

Summary of Decisions of the Structural Engineering Committee  
SEC Meeting 7/2021 held on 14.9.2021

Case 35/2021

Issue: In-principle Acceptance of Modular Integrated Construction (MiC)

- 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 2013 Code).
  - (2) To accept the use of NMB grouted pipe sleeve system for splicing of reinforcing bars of 16mm, 20mm and 25mm in accordance with Clause 3.2.8 of the 2013 Code as Type 2 mechanical coupler.

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. Part of the mock up should be opened up to verify quality of concreting/grouting. A performance report on the opening up should be submitted for acceptance prior to the commencement of module installation.
- (2) The following supervision conditions should be imposed:

● RSE Stream

Role	Frequency Level
RSE	Monthly
T3	<p>Two times per week</p> <p>(Full time during installation of the steel components between HS1 and HS2 (i.e. the Wedge Ties WT1, Tie Assemblies TA1/TA2s and concreting works of composite walls.)</p> <p>(Full time during inserting starter bars into couplers of upper module and grouting of NMB Splice Sleeve S pipe sleeve.)</p>

	(In prefabrication yard, at least 20% of all couplers to be checked by T3 to ensure that rebars are fully inserted into coupler before casting)
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- RC Stream

Role	Frequency Level
AS	Monthly
T1	<p>Two Full Time T1</p> <p>(On site, full time during inserting starter bars into couplers of upper module and grouting of NMB Splice Sleeve S pipe sleeve.)</p> <p>(In prefabrication yard, all couplers to be checked by T1 before casting to ensure that rebars are fully inserted into coupler.)</p>

- (3) Test reports of NMB grouted pipe sleeve with non-shrinkage cementitious grout of specific brand and model number should be submitted. The test should be in accordance with Clause 3.2.8.4 of the 2013 Code and Annex A of AC133. Comparison tests with misaligned rebars would be conducted in accordance with Annex A of AC133, including tensile tests with max. misaligned of rebar and tensile tests with max. angular misalignment of rebar.