

Elcometer 1940/1941 PAT™ Adhesion Testers



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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 1881-207 DIN 1048-2
- EN 1348 EN 1542
- EN 12636 EN 13144
- EN 24624 ISO 4624
- ISO 16276-1 JIS K 5600-5-7
- NF T30-062 NF T30-606

Standards in grey have been superseded but are still recognised in some industries.

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.

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

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 – 17300	KT001910P401 ^a	KT001910P108 ^b
KT001910P005	KT001910P205	14.2	0.56	0 – 40	0 – 5800		KT001910P109 ^b
KT001910P006	KT001910P206	20	0.79	0 – 20	0 – 2900		KT001910P110 ^b
KT001910P010	KT001910P210	28.2	1.11	0 – 10	0 – 1470		KT001910P111 ^b
KT001910P012	KT001910P212	50	2	0 – 3.2	0 – 460	KT001910P406 ^a	KT001910P101 ^{a1} or KT001910P123 ^{a2}
KT001910P018	KT001910P218	70	2.76	0 – 1.6	0 – 240	KT001910P406 ^a	KT001910P123 ^{a2}
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 2.5	0 – 370	KT001910P406 ^a	KT001910P123 ^{a2}

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 ^a	-
KT001910P012	KT001910P212	50	2	0 – 10	0 – 1470	KT001910P408 ^a	KT001910P101 ^{a1} or KT001910P123 ^{a2}
KT001910P018	KT001910P218	70	2.76	0 – 5	0 – 750	KT001910P408 ^a	KT001910P123 ^{a2}
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 8	0 – 1160	KT001910P408 ^a	KT001910P123 ^{a2}

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 – 80	0 – 11800	-	-
KT001910P012	KT001910P212	50	2	0 – 20	0 – 2950	KT001910P409 ^a	KT001910P101 ^{a1} or KT001910P123 ^{a2}
KT001910P018	KT001910P218	70	2.76	0 – 10	0 – 1470	KT001910P409 ^a	KT001910P123 ^{a2}
KT001910P016	KT001910P216	50 x 50	2 x 2	0 – 16	0 – 2320	KT001910P409 ^a	KT001910P123 ^{a2}

^a Must be ordered for use with the specified test head / dolly combination
^b Optional accessory for use with the specified test head / dolly combination
¹ Standard Support Ring: 50mm (1.97")
² 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.