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**TEMSA**  
**TMS-91.5 ROOFDECK DESIGN DATA**

# TMS-91.5 RoofDeck Design Data

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# ABOUT US

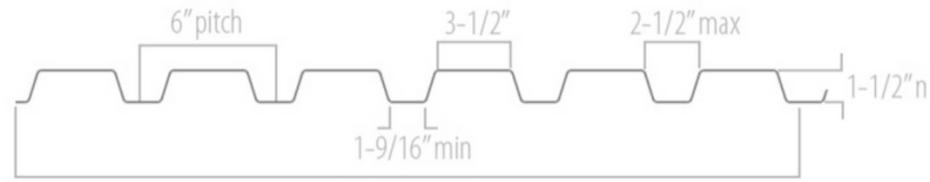
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WE MANUFACTURE STRUCTURES FOR THE MANUFACTURING INDUSTRY, MINING AND STEEL INDUSTRY, FOOD AND BEVERAGE INDUSTRY, AGRO-INDUSTRY, AND COMMERCIAL AND INSTITUTIONAL INFRASTRUCTURE. WE COMPLEMENT OUR SERVICES WITH THE SUPPLY AND INSTALLATION OF ROOF SHEETING, FACADE SHEETING, AND "LOSACERO," OFFERING OUR CLIENTS COMPREHENSIVE SOLUTIONS FOR THEIR PROJECTS.

TEMSA

STEEL DECK GEOMETRIC PROPERTIES..

Deck Denomination. TMS-91.5  
 SDI Denomination 1.5WR  
 Material A653 SS37  
 Fy (ksi) 37



(d) Wide Rib Deck Type WR

GAGE	THICKNESS (in)	COVER (in)	WEIGHT (psf)
22	0.0295	36	1.63
20	0.0358	36	1.98
18	0.0474	36	2.62



GAGE	MAXIMUM CANTILEVER SPANS		
	SINGLE	DOUBLE	TRIPLE
22	0'-10"	0'-9"	0'-10"
20	0'-11"	0'-10"	0'-11"
18	1'-1"	1'-0"	1'-1"

GAGE	MAXIMUM CANTILEVER SPANS		
	SINGLE	DOUBLE	TRIPLE
22	5'-6"	6'-6"	6'-6"
20	6'-3"	7'-5"	7'-5"
18	7'-6"	8'-10"	8'-10"

ASD

GAGE	SECTION PROPERTIES					DESIGN STRENGTHS	
	Fy (ksi)	Ip (in <sup>4</sup> )	In (in <sup>4</sup> )	Sp (in <sup>3</sup> )	Sn (in <sup>3</sup> )	Mn, p/ Ω (in-lb/ft)	Mn, n/ Ω (in-lb/ft)
22	37	0.1570	0.1750	0.1788	0.1857	3962	4114
20	37	0.2010	0.2130	0.2401	0.2420	5319	5361
18	37	0.2790	0.2810	0.3365	0.3363	7455	7452

MAX ALLOWABLE UPWARS LOAD PER WELD (PSF)									
Wels Size	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"	1/2"	5/8"	3/4"
Span (ft)	Internal Uplift Pattern 36/4			Internal Uplift Pattern 36/5			Internal Uplift Pattern 36/7		
4	93.0	117	143	124	156	190	186	234	285
4.5	83.0	104	127	110	139	169	165	208	254
5	74.0	94	114	99	125	152	149	187	228
5.5	68	85	104	90	114	138	135	170	207
6	62	78	95	83	104	127	124	156	190
6.5	57	72	88	76	96	117	114	144	176
7	53	67	81	71	89	109	106	134	163
7.5	50	62	76	66	83	101	99	125	152
8	46	59	71	62	78	95	93	117	143
8.5	44	55	67	58	73	89	87	110	134
9	41	52	63	55	69	85	83	104	127
9.5	39	49	60	52	66	80	78	99	120
10	37	47	57	50	62	76	74	94	114
10.5	35	45	54	47	59	72	71	89	109
11	34	43	52	45	57	69	68	85	104
11.5	32	41	50	43	54	66	65	81	99
12	31	39	48	41	52	63	62	78	95

MAX ALLOWABLE UPWARS LOAD PER SCREW (PSF)												
Wels Size	# 8	#10	#12	# 8	#10	#12	# 8	#10	#12	# 8	#10	#12
Span (ft)	Internal Uplift Pattern 36/4			Internal Uplift Pattern 36/5			Internal Uplift Pattern 36/7			Internal Uplift Pattern 36/9		
4	77	92	96	103	123	127	155	184	191	180	215	223
4.5	69	82	85	92	109	113	137	164	170	160	191	198
5	62	74	76	82	98	102	124	147	153	144	172	178
5.5	56	67	69	75	89	93	112	134	139	131	156	162
6	52	61	64	69	82	85	103	123	127	120	143	149
6.5	48	57	59	63	75	78	95	113	118	111	132	137
7	44	53	55	59	70	73	88	105	109	103	123	127
7.5	41	49	51	55	65	68	82	98	102	96	113	119
8	39	46	48	52	61	64	77	92	96	90	107	111
8.5	36	43	45	48	58	60	73	87	90	85	101	105
9	34	41	42	46	55	57	69	82	85	80	95	99
9.5	33	39	40	43	52	54	65	77	80	76	90	94
10	31	37	38	41	49	51	62	74	76	72	86	89
10.5	29	35	36	39	47	49	59	70	73	69	82	85
11	28	33	35	37	45	46	56	67	69	66	78	81
11.5	27	32	33	36	43	44	54	64	66	63	75	78
12	26	31	32	34	41	42	52	61	64	60	72	74

