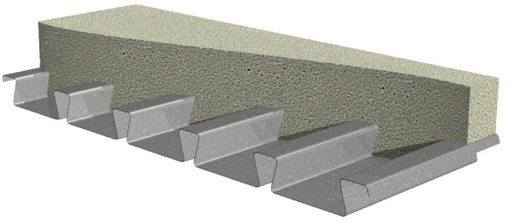
# 2.0DF-30 FL FORMLOK® DOVETAIL DECK
## GRADE 50 STEEL

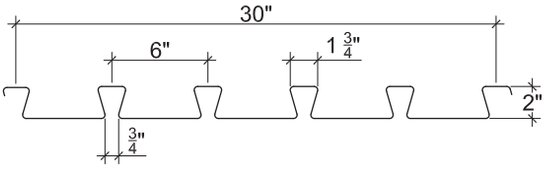
Imperial LSD

## 2.0DF-30 FL DOVETAIL DECK

- **Enhanced 2-Coat Polyester Paint**
- **White Factory Primer Paint**
- **Galvanized Finish**
- **UL Listed**



### Nominal Dimensions




Nested
Side-lap

### Section Properties

| Deck Gage | Deck Weight $w_{dd}$ (psf) | Base Metal Thickness t (in.) | Yield Strength $F_y$ (ksi) | Effective Moment of Inertia at Service Load $I_d = (2I_e+I_g)/3$ | | Effective Section Modulus at $F_y$ = 50 ksi | | Factored Moment | | Vertical Web Shear |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | $I_d$+ (in⁴/ft) | $I_d$- (in⁴/ft) | $S_e$+ (in³/ft) | $S_e$- (in³/ft) | $øM_n$+ (lb-ft/ft) | $øM_n$- (lb-ft/ft) | $øV_n$ (lb/ft) |
| **20** | 2.7 | 0.0359 | 50 | 0.524 | 0.468 | 0.380 | 0.344 | 1424 | 1291 | 5092 |
| **18** | 3.6 | 0.0478 | 50 | 0.699 | 0.660 | 0.530 | 0.491 | 1987 | 1841 | 6694 |
| **16** | 4.5 | 0.0598 | 50 | 0.877 | 0.857 | 0.670 | 0.632 | 2514 | 2369 | 8262 |

### Factored Reactions at Supports Based on Web Crippling, $øR_n$ (lb/ft)

| Deck Gage | Bearing Length of Webs | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | One-Flange Loading | | | | | | Two-Flange Loading | | | | | |
| | End Bearing | | | | Interior Bearing | | End Bearing | | | | Interior Bearing | |
| | 1½" | 2" | 3" | 4" | 3" | 5" | 1½" | 2" | 3" | 4" | 3" | 5" |
| **20** | 1586 | 1738 | 1992 | 2206 | 2869 | 3286 | 1603 | 1721 | 1918 | 2085 | 3551 | 4108 |
| **18** | 2679 | 2921 | 3327 | 3669 | 4866 | 5514 | 2926 | 3125 | 3459 | 3740 | 6112 | 6997 |
| **16** | 4030 | 4377 | 4959 | 5449 | 7337 | 8241 | 4642 | 4938 | 5435 | 5853 | 9299 | 10553 |

## Standard Features

- ASTM A653/A653M SS GR50 Min., with Z275/G90 galvanized or ZF75/A25 galvannealed
- Standard lengths – 6'-0" to 40'-0"
- UL Listed
- Cold-formed steel deck conforms to AISI S100-16 and meets the guidelines of CSSBI 12M-2024.

## Optional Features

- Inquire regarding cost and lead times for:
  - -19 or 17 gage
  - -Alternative metallic and painted finishes

# 2.0DF-30 FL FORMLOK® DOVETAIL DECK
## NORMAL WEIGHT CONCRETE (145 pcf)

Imperial LSD

### Maximum Unshored Spans

| Slab Depth | | Deck | Maximum Unshored Construction Clear Span | | |
|---|---|---|---|---|---|
| Total | Topping | Gage | 1 | 2 | 3 |
| 4” | 2” | 20 | 9'-8" | 10'-2" | 10'-6" |
| | | 18 | 10'-7" | 12'-1" | 12'-5" |
| | | 16 | 11'-4" | 13'-7" | 13'-4" |
| 5¼” | 3¼” | 20 | 8'-10" | 9'-2" | 9'-5" |
| | | 18 | 9'-8" | 10'-11" | 11'-3" |
| | | 16 | 10'-4" | 12'-3" | 12'-6" |
| 5½” | 3½” | 20 | 8'-8" | 9'-0" | 9'-3" |
| | | 18 | 9'-6" | 10'-8" | 11'-0" |
| | | 16 | 10'-2" | 12'-1" | 12'-4" |

### Composite Deck-Slab Properties

| Concrete + Deck (psf) | Deflection $I_d = (I_{cr}+I_u)/2$ (in⁴/ft) | Moment $\phi M_{no}$ (kip-ft/ft) | Shear $\phi V_{no}$ (kip/ft) |
|---|---|---|---|
| 46.0 | 6.14 | 7.15 | 5.21 |
| 46.9 | 6.85 | 9.18 | 5.21 |
| 47.8 | 7.49 | 11.10 | 5.21 |
| 61.1 | 12.99 | 9.310 | 6.84 |
| 62.0 | 14.43 | 12.00 | 6.84 |
| 62.9 | 15.72 | 14.59 | 6.84 |
| 64.1 | 14.78 | 9.75 | 7.17 |
| 65.0 | 16.41 | 12.59 | 7.17 |
| 65.9 | 17.87 | 15.31 | 7.17 |

**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, $\phi W_n$, / Deflection at L/360 (psf) NWC (145 pcf), $f'_c$ = 3000 psi

| Total Slab Depth | Deck Gage | Span (ft-in.) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 10'-0" | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 18'-0" | 20'-0" |
| 4" | 20 | 514/268 | 339/155 | 281/122 | 234/97 | 196/79 | 166/65 | 119/46 | 85/33 |
| | 18 | 675/299 | 451/173 | 375/136 | 315/109 | 267/88 | 228/73 | 167/51 | 124/37 |
| | 16 | 828/327 | 557/189 | 465/148 | 393/119 | 335/96 | 287/79 | 214/56 | 162/40 |
| 5¼" | 20 | 668/567 | 440/328 | 364/258 | 303/206 | 254/168 | 214/138 | 153/97 | 109/70 |
| | 18 | 882/630 | 589/364 | 490/287 | 412/229 | 349/186 | 297/153 | 218/108 | 162/78 |
| | 16 | 1088/687 | 731/397 | 611/312 | 516/250 | 440/203 | 377/167 | 281/117 | 213/85 |
| 5½" | 20 | 699/645 | 461/373 | 381/294 | 317/235 | 266/191 | 224/157 | 160/110 | 114/80 |
| | 18 | 925/716 | 617/414 | 514/326 | 432/261 | 366/212 | 312/175 | 229/122 | 170/89 |
| | 16 | 1142/780 | 768/451 | 642/355 | 542/284 | 462/231 | 396/190 | 295/133 | 223/97 |

**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.