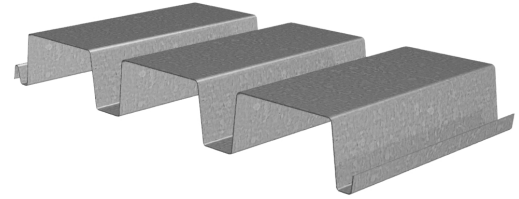


3N-24/3NI-24 ROOF DECKS GRADE 50 STEEL

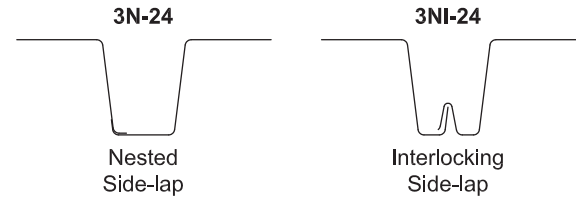
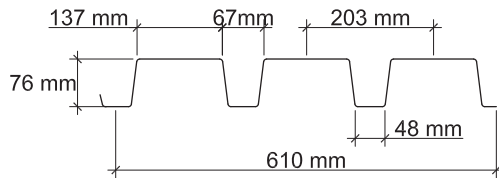
Metric
LSD

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} (kg/m ²)	Base Metal Thickness t (mm)	Yield Strength F_y (MPa)	Effective Moment of Inertia at Service Load* $I_d = (2I_e + I_g)/3$		Effective Section Modulus* at $F_y = 345$ MPa		Factored Moment*		Vertical Web Shear* ϕV_n (kN)
				I_{d+} (mm ⁴ x10 ³)	I_{d-} (mm ⁴ x10 ³)	S_{e+} (mm ³ x10 ³)	S_{e-} (mm ³ x10 ³)	ϕM_{n+} (N-m)	ϕM_{n-} (N-m)	
22	9.76	0.75	345	958.2	1172.1	18.97	20.87	5884	6475	46
20	12.21	0.91	345	1203.5	1449.3	24.77	27.58	7684	8558	75
18	16.11	1.20	345	1691.1	1940.0	35.68	38.63	11071	11985	131
16	20.02	1.52	345	2246.4	2451.2	46.39	49.79	14394	15449	168

*Physical Properties per meter (m) of width

Factored Reactions at Supports Based on Web Crippling, ϕR_n (kN/m)

Deck Gage	Bearing Length of Webs (mm)											
	One-Flange Loading						Two-Flange Loading					
	End Bearing				Interior Bearing		End Bearing				Interior Bearing	
	40	50	75	100	100	200	40	50	75	100	100	200
22	11.7	12.6	14.4	16.0	24.1	28.2	10.3	10.9	12.2	13.4	28.3	33.4
20	16.8	18.0	20.7	22.9	34.6	43.0	16.0	16.9	18.8	20.4	41.3	52.1
18	28.4	30.4	34.6	38.2	58.0	72.6	29.5	31.0	34.3	37.1	70.7	89.9
16	43.9	46.8	53.0	58.2	88.8	110.1	48.4	50.8	55.9	60.2	109.8	138.5

Standard Features

- ASTM A653/A653M SS GR50 Min., with Z275/G90 galvanized or ZF75/A25 galvanized
- Standard lengths – 1.83 m to 12.8 m
- UL and FM Listed
- Cold-formed steel deck conforms to CAN/CSA S136-16 and meets the guidelines of CSSBI 10M-2018.