LIABILITY STATEMENT

THE DATA PUBLISHED IN THESE TABLES WAS DEVELOPED USING ANSI/SDL-RD-2017 "STANDARD FOR STEEL ROOF DECK" AS THE TECHNICAL OF ILLUSTRATION AND NOT LIMITATION, THE DATA DISPLAYED IS BELIEVED TO BE ACCURATE AND TEMSA DOESN'T ASSUMES OR WILL NOT DAMAGES ARISING FROM OR RELATED TO THE DATA PROVIDED IN THIS DOCUMENT. THE FEASIBILITY OF THE PRODUCTS AND THE ACCURACY OF TO DETERMINE SUITABILITY FOR THE INTENDED APPLICATION.

## LIABILITY STATEMENT

### ALLOWABLE UNIFORM LOADS (PSF) AND MAXIMUM CONSTRUCTION SPANS

#### TMS-91.5-GAGE 18

GAGE		OUTWARD LOADS (PSF)																	
		SPAN (ft-in)																	
		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"	
18	SINGLE	WN/Ω	307	242	197	162	136	117	100	87	77	68	61	55	49	45	41	37	19
		W-IUP	NG	3/4"-36/7	3/4"-36/7	5/8"-36/7	5/8"-36/7	3/4"-36/5	1/2"-36/7	1/2"-36/7	5/8"-36/5	5/8"-36/5	5/8"-36/4	5/8"-36/4	1/2"-36/5	1/2"-36/5	5/8"-36/4	5/8"-36/4	1/2"-36/4
		SCREWS	NG	NG	NG	NG	#10-36/9	#12-36/9	#10-36/7	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#8-36/7	#12-36/5	#10-36/5	#10-36/5	#10-36/5	#8-36/4
		L/240	285	201	146	109	84	66	53	43	36	30	25	21	18	16	14	12	7
	DOUBLE	WN/Ω	307	244	198	163	137	116	101	87	77	68	61	55	49	45	41	37	18
		W-IUP	NG	3/4"-36/7	3/4"-36/7	5/8"-36/7	5/8"-36/7	3/4"-36/5	1/2"-36/7	1/2"-36/7	5/8"-36/5	5/8"-36/5	5/8"-36/4	5/8"-36/4	1/2"-36/5	1/2"-36/5	5/8"-36/4	5/8"-36/4	1/2"-36/4
		SCREWS	NG	NG	NG	NG	#10-36/9	#12-36/9	#10-36/7	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#8-36/7	#12-36/5	#10-36/5	#10-36/5	#10-36/5	#8-36/4
		L/240	684	480	349	262	202	158	127	103	85	71	60	51	44	38	33	29	14
	TRIPLE	WN/Ω	383	302	247	203	171	146	126	110	96	86	76	68	62	56	51	47	23
		W-IUP	NG	NG	NG	3/4"-36/7	3/4"-36/7	3/4"-36/7	5/8"-36/7	5/8"-36/7	5/8"-36/7	5/8"-36/5	5/8"-36/7	5/8"-36/4	5/8"-36/5	5/8"-36/5	3/4"-36/4	3/4"-36/4	1/2"-36/4
		SCREWS	NG	NG	NG	NG	NG	NG	#12-36/9	#10-36/9	#10-36/9	#10-36/7	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#8-36/7	#8-36/7	#8-36/4
		L/240	534	376	273	205	158	124	100	81	67	56	47	40	34	30	26	22	11

\*EBL= END BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*IBL = INTERNAL BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*NG = NOT GOOD

GAGE		INWARD LOADS (PSF)																		
		SPAN (ft-in)																		
		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"		
18	SINGLE	WN/Ω	308	244	196	163	137	117	100	88	77	68	61	55	49	45	41	37	34	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
		L/240	283	199	146	108	84	66	53	43	36	29	25	21	18	16	14	12	10	
	DOUBLE	WN/Ω	308	243	196	163	137	116	100	87	77	68	61	54	49	44	41	37	34	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		ILB (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		L/240	688	481	351	264	203	160	128	104	86	72	60	51	44	38	33	29	25	
	TRIPLE	WN/Ω	383	303	246	203	171	146	125	109	96	85	76	68	62	56	51	47	43	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		ILB (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		L/240	535	377	275	207	160	125	100	81	67	56	47	40	34	30	26	23	20	

