

Elcometer 1910 PAT™ Handy Adhesion Tester



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This light weight, portable, hydraulic adhesion tester has built in hydraulic safety devices for smooth and drift proof accuracy.

The special test head allows adhesion tests on both internal and external curved surfaces, making this an ideal gauge for pipelines and protective coatings applications.

Elcometer 1910 PAT™ Handy Adhesion Tester

At a glance

- *Light-weight, portable hydraulic adhesion tester.*
- *Ideal for adhesion tests on pipelines.*
- *Perform tests on internal & external curved surfaces.*

Can be used in accordance with:	
ASTM D 4541	EN 24624
ISO 4624	

Maximum Pull Force	6.3 kN	Weight of Tester	1250g (45oz)
Accuracy	±1% of full scale	Case Dimensions	340 x 270 x 80mm (12 x 8 x 3")

Adhesion

From the largest man-made structures to the smallest household appliances, most manufactured products have a protective or cosmetic coating. Premature failure of this coating can, at the very least, result in costly penalties or rework.

Adhesion testing during the coating process will quantify the strength of the bond between substrate and coating, or between different coating layers or the cohesive strength of some substrates. Routine testing is also used as part of inspection and maintenance procedures to help detect potential coating failures.

Elcometer offer a highly comprehensive range of Adhesion Gauges designed specifically to meet your requirements. These gauges can be split into three categories:

Cross Hatch / Cross Cut Method

The coating is cut into small squares, thereby reducing lateral bonding, and the adhesion assessed against ISO, ASTM or Corporate Standards

Pull Off Adhesion Method

Tensile Dollies (or stubs) are glued to the coating and, once the adhesive has cured, the force required to pull the dolly off the surface is measured.

Push Off Adhesion Method

Similar to the Pull Off Adhesion Test, a dolly is glued to the coating, once the adhesive has cured, however, the dolly is pushed off the surface by the adhesion gauge.

The Elcometer 1910 is supplied complete with a Calibration Certificate and:

- Crank handle driven pull mechanism
- PAT™ Testing Head 6.3kN (1416lbf)
- 5 Test Elements – 20mm (0.79”) Diameter
- HSS Cutting Tool for 20mm (0.79”) Diameter Test Elements
- Hydraulic Cable
- Carry Case with Protective Interior

HOW TO SELECT THE CORRECT ADHESION GAUGE

Cross Hatch Cutters

Advantages:

A fast, low cost, comparison method – see table below

Possible Limitations:

A subjective test for flat surfaces for a limited thickness range.

Applications:

Paint and powder coating adhesion up to a thickness of 125µm (5 mils).

Model	Description	Part Number
Elcometer 1910	Elcometer 1910 PAT™ Handy Adhesion Gauge	K0001910M001

For an easy Elcometer PAT™ Range Selection Guide and for a complete range of Test Elements - See the Elcometer 1970 PFCV Data Sheet below

