

Bridge Design Memorandum

To: Bridge Design
From: NJA/ptd
Date: 1/10/2013
Re: Stay-In-Place (SIP) Metal Bridge Deck Forms

As per NJA and JMW,

To expedite bridge deck construction, MDOT is allowing contractors to use Stay-In-Place (SIP) metal bridge deck forms. The design loading for SIP metal bridge deck forms shall be 18 pounds per square foot (lbs./ft.²). For interior beams, this loading shall be applied between the top flanges of two parallel beams and shall be equally distributed to each beam as a non-composite dead load. The loading for the exterior beams shall be one half of the interior beam loading. All interior and exterior beams in a bridge's superstructure shall be loaded with a line load to the criteria mentioned above. The design line loading shall be calculated as shown below.

$$DL_{(SIP-Int.)} = (BS-BFW)SIP$$

$$DL_{(SIP-Ext.)} = DL_{(SIP-Int.)} / 2$$

$DL_{(SIP-Int.)}$ = Dead Load of SIP for Interior Beams (Kips./ft.)

$DL_{(SIP-Ext.)}$ = Dead Load of SIP for Exterior Beams (Kips./ft.)

BS = Beam Spacing (ft.)

BFW = Beam's Top Flange Width (ft.)

SIP = .018 Kips./ft.²

The design loading shall be indicated on the beam sheet as shown below.

DESIGN DATA

Unit Stresses Are In Accordance With A.A.S.H.T.O., LRFD 2012.

Stay-In-Place Metal Forms 18 lbs./ft.² (Between Flanges)