MARLYN STEEL DECKS, INC

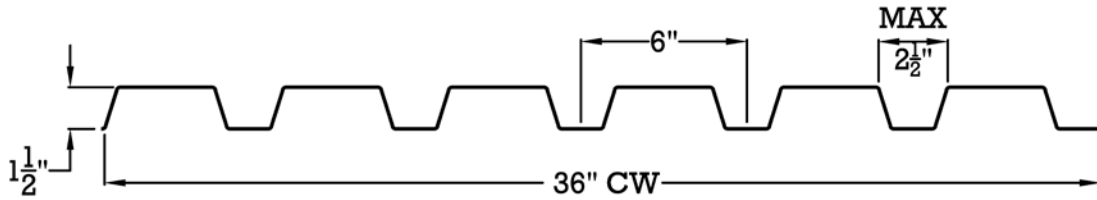# TYPE "B" WIDE RIB DECK
TYPE "BV" WIDE RIB SLOT VENTED DECK
TYPE "BA" WIDE RIB ACOUSTICAL DECK

SECTION PROPERTIES FY = 50KSI

Also available in stainless steel (304 & 316L) (FY= 33)

DECK TYPE	DESIGN THICKNESS	WT PSF GALV	WT PSF PNTD	I^{d+} IN.^{4}	I^{d-} IN.^{4}	S^{e+} IN.^{3}	S^{e-} IN.^{3}	M^P/Ω IN.-LBS. PER FT.	M^N/Ω IN.-LBS PER FT
22	.0295 IN.	1.6	1.54	0.151	0.173	0.173	0.171	5175	5111
20	.0358 IN.	2.0	1.88	0.191	0.216	0.222	0.219	6634	6549
18	.0474 IN.	2.6	2.47	0.270	0.292	0.301	0.303	9022	9072
16	.0598 IN.	3.0	3.10	0.359	0.370	0.387	0.383	11587	11457

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)					POUNDS PER SQUARE FOOT					
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
SIMPLE	22	STRESS DOWNWARD	138	114	96	82	70	61	54	48	43	38	34
		STRESS UPWARD	136	113	95	81	70	61	53	47	42	38	34
		DEFLECTION	79	60	46	36	29	24	19	16	14	12	10
	20	STRESS DOWNWARD	177	146	123	105	90	79	69	61	55	49	44
		STRESS UPWARD	175	144	121	103	89	78	68	60	54	48	44
		DEFLECTION	100	75	58	46	37	30	25	20	17	15	13
	18	STRESS DOWNWARD	241	199	167	142	123	107	94	83	74	67	60
		STRESS UPWARD	242	200	168	143	123	108	94	84	75	67	60
		DEFLECTION	142	107	82	65	52	42	35	29	24	21	18
	16	STRESS DOWNWARD	309	255	215	183	158	137	121	107	95	186	77
		STRESS UPWARD	306	252	212	181	156	136	119	106	94	85	76
		DEFLECTION	189	142	109	86	69	56	46	38	32	27	24

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)					POUNDS PER SQUARE FOOT					
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
DOUBLE	22	STRESS DOWNWARD	136	113	95	81	70	61	53	47	42	38	34
		STRESS UPWARD	138	114	96	82	70	61	54	48	43	38	34
		DEFLECTION	191	144	111	87	70	57	47	39	33	28	24
	20	STRESS DOWNWARD	175	144	121	103	89	78	68	60	54	48	44
		STRESS UPWARD	177	146	123	105	90	79	69	61	55	49	44
		DEFLECTION	242	182	140	110	88	72	59	49	41	35	30
	18	STRESS DOWNWARD	242	200	168	143	123	108	94	84	75	67	60
		STRESS UPWARD	241	199	167	142	123	107	94	83	74	67	60
		DEFLECTION	341	257	198	155	124	101	83	69	59	50	43
	16	STRESS DOWNWARD	306	252	212	181	156	136	119	106	94	85	76
		STRESS UPWARD	309	255	215	183	158	137	121	107	95	86	77
		DEFLECTION	454	341	263	207	165	134	111	92	78	66	57

