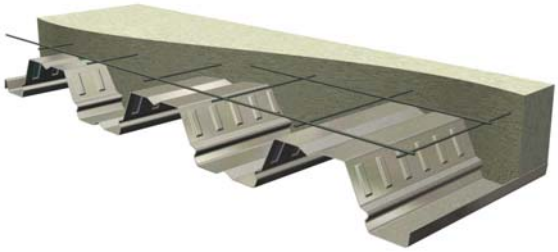
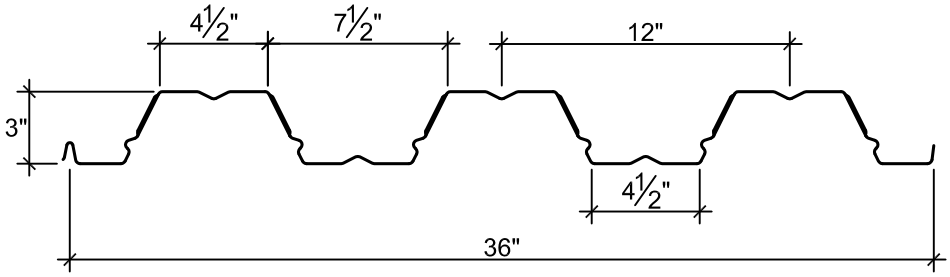
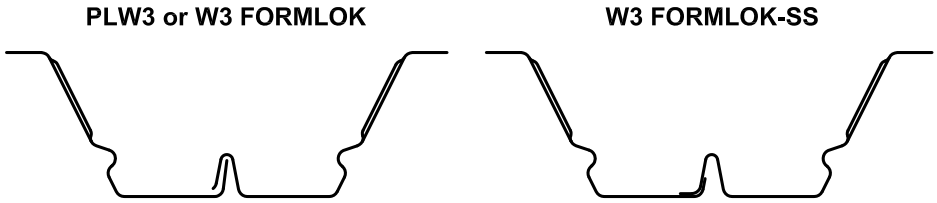
PLW3™ or W3 FORMLOK™

- 3 in. Deep FORMLOK Deck
- Phosphatized/Painted or Galvanized
- PLW3 FORMLOK used with PunchLok II System
- W3 FORMLOK used with TSWs or BPs
- W3 FORMLOK-SS used with Screws



Dimensions





Standard Interlocking Sidelap

Screw Fastened Sidelap

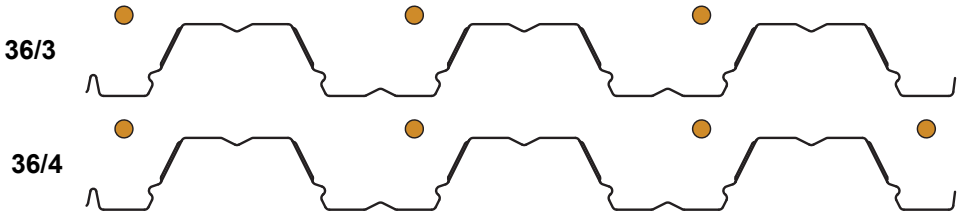
Deck Weight and Section Properties

Gage	Weight		I_d for Deflection		Moment		Allowable Reactions per ft of Width (lb) due to Web Crippling One Flange Loading					Two Flange Loading				
	Galv	Painted	Single Span	Multi Span	$+S_{eff}$	$-S_{eff}$	End Bearing Length			Interior Bearing Length		End Bearing Length			Interior Bearing Length	
	(psf)	(psf)	($in.^4$/ft)	($in.^4$/ft)	($in.^3$/ft)	($in.^3$/ft)	2"	3"	4"	4"	8"	2"	3"	4"	4"	8"
22	1.9	1.8	0.736	0.736	0.393	0.410	383	441	490	778	908	354	397	432	901	1063
21	2.1	2.0	0.824	0.824	0.453	0.470	461	530	588	934	1126	443	495	539	1093	1334
20	2.3	2.2	0.907	0.907	0.510	0.528	540	619	686	1091	1352	535	597	649	1287	1618
19	2.7	2.6	1.067	1.067	0.636	0.652	724	828	914	1456	1832	757	840	911	1741	2226
18	2.9	2.8	1.213	1.213	0.752	0.768	922	1049	1157	1845	2310	1002	1109	1199	2229	2836
16	3.5	3.4	1.516	1.516	0.968	0.966	1395	1581	1737	2780	3449	1614	1777	1913	3406	4298

Notes:

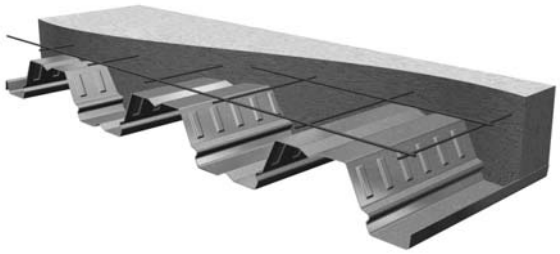
1. Section properties are based on F_y = 50,000 psi.
2. I_d is for deflection due to uniform loads.
3. S_{eff} (+ or -) is the effective section modulus.
4. Allowable (ASD) reactions are based on web crippling, per AISI S100 Section C3.4, where Ω_w = 1.70 for end bearing and 1.75 for interior bearing. Nominal reactions may be determined by multiplying the table values by Ω_w. LRFD reactions may be determined by multiplying nominal reactions by ϕ_w = 0.9 for end reactions and 0.85 for interior reactions.

