

(August 3, 2015)

Except as otherwise specified, concrete forms on all steel structures shall be removable and shall not remain in place. Where needed, the forms shall have openings for truss or girder members. Each opening shall be large enough to leave at least 1-1/2 inches between the concrete and steel on all sides of the steel member after the forms have been removed. Unit contract prices cover all costs related to these openings.

Permanent metal forms may be used to form that portion of the concrete slab inside the webs of the steel box girders, subject to the following requirements:

1. Metal forms shall be 18 gage minimum thickness, zinc coated, steel sheet conforming to ASTM A 653 Coating Designation G 210. All accessories shall conform to ASTM A 36 or Section 9-06.1 with a zinc coating of 2.0 ounces per square foot.
2. Forms shall be designed by the Contractor to support the plastic concrete, metal forms, steel reinforcing bars, and a construction live load of 60 pounds per square foot. Deflection of the metal form shall not exceed 1/360 of the span. Camber of the metal form shall not exceed the anticipated deflection. The working unit stress shall not exceed 0.725 of the specified yield strength of the metal form material.
3. The metal forms shall provide for the full depth of the deck slab above the uppermost portions of the form. Bottom transverse steel reinforcing bars of the deck slab shall be at least 1 inch clear of the metal forms at all points. Forms or supports shall not be welded to girder flanges.
4. The bridge deck concrete shall be placed continuously between the transverse construction joints shown in the Plans, except in an emergency when the Engineer authorizes an interruption in the concrete placement. In such an emergency, the Contractor shall construct a transverse joint at the bottom of a flute and shall field drill 1/4 inch weep holes through the metal form at 12 inch centers along the line of the joint.
5. All zinc coating on exposed metal form damaged or removed during construction shall be repaired with one coat of paint conforming to Section 9-08.1(2)B, two mils minimum dry film thickness.
6. Should the Engineer determine that inspection of the underside of the hardened slab is warranted, the Contractor shall remove at least one section of metal form in each span at no extra cost to the Contracting Agency. If excessive honeycomb or other defects are found, the Contractor shall, if required by the Engineer, remove additional form sections at no additional expense to the Contracting Agency, and shall revise concrete placing methods as required to produce sound concrete. All unacceptable concrete shall be removed or repaired.

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7. Complete layout, details, and a description of materials, for the permanent metal forms shall be included in the Contractor's falsework and formwork submittal as specified in Section 6-02.3(16).
8. No adjustment will be made to the lump sum contract price for "Bridge Deck - ____" for additional quantities of materials required because of the use of the permanent forms.