

## Terms and Conditions

Metroll, Inc. owns this catalog and the information contained herein. By using this catalog, you express your agreement to these Terms and Conditions. If you do not agree with all the Terms and Conditions, do not use this catalog. Metroll, Inc. may revise and update these Terms and Conditions and the contents of the catalog at any time.

1. The information contained in this catalog is for the sole purpose of suggesting a product.
2. The user of the information contained in this catalog accepts responsibility for the validity, applicability, and accuracy of the information.
3. The user of the information contained in this catalog or anyone benefitting from the use of this catalog (e.g., building owner, contractor, etc.) shall hold Metroll, Inc. and its third-party content providers harmless and not liable for any damages (including, without limitation, direct, indirect, exemplary, incidental, and consequential damages, personal injury/wrongful death, damage to property, or lost profits) resulting from the use of or inability to use the information contained in this catalog.
4. Metroll, Inc. has locations outside the USA and thus makes no claims that the information contained in this catalog is appropriate for locations outside the USA.

## Edition

The information presented in this catalog is in accordance with AISI S100-16, ANSI-SDI-C-2017, and 2019 CBC.

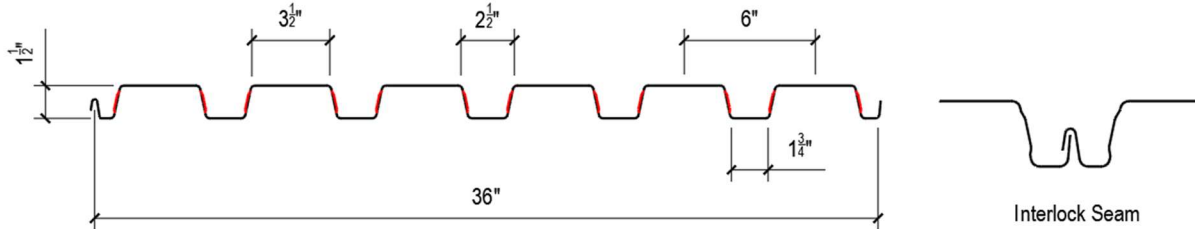
Date of this edition: January 2021.

## Notation and Symbols

- $A_e$  = Effective cross-sectional area.
- $A_g$  = Gross cross-sectional area.
- $f'_c$  = Concrete 28-day compressive strength.
- $F_u$  = Tensile strength.
- $F_y$  = Yield strength.
- $I_d$  = Moment of inertia for deflection due to uniform load.
- $I_e$  = Effective moment of inertia.
- $I_g$  = Gross moment of inertia based on gross properties.
- $r$  = Radius of gyration.
- $S_{e,b}$  = Effective section modulus for the bottom fiber.
- $S_{e,t}$  = Effective section modulus for the top fiber.
- $S_{g,b}$  = Gross section modulus for the bottom fiber.
- $t$  = Base metal thickness.
- $w$  = Deck self-weight.
- $y_b$  = Distance to neutral axis from bottom.
- $y_t$  = Distance to neutral axis from top.

### 1.5ED-IS-40

- 1 1/2" Deep Embossed Deck
- Interlock Seam
- A653 SS Grade 40



### Panel Material and Section Properties

Material Properties					Gross Section Properties				
Gage	Base Metal Thickness t (in)	Weight w (psf)	Yield Strength F <sub>y</sub> (ksi)	Tensile Strength F <sub>u</sub> (ksi)	Area A <sub>g</sub> (in <sup>2</sup> /ft)	Moment of Inertia I <sub>g</sub> (in <sup>4</sup> /ft)	Distance to N.A. from Bottom y <sub>b</sub> (in)	Section Modulus S <sub>g,b</sub> (in <sup>3</sup> /ft)	Radius of Gyration r (in)
22	0.0295	1.7	40	55	0.504	0.190	0.921	0.208	0.617
20	0.0358	2.1	40	55	0.612	0.233	0.924	0.252	0.617
18	0.0474	2.8	40	55	0.810	0.307	0.930	0.331	0.617
16	0.0598	3.5	40	55	1.021	0.390	0.936	0.415	0.617

