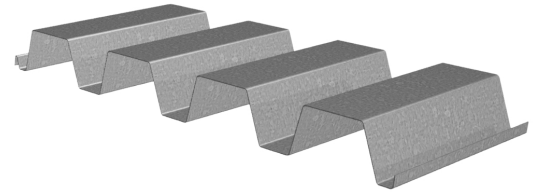


# 3NL-32/3NI-32 ROOF DECKS GRADE 50 STEEL

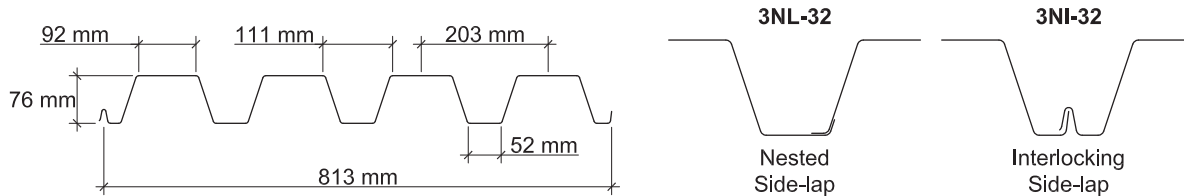
Metric  
LSD

## 32" WIDE 3N ROOF DECKS

- 3NL-32 Deck used with Side-lap Screws
- 3NI-32 Deck used with TSWs or BPs



## Nominal Dimensions



## Section Properties

Deck Gage	Deck Weight $w_{dd}$ (kg/m <sup>2</sup> )	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* $\phi V_n$ (kN)
				$I_{d+}$ (mm <sup>4</sup> x10 <sup>3</sup> )	$I_{d-}$ (mm <sup>4</sup> x10 <sup>3</sup> )	$S_{e+}$ (mm <sup>3</sup> x10 <sup>3</sup> )	$S_{e-}$ (mm <sup>3</sup> x10 <sup>3</sup> )	$\phi M_{n+}$ (N-m)	$\phi M_{n-}$ (N-m)	
22	8.78	0.75	345	878.1	976.4	18.55	20.00	5757	6205	41
20	10.74	0.91	345	1100.7	1209.9	24.09	25.59	7474	7939	70
18	14.15	1.20	345	1533.6	1638.7	35.48	36.29	11009	11262	123
16	18.06	1.52	345	2019.7	2081.2	46.72	47.58	14496	14765	169

\*Physical Properties per meter (m) of width

## Factored Reactions at Supports Based on Web Crippling, $\phi R_n$ (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	10.8	11.6	13.4	14.9	22.6	26.4	9.5	10.0	11.2	12.2	26.3	31.0
20	15.6	16.7	19.2	21.2	32.3	40.2	14.7	15.5	17.3	18.8	38.4	48.4
18	26.4	28.3	32.2	35.5	54.3	67.9	27.2	28.6	31.7	34.3	65.8	83.7
16	40.9	43.6	49.3	54.2	83.2	103.2	44.8	47.0	51.8	55.7	102.4	129.2

## Standard Features

- ASTM A653/A653M SS GR50 Min., with Z275/G90 galvanized or ZF75/A25 galvanealed
- 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

# 3NL-32/3NI-32 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	$\phi W_n$	14.3	10.5	8.0	6.3	5.1	4.2	3.6	3.0	2.6	2.3	2.0
		L/240	9.8	6.2	4.1	2.9	2.1	1.6	1.2	1.0	0.8	0.6	0.5
	Double	$\phi W_n$	14.1	10.6	8.2	6.6	5.4	4.5	3.8	3.2	2.8	2.4	2.1
		L/240	26.3	16.6	11.1	7.8	5.7	4.3	3.3	2.6	2.1	1.7	1.4
	Triple	$\phi W_n$	17.1	12.9	10.1	8.1	6.6	5.5	4.7	4.0	3.4		
		L/240	20.6	13.0	8.7	6.1	4.5	3.3	2.6	2.0	1.6		
20	Single	$\phi W_n$	18.5	13.6	10.4	8.2	6.7	5.5	4.6	3.9	3.4	3.0	2.6
		L/240	12.3	7.8	5.2	3.6	2.7	2.0	1.5	1.2	1.0	0.8	0.6
	Double	$\phi W_n$	18.7	13.9	10.8	8.5	7.0	5.8	4.9	4.1	3.6	3.1	2.7
		L/240	32.6	20.5	13.8	9.7	7.0	5.3	4.1	3.2	2.6	2.1	1.7
	Triple	$\phi W_n$	23.0	17.2	13.3	10.6	8.6	7.2	6.0	5.2	4.5		
		L/240	25.6	16.1	10.8	7.6	5.5	4.1	3.2	2.5	2.0		
18	Single	$\phi W_n$	27.3	20.0	15.3	12.1	9.8	8.1	6.8	5.8	5.0	4.4	3.8
		L/240	17.2	10.8	7.2	5.1	3.7	2.8	2.1	1.7	1.4	1.1	0.9
	Double	$\phi W_n$	27.0	20.0	15.4	12.2	9.9	8.2	6.9	5.9	5.1	4.4	3.9
		L/240	44.2	27.8	18.6	13.1	9.5	7.2	5.5	4.3	3.5	2.8	2.3
	Triple	$\phi W_n$	33.3	24.8	19.1	15.2	12.3	10.2	8.6	7.4	6.3		
		L/240	34.6	21.8	14.6	10.3	7.5	5.6	4.3	3.4	2.7		
16	Single	$\phi W_n$	35.9	26.4	20.2	15.9	12.9	10.7	9.0	7.6	6.6	5.7	5.0
		L/240	22.6	14.2	9.5	6.7	4.9	3.7	2.8	2.2	1.8	1.4	1.2
	Double	$\phi W_n$	35.5	26.3	20.2	16.0	13.0	10.8	9.1	7.7	6.7	5.8	5.1
		L/240	56.1	35.3	23.7	16.6	12.1	9.1	7.0	5.5	4.4	3.6	3.0
	Triple	$\phi W_n$	43.9	32.6	25.1	19.9	16.2	13.4	11.3	9.6	8.3		
		L/240	44.0	27.7	18.5	13.0	9.5	7.1	5.5	4.3	3.5		

