be fastened with #12-24 DP4 fasteners with RP-01 Roof Deck Plates and, if necessary, ¼-14 DP3 or DP5 Fasteners, (2) per WC-01 clip at side joint at the same spacing and frequency as the design fastening system.
 - Consult your AWIP representative for snow load design.
 - Consult your AWIP representative for project specific requirements.

Wind Uplift and Bending Strength for OneDek RD1/RD1-M Insulated Roof Deck

Support fastening: #12-24 DP4 Fasteners, 8" on center across 40" panel width
 Support fastening at side joint (where No. 22 gage panels are required for the loading conditions, optional for other installations):
 ¼-14 DP3 or DP5 Fasteners, (2) per WC-01 clip at side joint
 Side-lap fastening: #14-14 x 1 ½" DP2 Fasteners, 6" or 12" on center along length of panel joint
 Support thickness: 16 gauge - 3/16" steel

Panel Gauge	Fastening System	Fastener Layout	Side-lap Stitch Along Span	Design Method	Wind Uplift Connection Strength, P, psf (see notes) Panel Span (ft)						
					5	5.5	6	6.5	7	7.5	8
26 GA ext - 26 GA int	40/5-12	40/5	12" o/c	ASD	80	73	66	61	56	53	49
26 GA ext - 24 GA int	40/5-12	40/5	12" o/c		80	73	66	61	56	53	49
22 GA ext - 22 GA int	40/7-6	40/7	6" o/c		111	101	92	84	78	73	68
26 GA ext - 26 GA int	40/5-12	40/5	12" o/c	LRFD	120	109	99	91	84	79	73
26 GA ext - 24 GA int	40/5-12	40/5	12" o/c		120	109	99	91	84	79	73
22 GA ext - 22 GA int	40/7-6	40/7	6" o/c		166	151	138	126	117	109	102

Panel Thickness	Minimum Panel Gauge	Panel Weight (psf)	Design Method	Panel Out-of-Plane Bending Strength, P, psf (see notes) Panel Span (ft)						
				5	5.5	6	6.5	7	7.5	8
2"	26 GA ext - 26 GA int	2.22	ASD	41	37	33	30	27	24	22
2.5"	26 GA ext - 26 GA int	2.34		51	46	42	38	35	32	30
3"	26 GA ext - 26 GA int	2.41		60	54	49	45	42	39	36
4"	26 GA ext - 26 GA int	2.62		78	70	64	58	54	50	46
5"	26 GA ext - 26 GA int	2.82		93	84	76	70	64	60	55
6"	26 GA ext - 26 GA int	2.98		106	95	87	79	73	68	63
2"	26 GA ext - 26 GA int	2.22	LRFD	65	59	52	48	43	38	35
2.5"	26 GA ext - 26 GA int	2.34		81	73	67	60	56	51	48
3"	26 GA ext - 26 GA int	2.41		96	86	78	72	67	62	57
4"	26 GA ext - 26 GA int	2.62		124	112	102	92	86	80	73
5"	26 GA ext - 26 GA int	2.82		148	134	121	112	102	96	88
6"	26 GA ext - 26 GA int	2.98		169	152	139	126	116	108	100

Notes:

- Design safety factors or resistance factors **have been applied** to loads for wind uplift and bending
 ASD Available Strength (Allowable Service Applied Load) ≤ P
 $\Omega_{buckling} = 2.50, \Omega_{shear} = 3.00, \Omega_{fastening} = 3.00$
 LRFD Available Strength (Ultimate Factored Applied Load) ≤ P
 $\phi_{buckling} = 0.64, \phi_{shear} = 0.53, \phi_{fastening} = 0.50$
- The lowest allowable load between wind uplift connection strength and out-of-plane bending shall be used to determine maximum span.
- Spans shown are based on transverse load testing per ASTM-E72 and strength of fastening systems.
- Snow load design has not been taken into consideration. Contact your AWIP representative for snow load analysis.
- Deflection Limit = L/240.
- White single-ply roofing membrane or architectural single skin roof panels must be installed for weatherproofing.
- Thermal effect due to temperature differentials have not been considered.
- Structural capacity of steel supports has not been considered.
- Consult your AWIP representative for project specific requirements.



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