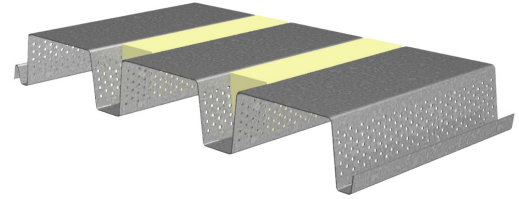


# 3NA-24/3NIA-24 ACOUSTICAL ROOF DECKS GRADE 40 STEEL

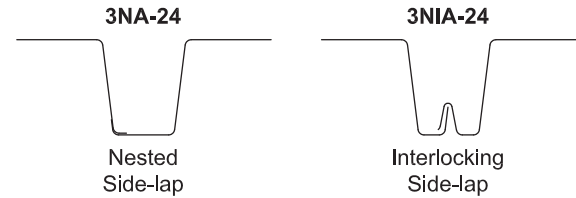
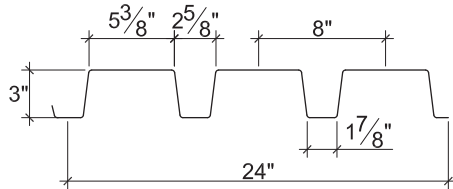
LRFD

## 24" WIDE 3N ACOUSTICAL ROOF DECKS

- 3NA-24 Deck used with Side-lap Screws
- 3NIA-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 $F_y = 40$ ksi		Design 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	1.9	0.0295	40	0.679	0.826	0.349	0.398	1047	1194	2760
20	2.4	0.0358	40	0.856	1.017	0.458	0.503	1374	1509	4062
19	2.8	0.0418	40	1.033	1.189	0.555	0.605	1665	1815	5535
18	3.1	0.0474	40	1.204	1.350	0.640	0.695	1920	2085	6484
16	3.9	0.0598	40	1.598	1.705	0.832	0.887	2496	2661	8126

## Design 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	673	739	851	946	1498	1742	612	659	738	805	1702	1998
20	976	1069	1226	1358	2146	2657	961	1032	1150	1250	2491	3128
19	1312	1433	1637	1809	2856	3595	1366	1462	1624	1760	3366	4304
18	1665	1816	2068	2281	3601	4510	1808	1931	2137	2312	4289	5459
16	2583	2806	3178	3493	5518	6848	3004	3195	3516	3787	6685	8436

## 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 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

# 3NA-24/3NIA-24 ACOUSTICAL ROOF DECKS GRADE 40 STEEL

LRFD

## 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	$\phi W_n$	523	233	131	103	84	69	58	43	33	26	21
		L/240	696	206	87	61	45	33	26	16	11	8	6
	Double	$\phi W_n$	525	250	144	115	93	77	65	48	37	29	24
		L/240	2038	604	255	179	130	98	75	48	32	22	16
	Triple	$\phi W_n$	626	304	177	142	116	96	81	60			
		L/240	1597	473	200	140	102	77	59	37			
20	Single	$\phi W_n$	687	305	172	136	110	91	76	56	43	34	27
		L/240	877	260	110	77	56	42	32	20	14	10	7
	Double	$\phi W_n$	684	320	184	146	119	98	83	61	47	37	30
		L/240	2509	744	314	220	161	121	93	59	39	28	20
	Triple	$\phi W_n$	824	393	227	181	147	122	103	76			
		L/240	1967	583	246	173	126	95	73	46			
19	Single	$\phi W_n$	833	370	208	164	133	110	93	68	52	41	33
		L/240	1058	314	132	93	68	51	39	25	17	12	8
	Double	$\phi W_n$	840	389	222	176	143	119	100	74	56	45	36
		L/240	2934	869	367	258	188	141	109	68	46	32	23
	Triple	$\phi W_n$	1018	479	275	219	178	148	124	92			
		L/240	2299	681	287	202	147	111	85	54			
18	Single	$\phi W_n$	960	427	240	190	154	127	107	78	60	47	38
		L/240	1233	365	154	108	79	59	46	29	19	14	10
	Double	$\phi W_n$	967	448	256	203	165	136	115	85	65	51	42
		L/240	3331	987	416	292	213	160	123	78	52	37	27
	Triple	$\phi W_n$	1174	551	317	252	205	170	143	105			
		L/240	2611	774	326	229	167	126	97	61			
16	Single	$\phi W_n$	1248	555	312	246	200	165	139	102	78	62	50
		L/240	1637	485	205	144	105	79	61	38	26	18	13
	Double	$\phi W_n$	1231	571	326	259	210	174	146	108	83	65	53
		L/240	4207	1246	526	369	269	202	156	98	66	46	34
	Triple	$\phi W_n$	1493	703	404	321	261	217	182	134			
		L/240	3297	977	412	289	211	159	122	77			

### Note:

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

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