### Note:

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

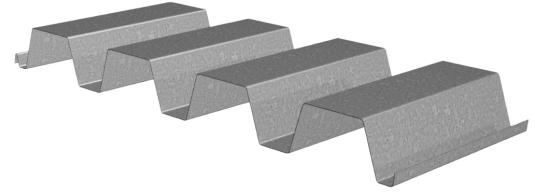
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# 3NL-32/3NI-32 ROOF DECKS GRADE 50 STEEL

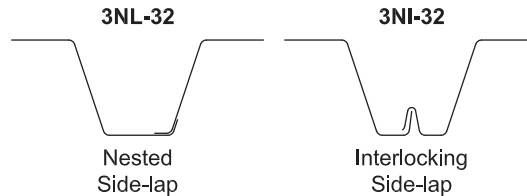
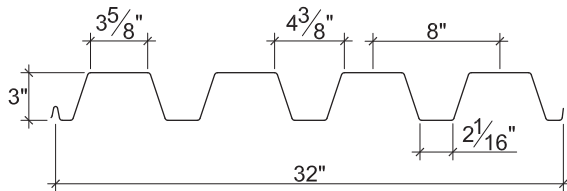
Imperial  
LSD

## 32" WIDE 3N ROOF DECKS

- 3NL-32 Deck used with Side-lap Screws
- 3NI-32 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 $\phi V_n$ (lb/ft)
				$I_{d+}$ (in <sup>4</sup> /ft)	$I_{d-}$ (in <sup>4</sup> /ft)	$S_{e+}$ (in <sup>3</sup> /ft)	$S_{e-}$ (in <sup>3</sup> /ft)	$\phi M_{n+}$ (lb-ft/ft)	$\phi M_{n-}$ (lb-ft/ft)	
22	1.8	0.0295	50	0.643	0.715	0.345	0.372	1294	1395	2785
20	2.2	0.0358	50	0.806	0.886	0.448	0.476	1680	1785	4814
18	2.9	0.0474	50	1.123	1.200	0.660	0.675	2475	2532	8445
16	3.7	0.0598	50	1.479	1.524	0.869	0.885	3259	3319	11602

## Factored Reactions at Supports Based on Web Crippling, $\phi R_n$ (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	729	801	922	1024	1555	1808	640	689	772	842	1812	2126
20	1053	1153	1322	1464	2227	2758	993	1067	1189	1292	2643	3320
18	1786	1947	2218	2447	3736	4680	1844	1970	2181	2359	4534	5771
16	2762	3000	3399	3735	5729	7109	3041	3235	3560	3835	7054	8900

## 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

# 3NL-32/3NI-32 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	$\phi W_n$	647	288	162	128	104	86	72	53	40	32	26
		L/240	659	195	82	58	42	32	24	15	10	7	5
	Double	$\phi W_n$	591	286	166	133	108	90	76	56	43	34	28
		L/240	1764	523	221	155	113	85	65	41	28	19	14
	Triple	$\phi W_n$	697	346	204	163	134	111	94	70			
		L/240	1383	410	173	121	88	66	51	32			
20	Single	$\phi W_n$	840	373	210	166	134	111	93	69	53	41	34
		L/240	826	245	103	72	53	40	31	19	13	9	7
	Double	$\phi W_n$	810	379	217	173	140	116	98	72	55	44	36
		L/240	2186	648	273	192	140	105	81	51	34	24	17
	Triple	$\phi W_n$	975	465	269	214	174	145	122	90			
		L/240	1713	508	214	150	110	82	63	40			
18	Single	$\phi W_n$	1238	550	309	244	198	164	138	101	77	61	50
		L/240	1150	341	144	101	74	55	43	27	18	13	9
	Double	$\phi W_n$	1185	546	311	247	200	166	140	103	79	62	50
		L/240	2961	877	370	260	189	142	110	69	46	32	24
	Triple	$\phi W_n$	1443	674	386	306	249	206	174	128			
		L/240	2321	688	290	204	149	112	86	54			
16	Single	$\phi W_n$	1629	724	407	322	261	215	181	133	102	80	65
		L/240	1515	449	189	133	97	73	56	35	24	17	12
	Double	$\phi W_n$	1563	717	408	324	263	218	183	135	103	82	66
		L/240	3760	1114	470	330	241	181	139	88	59	41	30
	Triple	$\phi W_n$	1906	886	507	403	327	271	228	168			
		L/240	2947	873	368	259	189	142	109	69			

### Note:

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

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