

Case 17/2021

Issue: Modification of reinforcement arrangement in confined boundary element of walls and transverse reinforcement arrangement through the thickness of walls

Recommendation:

- (1) To accept the modified reinforcement arrangement in confined boundary element of walls without following the prescriptive requirements stipulated in Clause 9.6.4 and Clause 9.9.3.2 of the Code of Practice for Structural Use of Concrete 2013 (the Concrete Code 2013).
- (2) To accept the modified transverse reinforcement arrangement through the thickness of walls without following the prescriptive requirements stipulated in Clause 9.6.4 of the Concrete Code 2013.

Decision: Having noted the background of the design approach, construction sequence, quality control, site supervision and the testing proposals, members endorsed the recommendations on a case-by-case basis subject to the following conditions:

- (1) A full-scale mock up should be carried out prior to the commencement of construction. A performance report should be submitted for acceptance prior to the commencement of module installation;

- (2) The following supervision conditions should be imposed:
RSE Stream:

Role	Proposed Frequency Level
RSE	Monthly
T3	Two times per week (Full time during installation of spiral reinforcement, lapping bars and grouting works in between precast wall panels.)

RC Stream:

Role	Proposed Frequency Level
AS	Monthly
T1	Two Full Time T1

- (3) Test reports of the trial panels should be submitted and found satisfactory prior to the consent application for the

proposed works. The criteria to assess the adequacy of design shall be:

- (i) Ultimate axial compression load of the test sample shall not be inferior to the control sample;
- (ii) Ultimate axial compression load of the test sample shall not be less than the code of practice requirement:
$$N_{ult} = 0.67 \times F_{cu} \times \text{Concrete Area} + F_y \times \text{Area of steel};$$
and
- (iii) Ultimate failure strain of the test sample defined as $\epsilon^*_{0.85}$ shall not be inferior to the control sample.