

## Adhesion Tester

The Adhesion Tester is one of the most accurate and versatile adhesion testers currently available. It measures the adhesion bond strength of applied coatings with ease and precision.



The adhesion is measured by the tensile pull on a Dolly glued to the coating surface. The force is applied through the centre of the Dolly by a hydraulically loaded pin. This ensures an exactly central point-loading of the force.

The maximum value achieved at pull-off is recorded by a reset needle that is easily read on the large scale of the pressure gauge.

Ensures effective quality control with a non-destructive capability. To allow the specification minimum to be proven, the dolly can be removed using the heated dolly remover supplied. If necessary, the dolly can be left in place for testing during service as part of a planned maintenance programme.

### Specification

Pressure Gauge resolution: psi 20, Mpa 0.2. Accuracy:  $\pm 1\%$ FSD

### Test Standards

ISO 4624 and ISO 16276-1 and ASTM D4541

The Right-Angle version of the Adhesion Tester enables the user to test the adhesion of coatings inside pipes with a minimum diameter of 150mm (6").



### Ascott Analytical Equipment Limited

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### Convex Dollies

The Adhesion Tester can test internal surfaces of pipes. Because the load reacts internally within the dolly, curved surfaces of pipes can be easily tested.

To obtain a uniform tensile load, Concave Dollies machined to match the diameter under test need to be used. Internal diameters as small as 152mm (6") can be tested.



### Ordering

T01-01022	Convex Dolly 6" (152mm)
T01-01023	Convex Dolly 8" (203mm)
T01-01024	Convex Dolly 10" (254mm)
T01-01025	Convex Dolly 12" (305mm)
T01-01026	Convex Dolly 14" (356mm)
T01-01027	Convex Dolly 16" (406mm)
T01-01028	Convex Dolly 18" (457mm)
T01-01029	Convex Dolly 20" (508mm)
T01-01030	Convex Dolly 24" (610mm)
T01-01031	Convex Dolly 30" (762mm)
T01-01032	Convex Dolly 36" (914mm)

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Supplied in an industrial foam filled Carrying Case  
with 5 Flat Dollies, Adhesive, Heated Dolly Remover, Dolly Cleaning Tool and Dolly Plug



### Ordering

T01-01000	Analogue Adhesion Tester (Standard) 0–3500psi (0–25MPa)
T01-01005	Analogue Adhesion Tester (Right angle) 0–3500psi (0–25MPa)
T01-01033	Spare Flat Dolly
T01-01034	Spare Turbo Fuse Adhesive
T01-01035	Spare Dolly Plug (pack of 5)

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### Concave Dollies

The Adhesion Tester can test external surfaces of pipes. Because the load reacts internally within the dolly, curved surfaces of pipes can be easily tested.

To obtain a uniform tensile load, Concave Dollies machined to match the diameter under test need to be used. External diameters as small as 51mm (2") can be tested.



### Ordering

T01-01008	Concave Dolly 2" (51mm)	T01-01019	Concave Dolly 24" (610mm)
T01-01009	Concave Dolly 3" (76mm)	T01-01020	Concave Dolly 30" (762mm)
T01-01010	Concave Dolly 4" (102mm)	T01-01021	Concave Dolly 36" (914mm)
T01-01011	Concave Dolly 6" (152mm)		
T01-01012	Concave Dolly 8" (203mm)		
T01-01013	Concave Dolly 10" (254mm)		
T01-01014	Concave Dolly 12" (305mm)		
T01-01015	Concave Dolly 14" (356mm)		
T01-01016	Concave Dolly 16" (406mm)		
T01-01017	Concave Dolly 18" (457mm)		
T01-01018	Concave Dolly 20" (508mm)		

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## Instructions

### Dolly Attachment

To reduce the likelihood of adhesive failure, abrade the face of the Dolly and the surface of the protective coating with fine emery paper.  
Clean the surface of the Dolly and protective coating. The cleaning process should include thorough degreasing.

Check that no adhesive has been left in the dolly hole by trial fitting the Dolly Plug.

Insert the Dolly Plug into the Dolly until the tip protrudes from the surface. Apply the Adhesive thinly and evenly to the whole end surface of the Dolly in sufficient quantity to ensure a good bond to the protective coating. Ensure that no Adhesive is on the Plastic Plug.

Press the Dolly onto the surface using thumb pressure for approximately 10 seconds and then remove the Dolly Plug. Do not twist the dolly as this could introduce air bubbles. Allow the adhesive to dry for approximately 15 minutes.

If you are testing a pipe using curved Dollies, ensure that the aligning mark is lined up with the longitudinal axis of the pipe.

### Measurement

Connect the Adhesion Tester to the Dolly by pulling back the coupling socket, pushing the head and releasing the coupling. Ensure the Adhesion Tester is held so that the rubber hose is straight.

To pressurise the Adhesion Tester, turn the handle clockwise at a uniform rate, not greater than 1MPa/s. To decrease the pressure, turn anticlockwise at a uniform rate. Set the red needle to zero before pressurising.

To destructively test the coating, increase the pressure slowly until the Dolly pulls off.

To non-destructively test the coating, increase the pressure slowly until the specified minimum value has been reached – you can then decrease the pressure to zero and remove the head.

The Dolly can be removed by using the heated Dolly remover. The pressure is recorded from the red needle.

### Information

Prior to testing, a recently applied coating shall be dried/cured in accordance with the manufacturer's recommendations. In the absence of manufacturer's recommendations, the coating should be dried/cured for at least 10 days.

Pull-off tests are destructive test methods. Repair work will be necessary when they are used on coated structures. To avoid damage to the coated structure, test panels can be used.

The cyanoacrylate Adhesive should not be used with thermoplastic, non-convertible paint systems due to chemical reactions that could affect adhesion results. These paint systems include cellulose, vinyls, chlorinated rubbers and some acrylics. For these paint systems a two-pack epoxy adhesive should be used.

### Dolly Cleaning

After use, clean the Dolly with the Dolly Remover. A duration of 3–5 minutes per Dolly should normally be sufficient to degrade the adhesive, which can then be scraped off.

Ensure the work area is well ventilated.

The hole can be cleaned using the Dolly Cleaning Tool.

### Care and Maintenance

Always store the Adhesion Tester with a Dolly fitted to the head. This will prevent any damage to the pin.

Do not hold the Adhesion Tester under pressure for longer than is required.

If the Adhesion Tester is not used on a regular basis, you will need to pressurise once a month to 2500psi, then immediately release the pressure. This will ensure that the seals are kept working to their maximum potential. Always pressurise with the Dolly fitted.



When using the cyanoacrylate Adhesive – ensure the work area is well ventilated, wear gloves and do not let any Adhesive come into contact with your skin.

When using the Dolly Remover – do not touch the elements or heads after switching on. Allow approximately 15 minutes for the elements and heads to cool to ambient temperature after switching off.