CODE

(a) $s + 50$ mm
(b) $1.5\ell_d$
(c) 150 mm
where s is the spacing of cross wires and ℓ_d is calculated in accordance with 25.4.7.2(b).

COMMENTARY

diameters or length. The 50 mm additional lap required is to provide adequate overlap of the cross wires and to provide space for satisfactory consolidation of the concrete between cross wires. Research (Lloyd 1971) has shown an increased splice length is required when welded wire reinforcement of large, closely spaced wires is lapped and, as a consequence, additional splice length requirements are provided for this reinforcement in addition to an absolute minimum of 150 mm. Splice requirements are illustrated in Fig. R25.5.4.1. If $A_{s,provided}/A_{s,required} \geq 2$ over the length of the splice, ℓ_{st} can be determined from 25.5.4.2.

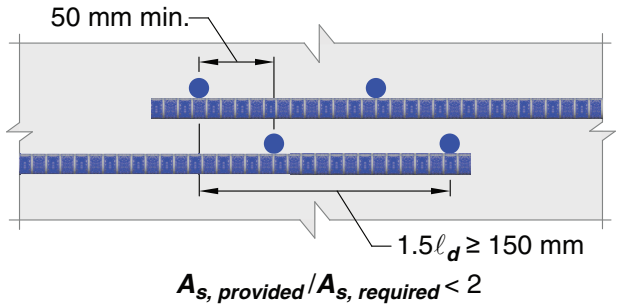

Fig. R25.5.4.1—Lap splices of plain welded wire reinforcement where $A_{s,provided}/A_{s,required} < 2$.

25.5.4.2 If $A_{s,provided}/A_{s,required} \geq 2.0$ over the length of the splice, ℓ_{st} measured between outermost cross wires of each reinforcement sheet shall be permitted to be the greater of (a) and (b).

(a) $1.5\ell_d$
(b) 50 mm

where ℓ_d is calculated by 25.4.7.2(b).

R25.5.4.2 Where $A_{s,provided}/A_{s,required} \geq 2$, the lap splice for plain welded wire reinforcement is illustrated in Fig. R25.5.4.2.

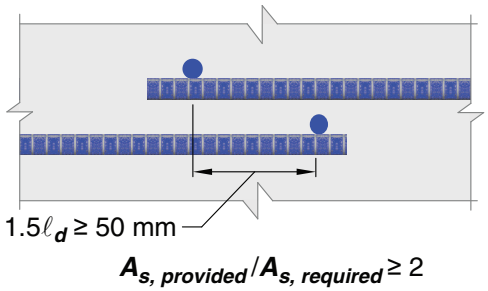

Fig. R25.5.4.2—Lap splices of plain welded wire reinforcement where $A_{s,provided}/A_{s,required} \geq 2$.

25.5.5 *Lap splice lengths of deformed bars in compression*

R25.5.5 *Lap splice lengths of deformed bars in compression*

Bond research has been primarily related to bars in tension. Bond behavior of compression bars is not complicated by the problem of transverse tension cracking and thus compression splices do not require provisions as strict as those specified for tension splices.

Lap splice requirements particular to columns are provided in Chapter 10.

25.5.5.1 Compression lap splice length ℓ_{sc} of No. 36 or smaller deformed bars in compression shall be calculated in accordance with (a), (b), or (c):

R25.5.5.1 Tests (ACI Committee 408 1966; Pfister and Mattock 1963) have shown that splice strengths in compression depend considerably on end bearing and do not increase proportionally in strength when the splice length is doubled.