

## Stainless Steel Works

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

- (a) For welding of stainless steel works, welding procedures and welders should be assessed/tested as follows:
  - (i) welding procedure approval test in accordance with the appropriate provisions of British Standards BS EN ISO 15614-1:2004+A1:2008 and BS EN ISO 15614-8:2002 or equivalent.
  - (ii) welder qualification approval test in accordance with the appropriate provisions of BS EN 287-1:2011 or equivalent.
- (b) For welding of cold formed stainless steel sections, test should be carried out in accordance with Section 7 of BS EN 1993-1-4:2006 to verify that the execution of the structure will not reduce the mechanical properties below the values to be adopted.
- (c) Non-destructive testing of welds should be carried out as follows:
  - (i) 100% of the welded joints to undergo visual inspection in accordance with BS EN 970:1997 or BS EN ISO 17637:2011.
  - (ii) 5% of the welded joints to undergo dye penetrant test to BS EN 571-1:1997 or ultrasonic test to BS EN 1714:1998.
  - (iii) 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 HOKLAS for the particular test concerned. The test reports<sup>@</sup> shall be endorsed by Registered Structural Engineer and kept on site for inspection by representatives of the Buildings Department.
- (d) Limits for imperfection of welded joints should conform to quality level B as stipulated in BS EN ISO 5817:2007.

2. The following conditions in respect of qualified supervision of works are imposed under item 6 in section 17(1) of the Buildings Ordinance:

- (a) Qualified site supervision of the stainless steel works, including fabrication, erection and examination of the structural elements, by experienced and competent persons as defined in (b) and (c), should be provided to ensure that the works are carried out in accordance with the plans approved and that the required standards are complied with.
- (b) The Registered Structural Engineer 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 Registered Structural Engineer's stream, as stipulated in the Code of Practice for Site Supervision 2009.

- (c) The Registered General Building Contractor 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 under the Registered General Building Contractor's/Registered Specialist Contractor's stream, as stipulated in the Code of Practice for Site Supervision 2009.
- (d) The names and qualifications of the supervisory personnel representing the Registered Structural Engineer and the Registered General Building Contractor 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 on site for inspection by representatives of the Buildings Department.

3. Under Building (Administration) Regulation 10, a copy of mill certificates of the structural stainless steel used, is required to be submitted within 60 days of the delivery of the structural stainless steel to the site which should be appended with a statement signed by the Registered Structural Engineer to confirm that the requirements of chemical composition and mechanical properties appropriate to the grade of stainless steel have been complied with.

4. Where impact testing to BS EN 10045-1 is required to ascertain the impact toughness of the stainless steel, the following conditions are imposed under item 6 in section 17(1) of the Buildings Ordinance:

Testing should be carried out by a laboratory\* accredited under HOKLAS or by other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS for the particular test concerned. The test results<sup>@</sup> should be appended with a statement signed by the Registered Structural Engineer and submitted within 60 days of the delivery of the stainless steel to the site for confirmation of the following:

- (i) All structural stainless steel used for the construction and the test specimens covered by the test reports are in accordance with the grades of stainless steel shown in the approved plans.
- (ii) Testing of at least 3 samples of stainless steel used has been carried out in accordance with BS EN 10045-1.
- (iii) Testing of stainless steel has been carried out by a laboratory\* accredited under HOKLAS or by other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS.

5. Where tensile testing to BS EN 10002-1 and chemical analysis to CR 10261 are required to ascertain the yield strength, ductility and chemical compositions of the stainless steel, the following conditions are imposed under item 6 in section 17(1) of the Buildings Ordinance:

Testing should be carried out by a laboratory\* accredited under HOKLAS or by other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS for the particular test concerned. The test results<sup>@</sup> should be appended with a statement signed by the Registered Structural Engineer and submitted within 60 days of the delivery of the stainless steel to the site for confirmation of the followings:

- (i) All structural stainless steel used for the construction and the test specimens covered by the test reports are in accordance with the grades of stainless steel shown in the approved plans.
- (ii) Testing of at least 3 samples of stainless steel used has been carried out in accordance with BS EN 10002-1.
- (iii) Testing of stainless steel used has been carried out in accordance with the appropriate European standards given in CR 10261.
- (iv) Testing of stainless steel has been carried out by a laboratory\* accredited under HOKLAS or by other laboratory accreditation bodies which have reached mutual recognition agreements/arrangements with HOKLAS.

\* 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/>.

<sup>@</sup> 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.