Optional Features

- Inquire regarding cost and lead times for:
 - Short cuts < 1.83 m
 - Sheet Lengths > 12.8 m
 - Alternative metallic and painted finishes
- Web Perforated Acoustical Versions

3N-24/3NI-24 ROOF DECKS GRADE 50 STEEL

Metric
LSD

Inward Uniform Factored Loads, LSD (kPa)

Deck Gage	Spans	Criteria	Span (mm)										
			1800	2100	2400	2700	3000	3300	3600	3900	4200	4500	4800
22	Single	ϕW_n	14.6	10.7	8.2	6.5	5.2	4.3	3.6	3.1	2.7	2.3	2.0
		L/240	10.7	6.8	4.5	3.2	2.3	1.7	1.3	1.1	0.8	0.7	0.6
	Double	ϕW_n	14.9	11.2	8.7	6.9	5.6	4.7	3.9	3.4	2.9	2.5	2.2
		L/240	31.6	19.9	13.3	9.4	6.8	5.1	3.9	3.1	2.5	2.0	1.7
	Triple	ϕW_n	18.2	13.7	10.6	8.5	6.9	5.8	4.9	4.2	3.6		
		L/240	24.8	15.6	10.4	7.3	5.3	4.0	3.1	2.4	1.9		
20	Single	ϕW_n	19.0	14.0	10.7	8.5	6.8	5.7	4.8	4.1	3.5	3.0	2.7
		L/240	13.5	8.5	5.7	4.0	2.9	2.2	1.7	1.3	1.1	0.9	0.7
	Double	ϕW_n	20.2	15.0	11.6	9.2	7.5	6.2	5.2	4.5	3.9	3.4	3.0
		L/240	39.1	24.6	16.5	11.6	8.4	6.3	4.9	3.8	3.1	2.5	2.1
	Triple	ϕW_n	24.7	18.5	14.3	11.4	9.3	7.7	6.5	5.6	4.8		
		L/240	30.6	19.3	12.9	9.1	6.6	5.0	3.8	3.0	2.4		
18	Single	ϕW_n	27.4	20.1	15.4	12.2	9.9	8.2	6.9	5.8	5.0	4.4	3.9
		L/240	18.9	11.9	8.0	5.6	4.1	3.1	2.4	1.9	1.5	1.2	1.0
	Double	ϕW_n	28.8	21.3	16.4	13.0	10.6	8.7	7.4	6.3	5.4	4.7	4.2
		L/240	52.3	32.9	22.1	15.5	11.3	8.5	6.5	5.1	4.1	3.3	2.8
	Triple	ϕW_n	35.5	26.4	20.3	16.2	13.1	10.9	9.2	7.8	6.8		
		L/240	41.0	25.8	17.3	12.1	8.9	6.7	5.1	4.0	3.2		
16	Single	ϕW_n	35.6	26.2	20.0	15.8	12.8	10.6	8.9	7.6	6.5	5.7	5.0
		L/240	25.1	15.8	10.6	7.4	5.4	4.1	3.1	2.5	2.0	1.6	1.3
	Double	ϕW_n	37.1	27.4	21.1	16.8	13.6	11.3	9.5	8.1	7.0	6.1	5.4
		L/240	66.1	41.6	27.9	19.6	14.3	10.7	8.3	6.5	5.2	4.2	3.5
	Triple	ϕW_n	45.7	34.0	26.2	20.8	16.9	14.0	11.8	10.1	8.7		
		L/240	51.8	32.6	21.8	15.3	11.2	8.4	6.5	5.1	4.1		

Note:

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

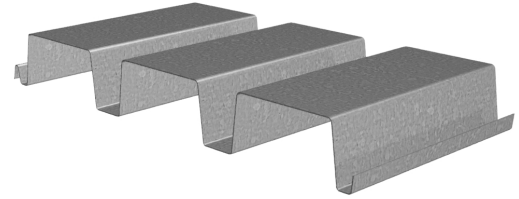
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3N-24/3NI-24 ROOF DECKS GRADE 50 STEEL

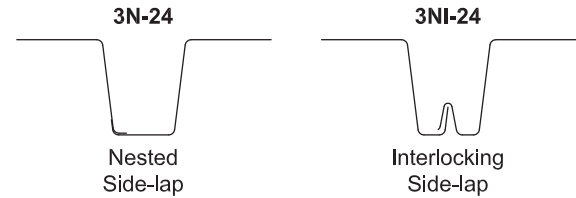
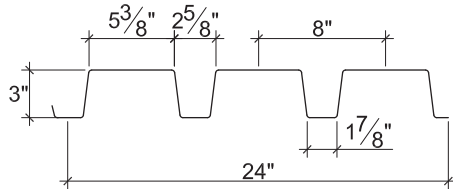
Imperial
LSD

