Elcometer 1506 Cylindrical Mandrel Bend Tester

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Can be used in accordance with:
AS/NZS 1580.402.1
ASTM D 522-B
ASTM D 1737
ISO 1519-2

Similar in use to the Elcometer 1510, the Elcometer 1506 is also a very robust mechanical unit for determining the elasticity, adhesion and elongation properties of cured coatings on sheet metal.

The frame has a bending lever with height-adjustable rollers and a sliding vice for clamping the sample which means the test pieces are bent perfectly and regularly on decreasing mandrels until the desired effect can be observed.

The instrument can be adjusted to the diameter of the mandrel used and the mandrels are easily changed.

A wide range of mandrels with metric and imperial diameters is available. Mandrels are not supplied with the instrument and can be ordered as a set or individually.

TECHNICAL SPECIFICATION	
Test Piece Width	Maximum: 64mm (2.5”)
Test Piece Length	Maximum: 80 to 100mm (3.15 to 3.93”); *depending on the size of the Mandrel used*
Dimensions	320 x 135 x 130mm (12.6 x 5.3 x 5.1”)
Weight	4.3kg (9.5lb)
Part Number	K1506M201 Elcometer 1506 Cylindrical Mandrel Bend Tester
Packing List	Elcometer 1506 Cylindrical Mandrel Bend Tester and operating instructions

METRIC MANDRELS			
KT001506P201	Metric Mandrel Set, 2 to 32mm (one of each of the Metric Mandrels below)		
KT001506F002	2mm Mandrel	KT001506F015	12mm Mandrel
KT001506F003	3mm Mandrel	KT001506F016	13mm Mandrel
KT001506F004	4mm Mandrel	KT001506F017	16mm Mandrel
KT001506F005	5mm Mandrel	KT001506F018	19mm Mandrel
KT001506F006	6mm Mandrel	KT001506F019	20mm Mandrel
KT001506F007	8mm Mandrel	KT001506F020	25mm Mandrel
KT001506F014	10mm Mandrel	KT001506F021	32mm Mandrel
IMPERIAL MANDRELS			
KTUS1506P201	Imperial Mandrel Set, ⅛ to 1” (one of each of the Imperial Mandrels below)		
KTUS1506F022	⅛” Mandrel	KTUS1506F026	⅝” Mandrel
KTUS1506F023	¼” Mandrel	KTUS1506F027	¾” Mandrel
KTUS1506F024	⅜” Mandrel	KTUS1506F028	1” Mandrel
KTUS1506F025	½” Mandrel	-	

Elasticity & Resistance to Deformation
The performance of coatings when influenced by external stresses caused by stretching, bending or impacts, determines their suitability for their designed application.

A coating designed for use in the coil coating industry, for example, should have the ability to stretch as the substrate is formed into its desired shape without damage. Deformation or damage would reduce the protective quality and appearance including colour change, adhesion etc.

Further, a coating designed for industrial use should be able to withstand impacts during the life of the product.

In order to characterise a coating’s performance to elongation and deformation, a number of repeatable and reproducible tests have been developed.

Mandrel Bend Test
A coated metal sheet is bent over a conical or cylindrical mandrel and cracks, colour change, adhesion etc. of the coating are evaluated. Corresponding results, produced by decreasing mandrel sizes, indicate the degree of elasticity of the coating. A conical mandrel allows the user to undertake fewer tests to achieve a similar result to cylindrical mandrels.

Cupping Test
A coated metal sheet is subjected to a gradual deformation by a polished die being pushed from beneath the coating - i.e. from the reverse side of the sheet.

Variable Impact Tests
There are two methods: either a weight with a punch attached falls on a coated metal sheet or a weight falls on to a punch which is resting on the coated metal sheet. In either test, the damage caused is observed and evaluated. These methods are used toidentify how the coating performs under a rapid deformation process.

Related Products

Elcometer 1510

Elcometer 1510 Conical Mandrel Bend Tester

The 1510 Bend Tester is a mechanical tester used to determine the effects of bending on the elasticity, adhesion and elongation properties of cured coatings on sheet metal.

Elcometer 1620

Elcometer 1620 Cupping Tester

These robust and user-friendly instruments are used for assessing the cupping ability of coatings applied to metal sheets up to 1.2mm (0.05”) thick.

Elcometer 1615

Elcometer 1615 Variable Impact Tester

This simple to use gauge is ideal for evaluating the resistance of a coating to impact (elongation, cracking or peeling). The Elcometer 1615 Impact Tester comes as one universal assembly with the option of six different kits providing the functionality for various testing methods.

Elcometer 1542

Elcometer 1542 Cross Hatch Adhesion Tester

This is a simple but effective method for determining the adhesion of coatings. The instrument is ideal for coatings on flat surfaces and is available with one of three different spacings.

ENGLAND
Elcometer Limited
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

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

NETHERLANDS
Elcometer NL
Newtonlaan 115
3584 BH Utrecht

Tel: +31 (0)30 210 7005
Fax: +31 (0)30 210 6666
e-mail: nl_info@elcometer.com
www.elcometer.com

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