

# Elcometer 1940/1941 PAT™ Adhesion Testers



Elcometer 1940/1941 PAT™ Adhesion Testers

**At a glance:**

Portable and simple to use

Produces comparable test results in the laboratory and on site

Precision gauge with both MPa (N/mm<sup>2</sup>) and psi readings

This portable range of hydraulic adhesion testers provides users with the ability to measure the bond strength of coatings on a wide range of substrates. With the unique testing head design, each gauge ensures a perpendicular (90°) pull irrespective of the surface contours or orientation.

Each gauge has the ability to test adhesion up to a force of 40kN (8992lbf). Adhesion ranges of up to 120MPa (17400psi) can be achieved depending on the test head / dolly diameter combination chosen. Each test head is fully interchangeable with the base unit.

Can be used in accordance with:	
ASTM D 4541	ASTM D 7234
BS 1881-20	DIN 1048
EN 1348	EN 1542
EN 12636	EN 13144
EN 24624	ISO 4324
ISO 16276-1	NF T30-062
NF T30-606	

TECHNICAL SPECIFICATION	
<b>Maximum Certified Pull Force</b>	6.3kN Test Head: 6.3kN 20kN Test Head: 17kN 40kN Test Head: 34kN
<b>Accuracy</b>	±1% of full scale
<b>Weight of Tester</b>	1250g (45oz)
<b>Case Dimensions</b>	400 x 300 x 170mm (15.7 x 11.8 x 6.7")
<b>Part Number</b>	<p><b>K0001940M001</b> Elcometer 1940 PAT™ Adhesion Tester with 6.3kN (1416lbf) Test Head</p> <p><b>K0001941M001</b> Elcometer 1941 PAT™ Adhesion Tester with 20kN (4496lbf) Test Head</p> <p><b>K0001941M002</b> Elcometer 1941 PAT™ Adhesion Tester with 40kN (8992lbf) Test Head</p>
<b>Packing List</b>	<p><b>K0001940M001:</b> Elcometer 1940 PAT™ Adhesion Tester, 6.3kN (1416lbf) test head, 5 x 20mm (0.79") dollies, cutting tool, heating element, hydraulic cable and operating instructions</p> <p><b>K0001941M001:</b> Elcometer 1941 PAT™ Adhesion Tester, 20kN (4496lbf) test head, adaptor for 50mm(2"), 70mm (2.76") and 50x50mm (2x2") dollies, large support for 50mm(2"), 70mm (2.76") and 50x50mm (2x2") dollies, cutting tool, hydraulic cable and operating instructions</p> <p><b>K0001941M002:</b> Elcometer 1941 PAT™ Adhesion Tester, 40kN (8992lbf) test head, adaptor for 50mm(2"), 70mm (2.76") and 50x50mm (2x2") dollies, large support for 50mm(2"), 70mm (2.76") and 50x50mm (2x2") dollies, cutting tool, hydraulic cable and operating instructions</p>

**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.

6.3kN (1416lbf) TEST HEAD ACCESSORIES							
Part Number		Dolly Diameter		Range		Part Number	
Pack of 10 Dollies	Pack of 100 Dollies	mm	inches	MPa	psi	Adaptor	Support Ring
KT001910P004	KT001910P204	8.2	0.32	0 – 120	0 – 17400	KT001910P401 <sup>a</sup>	KT001910P108 <sup>b</sup>
KT001910P005	KT001910P205	14.2	0.56	0 – 40	0 – 5800		KT001910P109 <sup>b</sup>
KT001910P006	KT001910P206	20	0.79	0 – 20	0 – 2900		KT001910P110 <sup>b</sup>
KT001910P010	KT001910P210	28.2	1.11	0 – 10	0 – 1450		KT001910P111 <sup>b</sup>
KT001910P012	KT001910P212	50	2	0 – 3.2	0 – 460	KT001910P406 <sup>a</sup>	KT001910P101 <sup>a1</sup> or KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P018	KT001910P218	70	2.76	0 – 5	0 – 725	KT001910P406 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 7.85	0 – 1140	KT001910P406 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>

20kN (4496lbf) TEST HEAD ACCESSORIES							
Part Number		Dolly Diameter		Range		Part Number	
Pack of 10 Dollies	Pack of 100 Dollies	mm	inches	MPa	psi	Adaptor	Support Ring
KT001910P007	KT001910P207	25	0.98	0 – 40	0 – 5800	KT001910P407 <sup>a</sup>	-
KT001910P012	KT001910P212	50	2	0 – 10	0 – 1450	KT001910P406 <sup>a</sup>	KT001910P101 <sup>a1</sup> or KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P018	KT001910P218	70	2.76	0 – 5	0 – 725	KT001910P408 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 7.85	0 – 1140	KT001910P408 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>

