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CODE

COMMENTARY

intended to provide sound welding that is also adequate for compression.

While direct butt welds are not required, AWS D1.4 states that wherever practical, direct butt welds are preferable for No. 22 bars and larger.

25.5.7.2 Welding of reinforcing bars shall conform to 26.6.4.

25.5.7.3 Mechanical or welded splices need not be staggered except as required by 25.5.7.4.

R25.5.7.3 Although mechanical and welded splices need not be staggered, staggering is encouraged and may be necessary for constructibility to provide enough space around the splice for installation or to meet the clear spacing requirements.

25.5.7.4 Splices in tension tie members shall be made with a mechanical or welded splice in accordance with 25.5.7.1. Splices in adjacent bars shall be staggered at least 750 mm.

R25.5.7.4 A tension tie member has the following characteristics: member having an axial tensile force sufficient to create tension over the cross section; a level of stress in the reinforcement such that every bar should be fully effective; and limited concrete cover on all sides. Examples of members that may be classified as tension ties are arch ties, hangers carrying load to an overhead supporting structure, and main tension elements in a truss.

In determining if a member should be classified as a tension tie, consideration should be given to the importance, function, proportions, and stress conditions of the member related to the above characteristics. For example, a usual large circular tank, with many bars and with splices well staggered and widely spaced, should not be classified as a tension tie member, and Class B splices may be used.

25.6—Bundled reinforcement

25.6.1 *Nonprestressed reinforcement*

R25.6—Bundled reinforcement

R25.6.1 *Nonprestressed reinforcement*

25.6.1.1 Groups of parallel reinforcing bars bundled in contact to act as a unit shall be limited to four in any one bundle.

R25.6.1.1 The Code phrase "bundled in contact to act as a unit" is intended to preclude bundling more than two bars in the same plane. Typical bundle shapes in cross section are triangular, L-shaped, or square-shaped patterns for three- or four-bar bundles. As a practical caution, bundles more than one bar deep in the plane of bending should not be hooked or bent as a unit. Where end hooks are required, it is preferable to stagger the individual bar hooks within a bundle.

25.6.1.2 Bundled bars shall be enclosed within transverse reinforcement. Bundled bars in compression members shall be enclosed by transverse reinforcement at least No. 13 in size.

25.6.1.3 Bars larger than a No. 36 shall not be bundled in beams.

R25.6.1.3 A limitation that bars larger than No. 36 not be bundled in beams is a practical limit for application to building size members. (AASHTO LRFDUS Article 5.9.4 permits two-bar bundles for No. 43 and No. 57 bars in bridge girders.) Conformance to the crack control requirements of 24.3 will effectively preclude bundling of bars larger than No. 36 as tension reinforcement.

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