Effective Section Properties for Bending at F <sub>y</sub>						Section Properties for Deflection at Service Load		
Gage	Area A <sub>e</sub> (in <sup>2</sup> /ft)	Section Modulus S <sub>e,b</sub> (in <sup>3</sup> /ft)	Distance to N.A. from Bottom y <sub>b</sub> (in)	Section Modulus S <sub>e,t</sub> (in <sup>3</sup> /ft)	Distance to N.A. from Top y <sub>t</sub> (in)	Moment of Inertia I <sub>e</sub> (in <sup>4</sup> /ft)	Uniform Load	
							Single Span	Multi Span
							I <sub>d</sub> = I <sub>e</sub> (in <sup>4</sup> /ft)	I <sub>d</sub> = (I <sub>g</sub> +I <sub>e</sub> )/2 (in <sup>4</sup> /ft)
22	0.504	0.170	0.921	0.258	0.605	0.157	0.157	0.168
20	0.612	0.220	0.924	0.335	0.608	0.203	0.203	0.213
18	0.810	0.323	0.930	0.490	0.614	0.300	0.300	0.302
16	1.021	0.415	0.936	0.627	0.620	0.390	0.390	0.390

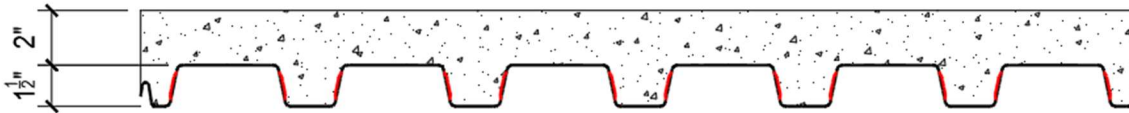
### Allowable Reaction at Supports (plf) Based on Web Crippling

Gage	Location	Bearing Length							
		One Flange Loading				Two Flange Loading			
		2"	2.5"	3"	3.5"	2"	2.5"	3"	3.5"
22	End	741	800	853	902	765	814	857	898
	Interior	1094	1169	1238	1300	1346	1447	1538	1621
20	End	1054	1135	1208	1275	1153	1222	1285	1343
	Interior	1579	1683	1778	1865	1963	2105	2233	2350
18	End	1752	1880	1996	2102	2065	2181	2286	2382
	Interior	2681	2847	2998	3136	3374	3603	3811	4002
16	End	2668	2854	3023	3178	3321	3497	3655	3801
	Interior	4151	4394	4614	4816	5262	5603	5911	6194

- Notes: 1. Flange is attached to support.  
2. Linear foot is across width of panel.

**1.5ED-IS-40**

- **1 ½” Deep Embossed Deck**
- **Interlock Seam**
- **A653 SS Grade 40**
- **3 ½” Total Slab Depth**
- **Normal Weight Concrete (145 pcf)**
- **Concrete Uniform Weight = 30.5 psf**
- **$f'_c = 3,000$  psi**



**Maximum Unshored Clear Span (ft-in.)**

Gage	No. of Spans		
	1	2	3
22	5'-5"	6'-4"	6'-5"
20	6'-6"	7'-7"	7'-9"
18	8'-4"	9'-5"	9'-9"
16	9'-7"	10'-8"	11'-0"

Notes:

1. Shoring is required for spans greater than
2. Deck supports dead load of concrete plus 20 psf uniform construction live load or a 150-lb/ft width of panel of concentrated construction live load for flexure.
3. An additional 4 psf is included to account for ponding due to deck deflection between supporting members.
4. A dead load deflection limit of L/180, not exceeding 0.75 in. is imposed.
5. Concrete shall have a minimum 28-day compressive strength of 3,000 psi.
6. Minimum bearing at end and interior supports shall be 2 in.

