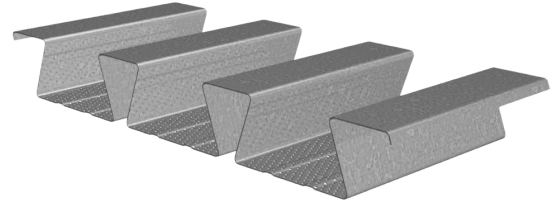


# 3.5DS-24 AC ACOUSTICAL DOVETAIL ROOF DECK GRADE 50 STEEL

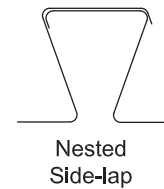
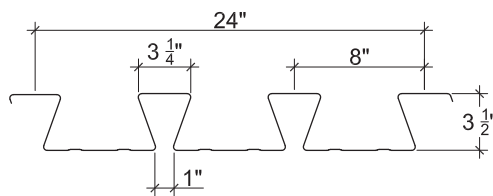
LRFD

## 3.5DS-24 AC DOVETAIL ROOF DECK

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



## 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<br>at Service Load<br>$I_d = (2I_e + I_g)/3$ |                                   | Effective Section Modulus<br>at $F_y = 50$ ksi |                                   | Design Moment               |                             | Vertical Web Shear<br>$\phi V_n$<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) | $\phi M_{n+}$<br>(lb-ft/ft) | $\phi M_{n-}$<br>(lb-ft/ft) |                                             |
| 20        | 3.2                              | 0.0359                               | 50                               | 1.687                                                                    | 1.646                             | 0.674                                          | 0.665                             | 2528                        | 2494                        | 5706                                        |
| 18        | 4.2                              | 0.0478                               | 50                               | 2.313                                                                    | 2.321                             | 0.982                                          | 0.999                             | 3682                        | 3746                        | 10356                                       |
| 16        | 5.3                              | 0.0598                               | 50                               | 2.942                                                                    | 3.040                             | 1.322                                          | 1.380                             | 4959                        | 5175                        | 14868                                       |

## Design Reactions at Supports Based on Web Crippling, $\phi R_n$ (lb/ft)

| Deck Gage | Bearing Length of Webs |      |      |      |                  |      |                    |      |      |      |                  |      |
|-----------|------------------------|------|------|------|------------------|------|--------------------|------|------|------|------------------|------|
|           | One-Flange Loading     |      |      |      |                  |      | Two-Flange Loading |      |      |      |                  |      |
|           | End Bearing            |      |      |      | Interior Bearing |      | End Bearing        |      |      |      | Interior Bearing |      |
|           | 2"                     | 3"   | 4"   | 5"   | 4"               | 6"   | 2"                 | 3"   | 4"   | 5"   | 4"               | 6"   |
| 20        | 1315                   | 1507 | 1669 | 1812 | 2580             | 2953 | 1301               | 1450 | 1576 | 1687 | 3044             | 3515 |
| 18        | 2241                   | 2553 | 2815 | 3046 | 4363             | 4960 | 2435               | 2695 | 2915 | 3108 | 5269             | 6048 |
| 16        | 3392                   | 3843 | 4223 | 4557 | 6567             | 7425 | 3924               | 4319 | 4652 | 4945 | 8048             | 9192 |

## Standard Features

- ASTM A653 SS GR 50 Min. with G90
- Standard lengths – 6'-0" to 40'-0"
- Tables conform to ANSI/SDI RD-2017
- IAPMO UES ER-423 and FM Listed

## Optional Features

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

# 3.5DS-24 AC ACOUSTICAL DOVETAIL ROOF DECK GRADE 50 STEEL

LRFD

## Inward Uniform Design Loads, LRFD (psf)

| Deck<br>Gage | Spans  | Criteria   | Span (ft-in.) |        |        |        |        |        |        |        |        |        |        |
|--------------|--------|------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|              |        |            | 11'-0"        | 12'-0" | 13'-0" | 14'-0" | 15'-0" | 16'-0" | 17'-0" | 18'-0" | 19'-0" | 20'-0" | 21'-0" |
| 20           | Single | $\phi W_n$ | 167           | 140    | 120    | 103    | 90     | 79     | 70     | 62     | 56     | 51     | 46     |
|              |        | L/240      | 83            | 64     | 50     | 40     | 33     | 27     | 23     | 19     | 16     | 14     | 12     |
|              | Double | $\phi W_n$ | 162           | 136    | 116    | 101    | 88     | 77     | 68     | 61     | 55     | 50     |        |
|              |        | L/240      | 195           | 150    | 118    | 95     | 77     | 63     | 53     | 45     | 38     | 32     |        |
|              | Triple | $\phi W_n$ | 200           | 169    | 145    |        |        |        |        |        |        |        |        |
|              |        | L/240      | 153           | 118    | 93     |        |        |        |        |        |        |        |        |
| 18           | Single | $\phi W_n$ | 243           | 205    | 174    | 150    | 131    | 115    | 102    | 91     | 82     | 74     | 67     |
|              |        | L/240      | 114           | 88     | 69     | 55     | 45     | 37     | 31     | 26     | 22     | 19     | 16     |
|              | Double | $\phi W_n$ | 244           | 206    | 176    | 152    | 132    | 116    | 103    | 92     | 83     | 75     |        |
|              |        | L/240      | 275           | 212    | 167    | 134    | 109    | 89     | 75     | 63     | 53     | 46     |        |
|              | Triple | $\phi W_n$ | 304           | 256    | 219    |        |        |        |        |        |        |        |        |
|              |        | L/240      | 216           | 166    | 131    |        |        |        |        |        |        |        |        |
| 16           | Single | $\phi W_n$ | 328           | 276    | 235    | 202    | 176    | 155    | 137    | 122    | 110    | 99     | 90     |
|              |        | L/240      | 145           | 112    | 88     | 70     | 57     | 47     | 39     | 33     | 28     | 24     | 21     |
|              | Double | $\phi W_n$ | 338           | 285    | 243    | 210    | 183    | 161    | 143    | 127    | 114    | 103    |        |
|              |        | L/240      | 361           | 278    | 219    | 175    | 142    | 117    | 98     | 82     | 70     | 60     |        |
|              | Triple | $\phi W_n$ | 420           | 354    | 302    |        |        |        |        |        |        |        |        |
|              |        | L/240      | 283           | 218    | 171    |        |        |        |        |        |        |        |        |

### Notes:

1. Table does not account for web crippling. Required bearing should be determined based on specific span conditions.
2. The symbol "---" indicates that the uniform allowable load based on deflection exceeds the allowable load based on stress.

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