CODE

construction, such loss of prestress shall be included in design calculations.

20.4—Headed shear stud reinforcement

20.4.1 Headed shear stud reinforcement and stud assemblies shall conform to ASTM A1044.

COMMENTARY

R20.4—Headed shear stud reinforcement

R20.4.1 The configuration of the studs for headed shear stud reinforcement differs from the configuration of the headed-type shear studs prescribed in Section 7 of AWS D1.1 (2015) and referenced for use in Chapter 17 of this Code (Fig. R20.4.1). Ratios of the head to shank cross-sectional areas of the AWS D1.1 studs range from approximately 2.5 to 4. In contrast, ASTM A1044 requires the area of the head of headed shear stud reinforcement to be at least 10 times the area of the shank. Thus, the AWS D1.1 headed studs are not suitable for use as headed shear stud reinforcement. The base rail, where provided, anchors one end of the studs; ASTM A1044 specifies material width and thickness of the base rail that are sufficient to provide the required anchorage without yielding for stud shank diameters of 9.5, 12.7, 15.9, and 19.1 mm. In ASTM A1044, the minimum specified yield strength of headed shear studs is 350 MPa.

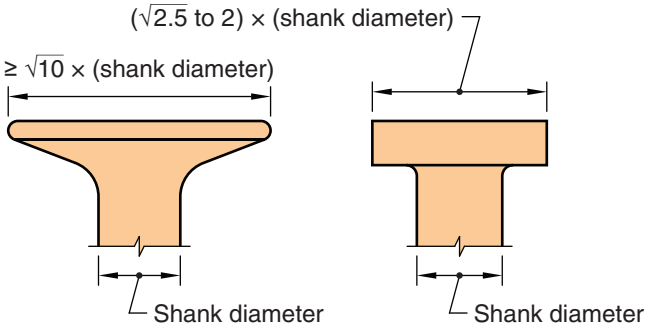

Fig. R20.4.1*—Configurations of stud heads.*

20.5—Provisions for durability of steel reinforcement

20.5.1 *Specified concrete cover*

R20.5—Provisions for durability of steel reinforcement

R20.5.1 *Specified concrete cover*

This section addresses concrete cover over reinforcement and does not include requirements for concrete cover over embedments such as pipes, conduits, and fittings, which are addressed in 20.6.5.

20.5.1.1 Unless the general building code requires a greater concrete cover for fire protection, the minimum specified concrete cover shall be in accordance with 20.5.1.2 through 20.5.1.4.

R20.5.1.1 Concrete cover as protection of reinforcement from weather and other effects is measured from the concrete surface to the outermost surface of the reinforcement to which the cover requirement applies. Where concrete cover is prescribed for a class of structural members, it is measured to the outer edge of stirrups, ties, or spirals if transverse reinforcement encloses main bars; to the outermost layer of bars if more than one layer is used without stirrups or ties; to the metal end fitting or duct of post-tensioning tendons; or to the outermost part of the head on headed bars.