TYPE "B" WIDE RIB DECK
TYPE "BV" WIDE RIB SLOT VENTED DECK
TYPE "BA" WIDE RIB ACOUSTICAL DECK

FY=50 KSI

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)										POUNDS PER SQUARE FOOT
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
TRIPLE	22	STRESS DOWNWARD	170	141	118	101	87	76	67	59	53	47	43
		STRESS UPWARD	172	143	120	102	88	77	67	60	53	48	43
		DEFLECTION	150	112	87	68	55	44	37	30	26	22	19
	20	STRESS DOWNWARD	218	180	152	129	111	97	85	76	67	60	55
		STRESS UPWARD	221	183	154	131	113	98	86	77	68	61	55
		DEFLECTION	189	142	109	86	69	56	46	38	32	28	24
	18	STRESS DOWNWARD	302	250	210	179	154	134	118	105	93	84	76
		STRESS UPWARD	301	249	209	178	153	134	117	104	93	83	75
		DEFLECTION	267	201	155	122	97	79	65	54	46	39	33
	16	STRESS DOWNWARD	382	316	265	226	195	170	149	132	118	106	95
		STRESS UPWARD	386	319	268	229	197	172	151	134	119	107	97
		DEFLECTION	355	267	206	162	129	105	87	72	61	52	44

GAGE NUMBER	V^N/Ω LBS PER Ft	Web Crippling (R^n/Ω), lbs/ft One Flange Loading End Bearing			Web Crippling (R^n/Ω), lbs/ft One flange Laoding Interior Bearing		
		1-1/2"	2"	3"	1-1/2"	2"	3"
22.	2552	829	911	1049	1231	1336	1511
20	3096	1181	1294	1484	1780	1924	2166
18	4072	1973	2151	2451	3029	3258	3642
16	5097	3016	3275	3710	4698	5033	5593

B Deck (Bare Deck – Roof) (50 ksi) Roof Deck Construction Spans

Span Cond.	GAGE NUMBER	ASD Span	ASD Cantilever Span
Single	22	8' – 07"	2' - 01"
	20	9" – 00"	2' – 06"
	18	15" – 00"	3' – 09"
	16	19" – 04"	4' – 08"
Double or Triple	22	10" – 07"	
	20	13" – 07"	
	18	18' – 06"	
	16	23' – 09"	

TYPE "BV" SHALL BE VENTED IN LOWER FLUTES WITH A .5% OPEN AREA. .75% AND 1.5% OPEN AREA AVAILABLE UPON REQUEST.
TYPE "BA" DECK HSALL BE PERFORATED IN THE WEBS WITH 5/32" DIAMETER HOLES STAGGERED 3/8" ON CENTER.
LOAD TABLES AND SECTION PROPERTIES WERE GENERATED BY THE SDI. STANDARD COVER WIDTH IS 36"

1. Roof deck section properties calculated in accordance with the AISI "Specification for the design of Cold-Formed Steel Structural Members."
2. Roof decks loads computed in accordance with the SDI bending moment and deflection formulas.
3. Loads shown in tables are uniformly distributed total (dead plus) loads in pounds per square foot. Loads in shaded area are governed by the live load deflection not in excess of L/240. The dead load included is 10 psf. All other loads are governed by the allowable flexural stress limit of 20,000 psi for 33,000 psi minimum yield.

4. Span lengths are considered center-to-center spacing of supports.
5. Spans which extend beyond the heavy vertical line in the load tables exceed the "Recommended Maximum spans for Construction and Maintenance Loads" shown on page 30.
6. Where heavy construction loads or other unusual concentrated loads are anticipated during the lifetime of the deck, the specified live load must be increased to offset the effects of the abnormal concentrated loading.
7. For loads that cause l/120 Deflection, multiply by 2.0. For loads that cause l/180 Deflection, multiply by 1.5. For loads that cause /360 Deflection, multiply by 0.667.

