



BRIDGE TECHNICAL DIRECTION BTD2007/10

RESTRAINT OF LONGITUDINAL REINFORCEMENT IN COLUMNS

Background

Clause 10.7.3 of AS 5100.5 specifies requirements for restraint of longitudinal (main) reinforcement in columns. Specific requirements are provided for columns where full restraint is required. This Bridge Technical Direction supplements the requirements of Clause 10.7.3 for columns where full restraint is not required as the Clause is not specific about the requirements for such columns.

Information

Clause 10.7.3.1 specifies that full restraint has to be provided for longitudinal bars in columns where $N^* > 0.5 \varnothing N_u$. The requirements for full restraint are stringent: the principal requirement is that all bundles of bars need to be restrained and all bars need to be restrained if the spacing is > 150 mm or restraint of every second bar if the spacing is ≤ 150 mm, together with other requirements.

Where the $N^* \leq 0.5 \varnothing N_u$, Clause 10.7.3.1 states that full restraint is not required. There is ambiguity in the wording of this Clause that results in a range of possible interpretations.

Bridge Technical Direction

In the design of all RTA bridges and those that will become the property of RTA, in columns where $N^* < 0.5 \varnothing N_u$ and in accordance with Clause 10.7.3.1 (a) (iii) of AS 5100.5, full restraint need not be provided to the main reinforcement; the designer shall determine the required level of restraint. However, the restraint provided shall be not less than the following:

- In horizontal sections at least every sixth longitudinal (main) reinforcing bar or a bundle of bars shall be restrained in accordance with Clauses 10.7.3.2 to 10.7.3.4 but the spacing of restraints shall not exceed 1000 mm.
- In the vertical direction the spacings between restraints shall not exceed 600 mm.

The provisions of Clause 10.7.3.5 for earthquake resistance may override the above requirements.

The restraints must comply with the access requirements specified in CBE 00/05.

Reference: CBE 00/05

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Approved: Wije Ariyaratne
Principal Bridge Engineer

Contact: Joe Canceri
Section: Bridge Engineering
Telephone no: 8837 0805
File no: 94M3917
Circular Number: BTD2007/10

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