\* IUP = INTERNAL UPLIFT PATTERN (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*W = ARC SPOT WELD  
 \*NG = NOT GOOD

MAX REACTION FOR WEB CRUPLING (END BEARING) (lb)										
BEARING LENGTH, In	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4
END BEARING	1178.8	1268.2	1348.2	1421.2	1489.4	1550.6	1663.5	1767.1	1861.2	1948.2
INTERNAL BEARING	1883.4	2002.3	2105.1	2198.9	2283.4	2365.7	2512	2644.6	2765.7	2877.7
SPAN (ft-in)	END BEARING PRESSURE									
4'-0"	589	634	674	711	745	775	832	884	931	974
4'-6"	524	564	599	632	662	689	739	785	827	866
5'-0"	472	507	539	568	596	620	665	707	744	779
5'-6"	429	461	490	517	542	564	605	643	677	708
6'-0"	393	423	449	474	496	517	555	589	60	649
6'-6"	363	390	415	437	458	477	512	544	573	599
7'-0"	337	362	385	406	426	443	475	505	532	557
7'-6"	314	338	360	379	397	413	444	471	496	520
8'-0"	295	317	337	355	372	388	416	442	465	487
8'-6"	277	298	317	334	350	365	391	416	438	458
9'-0"	262	282	299	316	331	345	370	393	414	433
9'-6"	248	267	284	299	314	326	350	372	392	410
10'-0"	236	254	270	284	298	310	333	353	372	390
10'-6"	225	242	257	271	284	295	317	337	355	371
11'-0"	214	231	245	258	271	282	302	321	338	354
11'-6"	205	221	234	247	259	270	289	307	324	339
12'-0"	196	211	225	237	248	258	277	295	310	325

MAX REACTION FOR WEB CRUPLING (INTERNAL BEARING) (lb)										
BEARING LENGTH, In	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4
END BEARING	1178.8	1268.2	1348.2	1421.2	1489.4	1550.6	1663.5	1767.1	1861.2	1948.2
INTERNAL BEARING	1883.4	2002.3	2105.1	2198.9	2283.4	2365.7	2512	2644.6	2765.7	2877.7
SPAN (ft-in)	INTERNAL BEARING PRESSURE									
4'-0"	471	501	526	550	571	591	628	661	691	719
4'-6"	419	445	468	489	507	526	558	588	615	639
5'-0"	377	400	421	440	457	473	502	529	553	576
5'-6"	342	364	383	400	415	430	457	481	503	523
6'-0"	314	334	351	366	381	394	419	441	461	480
6'-6"	290	308	324	338	351	364	386	407	425	443
7'-0"	269	286	301	314	326	338	359	378	395	411
7'-6"	251	267	281	293	304	315	335	353	369	384
8'-0"	235	250	263	275	285	296	314	331	346	360
8'-6"	222	236	248	259	269	278	296	311	325	339
9'-0"	209	222	234	244	254	263	279	294	307	320
9'-6"	198	211	222	231	240	249	264	278	291	303
10'-0"	188	200	211	220	228	237	251	264	277	288
10'-6"	179	191	200	209	217	225	239	252	263	274
11'-0"	171	182	191	200	208	215	228	240	251	262
11'-6"	164	174	183	191	199	206	218	230	240	250
12'-0"	157	167	175	183	190	197	209	220	230	240

**NOTES:**

1- LOAD TABLES WERE CALCULATED USING SECTION PROPERTIES BASED ON THE DESIGN THICKNESSEES SPECIFIED ON PAGE 1 AND SECTION PROPERTIES WERE CALCULATED IN ACCORDANCE WITH AISI S 100-16.

2. LOADS SHOWN IN TABLES ARE UNIFORMLY DISTRIBUTED TOTAL (DEAD PLUS LIVE) LOADS IN PSF (KPA). ALL LOADS ARE GOVERNED BY THE ALLOWABLE FLEXURAL STRESS LIMIT OF FOR A 37 KSI (255 MPA) MINIMUM YLED STEEL. 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. SEE MAXIMUM SPANS FOR CONSTRUCTION AND MAINTENANCE LOADS ON PAGE 1.

3. MAXIMUM SPANS FOR CONSTRUCTION SPANS SHOWN ON PAGE 1 INCLUDE A CHECK FOR A NOMINAL 200 LBS CONCENTRATED LOAD SUPPORTED BY A ONE FOOT SECTION OF DECK PER SDI CRITERIA.

4. SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS. TABULATED LOADS SHALL NOT BE INCREASED BY ASSUMING CLEAR SPAN DIMENSIONS.

