CODE

17.6.5.1.2 A_{Nao} is the projected influence area of a single adhesive anchor with an edge distance of at least c_{Na}:

$$A_{Nao} = (2c_{Na})^2 \qquad (17.6.5.1.2a)$$

where

$$c_{Na} = 10d_a\sqrt{\frac{\tau_{uncr}}{7.6}} \qquad (17.6.5.1.2b)$$

and constant 7.6 carries the unit of MPa.

COMMENTARY

the relationship for c_{Na} in Eq. (17.6.5.1.2b) uses τ_{uncr}, the characteristic bond stress in uncracked concrete. This has been verified by experimental and numerical studies (Eligehausen et al. 2006a). Figure R17.6.5.1(a) shows A_{Nao} and the development of Eq. (17.6.5.1.2a). A_{Nao} is the projected influence area for the bond strength of a single adhesive anchor. Figure R17.6.5.1(b) shows an example of the projected influence area for an anchor group. Because, in this case, A_{Na} is the projected influence area for an anchor group, and A_{Nao} is the projected influence area for a single anchor, there is no need to include n, the number of anchors, in Eq. (17.6.5.1b). If individual anchors in a group (anchors loaded by a common base plate or attachment) are positioned in such a way that the projected influence areas of the individual anchors overlap, the value of A_{Na} is less than nA_{Nao}.

The tensile strength of closely spaced adhesive anchors with low bond strength may significantly exceed the value given by Eq. (17.6.5.1b). A correction factor is given in the literature (Eligehausen et al. 2006a) to address this issue, but for simplicity, this factor is not included in the Code.