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CODE

(a) For $f_y \le$ **420 MPa**: ℓ_{sc} is the longer of $0.071 f_y d_b$ and 300 mm.

(b) For **420 MPa** $< f_y \le$ **550 MPa**: ℓ_{sc} is the longer of $(0.13 f_y - 24) d_b$ and 300 mm.

(c) For $f_y >$ **550 MPa**, ℓ_{sc} is the longer of $(0.13 f_y - 24) d_b$ and ℓ_{st} calculated in accordance with 25.5.2.1.

For $f_c' <$ **21 MPa**, the length of lap shall be increased by one-third.

25.5.5.2 Compression lap splices shall not be used for bars larger than No. 36, except as permitted in 25.5.5.3.

25.5.5.3 Compression lap splices of No. 43 or No. 57 bars to No. 36 or smaller bars shall be permitted and shall be in accordance with 25.5.5.4.

25.5.5.4 Where bars of different size are lap spliced in compression, ℓ_{sc} shall be the longer of ℓ_{dc} of larger bar calculated in accordance with 25.4.9.1 and ℓ_{sc} of smaller bar calculated in accordance with 25.5.5.1 as appropriate.

25.5.6 *End-bearing splices of deformed bars in compression*

25.5.6.1 For bars required for compression only, transmission of compressive stress by end bearing of square-cut ends held in concentric contact by a suitable device shall be permitted.

25.5.6.2 End-bearing splices shall be permitted only in members containing closed stirrups, ties, spirals, or hoops.

25.5.6.3 Bar ends shall terminate in flat surfaces within 1.5 degrees of a right angle to the axis of the bars and shall be fitted within 3 degrees of full bearing after assembly.

25.5.7 *Mechanical and welded splices of deformed bars in tension or compression*

25.5.7.1 A mechanical or welded splice shall develop in tension or compression, as required, at least $1.25 f_y$ of the bar.

COMMENTARY

Accordingly, for specified yield strengths above 420 MPa, compression lap lengths are significantly increased.

R25.5.5.3 Lap splices are generally prohibited for No. 43 or No. 57 bars. For compression only, however, lap splices are permitted between No. 43 or No. 57 bars and No. 36 or smaller bars.

R25.5.6 *End-bearing splices of deformed bars in compression*

R25.5.6.1 Experience with end-bearing splices has been almost exclusively with vertical bars in columns. If bars are significantly inclined from the vertical, attention is required to ensure that adequate end-bearing contact can be achieved and maintained.

R25.5.6.2 This limitation ensures a minimum shear resistance in sections containing end-bearing splices.

R25.5.6.3 These tolerances represent practice based on tests of full-size members containing No. 57 bars.

R25.5.7 *Mechanical and welded splices of deformed bars in tension or compression*

The 2014 Code eliminated mechanical and welded splices with strengths less than $1.25 f_y$. With the elimination of these mechanical and welded splices, the term "full" was deleted in reference to mechanical and welded splices that develop at least $1.25 f_y$.

R25.5.7.1 To ensure sufficient strength in splices so that yielding can be achieved in a member and thus brittle failure avoided, the 25 percent increase above the specified yield strength was selected as both an adequate minimum for safety and a practicable maximum for economy.

A welded splice is primarily intended for large bars (No. 19 and larger) in main members. The tensile strength requirement of 125 percent of specified yield strength is

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