Column Reinforcement Details

Reinforcement Detailing as per BS8110 and EC2

Discuss the detailing rules base on these codes.

Since the column is the most important structural element next to the foundation in a structure, no errors can be made.
Reinforcement Detailing Requirements

**Minimum Reinforcement in Column**
The minimum area of reinforcement in the column is 0.4% of the cross-sectional area of the column as per BS 8110.

\[ \frac{100A_s}{A_c} = 0.4 \]

**Maximum Reinforcement in Column**
The maximum area of reinforcement of columns is as follows. The below values are calculated as a percentage of the gross cross-sectional area of concrete.

- Vertically cast column 6%
- Horizontally cast column 8%
- Lapps in vertically/horizontally cast column 10%

Containment Links

Link Diameter: at least one quarter the size of largest compression bar or 6mm, whichever greater.

Link Spacing: Maximum spacing shall be 12 times the smallest compression bar.

All the column reinforcements should have at least one link passing them.

No rebar in the column should be further than 150mm from the restraining bar.
That is if a reinforcement bar spacing is more than 150mm from the restraining bar, that bar needs to be restrained with a link.
Reinforcement Lapping

Column reinforcement from above
Cracked 1:10

Crossbar that when column bars are cranked in they do not fail any other reinforcement

Compression on tension in opposite direction

Kicker

Rebar at Lap

No special link at crank

Spacing of links at lap not greater than:
- 12d of longitudinal bar
- 0.6 x lesser dimension of column
- 240

At least 3 No. links
Nominal floor level

Main bars rest on kicker

Link at knuckle of crank
Crank at bottom of lift
Length of crank is 10 x offset

50 to start to link run
Kicker: 75

Link not required for face bar if it is within 150 of restrained bar

12d minimum
Where columns are offset or large moments exist these bars should be anchored into floor slab as shown.

Nominal floor level

Slab or beam soffit

75 min.

Spacing of links at lap not greater than:
- 12e of longitudinal bar
- 0.6 x lesser dim. of column
- 2/40

At least 3 No. links

Additional links may be required
See 6.4.2

Fixing dimension to be compression lap +75 unless specified.

Thank you