Attachment Patterns to Supports



Note: ● indicates location of arc spot weld, power actuated fastener, or screw as indicated in the load tables.

PLW3™ or W3 FORMLOK™



Footnotes for Maximum Unshored Clear Span, Allowable Superimposed Loads, and Allowable Diaphragm Shear Strength Tables

1. Shoring calculations are based on the following:
   - Deck supporting dead load of concrete plus 20 psf uniform construction load or 150 pound concentrated construction live load for flexure. 4 psf is added for normal weight concrete and 3 psf is added for light weight concrete to account for ponding due to deck deflection between support members.
   - Dead load deflection limited to L/180 of span length, not to exceed 3/4".
   - Minimum end bearing of 2" for 16 to 21 gage. Minimum end bearing varies from 2" to 2.5" for 22 gage, depending on slab thickness. Minimum interior bearing for all gages varies from 2" to 6.5", depending on deck gage and slab thickness. Required bearing should be determined based on allowable reactions shown on page 68.
2. Concrete fill to have minimum 28-day compressive strength f'_c = 3,000 psi.
3. Total slab depth is nominal depth from top of concrete to bottom of steel deck.
4. Shoring is required at midspan for allowable superimposed loads in the shaded area to the right of the heavy line.
5. Nominal diaphragm shear strengths may be determined by multiplying the tabulated strengths by Ω = 3.0. LRFD diaphragm shear strength may be determined by multiplying nominal diaphragm shear strength by ϕ = 0.55.
6. PLW3-36 and W3-36 FORMLOK decks with structural concrete have a Flexibility Factor of F < 1.
7. To obtain allowable diaphragm shear strengths using mechanical fasteners, multiply the tabulated strengths by the appropriate adjustment factor, A_q listed in the following table.

Attachment Pattern	Adjustment Factor	Total Slab Depth (in.)								
		Normal Weight Concrete					Light Weight Concrete			
		5	5½	6	6½	7½	5	5½	6¼	7¼
36/3	A_{q3}	0.78	0.68	0.60	0.54	0.45	0.67	0.74	0.75	0.63
36/4	A_{q4}	0.73	0.79	0.77	0.69	0.58	0.63	0.68	0.75	0.80

Notes:

a. Mechanical fastener attachment patterns are to match the listed attachment patterns for welds.

b. Applicable mechanical fasteners are limited to the following: Hilti Fasteners, Pneutek Fasteners and SDI Recognized #12 or #14 Screws produced by Buildex, Elco, Hilti or Simpson Strong-Tie. Comply with minimum and maximum substrate thickness requirements for applicable mechanical fasteners. Note that these adjustment factors are based on the most conservative value for all listed connectors.

c. Nominal diaphragm shear strengths for mechanically fastened FORMLOK slabs may be determined by multiplying the adjusted table values by Ω = 3.25. LRFD diaphragm shear values for mechanically fastened FORMLOK slabs may be determined by multiplying the adjusted nominal values by ϕ = 0.50.

d. Consult fastener manufacturer for applicable fire-resistance assembly ratings where mechanical fasteners are required.

Footnotes for Allowable Uniform Load Tables for Deck without Concrete Fill

1. Stress = Allowable uniform load based on maximum allowable flexural stress in deck.
2. L/360, L240 or L/180 = Uniform load which produces selected deflection in deck.
3. The symbol ♦♦♦ indicates allowable uniform load based on deflection exceeds allowable uniform load based on stress.
4. Nominal uniform loads governed by stress may be determined by multiplying the allowable loads in the table by Ω_b = 1.67. LRFD loads may be determined by multiplying nominal loads by ϕ_b = 0.95.

Footnotes for Diaphragm Shear Strength and Flexibility Factor Tables for Deck without Concrete Fill

1. VSC2 = Verco Sidelap Connection 2; BP = Button Punch; TSW = Top Seam Weld. Sidelap connections are not required at support locations.
2. The end dimension to the first and last sidelap connection within each span is to be no more than one-half of specified spacing.
3. R is the ratio of vertical span (L_V) of the deck to the length (L_S) of the deck sheet: $R = L_V / L_S$.
4. Interpolation of diaphragm shear strength between adjacent spans or sidelap spacings is permissible. For interpolation of the diaphragm flexibility factor between adjacent spans, use the flexiblity factor for the closest adjacent span length.
5. Interpolation of diaphragm shear strengths for sidelap fasteners placed at spacings other than those in the table should be based on the number of fasteners in each span.
6. The allowable diaphragm shear strengths in the tables utilize a factor of safety, Ω = 3.0 (limited by connections), with the exception of the shaded table strengths, which utilize a factor of safety of Ω = 2.0 (limited by panel buckling).