5. BENDING MOMENT FORMULAS USED FOR FLEXURAL STRESS LIMITATIONS ARE:

$$\text{For one span: } M = \frac{WL^2}{8}$$

$$\text{For two span: } M_+ = \frac{9WL^2}{128} \quad M_- = \frac{WL^2}{8}$$

$$\text{For three span: } M_+ = \frac{2WL^2}{25} \quad M_- = \frac{WL^2}{10}$$

6. DEFLECTION FORMULAS FOR DEFLECTION LIMITATIONS ARE:

$$\text{For one span: } \Delta = \frac{5WL^4}{384EI}$$

$$\text{For two span: } \Delta = \frac{WL^4}{185EI}$$

$$\text{For three span: } \Delta = \frac{WL^4}{145EI}$$

7. TABLES ARE BASED ON AN ASSUMED DL=10 PSF

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	MAXIMUM CANTILEVER SPAN			ALLOWABLE
	BACK-SPAM CONDITIONS			
	SINGLE	DOUBLE	TRIPLE	
	7'-6"	8'-10"	8'-10"	
MAX CANTILEVER SPAN	1'-1"	1'-0"	1'-1"	
MAX MOMENT - (lb -ft)	223.7	206	223.7	621
MAX SHEAR (lb)	213	212	213	2654
Δ END OF BEAM (in)	0.099	0.0906	0.0102	0-108 / 0.100 / 0.108

**NOTES:**

1-MAXIMUM CANTILEVER SPAN WERE CALCULATED USING SECTION PROPERTIES BASED ON THE DESIGN THICKNESSES SPECIFIED ON PAGE 1 AND SECTION PROPERTIES WERE CALCULATED IN ACCORDANCE WITH AISI S100-16

2. BACK SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS AND SHALL NOT BE GREATER THAN SHOWN.

3. BENDING MOMENT FORMULA USED FOR FLEXURAL STRESS LIMITATION IS:

FOR ONE, TWO AND THREE SPAN:

$$M_{-} = \frac{WLc^2}{8} + PLc \text{ ,where } Lc \text{ is the maximum cantilever span}$$

$$\Delta_{allowable} = \frac{2Lc}{240} \text{ ,where } Lc \text{ is the maximum cantilever span}$$

4. DEFLECTION CRITERIA FORMULA IS:

5. TABLES ARE BASED ON LOADS GIVEN BY 2.4.4 FROM ANSI/SDI-RD-17 AS FOLLOWS: WDD+WLCC+PLC, WHERE WDD= DEAD WEIGHT OF STEEL DECK; WLCC=UNIFORM CONSTRUCTION LIVE LOAD APPLIED TO CANTILEVER AND ADJACENT SPAN, 10 PSF (0.48 KPA) & PLC= CONCENTRATED CONSTRUCTION AND MAINTENANCE LIVE LOAD PER UNIT WIDTH OF DECK SECTION; 200 POUNDS ON A 1 FOOT WIDTH (2.92 KN ON A 1 METER WIDTH), APPLIED AT THE END OF THE CANTILEVER.

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		INWARD LOADS (PSF)																		
		SPAN (ft-in)																		
GAGE		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"		
20	SINGLE	WN/Ω	220	173	141	116	97	83	72	63	55	48	44	39	35	32	29	37	24	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
		L/240	204	144	104	78	60	47	38	31	25	21	18	15	13	11	10	9	8	
	DOUBLE	WN/Ω	222	175	142	117	99	84	72	63	55	49	44	39	35	32	29	27	25	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
		ILB (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	TRIPLE	L/240	518	365	268	199	155	122	97	79	65	54	46	39	33	29	25	22	19	
		WN/Ω	276	218	176	146	123	105	90	79	69	61	55	49	44	40	37	34	31	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
			ILB (in)	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
			L/240	408	288	208	157	121	95	76	62	51	43	36	31	26	22	20	17	15

\* ELB = END BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*IBL = INTERNAL BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*NG = NOT GOOD

		OUTWARD LOADS (PSF)																		
		SPAN (ft-in)																		
GAGE		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"		
20	SINGLE	WN/Ω	221	175	141	117	98	84	72	63	55	49	44	39	35	32	29	7	19	
		W-IUP	5/8"-36/7	5/8"-36/7	1/2"-36/7	1/2"-36/7	5/8"-36/5	3/4"-36/4	3/4"-36/4	1/2"-36/5	5/8"-36/4	5/8"-36/4	5/8"-36/4	5/8"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4
		SCREWS	#12-36/9	#10-36/9	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#12-36/5	#10-36/5	#8-36/5	#10-36/5	#8-36/5	#12-36/4	#10-36/4	#10-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4
		L/240	215	151	111	83	64	50	40	33	27	23	19	16	14	12	10	9	7	
	DOUBLE	WN/Ω	220	174	140	116	98	83	72	62	55	49	43	39	35	32	29	26	18	
		W-IUP	5/8"-36/7	5/8"-36/7	1/2"-36/7	1/2"-36/7	5/8"-36/5	3/4"-36/4	3/4"-36/4	1/2"-36/5	5/8"-36/4	5/8"-36/4	5/8"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4
		SCREWS	#12-36/9	#10-36/9	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#12-36/5	#10-36/5	#10-36/5	#10-36/5	#8-36/5	#10-36/4	#10-36/4	#10-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4
		L/240	493	346	252	189	146	114	92	75	62	51	43	37	31	27	24	21	14	
	TRIPLE	WN/Ω	273	218	176	145	121	103	90	78	69	61	54	48	44	40	36	33	23	
		W-IUP	3/4"-36/7	3/4"-36/7	5/8"-36/7	5/8"-36/7	1/2"-36/7	1/2"-36/7	1/2"-36/7	5/8"-36/5	3/4"-36/4	3/4"-36/4	1/2"-36/5	5/8"-36/4	5/8"-36/4	5/8"-36/4	5/8"-36/4	5/8"-36/4	5/8"-36/4	1/2"-36/4
		SCREWS	NG	NG	#12-36/9	#10-36/9	#10-36/7	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#8-36/7	#10-36/5	#10-36/5	#10-36/5	#10-36/5	#8-36/5	#8-36/5	#8-36/5	#8-36/4
			L/240	385	271	196	148	114	89	72	59	48	40	34	29	25	21	19	16	11

