# 3.5DS-24 FL FORMLOK® DOVETAIL DECK
## LIGHT WEIGHT CONCRETE (115 pcf)

Imperial LSD

### Maximum Unshored Spans

| Slab Depth | | Deck | Maximum Unshored Construction Clear Span | | |
|---|---|---|---|---|---|
| Total | Topping | Gage | 1 | 2 | 3 |
| 5½” | 2” | 20 | 14'-1" | 14'-10" | 15'-4" |
| | | 18 | 15'-2" | 17'-11" | 17'-5" |
| | | 16 | 16'-0" | 19'-8" | 18'-6" |
| 5¾” | 2¼” | 20 | 13'-11" | 14'-7" | 15'-1" |
| | | 18 | 14'-11" | 17'-7" | 17'-3" |
| | | 16 | 15'-10" | 19'-5" | 18'-3" |
| 8” | 4½” | 20 | 12'-3" | 12'-8" | 13'-1" |
| | | 18 | 13'-8" | 15'-5" | 15'-9" |
| | | 16 | 14'-6" | 17'-10" | 16'-9" |

### Composite Deck-Slab Properties

| Concrete + Deck (psf) | Deflection $I_d = (I_{cr}+I_u)/2$ (in⁴/ft) | Moment $øM_{no}$ (kip-ft/ft) | Shear $øV_{no}$ (kip/ft) |
|---|---|---|---|
| 47.2 | 12.44 | 11.25 | 6.94 |
| 48.3 | 13.97 | 13.94 | 6.94 |
| 49.4 | 15.49 | 16.47 | 6.94 |
| 49.6 | 14.02 | 11.67 | 7.26 |
| 50.7 | 15.68 | 14.97 | 7.26 |
| 51.8 | 17.24 | 17.51 | 7.26 |
| 71.2 | 34.97 | 16.14 | 8.59 |
| 72.3 | 38.75 | 20.77 | 10.09 |
| 73.4 | 42.19 | 25.22 | 10.09 |

**Notes:**

1. Maximum unshored spans are based on 20.9 psf uniform construction live load and 151 plf concentrated construction live load.
2. Maximum unshored spans do not consider web-crippling. Required bearing should be determined based on specific span conditions.

### Superimposed Factored Load, $øW_n$, / Deflection at L/360 (psf)

LWC (115 pcf), $f'_c$ = 4000 psi

| Total Slab Depth | Deck Gage | Span (ft-in.) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 15'-0" | 17'-0" | 18'-0" | 19'-0" | 20'-0" | 21'-0" | 23'-0" | 25'-0" |
| 5½" | 20 | 340/161 | 252/110 | 218/93 | 190/79 | 165/67 | 145/58 | 111/44 | 84/34 |
| | 18 | 435/180 | 325/124 | 283/104 | 248/89 | 218/76 | 192/65 | 150/50 | 118/39 |
| | 16 | 524/200 | 394/137 | 345/116 | 303/98 | 267/84 | 237/73 | 187/55 | 149/43 |
| 5¾" | 20 | 353/181 | 261/124 | 226/105 | 196/89 | 171/76 | 149/66 | 114/50 | 87/39 |
| | 18 | 468/203 | 351/139 | 306/117 | 268/99 | 236/85 | 208/73 | 163/56 | 128/43 |
| | 16 | 557/223 | 419/153 | 367/129 | 323/109 | 285/94 | 252/81 | 200/61 | 159/48 |
| 8" | 20 | 485/452 | 357/311 | 309/262 | 268/222 | 233/191 | 203/165 | 155/125 | 117/97 |
| | 18 | 648/501 | 484/344 | 422/290 | 369/246 | 325/211 | 286/182 | 223/139 | 175/108 |
| | 16 | 805/546 | 606/375 | 531/316 | 467/268 | 412/230 | 365/199 | 289/151 | 231/117 |

**Notes:**

1. The composite deck-slab design is based on tested performance and engineering analysis in accordance Section 7.6.1 of CSSBI 12M-2024.
2. For high loads long term concrete creep should be considered.
3. Use Composite Deck-Slab Strength Web Based Solutions for alternate slabs.

## 3.5S-24 FL Deck-Slab Information

| Total Slab Depth (in.) | Cover Depth (in.) | Theoretical Concrete Volume ($yd^3$/100 $ft^2$) | Min. $A_s$ for T&S ($in.^2$) | Recommended WWR for Temperature and Shrinkage |
|---|---|---|---|---|
| **Normal Weight Concrete (145 pcf)** | | | | **$f'_c$ = 3000 psi** |
| **5½** | **2** | 1.41 | 0.028 | 6x6-W1.4xW1.4 |
| **5¾** | **2¼** | 1.49 | 0.028 | 6x6-W1.4xW1.4 |
| **6** | **2½** | 1.56 | 0.028 | 6x6-W1.4xW1.4 |
| **6½** | **3** | 1.72 | 0.028 | 6x6-W1.4xW1.4 |
| **7** | **3½** | 1.87 | 0.041 | 6x6-W2.1xW2.1 |
| **7¼** | **3¾** | 1.95 | 0.050 | 6x6-W2.5xW2.5 |
| **7½** | **4** | 2.03 | 0.059 | 6x6-W3.0xW3.0 |
| **8** | **4½** | 2.18 | 0.077 | 6x6-W4.0xW4.0 |
| **Light Weight Concrete (110 pcf)** | | | | **$f'_c$ = 4000 psi** |
| **5½** | **2** | 1.41 | 0.028 | 6x6-W1.4xW1.4 |
| **5¾** | **2¼** | 1.49 | 0.028 | 6x6-W1.4xW1.4 |
| **6** | **2½** | 1.56 | 0.028 | 6x6-W1.4xW1.4 |
| **6½** | **3** | 1.72 | 0.028 | 6x6-W1.4xW1.4 |
| **7** | **3½** | 1.87 | 0.041 | 6x6-W2.1xW2.1 |
| **7½** | **4** | 2.03 | 0.059 | 6x6-W3.0xW3.0 |
| **8** | **4½** | 2.18 | 0.077 | 6x6-W4.0xW4.0 |

**Notes:**

1. Recommended temperature and shrinkage reinforcement in accordance with CSSBI S3-2019, Table 2.