

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

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

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

### **Type 2 Mechanical Couplers for Steel Reinforcing Bars**

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

- (a) Qualified site supervision of the splicing assembly<sup>+</sup> 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 under the RSE's stream, as stipulated in the Code of Practice (CoP) 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 T3 under the RGBC's/Registered Specialist Contractor (RSC)'s stream, as stipulated in the CoP 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) Strength tests on a representative number of the splicing assemblies, as directed by the RSE, are required to be carried out in accordance with the test criteria specified in paragraph 5 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 splicing components or the partially fabricated assemblies to site and appended with a statement signed by the RSE to confirm that the acceptance criteria appropriate to the tests have been complied with.

- <sup>#</sup>(f) For welding of weldable mechanical couplers, welding procedures and welders should be assessed/tested in accordance with the appropriate provisions of the Annex A to the CoP for the Structural Use of Steel 2011.
- <sup>#</sup>(g) Non-destructive testing of welds should be carried out in accordance with the appropriate provisions of the CoP for the Structural Use of Steel 2011 and 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 HOKLAS for the particular test concerned. The test reports<sup>@</sup> shall be endorsed by RSE and kept on site for inspection by representatives of the Buildings Department.

2. Under regulation 10 of the Building (Administration) Regulations (B(A)R), 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 splicing assembly works. The quality assurance scheme should include the following details:

- <sup>^</sup>(a) Quality control documentation relating to the production of the mechanical couplers.
- <sup>^</sup>(b) Sample mill certificates of the constituent materials used to produce the couplers.
- (c) Detailed description of the process of strength hardening and threading the connecting ends of the steel reinforcing bars and the relevant specifications from the manufacturer.
- (d) Description of the method of identification for the splicing assemblies from others, if any, without ductility requirement. In this connection, the method of identification should allow physical evidence of the strength hardening process to be observable after the threading of the steel reinforcing bars. Therefore, methods of only colour coding are not acceptable.
- (e) 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.
- (f) 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.
- (g) Test results<sup>@</sup> to establish that the criteria as specified in paragraph 5 below are complied with.

3. Under regulation 10 of the B(A)R, a quality supervision plan\*\* of the RSE and the RGBC/RSC is required to be submitted to this Department prior to the application for consent to the commencement of the splicing assembly works. The quality supervision plan should include the following details:

- (a) Assignments of quality control supervisor of the RSE and quality control co-ordinator of the RGBC/RSC to supervise the manufacturing process of the connecting ends of the steel reinforcing bars, and the installation of steel reinforcing bars to the couplers.
  - (b) Frequency of quality supervision, which should be at least 20% of the splicing assemblies by the quality control supervisor of the RSE and full time continuous supervision by the quality control co-ordinator of the RGBC/RSC of the splicing assembly works.
  - (c) For couplers to be used at the top of pile cap and transfer plate, the frequency of quality supervision should be at least 50% of the splicing assemblies by the quality control supervisor of the RSE and full time continuous supervision by the quality control co-ordinator of the RGBC/RSC.
  - (d) A description of the sampling procedures including the arrangement from collecting samples on site to delivery of samples directly to laboratory for testing the quality of the splicing assemblies.
4. Under regulation 10 of the B(A)R, the following documents are required to be submitted, which should include:
- (a) A quality supervision report\*\* signed by the RSE, which should be submitted within 21 days upon completion of the splicing assembly works to confirm that the quality supervision has been adequately provided with, the inspection log book of the quality control supervisor and quality control coordinator representing the RSE and the RGBC/RSC respectively for the splicing assembly works.
  - (b) A copy of mill certificates of the constituent materials used to produce the couplers, which should be submitted within 60 days of the delivery of the mechanical couplers to the site and appended with a statement signed by the RSE to confirm that the requirements of chemical composition and mechanical properties of the constituent materials have been complied with.
5. Strength tests of the splicing assemblies should satisfy the following criteria:
- Application under the CoP for Structural Use of Concrete 2013
- (a) Clause 3.2.8.4 of the Code of Practice (CoP) for Structural Use of Concrete 2013.
  - (b) Sampling for testing depends on the quantity of couplers of the same type and size, covered by the same mill and testing certificates, delivered to site. The sampling should be a continuous process and at a rate commensurate with the number of couplers to be used for splicing steel reinforcing bars as follows:

Number of couplers to be used (Nos.)	Minimum number of splicing assemblies	
	Tests as per clause 3.2.8.4(b), (c) & (d) of the CoP for Structural Use of Concrete 2013 (per test)	Test as per clause 3.2.8.4(a) of the CoP for Structural Use of Concrete 2013
Fewer than or equal to 100	5	3
101 <sup>st</sup> – 500 <sup>th</sup>	2	3
501 <sup>st</sup> – 1000 <sup>th</sup>	2	3
Every 1 <sup>st</sup> to 500 <sup>th</sup> thereafter	2	2

+ A splicing assembly comprises a mechanical coupler connected with steel reinforcing bars at both ends.

\* 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.itc.gov.hk/hkas/>.

@ The test carried out by an accredited laboratory should be within its scope of accreditation. To ensure this, 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.

*Laboratory/Organisation/Testing Agency for carrying out the test(s) should be independent of the Registered General Building Contractor (RGBC)/Registered Specialist Contractor (RSC).*

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

# Delete wherever inapplicable.

\*\* For the Personal Data contained in the documents/reports mentioned in this Appendix

#### Purposes of Collection

- (i) The personal data provided will be used by the Buildings Department for the following purposes:
  - (a) activities relating to the processing of the submission;
  - (b) activities relating to works specified in this appendix; and
  - (c) facilitating communication between the Buildings Department and the related personnel.

#### Classes of Transferees

- (ii) The personal data provided may be disclosed to:
  - (a) other Government departments, bureaux & relevant organisations for the purposes mentioned in paragraph (i) above; and
  - (b) any person for the purpose mentioned in paragraph (i)(b) above.

#### Access to Personal Data

- (iii) Data subject has a right of access and correction with respect to personal data as provided for in sections 18 and 22 and principle 6 of Schedule 1 of the Personal Data (Privacy) Ordinance. Data subject's right of access includes the right to obtain a copy of his/her personal data provided by AP/RSE's submission.

#### Responsibility of AP/RSE

- (iv) AP/RSE should be responsible for disseminating of the above information to the relevant data subjects.