

**ACCUFORM METAL LTD.**  
**COMPOSITE FLOOR SLAB INFORMATION**  
**IMPERIAL UNITS**

***Material Properties***

1. The composite steel decks AFCD 15-36 and AFCD 3-26, are the respective roof decks AFRD 15-36 and AFRD 3-26 with embossments rolled into the web elements to achieve the composite interlocking capacity between the steel deck and concrete.
2. Steel deck section properties were calculated in accordance with CSA S136-16.
3. Steel conforms to ASTM A653 SS Grade 40 with G90 (Galvanized) surface coating.
4. Concrete is based on normal density of 145 pcf and having a minimum compressive strength of 3 ksi.

***Load Table***

1. Loads are maximum specified uniformly distributed loads resulting from human occupancy and should not be used for concentrated loads.  
Maximum specified load from load table must be  **$\geq LL + (1.25/1.5)DL$** ;  
Where LL = specified live load;  
DL = specified superimposed dead load;
2. Loads greater than **400 psf** are commonly the result of large concentrated moving loads. In such cases, contact **ACCUFORM METAL**.
3. The AFCD 15-36 and AFCD 3-26 steel decks provide the positive reinforcement for the simply supported composite slab and no additional reinforcing steel is required. To control shrinkage and temperature cracking, it is the responsibility of the design engineer to provide the minimum shrinkage and temperature reinforcement as specified in CSSBI S3-2019.
4. *Shoring requirements shown in shaded areas of the load table were established in accordance with CSSBI 12M-2024 and are based on a Light Duty uniform construction live load of 20 psf. For Medium or Heavy Duty construction live loads contact **ACCUFORM METAL**.*
5. *For the AFCD 15-36 deck, the minimum bearing length at end support is 1.5 in. and at mid-support 4 in. For the AFCD 3-26 deck, the minimum bearing length at end support is 3 in. and at mid-support 6 in.*
6. To establish the shear-bond capacity of the composite slab system, laboratory tests were carried out at the Structures Laboratory at the University of Waterloo in accordance with CSSBI S2-2017.

7. Use of deflection parameter, DP

$$W_d = \frac{DP \times 10^6}{DC \times (L)^3}$$

where:

$W_d$  = Maximum specified deflection load in psf

DP = Deflection parameter from load table

DC = Deflection constant such as 360

L = Span length in feet

8. All technical information and load tables were prepared by Dr. R.M. Schuster, P.Eng. Distinguished Professor Emeritus, University of Waterloo, Ontario.

**EXAMPLE**

Determine the specified uniformly distributed live load that can be placed on the **AFCD 15-36** composite floor slab, given the following information:

***Given:***

- Steel deck thickness = 0.048 in.
- Yield stress = 40 ksi
- Overall slab depth = 4.0 in.
- Double span, each = 9.5 ft
- Specified superimposed dead load, DL = 35 psf

***Check Strength:***

The maximum specified load in (**psf**) from load table must be  $\geq LL + 0.833(DL)$ ,

where:

LL = specified live load

DL = specified superimposed dead load

From load table under 9.5 ft span, the maximum specified load is **246 psf**, therefore,

$246 \geq LL + 0.833(35)$  and solving for LL,

**LL = 217 psf**

Since this is in the shaded area, one shore support is required at mid-span in each span.

***Note:***

***The self-weight of the steel deck and concrete slab have already been accounted for in the maximum specified uniformly distributed load given in the composite slab load table.***

***Check Deflection:***

From table DP = 75.9 and assuming DC = 360

$$W_d = 75.9 \times 10^6 / 360 / (9.5)^3 = \mathbf{246 \text{ psf}}$$

Since this is greater than 217 psf, strength controls.