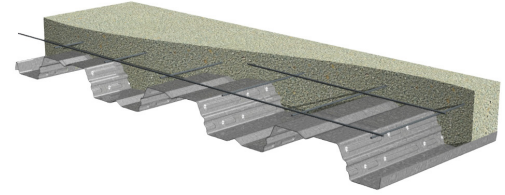


# PLW2™-36/W2-36 FORMLOK® COMPOSITE DECKS GRADE 50 STEEL

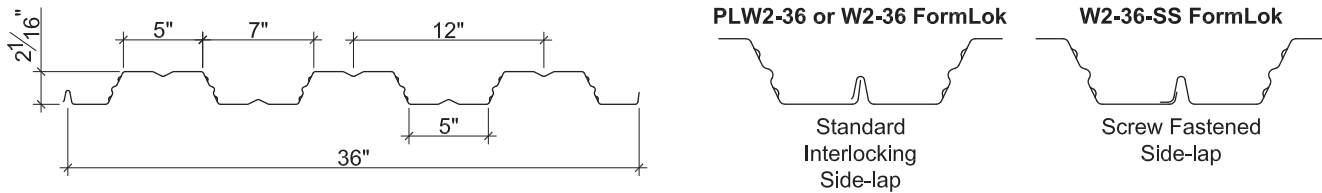
ASD

## W2 FORMLOK DECKS

- PLW2-36 FormLok Deck used with PunchLok® II System
- W2-36 FormLok Deck used with TSWs or BPs
- W2-36-SS FormLok Deck used with Side-lap Screws



## Nominal Dimensions



## Section Properties

| Deck Gage | Deck Weight<br>$w_{dd}$<br>(psf) | Base Metal Thickness<br>$t$<br>(in.) | Yield Strength<br>$F_y$<br>(ksi) | Effective Moment of Inertia at Service Load<br>$I_d = (2I_e + I_g)/3$ |                                   | Effective Section Modulus at $F_y = 50$ ksi |                                   | Vertical Web Shear<br>$V_n/\Omega$<br>(lb/ft) |
|-----------|----------------------------------|--------------------------------------|----------------------------------|---|-----------------------------------|---|-----------------------------------|---|
|           |                                  |                                      |                                  | $I_{d+}$<br>(in <sup>4</sup> /ft)                                     | $I_{d-}$<br>(in <sup>4</sup> /ft) | $S_{e+}$<br>(in <sup>3</sup> /ft)           | $S_{e-}$<br>(in <sup>3</sup> /ft) |   |
| 22        | 1.8                              | 0.030                                | 50                               | 0.341   | 0.339                             | 0.246                                       | 0.256                             | 1699  |
| 20        | 2.1                              | 0.036                                | 50                               | 0.422   | 0.419                             | 0.323                                       | 0.333                             | 2444  |
| 18        | 2.7                              | 0.047                                | 50                               | 0.564   | 0.562                             | 0.471                                       | 0.481                             | 3224  |
| 16        | 3.3                              | 0.059                                | 50                               | 0.708   | 0.708                             | 0.623                                       | 0.638                             | 4034  |

## Allowable Reactions at Supports Based on Web Crippling, $R_n/\Omega$ (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"   | 6"   | 1 1/2"             | 2"   | 3"   | 4"               | 4"   | 6"   |
| 22        | 375                    | 412  | 474  | 527              | 792  | 910  | 376                | 405  | 453  | 494              | 955  | 1107 |
| 20        | 526                    | 577  | 661  | 732              | 1109 | 1268 | 560                | 601  | 670  | 728              | 1355 | 1565 |
| 18        | 862                    | 940  | 1071 | 1182             | 1808 | 2056 | 990                | 1058 | 1172 | 1267             | 2247 | 2580 |
| 16        | 1310                   | 1423 | 1613 | 1773             | 2737 | 3095 | 1594               | 1696 | 1867 | 2011             | 3439 | 3929 |

## Standard Features

- ASTM A653 SS GR50 Min., with G60 or G90, white or gray primer bottom optional
- ASTM A1008 SS GR50 Min. with gray primer bottom
- Standard lengths – 6'-0" to 40'-0"
- IAPMO UES ER-2018 and UL Listed
- Tables conform to ANSI/SDI C-2017

