

# installation and testing of top fixings for suspended ceilings

## Specified fixing to be installed in accordance with manufacturer's instructions

Fixings should be installed by competent installers who have been trained in the particular method needed for the fixing concerned - using the correct tools and strictly in accordance with the manufacturer's instructions.

Key aspects are:

- Drill holes to correct diameter and depth
- Clean holes strictly in accordance with the manufacturer's instructions
- Set in accordance with the manufacturer's setting instructions using the correct tools.

Hole dimensions can be critical.

Drill bits should be used in accordance with the manufacturer's instructions.

This guidance recommends that drill bits bear the PGM mark, which gives assurance that the drill bit has been manufactured to agreed tolerances

[www.pgm-online.org](http://www.pgm-online.org)

Hole diameter must be correct to ensure the fixing provides the expected performance. Hole depths in particular must be specified carefully in drawings or on method statements as this affects not only the capacity of the fixing but the ability of fixings using bolts to engage properly.

Follow the manufacturer's instructions. For many fixings the hole depth is governed by the required embedment depth.

## Sample of fixings in each room to be proof tested, and the results to be recorded and filed in the O&M manual

Proof tests are needed to check the quality of the installation.

Fixings shall be tested to a load of 1.5 times the applied working load. The pass criterion is that no significant movement of the fixing is apparent - a visual check is sufficient. A minimum of three fixings should be tested and at least 5% (one in 20), chosen at random and spread evenly.

The minimum number (three) applies to every area where:

- a** different fixings may have been used
- b** the base material is different
- c** a different team of installers has worked.

The failure of a fixing in proof testing is a serious issue and requires investigation and an increase in testing rate.

- One failure - double the test rate to one in 10 and a minimum of six
- More than one failure - test 100% of the job, review the fixing specification and installation method. Tests should be carried out by a suitably competent person(s) (other than the actual installer of the fixings tested).

For test loads over 0.25kN tests can be done using a test meter for test loads up to 0.25kN (light weight ceilings <math><10\text{kg/m}^2</math>) by the use of a simple spring balance.

Test results should be formally recorded and retained with documentation relating to the project.

See Factsheet 5 of 5 for a site register.

### Typical test rig arrangements

