

# Elcometer 1506 Cylindrical Mandrel Bend Tester



Elcometer 1506 Cylindrical Mandrel Bend Tester

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.

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

**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 to identify how the coating performs under a rapid deformation process.

| 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, 1/8" to 1" (one of each of the Imperial Mandrels below) |              |              |
| KTUS1506F022      | 1/8" Mandrel  | KTUS1506F026 | 5/8" Mandrel |
| KTUS1506F023      | 1/4" Mandrel  | KTUS1506F027 | 3/4" Mandrel |
| KTUS1506F024      | 3/8" Mandrel  | KTUS1506F028 | 1" Mandrel   |
| KTUS1506F025      | 1/2" Mandrel  |              | -            |

## 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 Chécny  
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