\*IUP= INTERNAL UPLIFT PATTERN (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*W= ARC SPOT WELD  
 \*NG = NOT GOOD

LIABILITY STATEMENT

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MAX REACTION FOR WEB CRUPLING (END BEARING) (lb)											
BEARING LENGTH, in	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	
END BEARING	696.5	755.3	804.7	851.8	894.1	931.8	1004.7	168.2	1129.4	1183.5	
INTERNAL BEARING	1092.6	1168	1232	1291.4	1346.3	1396.6	1488	1572.6	1648	1721.1	
END BEARING PRESSURE											
SPAN (ft-in)	4'-0"	348	378	402	426	447	466	502	534	565	592
4'-6"	310	336	358	379	397	414	447	475	502	526	
5'-0"	279	302	322	341	358	373	402	427	452	473	
5'-6"	253	275	293	310	325	339	365	388	411	430	
6'-0"	232	252	268	284	298	311	335	356	376	395	
6'-6"	214	232	248	262	275	287	309	329	348	364	
7'-0"	199	216	230	243	255	266	287	305	323	338	
7'-6"	186	201	215	227	238	248	268	285	301	316	
8'-0"	174	189	201	213	224	233	251	267	282	296	
8'-6"	164	178	189	200	210	219	236	251	266	278	
9'-0"	155	168	179	189	199	207	223	237	251	263	
9'-6"	147	159	169	179	188	196	212	225	238	249	
10'-0"	139	151	161	170	179	186	201	214	226	237	
10'-6"	133	144	153	162	170	177	191	203	215	225	
11'-0"	127	137	146	155	163	169	183	194	205	215	
11'-6"	121	131	140	148	155	162	175	186	196	206	
12'-0"	116	126	134	142	149	155	167	178	188	197	

MAX REACTION FOR WEB CRUPLING (INTERNAL BEARING) (lb)											
BEARING LENGTH, in	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	
END BEARING	696.5	755.3	804.7	851.8	894.1	931.8	1004.7	168.2	1129.4	1183.5	
INTERNAL BEARING	1092.6	1168	1232	1291.4	1346.3	1396.6	1488	1572.6	1648	1721.1	
INTERNAL BEARING PRESSURE											
SPAN (ft-in)	4'-0"	273	292	308	323	337	349	372	393	412	430
4'-6"	243	260	274	287	299	310	331	349	366	382	
5'-0"	219	234	246	258	269	279	298	315	330	344	
5'-6"	199	212	224	235	245	254	271	286	300	313	
6'-0"	182	195	205	215	224	233	248	262	275	287	
6'-6"	168	180	190	199	207	215	229	242	254	265	
7'-0"	156	167	176	184	192	200	213	225	235	246	
7'-6"	146	156	164	172	180	186	198	210	220	229	
8'-0"	137	146	154	161	168	175	186	197	206	215	
8'-6"	129	137	145	152	158	164	175	185	194	202	
9'-0"	121	130	137	143	150	155	165	175	183	191	
9'-6"	115	123	130	136	142	147	157	166	173	181	
10'-0"	109	117	123	129	135	140	149	157	165	172	
10'-6"	104	111	117	123	128	133	142	150	157	164	
11'-0"	99	106	112	117	122	127	135	143	150	156	
11'-6"	95	102	107	112	117	121	129	137	143	150	
12'-0"	91	97	103	108	112	116	124	131	137	143	

**NOTES:**

1-LOAD TABLES WERE CALCULATED USING SECTION PROPERTIES BASED ON THE DESIGN THICKNESSES SPECIFIED ON PAGE 1 AND SECTION PROPERTIES WERE CALCULATED IN ACCORDANCE WITH AISI S100-16.