## Optional Features

- Inquire regarding cost and lead times for:
  - Short cuts < 6'-0"
  - Sheet Lengths > 40'-0"
  - Alternative metallic and painted finishes
- Factory Vent Tabs

# PLW2™-36/W2-36 FORMLOK® DECK-SLABS

## NORMAL WEIGHT CONCRETE (145 pcf)

ASD

| Slab Depth |         | Maximum Unshored Spans |  |         | Composite Deck-Slab Properties |                       |   |                                    |                                |
|------------|---------|------------------------|--|---------|--------------------------------|-----------------------|---|------------------------------------|--------------------------------|
| Total      | Topping | Deck Gage              | Maximum Unshored Construction Clear Span |         |                                | Concrete + Deck (psf) | Deflection $I_d = (I_{cr} + I_u)/2$ (in <sup>4</sup> /ft) | Moment $M_{no}/\Omega$ (kip-ft/ft) | Shear $V_{no}/\Omega$ (kip/ft) |
|            |         |                        | 1  | 2       | 3                              |                       |   |                                    |                                |
| 4"         | 2"      | 22                     | 7'-10"                                   | 9'-1"   | 9'-4"                          | 38.1                  | 4.17  | 2.45                               | 3.07                           |
|            |         | 20                     | 9'-4"                                    | 10'-4"  | 10'-8"                         | 38.4                  | 4.44  | 2.88                               | 3.07                           |
|            |         | 18                     | 10'-7"                                   | 12'-5"  | 12'-7"                         | 39.0                  | 4.91  | 3.62                               | 3.07                           |
|            |         | 16                     | 11'-4"                                   | 14'-1"  | 13'-3"                         | 39.6                  | 5.37  | 4.39                               | 3.07                           |
| 5½"        | 3½"     | 22                     | 6'-11"                                   | 7'-11"  | 8'-2"                          | 56.2                  | 10.38   | 3.51                               | 3.89                           |
|            |         | 20                     | 8'-2"                                    | 9'-1"   | 9'-4"                          | 56.5                  | 11.02   | 4.14                               | 4.57                           |
|            |         | 18                     | 9'-4"                                    | 10'-10" | 11'-3"                         | 57.1                  | 12.10   | 5.24                               | 4.67                           |
|            |         | 16                     | 10'-1"                                   | 12'-6"  | 12'-2"                         | 57.7                  | 13.18   | 6.38                               | 4.67                           |
| 6½"        | 4½"     | 22                     | 6'-5"                                    | 7'-4"   | 7'-7"                          | 68.3                  | 16.86   | 4.46                               | 4.49                           |
|            |         | 20                     | 7'-7"                                    | 8'-5"   | 8'-9"                          | 68.6                  | 17.86   | 5.27                               | 5.17                           |
|            |         | 18                     | 8'-10"                                   | 10'-1"  | 10'-6"                         | 69.2                  | 19.55   | 6.71                               | 5.87                           |
|            |         | 16                     | 9'-6"                                    | 11'-8"  | 11'-7"                         | 69.8                  | 21.23   | 7.80                               | 5.87                           |

**Note:**

- Maximum unshored spans do not consider web-crippling. Required bearing should be determined based on specific span conditions.

