

### Bend Test

#### Principle:

Bend Test is a simple qualitative test used to determine the elasticity, adhesion, elongation, and soundness of a material.

The test uses a coupon that is bent in three points, bending to a specified angle. The outside of the bend is plastically deformed so that any defects in, or embrittlement of, the material will be revealed by the premature failure of the coupon.

#### Current models:



Figure 1: Cylindrical Mandrel Bend Test

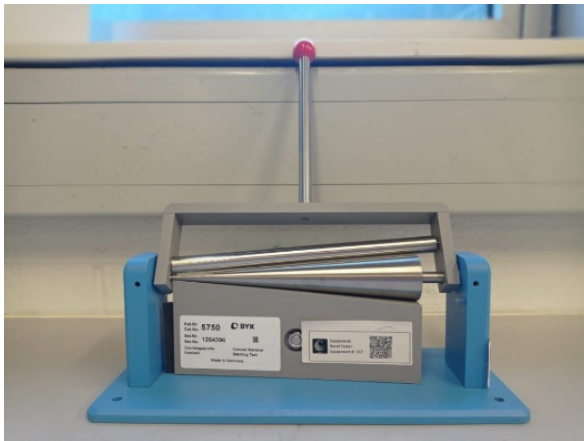


Figure 2: Conical Bend Test

Conical Bend Test <https://www.youtube.com/watch?v=vG23axvq8ek>

Cylindrical Bend Test: <https://www.youtube.com/watch?v=LQQ0VwpKMi8>



# Instrument Description

## Sub Folder: Physical Analysis

A bend test produces tensile stress in the convex side of the sample and compression stress in the concave side. The sample being tested is bent over a cylindrical mandrel. The smaller the diameter of the mandrel, the larger the tension on the coating. The tested sample is then checked for cracks or damage in the coating.

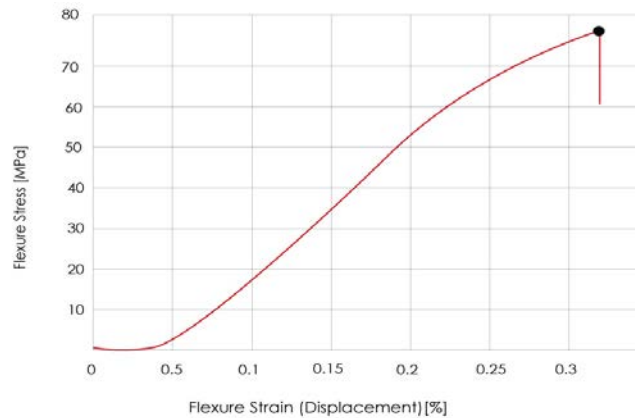


Figure 3: Stress-Strain Diagram

### Typical samples:

Samples which are tested by Bend tester are generally rigid and can be made of several materials such as, plastics, coatings, paints, ceramics, polymers, wood, metal, varnish, and panels.

### Standards:

Samples can be assessed in accordance with ISO standards ISO 1512, ISO 1514, ISO 2808, ISO 3270 or as per Client Requirements.

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