TYPE "B" WIDE RIB DECK
TYPE "BV" WIDE RIB SLOT VENTED DECK
TYPE "BA" WIDE RIB ACOUSTICAL DECK

MARLYN **S**TEEL **D**ECKS, INC
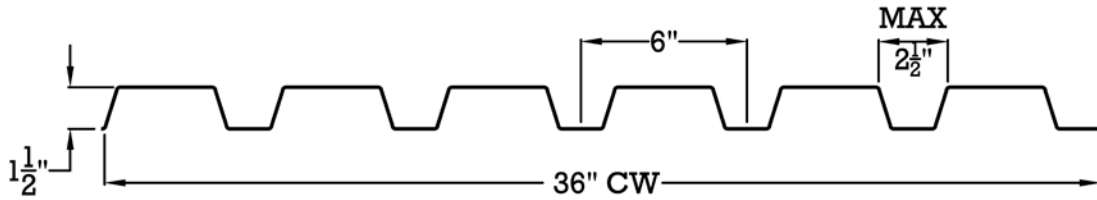
SECTION PROPERTIES FY = 60 KSI (Grade 80)
Also available in stainless steel (304 & 316L) (FY= 33)

DECK TYPE	DESIGN THICKNESS	WT PSF GALV	WT PSF PNTD	I^{d+} IN.^{4}	I^{d-} IN.^{4}	S^{e+} IN.^{3}	S^{e-} IN.^{3}	M^P/Ω IN. - LBS. PER FT.	M^N/Ω IN.- LBS PER FT
22	.0295 IN.	1.6	1.54	0.149	0.171	0.166	0.166	5956	5958
20	.0358 IN.	2.0	1.88	0.189	0.213	0.220	0.213	7904	7647
18	.0474 IN.	2.6	2.47	0.263	0.292	0.298	0.302	10719	10850
16	.0598 IN.	3.0	3.10	0.352	0.370	0.383	0.381	13772	13689

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)					POUNDS PER SQUARE FOOT					
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
SINGLE	22	STRESS DOWNWARD	159	131	110	94	81	71	62	55	49	44	40
		STRESS UPWARD	159	131	110	94	81	71	62	55	49	44	40
		DEFLECTION	78	59	45	36	29	23	19	16	13	11	10
	20	STRESS DOWNWARD	211	174	146	125	108	94	82	73	65	58	53
		STRESS UPWARD	204	169	142	121	104	91	80	71	63	56	51
		DEFLECTION	99	75	57	45	36	29	24	20	17	14	12
	18	STRESS DOWNWARD	286	236	198	169	146	127	112	99	88	79	71
		STRESS UPWARD	289	239	201	171	148	129	113	100	89	80	72
		DEFLECTION	138	104	80	63	50	41	34	28	24	20	17
	16	STRESS DOWNWARD	367	304	255	217	187	163	143	127	113	102	92
		STRESS UPWARD	365	302	253	216	186	162	143	126	113	101	91
		DEFLECTION	185	139	107	84	67	55	45	38	32	27	23

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)					POUNDS PER SQUARE FOOT					
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
DOUBLE	22	STRESS DOWNWARD	159	131	110	94	81	71	62	55	49	44	40
		STRESS UPWARD	159	131	110	94	81	71	62	55	49	44	40
		DEFLECTION	188	141	109	86	69	56	46	38	32	27	24
	20	STRESS DOWNWARD	204	169	142	121	104	91	80	71	63	56	51
		STRESS UPWARD	211	174	146	125	108	94	82	73	65	58	53
		DEFLECTION	239	179	138	109	87	71	58	49	41	35	30
	18	STRESS DOWNWARD	289	239	201	171	148	129	113	100	89	80	72
		STRESS UPWARD	286	236	198	169	146	127	112	99	88	79	71
		DEFLECTION	333	250	193	152	121	99	81	68	57	49	42
	16	STRESS DOWNWARD	365	302	253	216	186	162	143	126	113	101	91
		STRESS UPWARD	367	304	255	217	187	163	143	127	113	102	92
		DEFLECTION	445	335	258	203	162	132	109	91	76	65	56

