5.4.4 APPLICATION OF SEALER

Subsequent to the completion of plastering works or skim coating, it is recommended to apply a water repelling sealer, either film forming or impregnating in nature, over the external wall before commencing painting works. In particular, water-based impregnating sealers can form a hydrophobic zone which protects the substrate against water ingress. Prior to application of the sealer, the receiving surface should be dry, clean and free from dust, dirt, grease and any loose foreign matter. Refer to manufacturer's instructions on the selection and usage of the sealer.

Figure 5.27: Application of sealer prior to painting works

6. Testing

6.1. WATERTIGHTNESS TESTS

External Wall Panels

To verify the watertightness performance of the completed external walls, field watertightness test could be carried out on minimum 10% of the external walls. The conduct of field watertightness test is especially critical for external brickwalls where waterproofing performance is highly workmanship-dependent.

For conduct of the watertightness test, water should be sprayed on the wall surface at a distance of 1800 – 2000 mm from the wall, with the nozzle fixed at an inclined angle of 30 degree to the external wall. 300 litres of water should be delivered to the test wall panel for 2 hours.

The test wall panel is considered to have passed the test if no dampness or seepage appears on the internal surface of the wall panel or the adjacent areas during the test and within half an hour after the completion of test.

Joints Between External Wall and Window Frame

Field tests should be conducted to verify the watertightness performance of the joints between the external wall and window frame.

The following parameters are used in the CONQUAS 21 field watertightness test:

Water intensity	: 300mm/hr : 1 litre/min/m of joint
Wind Pressure	: 240 Pa
Nozzle inclination	: 90° to wall
Distance of nozzle from wall	: 200mm
Sample	: 1 sample = 2m length of joint
Spray duration	: 10mins

Figure 6.1: Conduct of field watertightness test for joints between external wall and window frame

No sign of seepage should be detected throughout the test.

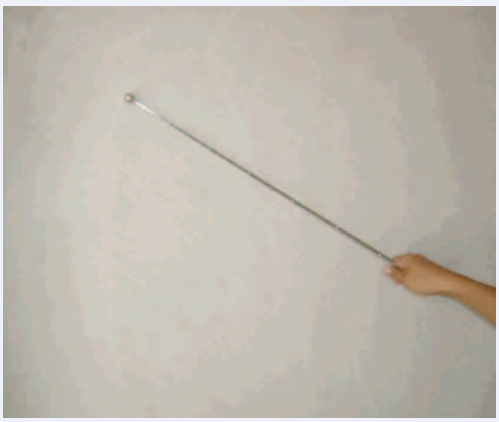
6.2 TESTS FOR RENDERED SURFACES

The following tests could be conducted after the completion of external finishing work:

6.2.1 TAP TEST

Tap all wall surfaces after installation of final coat to identify any hollow areas. All hollow areas should be remedied accordingly.

Figure 6.2: Tap test to detect hollow areas



6.2.2 ADHESION TEST

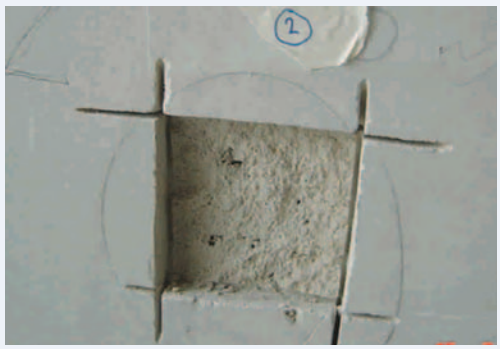
Conduct pull-out tests on plaster applied to concrete surfaces within 21-28 days after plastering. For each test, 5 spots are to be randomly selected. Details of the adhesion test are as follows:

- Size of test sample:
  - 75mm x 75mm
- Passing criteria:
  - Average tensile pull out strength of the five spots ≥ 0.40 N/mm^2; and
  - Individual pull-out strength of each sample ≥ 0.30 N/mm^2.

Figure 6.3: Test for plaster surface

1. Mount test plate onto plaster

2. Conduct pull-out test



3. Test area to be patched back

testing