

### Anchor Pull Test of Membrane Fixing Plugs

Delta Plugs and Delta Ultra Fix Plugs are specially designed to provide a fixing point for the Delta MS 500, Delta MS 500 Fire Retardant, PT, PT 3mm, and Delta AT 800 membranes.

BS 5080-1:1993 - Structural fixings in concrete and masonry – Part 1: Method of test for tensile loading, describes a method for testing fixings, such as expanding anchors installed in solid materials either on site or for comparative purposes in a standard material. Measurements of force and movement should be recorded when tension is applied.

Pull tests should be undertaken before any membrane installation.

The purpose of pull testing is to ensure the correct installation of membrane fixings, confirming they adhere to specific design calculations and requirements, and guarantee safety on site.

In accordance with BS 5080-1:1993 membrane fixing plugs should be tested on all elements of the substrate(s) (masonry, stone, block, concrete, etc) where membranes are to be installed. A variety of substrates and locations should be tested. Substrate(s) and test location(s) should be site specific, with a selection of plugs tested in each substrate/location.

Pull testing involves attaching a suitable test rig to the membrane fixing plug. This is then put under tension to the designed stress load level to determine how strong and secure the fixing is.

Hydrajaws' range of portable pull testers enables pull tests on a wide range of fasteners, fixings, safety-critical anchors, and lifeline systems to verify their installation.

Delta Fixing Plugs/Delta Ultra Fix Plugs should be fixed to substrates where membranes are to be installed. Installation of the Delta Fixing Plug(s)/ Delta Ultra Fix Plugs should be installed to manufacturers recommendations.

Axial tensile force should be applied at a steady and continuous motion, until the required proof of load is achieved. Successful installation of a Delta Fixing Plug/Delta Ultra Fix Plug should hold for a period of over 1 minute with no visual signs of distress, movement or loss of pressure recorded.

Once Delta Fixing Plugs/Delta Ultra Fix Plugs are tested, pressure should be carefully released, and the test apparatus removed. Where visual signs of distress, movement or loss of pressure be recorded it is recommended to install Delta Fixing Plugs/Delta Ultra Fix Plugs with Delta Fix Adhesive. Where no visual signs of distress, movement or loss of pressure are recorded, membranes can be fixed to manufacturers recommendations.