MARLYN STEEL DECKS, INC

TYPE "B" WIDE RIB DECK
TYPE "BV" WIDE RIB SLOT VENTED DECK
TYPE "BA" WIDE RIB ACOUSTICAL DECK

Fy = 60 ksi (Grade 80)

DECK-SPAN	DECK TYPE	DESIGN THICKNESS	DECK SUPPORT SPACING (FT. - IN.)							POUNDS PER SQUARE FOOT				
			5-0	5-06	6-00	6-06	7-00	7-06	8-00	8-.06	9-00	9-06	10-00
TRIPLE	22	STRESS DOWNWARD	199	164	138	118	101	88	78	69	61	55	50
		STRESS UPWARD	199	164	138	117	101	88	78	69	61	55	50
		DEFLECTION	147	111	85	67	54	44	36	30	25	21	18
	20	STRESS DOWNWARD	255	211	177	151	130	113	100	88	79	71	64
		STRESS UPWARD	263	218	183	156	134	117	103	91	81	73	66
		DEFLECTION	187	140	108	85	68	55	46	38	32	27	23
	18	STRESS DOWNWARD	362	299	251	214	185	161	141	125	112	100	90
		STRESS UPWARD	357	295	248	211	182	159	140	124	110	99	89
		DEFLECTION	261	196	151	119	95	77	64	53	45	38	33
	16	STRESS DOWNWARD	456	377	317	270	233	203	178	158	141	126	114
		STRESS UPWARD	459	379	319	272	234	204	179	159	142	127	115
		DEFLECTION	349	262	202	159	127	103	85	71	60	51	44

		Web Crippling (R^n/Ω), lbs/ft One Flange Loading End Bearing			**Web Crippling (R^n/Ω), lbs/ft One flange Laoding Interior Bearing**		
GAGE NUMBER	V^N/Ω LBS PER Ft	1-1/2"	2"	3"	1-1/2"	2"	3"
22.	2985	995	1093	1259	1478	1603	1813
20	3715	1418	1553	1781	2136	2309	2599
18	4886	2367	2582	2941	3635	3910	4371
16	6117	3619	3930	4452	5638	6039	6712

B Deck (Bare Deck – Roof) (50 ksi) Roof Deck Construction Spans

Span Cond.	GAGE NUMBER	ASD Span	ASD Cantilever Span
Single	22.	9'-11"	2' - .05"
	20	13" – 02"	3' – 02."
	18	17" – 10"	4' – 05"
	16	22" – 11"	5' – 07"
Double or Triple	22.	12' – 03"	
	20	16' – 03"	
	18	22' – 00"	
	16	28' – 03"	

TYPE "BV" SHALL BE VENTED IN LOWER FLUTES WITH A .5% OPEN AREA. .75% AND 1.5% OPEN AREA AVAILABLE UPON REQUEST.
TYPE "BA" DECK HSALL BE PERFORATED IN THE WEBS WITH 5/32" DIAMETER HOLES STAGGERED 3/8" ON CENTER.
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2. Roof decks loads computed in accordance with the SDI bending moment and deflection formulas.
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6. Where heavy construction loads or other unusual concentrated loads are anticipated during the lifetime of the deck, the specified live load must be increased to offset the effects of the abnormal concentrated loading.
7. For loads that cause l/120 Deflection, multiply by 2.0. For loads that cause l/180 Deflection, multiply by 1.5. For loads that cause /360 Deflection, multiply by 0.667.
8. The design stress for Grade 80 is 0.75 times the 80 ksi due to the low ductility of the steel.