

The Pull-Off Adhesion Series

2. Selecting the Dolly Diameter and Gauge

When testing coating adhesion using a pull-off adhesion gauge, there are a range of dolly sizes and gauge types to choose from - and your application will affect the dolly or gauge you choose.

Whilst a 20mm diameter dolly is most commonly used to test coating adhesion on most substrates, there are different sized dollies for different applications.

When the adhesive value of a coating is expected to be very high, use a smaller sized dolly, as the smaller the diameter, the higher the achievable tensile force – and vice-versa.

So 50mm dollies, for example, are designed for testing coatings on concrete or if the adhesion is expected to be very low.

14.2 and 10mm dollies, on the other hand, are typically used for testing small areas, curved surfaces, or when the adhesive value of the coating is expected to be very high.

There are a number of pull-off adhesion gauge design types. These include:

- mechanical gauges such as the Elcometer 106;
- hydraulic push off gauges such as the Elcometer 108 and 508;
- And hydraulic pull-off gauges, such as the manual Elcometer 506, and the automatic Elcometer 510 – which are available with various dolly skirts for the different dolly sizes or substrate thicknesses.

International Standards typically state that you cannot compare the pull values from different gauge models. By their very design, each model variant will give slightly different pull-off values depending on the failure mode of the coating. It is therefore important to not only use the same gauge model for all tests, but also to record the gauge model and type used, along with the dolly size.

This video is part of a series on pull-off adhesion testing. Click on any one of the titles on-screen to watch another video in the series.

For more information and training on the pull-off adhesion method, or Elcometer's range of pull-off adhesion testers, visit our website.