

Ref : BD \_\_\_\_\_

Address : \_\_\_\_\_

Appendix \_\_\_\_\_ to approval dated \_\_\_\_\_

**Type 1 Mechanical Coupler for Steel reinforcing Bars <sup>a</sup>**  
**Mechanical Couplers for Steel Reinforcing Bars without Ductility Requirement <sup>b</sup>**

In giving this approval of plans, I hereby impose the following conditions under item 6 in section 17(1) of the Buildings Ordinance:

- (a) Qualified site supervision of the mechanical splice works by experienced and competent persons shall be provided to ensure that the works are carried out in accordance with the plans approved and that the required quality standards are complied with.
- (b) The Registered Structural Engineer (RSE) should assign a quality control supervisor to supervise the works, determine the necessary frequency of inspection by the quality control supervisor which should not be less than once a week, and devise inspection check lists. The minimum qualifications and experience of the quality control supervisor is to be the same as the Technically Competent Person of grade T3, as stipulated in the Code of Practice for Site Supervision 2009.
- (c) The Registered General Building Contractor/Registered Specialist Contractor (RGBC/RSC) should assign a quality control co-ordinator to provide full time on site supervision of the works and devise inspection check lists. The minimum qualifications and experience of the quality control co-ordinator is to be the same as the Technically Competent Person of grade T1, as stipulated in the Code of Practice for Site Supervision 2009.
- (d) The names and qualifications of the supervisory personnel representing the RSE and the RGBC/RSC respectively should be recorded in an inspection log book. The date, time, items inspected and inspection results should be clearly recorded in the log book. The log book should be kept at the site office and, when required, produced to the Building Authority for inspection.
- (e) After delivery of the mechanical splices to site, strength tests on a representative number of the mechanical splices, as directed by the RSE, are required to be carried out in accordance with the test criteria specified in paragraph 4 below. The tests should be carried out by a laboratory\* accredited under the Hong Kong Laboratory Accreditation Scheme (HOKLAS) or by other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with the HOKLAS for the particular tests concerned. All results of the strength tests<sup>@</sup> should be submitted within 60 days of the delivery of the mechanical splices to the site and appended with a statement signed by the RSE to confirm that the acceptance criteria appropriate to the tests have been complied with.

2. Under Building (Administration) Regulation 10, a copy of quality assurance scheme of the manufacturer is required to be submitted prior to the application for consent to the commencement of the mechanical splice works. The quality assurance scheme should include the following details:

- (a)<sup>^</sup> Quality control documentation relating to the production of the mechanical splices.
- (b)<sup>^</sup> Sample mill certificates of the constituent materials used to produce the couplers.
- (c) Description of the process of strength hardening and threading the connecting ends of the steel reinforcing bars.
- (d) Description of the method of installing the steel reinforcing bars to the couplers. This should include description of any special equipment involved, its frequency of calibration and any special training provided to the site fabricators and the inspection required.
- (e) Documents to prove that manufacturing of the couplers and the process of strength hardening and threading of the connecting ends of steel reinforcing bars are by a factory or factories with ISO 9001 quality assurance certification.
- (f)<sup>^a</sup> Test results<sup>@</sup> to establish that the criteria as specified in clause 3.2.8.3 of the Code of Practice for Structural Use of Concrete 2013 (CoP for Structural Use of Concrete 2013) are complied with.
- (g)<sup>^b</sup> Test results<sup>@</sup> to establish that the permanent elongation of the splicing assemblies after loading to 0.6fy should not exceed 0.1 mm in accordance with the requirements stated in Clause 3.2.8.2 of the Code of Practice for Structural Use of Concrete 2004 (CoP for Structural Use of Concrete 2004) and the tensile strength of the splicing assemblies should exceed 287.5 N/mm<sup>2</sup> for grade 250 and 529 N/mm<sup>2</sup> for grade 460.

3. Under Building (Administration) Regulation 10, a description of the sampling procedures including the arrangement from collecting samples to delivery of samples to laboratory for testing the quality of the mechanical splice assemblies is required to be submitted prior to the application for consent to the commencement of the mechanical coupler works.

4. Strength tests of the mechanical splices should satisfy the following criteria:

- (a)<sup>a</sup> Clause 3.2.8.3 of the CoP for Structural Use of Concrete 2013.
- (b)<sup>b</sup> Permanent elongation of the splicing assemblies after loading to 0.6 fy should not exceed 0.1 mm in accordance with the requirements stated in Clause 3.2.8.2 of CoP for Structural Use of Concrete 2004 and the tensile strength

of the splicing assemblies should exceed 287.5 N/mm<sup>2</sup> for grade 250 and 529 N/mm<sup>2</sup> for grade 460.

- (c) The rate of sampling shall be dependent on the size of the batch which is the quantity of the couplers of the same type, size, covered by the same mill and testing certificates and delivered to the site at any one time, and shall be as follows:

Size of batch ( Nos.)	Minimum number of specimens per batch
Less than 100	3
100-500	6
Exceeding 500	9

5. Under Building (Administration) Regulation 10, a copy of mill certificates of the constituent materials used to produce the coupler is required to be submitted within 60 days of the delivery of the mechanical couplers to the site.

- \* A Directory of Accredited Laboratories in Hong Kong is obtainable from the Hong Kong Accreditation Service (HKAS) Executive, Innovation and Technology Commission.

A laboratory's accreditation for an individual test or calibration may be granted, modified or withdrawn at any time. Up-to-date information on accredited laboratories and their scopes of accreditation are available on the internet at the HKAS website at <http://www.info.gov.hk/itc/hkas/>.

- @ The test carried out by an accredited laboratory should be within its scope of accreditation. Test results should be reported on a HOKLAS Endorsed Certificate or equivalent Certificate/Report issued from other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with the HOKLAS.

^ Not required if the mechanical coupler is one of the types listed in Central Data Bank

<sup>a</sup> Delete when the design is to the CoP for Structural Use of Concrete 2004

<sup>b</sup> Delete when the design is to the CoP for Structural Use of Concrete 2013