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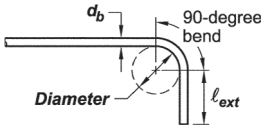
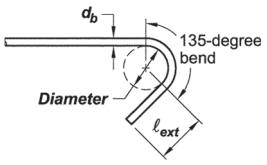
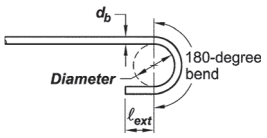
should be avoided in closed stirrups, ties, and hoops made of continuous reinforcement.

Table 25.3.2—Minimum inside bend diameters and standard hook geometry for stirrups, ties, and hoops

Type of standard hook	Bar size	Minimum inside bend diameter, mm	Straight extension[1] ℓ_{ext}, mm	Type of standard hook
90-degree hook	No. 10 through No. 16	$4d_b$	Greater of $6d_b$ and 75 mm	
	No. 19 through No. 25	$6d_b$	$12d_b$	
135-degree hook	No. 10 through No. 16	$4d_b$	Greater of $6d_b$ and 75 mm	
	No. 19 through No. 25	$6d_b$		
180-degree hook	No. 10 through No. 16	$4d_b$	Greater of $4d_b$ and 65 mm	
	No. 19 through No. 25	$6d_b$		

[1]A standard hook for stirrups, ties, and hoops includes the specific inside bend diameter and straight extension length. It shall be permitted to use a longer straight extension at the end of a hook. A longer extension shall not be considered to increase the anchorage capacity of the hook.

25.3.3 Minimum inside bend diameters for welded wire reinforcement used as stirrups or ties shall not be less than $\mathbf{4}d_b$ for deformed wire larger than MD35 and $\mathbf{2}d_b$ for all other wires. Bends with inside diameter of less than $\mathbf{8}d_b$ shall not be less than $\mathbf{4}d_b$ from nearest welded intersection.

R25.3.3 Welded wire reinforcement can be used for stirrups and ties. The wire at welded intersections does not have the same uniform ductility and bendability as in areas that were not heated by welding in the manufacture of the welded wire reinforcement. These effects of the welding temperature are usually dissipated in a distance of approximately four wire diameters. Minimum bend diameters permitted are in most cases the same as those required in the ASTM bend tests for wire (ASTM A1064 and A1022).

25.3.4 Seismic hooks used to anchor stirrups, ties, hoops, and crossties shall be in accordance with (a) and (b):

(a) Minimum bend of 90 degrees for circular hoops and 135 degrees for all other hoops
(b) Hook shall engage longitudinal reinforcement and the extension shall project into the interior of the stirrup or hoop

25.3.5 Crossties shall be in accordance with (a) through (e):

(a) Crosstie shall be continuous between ends
(b) There shall be a seismic hook at one end
(c) There shall be a standard hook at other end with minimum bend of 90 degrees
(d) Hooks shall engage peripheral longitudinal bars
(e) 90-degree hooks of two successive crossties engaging the same longitudinal bars shall be alternated end for end, unless crossties satisfy 18.6.4.3 or 25.7.1.6.1

R25.3.5 Crossties are illustrated in Fig. R25.3.5.

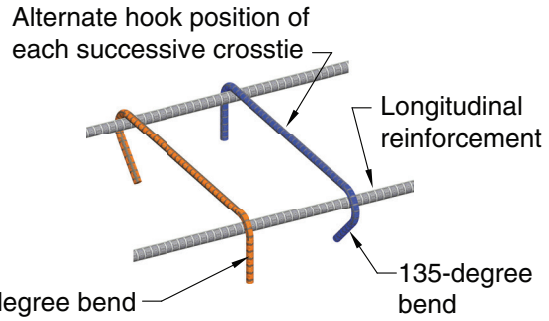


Fig. R25.3.5—Crosstie.