**Allowable Superimposed Loads (psf)**

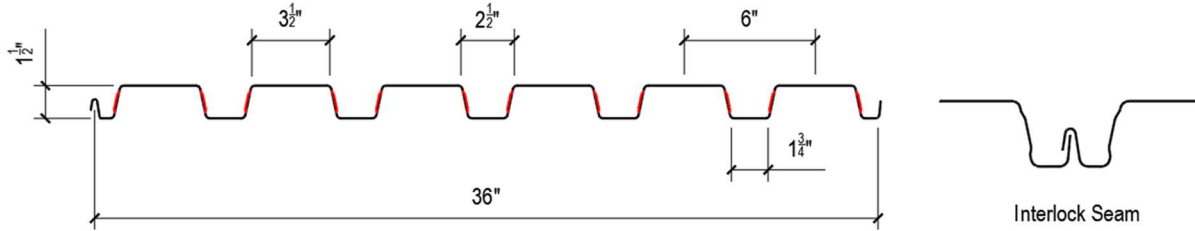
Gage	No. of Spans	Panel Span (Support Spacing)								
		4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	1	400	268	154	104	72	50	34	23	14
	2	400	268	186	104	72	50	34	23	14
	3	400	268	186	104	72	50	34	23	14
20	1	400	340	236	141	100	72	52	37	26
	2	400	340	236	173	100	72	52	37	26
	3	400	340	236	173	100	72	52	37	26
18	1	400	400	332	244	187	114	86	65	47
	2	400	400	332	244	187	147	86	65	47
	3	400	400	332	244	187	147	86	65	47
16	1	400	400	400	323	247	195	120	82	55
	2	400	400	400	323	247	195	154	82	55
	3	400	400	400	323	247	195	154	82	55

Notes:

1. Grey shading means that shoring at midspan of panel is required for that span.
2. Calculations are based on ANSI-SDI-C-2017 and AISI S100-16.

**1.5ED-IS-50**

- 1 1/2" Deep Embossed Deck
- Interlock Seam
- A653 SS Grade 50



**Panel Material and Section Properties**

Material Properties					Gross Section Properties				
Gage	Base Metal Thickness t (in)	Weight w (psf)	Yield Strength F <sub>y</sub> (ksi)	Tensile Strength F <sub>u</sub> (ksi)	Area A <sub>g</sub> (in <sup>2</sup> /ft)	Moment of Inertia I <sub>g</sub> (in <sup>4</sup> /ft)	Distance to N.A. from Bottom y <sub>b</sub> (in)	Section Modulus S <sub>g,b</sub> (in <sup>3</sup> /ft)	Radius of Gyration r (in)
22	0.0295	1.7	50	65	0.504	0.190	0.921	0.208	0.617
20	0.0358	2.1	50	65	0.612	0.233	0.924	0.252	0.617
18	0.0474	2.8	50	65	0.810	0.307	0.930	0.331	0.617
16	0.0598	3.5	50	65	1.021	0.390	0.936	0.415	0.617

Effective Section Properties for Bending at F <sub>y</sub>						Section Properties for Deflection at Service Load		
Gage	Area A <sub>e</sub> (in <sup>2</sup> /ft)	Section Modulus S <sub>e,b</sub> (in <sup>3</sup> /ft)	Distance to N.A. from Bottom y <sub>b</sub> (in)	Section Modulus S <sub>e,t</sub> (in <sup>3</sup> /ft)	Distance to N.A. from Top y <sub>t</sub> (in)	Moment of Inertia I <sub>e</sub> (in <sup>4</sup> /ft)	Uniform Load	
							Single Span I <sub>d</sub> = I <sub>e</sub> (in <sup>4</sup> /ft)	Multi Span I <sub>d</sub> = (I <sub>g</sub> +I <sub>e</sub> )/2 (in <sup>4</sup> /ft)
22	0.504	0.162	0.921	0.246	0.605	0.150	0.150	0.163
20	0.612	0.210	0.924	0.319	0.608	0.193	0.193	0.207
18	0.810	0.308	0.93	0.467	0.614	0.287	0.287	0.293
16	1.021	0.415	0.936	0.627	0.620	0.390	0.390	0.390

