The Pull-Off Adhesion Series

3. Selecting the Most Appropriate Position for an Adhesion Test

When preparing a pull-off adhesion test, it's important to select an appropriate position on the substrate to adhere the dolly to, as poor positioning can result in low pull-off values or invalid tests.

Whilst the actual location and the number of pulls is typically defined by the test method or procedure you're working to, the actual positioning of the dolly or pull stub is determined by 2 things - the size of the dolly attachment actuator or gauge, and the flatness of the surface.

The clearance of the gauge or actuator head and its proximity to edges, cut outs, weld seams, or steps all need to be considered.

The flatness of the surface is critical. Test standards require that the dolly is pulled off perpendicularly to the test surface – a uniform, tensile pull.

If the dolly is adhered on a ridge or bump, as opposed to a clean flat surface, when the gauge tries to pull the dolly off the surface, the moment of fracture pivots around the ridge or bump, tearing the dolly off, and not pulling perpendicularly to the surface - leading to an inaccurate test.

It is essential to position the dolly on a flat surface, located away from any bumps, seams or edges, and have sufficient space around it for the gauge or actuator to be attached for a uniform, perpendicular pull.

In almost all cases adhesion tests are destructive, and as repairs to a coating are not typically covered by a coating manufacturer's warranty; test panels which have been prepared and coated in the same way, and at the same time as the structure, could be used to test the adhesion instead of the structure itself – thereby avoiding damage to the structure.

Appropriate approvals should be sought from the client and/or contractor before any testing takes place on these panels.

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