**Superimposed Allowable Load,  $W_n/\Omega$ , Limited by L/360 (psf)**

NWC (145 pcf),  $f'_c = 3000$  psi

| Total Slab Depth | Deck Gage | Span (ft-in.) |       |       |       |        |        |        |        |        |
|------------------|-----------|---------------|-------|-------|-------|--------|--------|--------|--------|--------|
|                  |           | 6'-0"         | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" |
| 4"               | 22        | 507           | 362   | 268   | 204   | 158    | 124    | 98     | 78     | 62     |
|                  | 20        | 601           | 431   | 321   | 246   | 192    | 145    | 112    | 88     | 70     |
|                  | 18        | 765           | 552   | 413   | 294   | 214    | 161    | 124    | 97     | 78     |
|                  | 16        | 935           | 676   | 458   | 321   | 234    | 176    | 135    | 106    | 85     |
| 5½"              | 22        | 724           | 517   | 382   | 290   | 224    | 175    | 138    | 110    | 87     |
|                  | 20        | 863           | 619   | 460   | 352   | 274    | 217    | 173    | 139    | 112    |
|                  | 18        | 1106          | 798   | 597   | 460   | 361    | 289    | 233    | 190    | 156    |
|                  | 16        | 1360          | 983   | 739   | 572   | 452    | 364    | 296    | 244    | 202    |
| 6½"              | 22        | 923           | 660   | 489   | 372   | 288    | 226    | 179    | 142    | 113    |
|                  | 20        | 1103          | 792   | 590   | 452   | 353    | 280    | 224    | 181    | 146    |
|                  | 18        | 1421          | 1025  | 769   | 593   | 467    | 374    | 303    | 248    | 204    |
|                  | 16        | 1663          | 1203  | 904   | 700   | 554    | 445    | 363    | 299    | 248    |

**Notes:**

- For high loads long term concrete creep should be considered.
- See Composite Deck-Slab Strength Web Based Solutions for alternate slabs or LRFD design.

# PLW2™-36/W2-36 FORMLOK® DECK-SLABS

## LIGHT WEIGHT CONCRETE (110 pcf)

ASD

| Slab Depth |         | Maximum Unshored Spans |  |         | Composite Deck-Slab Properties |                       |   |                                    |                                |
|------------|---------|------------------------|--|---------|--------------------------------|-----------------------|---|------------------------------------|--------------------------------|
|            |         | Deck Gage              | Maximum Unshored Construction Clear Span |         |                                | Concrete + Deck (psf) | Deflection $I_d = (I_{cr} + I_u)/2$ (in <sup>4</sup> /ft) | Moment $M_{no}/\Omega$ (kip-ft/ft) | Shear $V_{no}/\Omega$ (kip/ft) |
| Total      | Topping |                        | 1  | 2       | 3                              |                       |   |                                    |                                |
| 4"         | 2"      | 22                     | 8'-7"                                    | 9'-11"  | 10'-3"                         | 29.3                  | 3.21  | 2.34                               | 2.70                           |
|            |         | 20                     | 10'-4"                                   | 11'-3"  | 11'-8"                         | 29.6                  | 3.45  | 2.74                               | 3.07                           |
|            |         | 18                     | 11'-6"                                   | 13'-6"  | 13'-5"                         | 30.2                  | 3.85  | 3.43                               | 3.07                           |
|            |         | 16                     | 12'-1"                                   | 15'-0"  | 14'-2"                         | 30.8                  | 4.24  | 4.14                               | 3.07                           |
| 4½"        | 2½"     | 22                     | 8'-3"                                    | 9'-6"   | 9'-9"                          | 33.9                  | 4.47  | 2.68                               | 2.89                           |
|            |         | 20                     | 9'-10"                                   | 10'-10" | 11'-2"                         | 34.2                  | 4.80  | 3.13                               | 3.57                           |
|            |         | 18                     | 11'-0"                                   | 12'-11" | 13'-0"                         | 34.8                  | 5.34  | 3.93                               | 3.57                           |
|            |         | 16                     | 11'-8"                                   | 14'-7"  | 13'-8"                         | 35.4                  | 5.87  | 4.74                               | 3.57                           |
| 5¼"        | 3¼"     | 22                     | 7'-9"                                    | 8'-11"  | 9'-2"                          | 40.8                  | 6.93  | 3.20                               | 3.20                           |
|            |         | 20                     | 9'-3"                                    | 10'-2"  | 10'-6"                         | 41.1                  | 7.42  | 3.76                               | 3.88                           |
|            |         | 18                     | 10'-5"                                   | 12'-3"  | 12'-5"                         | 41.7                  | 8.24  | 4.72                               | 4.39                           |
|            |         | 16                     | 11'-2"                                   | 13'-11" | 13'-2"                         | 42.3                  | 9.04  | 5.72                               | 4.39                           |

**Note:**

1. Maximum unshored spans do not consider web-crippling. Required bearing should be determined based on specific span conditions.