ELCOMETER PAT™ RANGE SELECTION GUIDE AND TEST ELEMENTS						
Element Number	Test Element Diameter		Range		Range Values valid for the following models	Part Number
	mm	inches	MPa	PSI		
TE001	2.3	0.09	160	23200	Elcometer 1930	KT001910P001
TE002	4	0.16	80	11600	Elcometer 1930	KT001910P002
TE003	5.7	0.22	40	5800	Elcometer 1930	KT001910P003
TE004	8.16	0.32	120	17400	Elcometer 1910, 1920/1, 1940	KT001910P004
TE005	14.1	0.55	40	5800	Elcometer 1910, 1920/1, 1940	KT001910P005
TE006	20	0.79	20	2900	Elcometer 1910, 1920/1, 1940	KT001910P006
TE007	25	0.98	40	5800	Elcometer 1920/2, 1941/1	KT001910P007
TE008	25	0.98	80	11600	Elcometer 1920/3, 1941/2	KT001910P008
TE009	25	0.98	160	23200	Elcometer 1920/4	KT001910P009
TE010	28.2	1.11	10	1450	Elcometer 1910, 1920/1, 1940	KT001910P010
TE011	40	1.57	5	725	Elcometer 1910, 1920/1, 1940	KT001910P011
TE012	50	2.0	3.2	460	Elcometer 1920/1, 1940	KT001910P012
TE013	50	2.0	10	1450	Elcometer 1920/2, 1941/1	KT001910P013
TE014	50	2.0	20	2900	Elcometer 1920/3, 1941/2	KT001910P014
TE015	50	2.0	40	7200	Elcometer 1920/4	KT001910P015
TE016	50 x 50	2.0 x 2.0	7.85	1140	Elcometer 1920/2, 1941/1	KT001910P016
TE017	50 x 50	2.0 x 2.0	15.7	2270	Elcometer 1920/3, 1941/2	KT001910P017
TE018	70.7	2.78	5	725	Elcometer 1920/2, 1941/1	KT001910P018
TE019	70.7	2.78	10	1450	Elcometer 1920/3, 1941/2	KT001910P019
TE020	70.7	2.78	20	2900	Elcometer 1920/4	KT001910P020

Pull Off Adhesion Testers

Advantages:

Simple to use, quantitative range – giving you a definitive adhesion value

Possible Limitations:

Time required for adhesive to cure

Applications:

Ideal gauge for the laboratory or field – flat or curved substrate applications

Push Off Adhesion Testers

Advantages:

Fast cure time adhesives can be used, ideal for curved surfaces

Possible Limitations:

High forces exerted by gauge may cause thin substrates to deform

Applications:

Pipelines and metal spray coatings.

Related products



Elcometer 1920

This automatic adhesion tester is designed for measuring the bond strength of all types of paints, thermal sprayed coatings, thin films, concrete coatings and much, much more, on any shaped substrate. A dolly is adhered to the surface and once the test head is connected, a tensile force is applied. The rate of application can be adjusted by the User.



Elcometer 1940

The most popular in the Elcometer PAT™ tester range, a manual hydraulic tensile adhesion tester for measuring the bond strength of all types of paints, thermal sprayed coatings, thin films, concrete coatings, ceramics, etc. A portable, precision gauge with both MPa and PSI readings which gives accurate and comparable test results both in the laboratory and on site.



Elcometer 1941

A 20 or 40kN manual hydraulic tensile adhesion tester for testing of coatings (including thermal sprayed coatings), on test panels, sprayed components. Designed for testing with 50mm (2") diameter test elements and with the square 50 x 50mm (2 x 2") test element for adhesion testing of tile adhesives and other cementitious materials.



Elcometer 1930

This automatic tester has been designed specifically for testing in confined areas, particularly on small components of irregular and awkward shape, and with very low pull force.



Elcometer 110

The Elcometer 110 Patti® is a portable pneumatic adhesion tester which uses compressed gas from either a canister or the compressed air feed. Due to the controlled force being applied, the resultant adhesion value is highly repeatable. This, together with the gauge's suitability on thin substrates provides the User with an ideal testing instrument in the laboratory or the field.



Elcometer 106

Perhaps the best known adhesion gauge on the market today. The Elcometer 106 adhesion tester is easy to operate and fully portable, providing a numerical value for adhesion. Supplied in a rugged carry case for moving around the jobsite, the unit is hand operated so you don't have to worry about a power supply!



Elcometer 108

An extremely versatile hydraulic adhesion tester which will cope with many adhesion test requirements. Test can be made on flat or curved (concave and convex) surfaces. A reusable dolly is adhered to the coating's surface and the force required to push the dolly from the surface is applied using the handle. The value of the force applied is displayed either on a digital display or on an analogue dial.



Elcometer 107

The coating may be continuous and look good, but how well is it connected to the substrate? The Elcometer 107 cross hatch cutter provides an instant assessment of the quality of the bond to the substrate. Due to its rugged construction this gauge is ideal for thin, thick or tough coatings on flat or curved surfaces. An ideal field or laboratory test.

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