

1. Introduction

Windows are major components of buildings. A recent survey conducted by BCA on private residential buildings showed that water seepage through windows is a common building defect which is unacceptable to owners. In addition, CONQUAS assessment data on *Window Watertightness Test* show that even newly completed buildings have a small but significant rate of water seepage. Beside water seepage defects, CONQUAS results also show that, poor jointing and material/ component damages are major defect areas for windows.

In general, a window is designed to:

- provide view;
- admit light;
- allow for natural ventilation; and
- give a pleasing façade.

Window design and installation should also cut down noise transmission, reduce solar heat gain, keep out rainwater and provide security to the occupants.

Window can be fabricated from a variety of materials, for example, timber, plastic, metal, etc. It is a system and comprises various components as follows (Figure 1.1):

- head;
- jamb;
- sill;
- sash;
- mullion;
- transom; and
- accessories

Due to volume constraint, this guidebook focuses on aluminium frame windows which are commonly used in the local industry, with emphasis on enhancing watertightness performance and minimizing physical defects of the windows.

For more information on the safety aspects on installation and maintenance of windows, please refer to the specific requirements for the installation and retrofitting works relating to windows prescribed in the Building Control Regulations. The Fifth Schedule of the Building Control Regulations specifies the performance-based requirements on the design of windows. The acceptable solution is based on compliance to SS 212 Specification for Aluminium Alloy Windows. In addition, only trained and approved contractors registered in BCA Contractors Registry under the regulatory workhead RW01 can carry out installation and retrofitting of windows.

Figure 1.1: Components of window