2. LOADS SHOWN IN TABLES ARE UNIFORMLY DISTRIBUTED TOTAL(DEAD PLUS LIVE) LOADS IN PSF (KPA). ALL LOADS ARE COVERED BY THE ALLOWABLE FLEXURAL STRESS LIMIT OF FOR A 37 KSI (255 MPA) MINIMUM YIELD STEEL. WHERE HEAVY CONSTRUCTION LOADS FOR THE UNUSUAL CONCENTRATED LOADS ARE ANTICIPATED DURING THE UNUSUAL CONCENTRATED LOADING. SEE MAXIMUM SPANS FOR CONSTRUCTION AND MAINTENANCE LOADS ON PAGE 1.

3. MAXIMUM SPANS FOR CONSTRUCTION SPANS SHOWN ON PAGE 1 INCLUDE A CHECK FOR A NOMINAL 200 LBS CONCENTRATED LOAD SUPPORTED BY A ONE FOOT SECTION OF DECK PER SDI CRITERIA.

4. SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS. TABULATED LOADS SHALL NOT BE INCREASED BY ASSUMING CLEAR SPAN DIMENSIONS.

5. BENDING MOMENT FORMULAS USED FOR FLEXURAL STRESS LIMITATIONS ARE:

$$\text{For one span: } M = \frac{WL^2}{8}$$

$$\text{For two span: } M_+ = \frac{9WL^2}{128} \quad M_- = \frac{WL^2}{8}$$

$$\text{For three span: } M_+ = \frac{2WL^2}{25} \quad M_- = \frac{WL^2}{10}$$

6. DEFLECTION FORMULAS FOR DEFLECTION LIMITATIONS ARE:

$$\text{For one span: } \Delta = \frac{5WL^4}{384EI}$$

$$\text{For two span: } \Delta = \frac{WL^4}{185EI}$$

$$\text{For three span: } \Delta = \frac{WL^4}{145EI}$$

7. TABLES ARE BASED ON AN ASSUMED DL=10 PSF

LIABILITY STATEMENT

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	MAXIMUM CANTILEVER SPAN			ALLOWABLE
	BACK-SPAN CONDITIONS			
	SINGLE	DOUBLE	TRIPLE	
	6'-3"	7'-5"	7'-5"	
MAX CANTILEVER SPAN	0'-11"	0'-10"	0'-11"	
MAX MOMENT - (lb -ft)	188.4	170.83	188.4	447
MAX SHEAR (lb)	211	210	211	2654
Δ END OF BEAM (in)	0.084	0.0737	0.0871	0.092 / 0.083 / 0.092

**NOTES:**

1-MAXIMUM CANTILEVER SPAN WERE CALCULATED USING SECTION PROPERTIES BASED ON THE DESIGN THICKNESSES SPECIFIED ON PAGE 1 AND SECTION PROPERTIES WERE CALCULATED IN ACCORDANCE WITH AISI S100-16

2. BACK SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS AND SHALL NOT BE GREATER THAN SHOWN.

3. BENDING MOMENT FORMULA USED FOR FLEXURAL STRESS LIMITATION IS:

FOR ONE, TWO AND THREE SPAN:

$$M_{-} = \frac{WLc^2}{8} + PLc, \text{ where } Lc \text{ is the maximum cantilever span}$$

$$\Delta_{allowable} = \frac{2Lc}{240}, \text{ where } Lc \text{ is the maximum cantilever span}$$

4. DEFLECTION CRITERIA FORMULA IS:

5. TABLES ARE BASED ON LOADS GIVEN BY 2.4.4 FROM ANSI/SDI-RD-17 AS FOLLOWS: WDD+WLCC+PLC, WHERE WDD= DEAD WEIGHT OF STEEL DECK; WLCC=UNIFORM CONSTRUCTION LIVE LOAD APPLIED TO CANTILEVER AND ADJACENT SPAN, 10 PSF (0.48 KPA) & PLC= CONCENTRATED CONSTRUCTION AND MAINTENANCE LIVE LOAD PER UNIT WIDTH OF DECK SECTION; 200 POUNDS ON A 1 FOOT WIDTH (2.92 KN ON A 1 METER WIDTH), APPLIED AT THE END OF THE CANTILEVER.

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ALLOWABLE UNIFORM LOADS (PSF) AND MAXIMUM CONSTRUCTION SPANS  
TMS-91.5 - GAGE 22

		INWARD LOADS (PSF)																		
		SPAN (ft-in)																		
GAGE		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"		
22	SINGLE	WN/Ω	163	129	105	86	73	91	53	47	41	36	32	29	26	24	22	20	18	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		L/240	159	111	81	61	47	36	30	24	20	17	14	12	10	9	8	7	6	
	DOUBLE	WN/Ω	170	134	109	90	75	97	56	48	42	38	33	30	27	25	22	21	19	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
		ILB (in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
	TRIPLE	L/240	429	299	219	164	126	100	80	65	53	45	38	32	27	24	21	18	16	
		WN/Ω	211	168	135	112	94	121	69	60	53	47	42	37	34	31	28	26	24	
		ELB(in)	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
			ILB (in)	1.25	1.00	0.75	0.75	0.75	0.75	1.00	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	
			L/240	334	235	172	128	99	78	62	51	42	35	29	25	22	19	16	14	12

