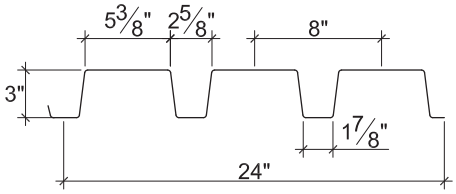
3N-24/3NI-24 ROOF DECKS
GRADE 40 STEEL

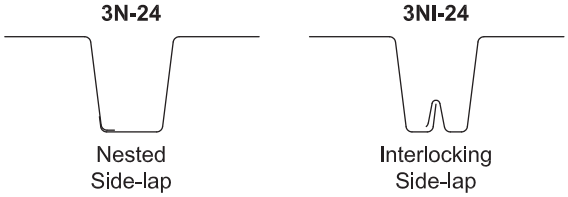
LRFD

24” WIDE 3N ROOF DECKS

- **3N-24 Deck used with Side-lap Screws**
- **3NI-24 Deck used with TSWs or BPs**

Nominal Dimensions





Section Properties

Deck Gage	Deck Weight w_{dd} (psf)	Base Metal Thickness t (in.)	Yield Strength F_y (ksi)	Effective Moment of Inertia at Service Load $I_d = (2I_e+I_g)/3$ I_d+ (in⁴/ft)	I_d- (in⁴/ft)	Effective Section Modulus at F_y = 40 ksi S_e+ (in³/ft)	S_e- (in³/ft)	Design Moment øM$_n$+ (lb-ft/ft)	øM$_n$- (lb-ft/ft)	Vertical Web Shear øV$_n$ (lb/ft)
22	2.0	0.0295	40	0.714	0.869	0.368	0.419	1104	1257	3703
20	2.5	0.0358	40	0.901	1.071	0.482	0.530	1446	1590	5455
19	2.9	0.0418	40	1.088	1.252	0.584	0.637	1752	1911	7439
18	3.3	0.0474	40	1.268	1.421	0.674	0.731	2022	2193	8721
16	4.1	0.0598	40	1.682	1.795	0.876	0.934	2628	2802	10951

Design Reactions at Supports Based on Web Crippling, øR$_n$ (lb/ft)

Deck Gage	Bearing Length of Webs: One-Flange Loading, End Bearing 1½"	2"	3"	4"	Interior Bearing 4"	8"	Two-Flange Loading, End Bearing 1½"	2"	3"	4"	Interior Bearing 4"	8"
22	708	778	896	995	1508	1753	679	731	819	893	1769	2076
20	1021	1119	1282	1420	2158	2672	1050	1127	1257	1366	2577	3236
19	1366	1493	1706	1885	2872	3614	1477	1582	1757	1904	3472	4439
18	1729	1886	2148	2369	3619	4532	1942	2074	2296	2483	4414	5618
16	2670	2899	3284	3609	5543	6878	3191	3395	3736	4024	6856	8651

Standard Features

- ASTM A653 SS GR40 Min., with G60 or G90, white or gray primer optional
- ASTM A1008 SS GR40 Min. with gray primer
- Standard lengths – 6’-0” to 42’-0”
- IAPMO UES ER-0652, UL, and FM Listed
- Tables conform to ANSI/SDI RD-2017

Optional Features

- Inquire regarding cost and lead times for:
  - -Short cuts < 6’-0”
  - -Sheet Lengths > 42’-0”
  - -Alternative metallic and painted finishes
- Web Perforated Acoustical Versions

Inward Uniform Design Loads, LRFD (psf)

Deck Gage	Spans	Criteria	Span (ft-in.) 4'-0"	6'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"	14'-0"	16'-0"	18'-0"	20'-0"
22	Single	$øW_n$	552	245	138	109	88	73	61	45	35	27	22
		L/240	731	217	91	64	47	35	27	17	11	8	6
	Double	$øW_n$	579	269	154	122	99	82	69	51	39	31	25
		L/240	2144	635	268	188	137	103	79	50	34	24	17
	Triple	$øW_n$	700	331	190	151	123	102	86	63			
		L/240	1681	498	210	148	108	81	62	39			
20	Single	$øW_n$	723	321	181	143	116	96	80	59	45	36	29
		L/240	923	273	115	81	59	44	34	22	14	10	7
	Double	$øW_n$	747	343	196	155	126	104	88	65	49	39	32
		L/240	2643	783	330	232	169	127	98	62	41	29	21
	Triple	$øW_n$	911	424	243	193	157	130	109	81			
		L/240	2071	614	259	182	133	100	77	48			
19	Single	$øW_n$	876	389	219	173	140	116	97	72	55	43	35
		L/240	1114	330	139	98	71	54	41	26	17	12	9
	Double	$øW_n$	910	415	236	187	152	125	106	78	60	47	38
		L/240	3089	915	386	271	198	149	114	72	48	34	25
	Triple	$øW_n$	1114	514	293	233	189	156	132	97			
		L/240	2421	717	303	213	155	116	90	56			
18	Single	$øW_n$	1011	449	253	200	162	134	112	83	63	50	40
		L/240	1299	385	162	114	83	62	48	30	20	14	10
	Double	$øW_n$	1046	477	271	215	174	144	121	89	68	54	44
		L/240	3506	1039	438	308	224	169	130	82	55	38	28
	Triple	$øW_n$	1283	591	337	267	217	180	151	111			
		L/240	2748	814	344	241	176	132	102	64			
16	Single	$øW_n$	1314	584	329	260	210	174	146	107	82	65	53
		L/240	1723	510	215	151	110	83	64	40	27	19	14
	Double	$øW_n$	1334	609	346	274	222	184	155	114	87	69	56
		L/240	4429	1312	554	389	283	213	164	103	69	49	35
	Triple	$øW_n$	1635	754	430	341	277	229	193	142			
		L/240	3471	1029	434	305	222	167	129	81			

Note:

1. Table does not account for web crippling. Required bearing should be determined based on specific span conditions.