

The experiment deflection of curved bars allows the experimental investigation of the deflection observed when a load is applied to different shaped curved beams or bars as well as being able to validate calculated deflections found using Castigliano's Theorem.

This experiment has the following properties:

- ▶ Six different curved bar specimens
- ▶ Up to 1.5kg of weight hangers to apply load to the specimens
- ▶ Two digital indicators to measure vertical and horizontal deflection

**ALLOWS THE EXPERIMENTAL INVESTIGATION INTO 3 CURVED STRUCTURES AND 3 DAVIT STRUCTURES
SOFTWARE INCLUDED AS STANDARD**

SV100 Bench mounted frame (sold separately)



armBUS software



Horizontal and vertical deflection measured using digital indicator



Description

Six different bar specimens can be supported individually using a clamping mounting block. A vertical load is applied to the ends of the specimens using a pivoting load hanger.

The specimens use the same material and cross-sectional area and are similar in size. As a result, the deflection of these different specimens can be compared and evaluated.

The beam mounting bracket is universal for all of the curved beam experiments. These can be either clamped on the top or side of the bracket, depending on the specimen being tested. The specimens are clamped via 2 thumb screws allowing for ease of use without additional tools being required

The load hanger is clamped to the specimen via a thumb screw. This assembly allows for the weight hanger to always be applying a force directly downwards from the end of the specimen as it is free to rotate around the clamping point.

The twin Dial Test Indicator (DTI) mount allows two digital indicators to be positioned perpendicular to each other. This allows the horizontal and vertical deflection components to be easily measured.

Requirements

Scale



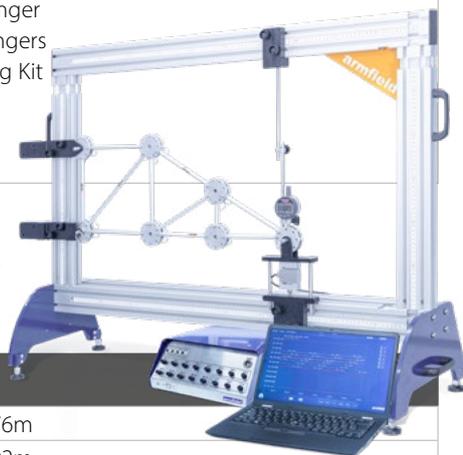
Electrical supply: 110/120V, 60Hz or 220/240V, 50Hz

- ▶ SV100: Bench Mounted Frame
- ▶ SV101: Structures Interface Unit
- ▶ PC with a USB port, running Windows 7 or above

Technical specification

- ▶ Universal Frame Mounting Hardware
- ▶ 1 x Half Circle Specimen
- ▶ 1 x Quarter Circle Specimen
- ▶ 1 x 45° Davit Specimen
- ▶ 1 x Curved Davit Specimen
- ▶ 1 x 90° Davit Specimen
- ▶ Specimen Material: Aluminium (BS EN 755-2 EN AW-6082 T6)
- ▶ 1 x Specimen Mounting Block
- ▶ 1 x 500g Weight Hanger
- ▶ 1 x 1000g Weight Hanger
- ▶ 2 x Pivoting Load Hangers
- ▶ 1 x Twin DTI Mounting Kit
- ▶ 1 x Double Davit
- ▶ 2 x DTI's
- ▶ 1 x Digital Calliper

SV series is supplied with Armfield structures software as standard



Overall dimensions

Length	1.176m
Width	0.392m
Height	0.922m

Packed and crated shipping specifications

Volume	0.1m ³
Gross weight	25kg

Experimental content

- ▶ Simpson's Rule
- ▶ Unit Force Method
- ▶ Castigliano's Theorem

Features / benefits

- ▶ Supplied with a range of specimens, full circle, semi circle, quarter circle, curved davit, angled davit, double davit
- ▶ Allows the horizontal and vertical deflection components to be easily measured.
- ▶ Supplied with Armfield structures software as standard

Related laws

- ▶ Unit Force Method
- ▶ Simpson's Rule
- ▶ Castiglianos' Theorem

Graphing detail



Essential accessories/equipment

- ▶ SV100: Bench Mounted Frame
- ▶ SV101: Structures Interface Unit

Related products

Strength of materials

- ▶ SV500 Continuous and Indeterminate Beams
- ▶ SV501 Plastic Bending of Beams
- ▶ SV502 Plastic Bending of Portals

Operational conditions

- ▶ Storage temperature: -10°C to +70°C
- ▶ Operating temperature range: +10°C to +50°C
- ▶ Operating relative humidity range: 0 to 95%, non-condensing

Ordering codes

- ▶ **SV503:** Deflection of Curved Bars
- ▶ **SV100:** Bench Mounted Frame (Sold separately)
- ▶ **SV101:** Structures Interface Unit (Sold separately)

Armfield standard warranty applies with this product

Knowledge base

- > 28 years expertise in research & development technology
- > 50 years providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



armfield.co.uk

Aftercare

Installation
Commissioning
Training
Service and maintenance
Support: armfieldassist.com