

## 9 INSTALLATION

### 9.1 General

**9.1.1** This section is intended to cover all operations involved in the fixing of assemblies and components in their final location at the site.

9.1.1.1 The work should be installed in accordance with agreed method statement and drawings and the requirements of the contract documentation.

9.1.1.2 Methods used in the installation should be selected to achieve the specified appearance and performance. Methods used should be based upon the employment of suitable equipment and experienced operatives.

Method statements should contain control procedures to ensure compliance with the project requirements including programme, sequence of erection and co-ordination with other trades.

It is essential that the installer produces a quality plan in line with the principles and guidelines of Section Six of this document to demonstrate his capabilities and commitment.

9.1.1.3 Installation drawings and procedures should be supplied to the site installation team that are adequate for them to carry out the work.

The installation drawings and procedures should detail all the components used to construct the facade and clearly show:-

- Setting out and control points
- Cross reference to the identification of components (See clause 8.1.3)
- Details of isolation and packing.
- All points requiring sealant together with details of cleaning and, if required, priming procedures.
- Details of position, type and size of backing rods and bond-release tapes etc.
- All tolerances allowed both in location of units and relating to joints.
- All bolts requiring specific torques.
- Details of any glazing procedures including position of setting blocks, orientation of glass and any special requirements.
- Details of points which are susceptible to damage or should not be loaded during installation.

**9.1.2** The work should be installed to the figured dimensions indicated within agreed permissible deviations. These permissible deviations should be established at the design stage and be appropriate for the materials and methods employed such as to achieve the project requirements for appearance and fit. These requirements are outlined in the relevant CWCT Standard.

All non-conforming work should be recorded. Remedial proposals should be reviewed and agreed as soon as possible after the problem has been identified.

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**9.1.3** The position of all elements of the building structure which interface with or abut the facade should be checked as early as possible prior to the erection of the facades to verify their compliance with the project requirements. All discrepancies should be reported and agreed or rectified prior to erection of the facades.

**9.1.4** A section of the walling should be completed as early as possible in the programme to enable agreement of the acceptable standards for the remainder of the work.

### **9.2 Workmanship**

**9.2.1** No modification or adaption of the agreed details should be undertaken without prior agreement. All changes must be recorded for inclusion on the final drawings.

**9.2.2** The installer should employ competent, experienced facade erectors to carry out the works. The installer should maintain records to demonstrate his employees experience and all related training.

Installers registered with the CWCT have the necessary experience and competence. Individual installers should have current cards showing that they are trained for the system wall or custom wall being installed. This is detailed in 'Registration & Certification Scheme for Window & Curtain Walling Installers, CWCT'.

**9.2.3** Glazing should be carried out in accordance with the requirements of BS 6262 and the recommendations of the Glass and Glazing Federation.

**9.2.4** Sealants should be applied to clean surfaces, primed as necessary, in accordance with the manufacturers recommendation and procedures agreed following adhesion and application tests. Conditions of application should be conducive to producing satisfactory results and avoid inducing undue stress in uncured material.

It is recommended that the sealant manufacturer reviews the application of his materials. (See clause 7.4.5).

**9.2.5** Fixings should be installed in accordance with the manufacturers recommendations and agreed procedures, where necessary following site trials and tests.

Specific areas for checking are:

- Use of proprietary fixings.
- Embedment, spacing and edge distances.
- Torque levels.
- Locking washers or nuts and engagement of serrations etc.
- Isolation of dissimilar metals and of mill finish aluminium from cementitious material.

### **9.3 Inspection and Testing**

**9.3.1** Inspections should be undertaken of the elements of the facade in accordance with the agreed quality control procedures. The quality control procedures should include the agreed inspection methods and any test requirements. Items not accessible on completion of the work should be inspected at logical stages.

### 9.3.2 Site Testing

Representative samples of the finished installation should be tested in accordance with the relevant CWCT Standard. Selected areas should be tested using the method given in Section 7 of *Test methods for curtain walling*. These areas should be selected to evaluate the quality and consistency of the workmanship particularly in non standard details and difficult to execute areas.

It is strongly recommended that testing starts as early as possible after installation commences, as any necessary remedial measures may become increasingly difficult to implement as installation progresses.

### 9.4 Protection and Cleaning

**9.4.1** Protection applied at the fabrication stage should not be removed unless necessary for installation.

**9.4.2** Protection for following trades or operations should provide specific protection from the anticipated hazards. It should be noted that cementitious deposits, hot metallic spatter and chemical cleaning solutions can damage curtain walling materials, eg glass, polyester powder, PVDF and anodised coatings.

Final extent and type of protection and allocation of responsibilities should be agreed by the participating parties and included in the finalised conditions of contract.

**9.4.3** Removal of protection and cleaning of the facade should be carried out on completion of the works, unless otherwise agreed.