\*ELB = END BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*ILB = INTERNAL BEARING LENGTH (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*NG = NOT GOOD

		OUTWARD LOADS (PSF)																		
		SPAN (ft-in)																		
GAGE		4'-0"	4'-6"	5'-0"	5'-6"	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	10'-6"	11'-0"	11'-6"	12'-0"		
22	SINGLE	WN/Ω	169	134	108	90	75	97	56	48	42	38	34	30	27	25	22	21	19	
		W-IUP	1/2"-36/7	5/8"-36/5	3/4"-36/4	1/2"-36/5	5/8"-36/4	1/2"-36/7	5/8"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4
		SCREWS	#10-36/7	#8-36/7	#8-36/7	#12-36/5	#10-36/5	#10-36/7	#8-36/5	#10-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4	#8-36/4	#8-36/4	#8-36/4	#8-36/4	#8-36/4	#8-36/4
	DOUBLE	L/240	178	124	91	68	52	41	33	27	22	18	16	13	11	10	9	8	7	
		WN/Ω	164	129	105	86	73	91	53	46	41	36	32	29	26	24	22	20	18	
		W-IUP	1/2"-36/7	5/8"-36/5	3/4"-36/4	1/2"-36/5	5/8"-36/4	5/8"-36/5	5/8"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4
	TRIPLE	SCREWS	#10-36/7	#8-36/7	#8-36/7	#10-36/5	#10-36/5	#8-36/7	#12-36/4	#10-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4	#8-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4	#8-36/4
		L/240	384	268	196	147	113	86	71	58	48	40	34	29	25	21	19	16	14	
		WN/Ω	205	161	131	108	91	113	66	58	51	45	40	36	33	30	27	25	23	
			W-IUP	5/8"-36/7	1/2"-36/7	1/2"-36/7	5/8"-36/5	3/4"-36/4	1/2"-36/7	5/8"-36/4	5/8"-36/4	5/8"-36/4	5/8"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4	1/2"-36/4
			SCREWS	#10-36/9	#10-36/7	#10-36/7	#8-36/7	#8-36/7	#12-36/7	#10-36/5	#10-36/5	#8-36/5	#8-36/5	#10-36/4	#10-36/4	#10-36/4	#10-36/4	#8-36/4	#8-36/4	#8-36/4
			L/240	300	210	153	115	89	67	56	46	38	31	26	22	19	17	15	13	11

\*IUP= INTERNAL UPLIFT PATTERN (MINIMUM REQUIRED TO DEVELOP 100% OF THE DECK STRENGTH)  
 \*W= ARC SPOT WELD  
 \*NG = NOT GOOD

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2. LOADS SHOWN IN TABLES ARE UNIFORMLY DISTRIBUTED TOTAL(DEAD PLUS LIVE) LOADS IN PSF (KPA). ALL LOADS ARE COVERED BY THE ALLOWABLE FLEXURAL STRESS LIMIT OF FOR A 37 KSI (255 MPA) MINIMUM YIELD STEEL. WHERE HEAVY CONSTRUCTION LOADS FOR THE UNUSUAL CONCENTRATED LOADS ARE ANTICIPATED DURING THE ABNORMAL CONCENTRATED LOADING. SEE MAXIMUM SPANS FOR CONSTRUCTION AND MAINTENANCE LOADS ON PAGE 1.

3. MAXIMUM SPANS FOR CONSTRUCTION SPANS SHOWN ON PAGE 1 INCLUDE A CHECK FOR A NOMINAL 200 LBS CONCENTRATED LOAD SUPPORTED BY A ONE FOOT SECTION OF DECK PER SDI CRITERIA.

4. SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS. TABULATED LOADS SHALL NOT BE INCREASED BY ASSUMING CLEAR SPAN DIMENSIONS.

5. BENDING MOMENT FORMULAS USED FOR FLEXURAL STRESS LIMITATIONS ARE:

For one span: $M = \frac{WL^2}{8}$	For two span: $M_+ = \frac{9WL^2}{128}$ $M_- = \frac{WL^2}{8}$
	For three span: $M_+ = \frac{2WL^2}{25}$ $M_- = \frac{WL^2}{10}$

6. DEFLECTION FORMULAS FOR DEFLECTION LIMITATIONS ARE:

For one span: $\Delta = \frac{5WL^4}{384EI}$	For two span: $\Delta = \frac{WL^4}{185EI}$
	For three span: $\Delta = \frac{WL^4}{145EI}$

