CODE

mately reflect the distribution of interface shear forces in the composite concrete flexural member.

16.4.5.3 Transverse reinforcement in a previously cast section that extends into the cast-in-place section and is anchored on both sides of the interface shall be permitted to be included as ties for calculation of V_{nh}.

16.4.6 *Minimum reinforcement for horizontal shear transfer*

16.4.6.1 Where shear transfer reinforcement is designed to resist horizontal shear, $A_{v,min}$ shall be the greater of (a) and (b):

(a) $0.062\sqrt{f'_c}\dfrac{b_w s}{f_y}$

(b) $0.35\dfrac{b_w s}{f_y}$

16.4.7 *Reinforcement detailing for horizontal shear transfer*

16.4.7.1 Shear transfer reinforcement shall consist of single bars or wire, multiple leg stirrups, or vertical legs of welded wire reinforcement.

16.4.7.2 Where shear transfer reinforcement is designed to resist horizontal shear, longitudinal spacing of shear transfer reinforcement shall not exceed the lesser of 600 mm and four times the least dimension of the supported element.

16.4.7.3 Shear transfer reinforcement shall be developed in interconnected elements in accordance with 25.7.1.

16.5—Brackets and corbels

16.5.1 *General*

COMMENTARY

shear failure will initiate where the horizontal shear stress is a maximum and will spread to regions of lower stress. Because the slip at peak horizontal shear resistance is small for a concrete-to-concrete contact surface, longitudinal redistribution of horizontal shear resistance is very limited. Therefore, the spacing of ties along the contact surface should provide horizontal shear resistance distributed approximately the same as the distribution of shear stress along the contact surface.

R16.4.6 *Minimum reinforcement for horizontal shear transfer*

R16.4.6.1 The requirements for minimum area of shear transfer reinforcement are based on test data given in Kaar et al. (1960), Saemann and Washa (1964), Hanson (1960), Grossfield and Birnstiel (1962), and Mast (1968).

R16.4.7 *Reinforcement detailing for horizontal shear transfer*

R16.4.7.3 Proper anchorage of ties extending across the interface is required to maintain contact along the interface.

R16.5—Brackets and corbels

R16.5.1 *General*

Brackets and corbels are short cantilevers that tend to act as simple trusses or deep beams, rather than beams, which are designed for shear according to 22.5. The corbel shown in Fig. R16.5.1a and Fig. 16.5.1b may fail by shearing along the interface between the column and the corbel, yielding of the tension tie, crushing or splitting of the compression strut, or localized bearing or shearing failure under the loading plate. These failure modes are illustrated and discussed in Elzanaty et al. (1986).