

Variants

Variations to the typical column detail may be derived using the same method of calculation, but amending the calculated perimeter. Edge and corner columns and holes/ducts near columns may all be designed and detailed.

Edge and corner perimeters are cropped by the edge of the flat slab. If a common face is closer than $6d$ to the edge of the slab (a), the perimeter should be detailed and calculated as shown.

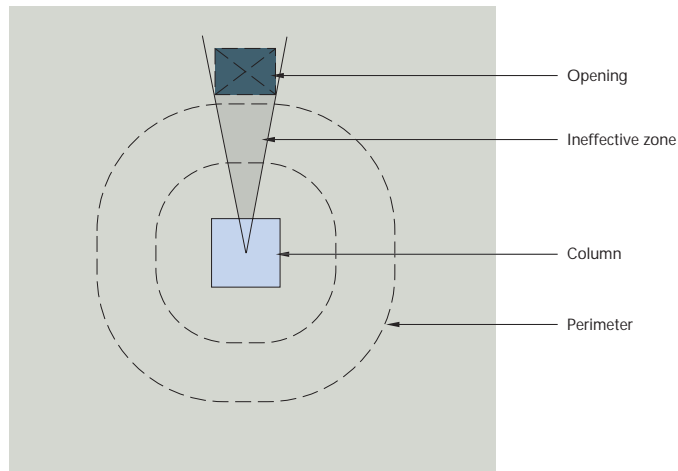
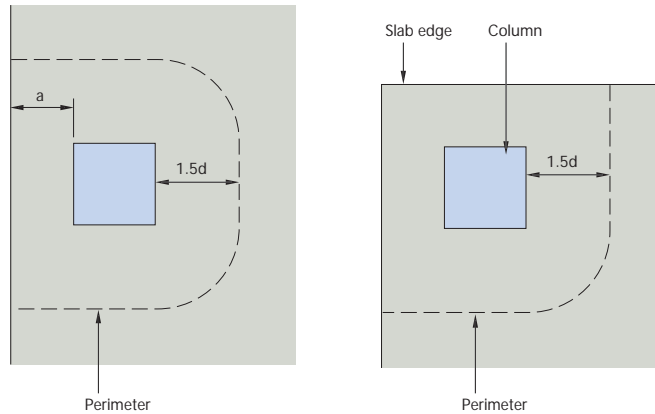
Openings in the slab near to the column are treated in a similar way. If the opening is less than $6d$ from the column edge, an effective zone is described by connecting the corner of the opening with the centre of the column. This reduces the working perimeter in the method of calculation.

The HDB shear stud is also used as additional reinforcement for slab to shearwall and beam to column junctions. The HDB-S shearwall reinforcing bars reduce the concentration of reinforcement and remove the need for gusseting or thickening of the connection area.

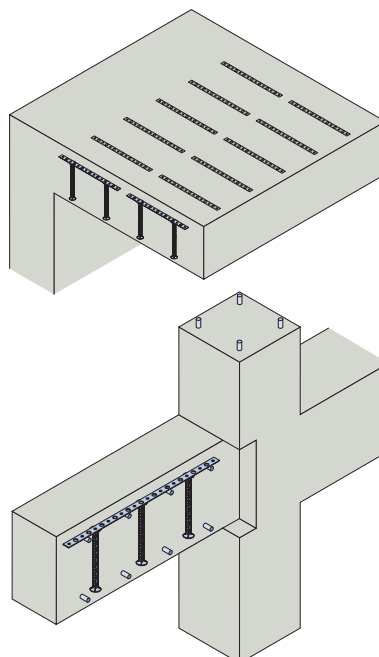
HDB shear stud reinforcement can also be used in footings and foundation slabs, with the design load V_{eff} reduced by the soil bearing pressure:

$$V_{eff} = V_{eff, column} - \sigma_0 \cdot A$$

Edge and corner perimeters



Typical HDB-S applications



Footings and foundation slabs