7. TABLES ARE BASED ON AN ASSUMED DL=10 PSF

MAX REACTION FOR WEB CRUPLING (END BEARING) (lb)										
BEARING LENGTH, in	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4
END BEARING	484.7	527.1	564.7	597.6	628.2	656.5	708.2	755.3	800	840
INTERNAL BEARING	749.7	804.6	850.3	893.7	932.6	969.1	1035.4	1097.1	1152	1204.6
SPAN (ft-in)	END BEARING PRESSURE									
4'-0"	242	264	282	299	314	328	354	378	400	420
4'-6"	215	234	251	266	279	292	315	336	356	373
5'-0"	194	211	226	239	251	263	283	302	320	336
5'-6"	176	192	205	217	228	239	258	275	291	305
6'-0"	162	176	188	199	209	219	236	252	267	280
6'-6"	149	162	174	184	193	202	218	232	246	258
7'-0"	138	151	161	171	179	188	202	216	229	240
7'-6"	129	141	151	159	168	175	189	201	213	224
8'-0"	121	132	141	149	157	164	177	189	200	210
8'-6"	114	124	133	141	148	154	167	178	188	198
9'-0"	108	117	125	133	140	146	157	168	178	187
9'-6"	102	111	119	126	132	138	149	159	168	177
10'-0"	97	105	113	120	126	131	142	151	160	168
10'-6"	92	100	108	114	120	125	135	144	152	160
11'-0"	88	96	103	109	114	119	129	137	145	153
11'-6"	84	92	98	104	109	114	123	131	139	146
12'-0"	81	88	94	100	105	109	118	126	133	140

MAX REACTION FOR WEB CRUPLING (INTERNAL BEARING) (lb)										
BEARING LENGTH, in	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4
END BEARING	484.7	527.1	564.7	597.6	628.2	656.5	708.2	755.3	800	840
INTERNAL BEARING	749.7	804.6	850.3	893.7	932.6	969.1	1035.4	1097.1	1152	1204.6
SPAN (ft-in)	INTERNAL BEARING PRESSURE									
4'-0"	187	201	213	223	233	242	259	274	288	301
4'-6"	167	179	189	199	207	215	230	244	256	258
5'-0"	150	161	170	179	187	194	207	219	230	241
5'-6"	136	146	155	162	170	176	188	199	209	219
6'-0"	125	134	142	149	155	162	173	183	192	201
6'-6"	115	124	131	137	143	149	159	169	177	185
7'-0"	107	115	121	128	133	138	148	157	165	172
7'-6"	100	107	113	119	124	129	138	146	154	161
8'-0"	94	101	106	112	117	121	129	137	144	151
8'-6"	88	95	100	105	110	114	122	129	136	142
9'-0"	83	89	94	99	104	108	115	122	128	134
9'-6"	79	85	90	94	98	102	109	115	121	127
10'-0"	75	80	85	89	93	97	104	110	115	120
10'-6"	70	77	81	85	89	92	99	104	110	115
11'-0"	68	73	77	81	85	88	94	100	105	110
11'-6"	65	70	74	78	81	84	90	95	100	105
12'-0"	62	67	71	74	78	81	86	91	96	100

LIABILITY STATEMENT

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	MAXIMUM CANTILEVER SPAN			ALLOWABLE
	BACK-SPAM CONDITIONS			
	SINGLE	DOUBLE	TRIPLE	
	5'-6"	7'-5"	7'-5"	
MAX CANTILEVER SPAN	0'-10"	0'-9"	0'-10"	
MAX MOMENT - (lb -ft)	170.7	152.7	170.7	343
MAX SHEAR (lb)	209.7	208	209.7	2654
Δ END OF BEAM (in)	0.079	0.067	0.0818	0.083 / 0.075 / 0.0833

**NOTES:**

1-MAXIMUM CANTILEVER SPAN WERE CALCULATED USING SECTION PROPERTIES BASED ON THE DESIGN THICKNESSES SPECIFIED ON PAGE 1 AND SECTION PROPERTIES WERE CALCULATED IN ACCORDANCE WITH AISI S100-16

2. BACK SPAN LENGTH ASSUMES CENTER SPACING OF SUPPORTS AND SHALL NOT BE GREATER THAN SHOWN.

3. BENDING MOMENT FORMULA USED FOR FLEXURAL STRESS LIMITATION IS:

FOR ONE, TWO AND THREE SPAN:

$$M_{-} = \frac{WLc^2}{8} + PLc, \text{ where } Lc \text{ is the maximum cantilever span}$$

$$\Delta_{allowable} = \frac{2Lc}{240}, \text{ where } Lc \text{ is the maximum cantilever span}$$

4. DEFLECTION CRITERIA FORMULA IS:

5. TABLES ARE BASED ON LOADS GIVEN BY 2.4.4 FROM ANSI/SDI-RD-17 AS FOLLOWS: WDD+WLCC+PLC, WHERE WDD= DEAD WEIGHT OF STEEL DECK; WLCC=UNIFORM CONSTRUCTION LIVE LOAD APPLIED TO CANTILEVER AND ADJACENT SPAN, 10 PSF (0.48 KPA) & PLC= CONCENTRATED CONSTRUCTION AND MAINTENANCE LIVE LOAD PER UNIT WIDTH OF DECK SECTION; 200 POUNDS ON A 1 FOOT WIDTH (2.92 KN ON A 1 METER WIDTH), APPLIED AT THE END OF THE CANTILEVER.

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