40kN (8992lbf) TEST HEAD ACCESSORIES							
Part Number		Dolly Diameter		Range		Part Number	
Pack of 10 Dollies	Pack of 100 Dollies	mm	inches	MPa	psi	Adaptor	Support Ring
KT001910P007	KT001910P207	25	0.98	0 – 40	0 – 5800	-	-
KT001910P012	KT001910P212	50	2	0 – 10	0 – 1450	KT001910P409 <sup>a</sup>	KT001910P101 <sup>a1</sup> or KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P018	KT001910P218	70	2.76	0 – 5	0 – 725	KT001910P409 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 7.85	0 – 1140	KT001910P409 <sup>a</sup>	KT001910P102 <sup>a2</sup> or KT001910P123 <sup>a3</sup>

<sup>a</sup> Must be ordered for use with the specified test head / dolly combination  
<sup>b</sup> Optional accessory for use with the specified test head / dolly combination  
<sup>1</sup> Standard Support Ring: 50mm (1.97")  
<sup>2</sup> Large Support Ring: 70mm (2.76")  
<sup>3</sup> Adjustable Support Ring

## Spares & Accessories

Part Number	Description
KT001910P501	Testing Head: 6.3kN (1416lbf)
KT001910P502	Testing Head: 20kN (4496lbf)
KT001910P503	Testing Head: 40kN (8992lbf)
KT001910P116	Cutting Tool for 8.2mm (0.32") Diameter Dollies
KT001910P117	Cutting Tool for 14.2mm (0.56") Diameter Dollies
KT001910P118	Cutting Tool for 20mm (0.79") Diameter Dollies
KT001910P119	Cutting Tool for 25mm (0.98") Diameter Dollies
KT001910P120	Cutting Tool for 28.2mm (1.11") Diameter Dollies
KT001910P122	Cutting Tool for 50mm (2") Diameter Dollies

## Related Products



Elcometer 106

### Elcometer 106 Pull-Off Adhesion Tester:

Easy to operate and fully portable instrument which provides a numerical value for adhesion. Applications include paint or plasma spray on bridge decking, coatings on steel, aluminium, concrete, etc.



Elcometer 108

### Elcometer 108 Hydraulic Adhesion Tester:

Available with an analogue dial or as a digital gauge, the Elcometer 108 is an extremely versatile gauge which can be used for many adhesion requirements. Tests can be undertaken on flat or curved – concave or convex – surfaces.



Elcometer 110

### Elcometer 110 PATTI® Adhesion Tester:

A portable pneumatic adhesion tester which uses compressed air from either a canister or the compressed air feed.

### ENGLAND

Elcometer Ltd  
Edge Lane  
Manchester M43 6BU

Tel: +44 (0)161 371 6000  
Fax: +44 (0)161 371 6010  
e-mail: sales@elcometer.com  
www.elcometer.com

### USA

Elcometer Inc  
1893 Rochester Industrial Drive  
Rochester Hills Michigan 48309

Tel: +1 248 650 0500  
Toll Free: 800 521 0635  
Fax: +1 248 650 0501  
e-mail: inc@elcometer.com  
www.elcometer.com

### CANADA

Elcometer Ltd  
PO Box 622, 401 Ouelette Avenue  
Windsor, Ontario N9A 6N4

Tel: +1 248 650 0500  
Toll Free: 800 521 0635  
Fax: +1 248 650 0501  
e-mail: ca\_info@elcometer.com  
www.elcometer.com

### ASIA & THE FAR EAST

Elcometer (Asia) Pte Ltd  
896 Dunearn Rd  
Sime Darby Centre #3-09  
Singapore 589472,  
Republic of Singapore

Tel: +65 6462 2822  
Fax: +65 6462 2860  
e-mail: asia@elcometer.com  
www.elcometer.com

### BELGIUM

Elcometer SA  
Rue Vallée 13  
B-4681 Hermalle /s Argenteau

Tel: +32 (0)4 379 96 10  
Fax: +32 (0)4 374 06 03  
e-mail: be\_info@elcometer.be  
www.elcometer.be

### FRANCE

Elcometer Sarl  
97 Route de Chécy  
45430 BOU

Tel: +33 (0)2 38 86 33 44  
Fax: +33 (0)2 38 91 37 66  
e-mail: fr\_info@elcometer.fr  
www.elcometer.fr

### GERMANY

Elcometer Instruments GmbH  
Ulmer Strasse 68  
D-73431 Aalen

Tel: +49 (0)7361 52806 0  
Fax: +49 (0)7361 52806 77  
e-mail: de\_info@elcometer.de  
www.elcometer.de