

CODE

COMMENTARY

Table 15.4.2.3—Nominal joint shear strength V_n

Column	Beam in direction of V_u	Confinement by transverse beams according to 15.2.8	V_n , N ⁽¹⁾
Continuous or meets 15.2.6	Continuous or meets 15.2.7	Confined	$2.0\lambda\sqrt{f'_c}A_j$
		Not confined	$1.7\lambda\sqrt{f'_c}A_j$
	Other	Confined	$1.7\lambda\sqrt{f'_c}A_j$
		Not confined	$1.3\lambda\sqrt{f'_c}A_j$
Other	Continuous or meets 15.2.7	Confined	$1.7\lambda\sqrt{f'_c}A_j$
		Not confined	$1.3\lambda\sqrt{f'_c}A_j$
	Other	Confined	$1.3\lambda\sqrt{f'_c}A_j$
		Not confined	$1.0\lambda\sqrt{f'_c}A_j$

⁽¹⁾ λ shall be 0.75 for lightweight concrete and 1.0 for normalweight concrete.

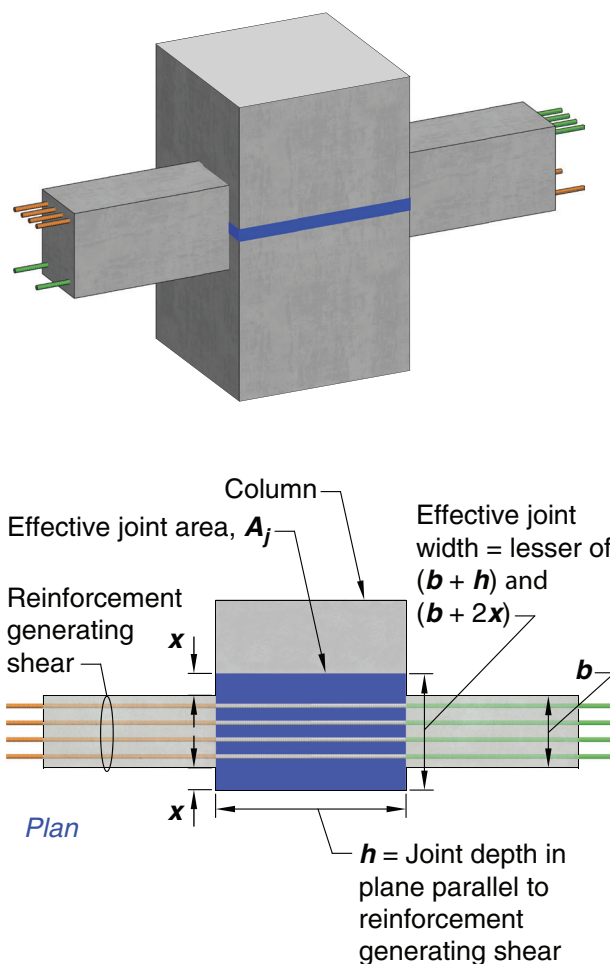
15.4.2.4 Effective cross-sectional area within a joint, A_j , shall be calculated as the product of joint depth and effective joint width. Joint depth shall be the overall depth of the column, h , in the direction of joint shear considered. Effective joint width shall be the overall width of the column where the beam is wider than the column. Where the column is wider than the beam, effective joint width shall not exceed the lesser of (a) and (b):

- (a) Beam width plus joint depth
- (b) Twice the perpendicular distance from longitudinal axis of beam to nearest side face of the column

15.5—Transfer of column axial force through the floor system

15.5.1 If f'_c of a floor system is less than $0.7f'_c$ of a column, transmission of axial force through the floor system shall be in accordance with (a), (b), or (c):

- (a) Concrete of compressive strength specified for the column shall be placed in the floor system at the column location. Column concrete shall extend outward at least 600 mm into the floor system from face of column for the full depth of the floor system and be integrated with floor concrete.
- (b) Design strength of a column through a floor system shall be calculated using the lower value of concrete strength with vertical dowels and transverse reinforcement as required to achieve design strength.
- (c) For beam-column joints laterally supported on four sides by beams of approximately equal depth that satisfy



Note: Effective area of joint for forces in each direction of framing is to be considered separately.

Fig. R15.4.2—Effective joint area.

R15.5—Transfer of column axial force through the floor system

The requirements of this section consider the effect of floor system concrete strength on column axial strength (Bianchini et al. 1960). If floor system concrete strength is less than 70 percent of column concrete strength, methods in 15.5.1(a) or 15.5.1(b) may be applied to corner or edge columns. Methods in 15.5.1(a), (b), or (c) may be applied to interior columns.

Application of the concrete placement procedure described in 15.5.1(a) requires the placing of two different concrete mixtures in the floor system. The Code requires that column concrete be placed through the thickness of the floor system and that mixtures be placed and remain plastic such that the two can be vibrated so they are well integrated. Additional inspection may be required for this process. As required in Chapter 26, it is the responsibility of the licensed design professional to indicate on the construction docu-