

460 MARKING AND SHIPPING – GENERAL.

(REV 6-16-00) (FA 7-6-00) (1-01)

SUBARTICLE 460-27.1 (Pages 614 and 615) is deleted and the following substituted:

460-27.1 General: Mark the weight on members weighing more than 3 tons [3 metric tons]. Pack bolts and rivets of one length and diameter, and loose nuts or washers of each size, separately. Ship pins, small parts, and small packages of bolts, rivets, washers, and nuts in boxes, crates, kegs, or barrels of convenient sizes. Plainly display a list and description of the contained material on the outside of each shipping container. Keep the weight of all tools and erection material separate.

The Engineer will allow metal die stamping in the fabrication of structural steel in conformance with the requirements specified herein. Do not use die stamps on fracture-critical members, or near the edges of plate members subject to tensile stresses. The Engineer will accept numbers, letters, or combinations thereof impressed into steel components for the purpose of identifying the fabricated member in lieu of paint, metal tags, or other methods of identification.

The Contractor may accomplish marking of fabricated structural steel as required herein and in 460-12.4 by the use of paint, attached metal tags, or low stress dies with blunt-nosed continuous or blunt-nosed interrupted dot die stamps (i.e., dies manufactured to produce impressions that are rounded at the bottom of the impression).

The maximum allowed depth of the impression is 1/32 or 0.031 inch [0.8 mm]. Use die stamping tools that make character sizes with corresponding face radii as shown in the following table:

Size of Steel Die Stamp Markings	
Character Size inch [mm]	Minimum Face Radii inch [mm]
0.125 [3]	0.007 [0.2]
0.1,875 [5]	0.004 [0.1]
0.250 [6]	0.010 [0.3]
0.3750 [10]	0.014.[0.4]
0.5000 [13]	0.020 [0.5]

In all cases, ensure that shop drawings submitted by the fabricator indicate proposed location of all low stress metal die stamping.

For bridge members, the Contractor may apply the low stress metal die stamping at the following locations:

- (1) Girder field splices or beam ends:
 - a. Outer fourth of top flange splice plates.
 - b. Middle third of web splice plates.
 - c. Outer half of girder flange bolt hole pattern at splice.
 - d. Within 6 inches [150 mm] of bearing stiffeners in the top flange areas at end of

girder.

- (2) Diaphragms:

bracing member.

- a. The preferred location is the middle portion of a top horizontal diaphragm

- b. In lieu of the above, the middle of the bottom horizontal diaphragm bracing member.

(3) Other members: Clearly indicate the location on shop drawings submitted for approval. Make any marking to be done at the mill, as required by AASHTO M 160 (ASTM A 6) [AASHTO M 160M (ASTM A 6M)], in no more than one place on each piece. The Contractor may use die stamping, using low-stress blunt-nosed continuous or low-stress blunt-nosed interrupted dot steel dies.