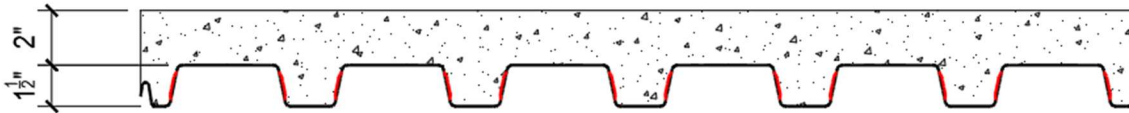
**Allowable Reaction at Supports (plf) Based on Web Crippling**

Gage	Location	Bearing Length							
		One Flange Loading				Two Flange Loading			
		2"	2.5"	3"	3.5"	2"	2.5"	3"	3.5"
22	End	927	1000	1067	1128	957	1017	1072	1122
	Interior	1368	1462	1547	1625	1683	1808	1922	2027
20	End	1317	1418	1510	1594	1441	1528	1606	1679
	Interior	1974	2104	2222	2331	2454	2631	2791	2938
18	End	2190	2350	2495	2628	2581	2726	2857	2978
	Interior	3352	3560	3747	3920	4217	4504	4764	5003
16	End	3336	3568	3779	3972	4152	4371	4569	4752
	Interior	5189	5493	5768	6020	6578	7004	7389	7743

- Notes: 1. Flange is attached to support.  
2. Linear foot is across width of panel.

### 1.5ED-IS-50

- 1 ½” Deep Embossed Deck
- Interlock Seam
- A653 SS Grade 50
- 3 ½” Total Slab Depth
- Normal Weight Concrete (145 pcf)
- Concrete Uniform Weight = 30.5 psf
- $f'_c = 3,000$  psi



### Maximum Unshored Clear Span (ft-in.)

Gage	No. of Spans		
	1	2	3
22	6'-1"	7'-2"	7'-3"
20	7'-4"	8'-7"	8'-8"
18	8'-9"	10'-4"	10'-8"
16	9'-7"	11'-11"	11'-8"

Notes:

1. Deck supports dead load of concrete plus 20 psf uniform construction live load or a 150-lb/ft width of panel of concentrated construction live load for flexure.
2. An additional 4 psf is included to account for ponding due to deck deflection between supporting members.
3. A dead load deflection limit of L/180, not exceeding 0.75 in. is imposed.
4. Concrete shall have a minimum 28-day compressive strength of 3,000 psi.
5. Minimum bearing at end and interior supports shall be 2 in.

### Allowable Superimposed Loads (psf)

Gage	No. of Spans	Panel Span (Support Spacing)								
		4'-0"	5'-0"	6'-0"	7'-0"	8'-0"	9'-0"	10'-0"	11'-0"	12'-0"
22	1	400	335	233	138	98	71	51	37	26
	2	400	335	233	171	98	71	51	37	26
	3	400	335	233	171	98	71	51	37	26
20	1	400	400	295	216	133	98	73	55	39
	2	400	400	295	216	166	98	73	55	39
	3	400	400	295	216	166	98	73	55	39
18	1	400	400	400	305	233	151	106	71	47
	2	400	400	400	305	233	184	139	71	47
	3	400	400	400	305	233	184	139	71	47
16	1	400	400	400	400	301	212	120	82	55
	2	400	400	400	400	301	212	154	116	55
	3	400	400	400	400	301	212	154	116	55

Notes:

1. Grey shading means that shoring at midspan of panel is required for that span.
2. Calculations are based on ANSI-SDI-C-2017 and AISI S100-16.