### Superimposed Allowable Load, $W_n/\Omega$ , Limited by L/360 (psf)

LWC (110 pcf),  $f'_c = 3000$  psi

| Total Slab Depth | Deck Gage | Span (ft-in.) |       |       |       |        |        |        |        |        |
|------------------|-----------|---------------|-------|-------|-------|--------|--------|--------|--------|--------|
|                  |           | 6'-0"         | 7'-0" | 8'-0" | 9'-0" | 10'-0" | 11'-0" | 12'-0" | 13'-0" | 14'-0" |
| 4"               | 22        | 491           | 353   | 263   | 192   | 140    | 105    | 81     | 63     | 51     |
|                  | 20        | 579           | 418   | 294   | 206   | 150    | 113    | 87     | 68     | 54     |
|                  | 18        | 732           | 490   | 328   | 230   | 168    | 126    | 97     | 76     | 61     |
|                  | 16        | 858           | 540   | 361   | 254   | 185    | 139    | 107    | 84     | 67     |
| 4½"              | 22        | 560           | 402   | 300   | 230   | 180    | 143    | 113    | 88     | 71     |
|                  | 20        | 662           | 477   | 357   | 275   | 209    | 157    | 121    | 95     | 76     |
|                  | 18        | 837           | 606   | 455   | 320   | 233    | 175    | 135    | 106    | 85     |
|                  | 16        | 1018          | 738   | 500   | 351   | 256    | 192    | 148    | 116    | 93     |
| 5¼"              | 22        | 670           | 481   | 359   | 275   | 215    | 170    | 136    | 110    | 89     |
|                  | 20        | 793           | 572   | 428   | 329   | 259    | 207    | 167    | 136    | 112    |
|                  | 18        | 1007          | 729   | 548   | 424   | 336    | 270    | 208    | 163    | 131    |
|                  | 16        | 1228          | 891   | 672   | 522   | 395    | 296    | 228    | 179    | 144    |

**Notes:**

1. For high loads long term concrete creep should be considered.
2. See Composite Deck-Slab Strength Web Based Solutions for alternate slabs or LRFD design.

## PLW2-36/W2-36 FormLok Deck-Slab Information

$f'_c = 3000$  psi

| Total Slab Depth (in.)                  | Cover Depth (in.) | Theoretical Concrete Volume (yd <sup>3</sup> /100 ft <sup>2</sup> ) | Min. A <sub>s</sub> for T&S (in. <sup>2</sup> ) | Recommended Reinforcing for Temperature and Shrinkage |   |
|---|-------------------|---|---|---|---|
|   |                   |   |   | WWR   | (OR) Bekaert Dramix® Steel Fiber Alternate to WWR (lb/yd <sup>3</sup> ) |
| <b>4D 65/60BG</b>                       |                   |   |   |   |   |
| <b>Normal Weight Concrete (145 pcf)</b> |                   |   |   |   |   |
| 4                                       | 2                 | 0.93  | 0.028   | 6x6-W1.4xW1.4   | 23  |
| 4½                                      | 2½                | 1.08  | 0.028   | 6x6-W1.4xW1.4   | 18  |
| 5                                       | 3                 | 1.24  | 0.028   | 6x6-W1.4xW1.4   | 15  |
| 5½                                      | 3½                | 1.39  | 0.032   | 6x6-W2.1xW2.1   | 15  |
| 6½                                      | 4½                | 1.70  | 0.041   | 6x6-W2.1xW2.1   | 15  |
| <b>Light Weight Concrete (110 pcf)</b>  |                   |   |   |   |   |
| 4                                       | 2                 | 0.93  | 0.028   | 6x6-W1.4xW1.4   | 33  |
| 4½                                      | 2½                | 1.08  | 0.028   | 6x6-W1.4xW1.4   | 25  |
| 5¼                                      | 3¼                | 1.31  | 0.029   | 6x6-W2.1xW2.1   | 20  |
| 6¼                                      | 4¼                | 1.62  | 0.038   | 6x6-W2.1xW2.1   | 20  |

**Notes:**

1. FRC reinforcement is based on IAPMO UES ER-465.
2. Dramix® fibers may be used in UL or ULC fire rated assemblies in lieu of WWR. See UL file R19307 for additional information.

For information on Bekaert Dramix® fibers contact 770-514-2295 or [infobuilding@beckaert.com](mailto:infobuilding@beckaert.com)

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