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 $I_d = (2I_e + I_g)/3$		Effective Section Modulus at $F_y = 50$ ksi		Factored Moment		Vertical Web Shear ϕV_n (lb/ft)
				I_{d+} (in ⁴ /ft)	I_{d-} (in ⁴ /ft)	S_{e+} (in ³ /ft)	S_{e-} (in ³ /ft)	ϕM_{n+} (lb-ft/ft)	ϕM_{n-} (lb-ft/ft)	
22	2.0	0.0295	50	0.702	0.858	0.353	0.388	1323	1456	3185
20	2.5	0.0358	50	0.881	1.061	0.461	0.513	1727	1924	5136
18	3.3	0.0474	50	1.238	1.421	0.664	0.719	2489	2694	9008
16	4.1	0.0598	50	1.645	1.795	0.863	0.926	3236	3473	11526

Factored Reactions at Supports Based on Web Crippling, ϕR_n (lb/ft)

Deck Gage	Bearing Length of Webs											
	One-Flange Loading						Two-Flange Loading					
	End Bearing				Interior Bearing		End Bearing				Interior Bearing	
	1 1/2"	2"	3"	4"	4"	8"	1 1/2"	2"	3"	4"	4"	8"
22	787	865	996	1106	1663	1933	699	753	843	920	1951	2289
20	1134	1243	1425	1578	2380	2947	1081	1160	1294	1406	2843	3569
18	1922	2095	2387	2632	3991	4999	1999	2135	2363	2556	4869	6197
16	2966	3221	3649	4010	6113	7586	3285	3495	3846	4142	7562	9541

Standard Features

- ASTM A653/A653M SS GR50 Min., with Z275/G90 galvanized or ZF75/A25 galvanized
- UL and FM Listed
- Standard lengths – 6'-0" to 42'-0"
- Cold-formed steel deck conforms to CAN/CSA S136-16 and meets the guidelines of CSSBI 10M-2018.

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

3N-24/3NI-24 ROOF DECKS GRADE 50 STEEL

Imperial
LSD

Inward Uniform Factored Loads, LSD (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	ϕW_n	661	294	165	131	106	87	73	54	41	33	26
		L/240	719	213	90	63	46	35	27	17	11	8	6
	Double	ϕW_n	632	302	175	139	114	94	79	59	45	36	29
		L/240	2118	628	265	186	136	102	78	49	33	23	17
	Triple	ϕW_n	750	368	215	172	140	117	99	73			
		L/240	1660	492	207	146	106	80	61	39			
20	Single	ϕW_n	864	384	216	171	138	114	96	71	54	43	35
		L/240	903	267	113	79	58	43	33	21	14	10	7
	Double	ϕW_n	871	408	234	186	151	125	106	78	60	47	38
		L/240	2619	776	327	230	168	126	97	61	41	29	21
	Triple	ϕW_n	1048	500	289	230	188	156	131	97			
		L/240	2053	608	257	180	131	99	76	48			
18	Single	ϕW_n	1244	553	311	246	199	165	138	102	78	61	50
		L/240	1268	376	159	111	81	61	47	30	20	14	10
	Double	ϕW_n	1262	581	331	263	213	177	149	109	84	66	54
		L/240	3505	1039	438	308	224	169	130	82	55	38	28
	Triple	ϕW_n	1536	717	411	326	265	220	185	136			
		L/240	2747	814	343	241	176	132	102	64			
16	Single	ϕW_n	1618	719	404	320	259	214	180	132	101	80	65
		L/240	1685	499	211	148	108	81	62	39	26	18	13
	Double	ϕW_n	1625	749	427	338	275	227	191	141	108	85	69
		L/240	4429	1312	554	389	283	213	164	103	69	49	35
	Triple	ϕW_n	1978	924	529	420	342	283	238	176			
		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.

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