UNSYMMETRICAL CANTILEVER APPARATUS

HSM30

Year 2
study

Features

- Sturdy, compact bench top unit
- Three test beams supplied as standard
- 360° adjustment in one degree increments
- Free end deflection measured relative to its fixed end.
- Shear Centre part of standard arrangement
- Full set of weights and hangers supplied

Description

This apparatus allows the vertical and horizontal deflections of the free end of a test specimen to be measured when loading occurs along a principle axis or at a known angle. A solid compact base holds a rigid vertical end support for the clamping of three cantilevers. Each cantilever can be attached into the rigid support via a chuck, which allows angular adjustment of the specimens. The chuck also creates a rigid end fixing for the cantilevers when under test. The angular orientation of the specimens can be read off using the integral angular scale. Three test cantilevers are supplied, in the form U, L and rectangular. The free end of the cantilever has vertical point loads applied using hangers and weight. The free end movement is measured using digital deflection indicators, which have their anvils resting on a cantilever boss. The cantilever boss allows for offset point loading for shear centre work using the attachment supplied. A framework holds the digital indicators relative to the rigid end of the cantilever to ensure accurate deflection measurement. The zero point of each indicator can be accurately set using the stands available.

Related Laws/Applications

- Vertical Deflection
- Horizontal Deflection
- Shear centre
- Principle axis
- Mohr's circle
- Moment of Area

Learning capabilities

- Vertical and horizontal deflection of unsymmetrical cantilevers
- Mohr’s circle
- Moment of area
- Shear centre location
- Comparison between actual and theoretical results

Technical Specification

- Rectangular specimen: 500(L) x 20(W) x 10(H) mm (approx.)
- L specimen: 500(L) x 25.4(L) x 25.4(W) x 3.175(t) mm (approx.)
- U specimen: 500(L) x 21(L) x 40(H) x 5(t) mm (approx.)
- Protractor scale: 360°, 5° increments
- Digital deflection indicators; 0.01mm resolution, 12.7mm travel, zero function

What’s in the Box?

- 1 x HSM30
- 3 x Specimen
- 1 x load ring assembly
- 2 x Dial gauge
- 1 x Pointer assembly
- 1 x Ring assembly
- 1 x Horizontal bar
- 2 x Load hanger
- 1 x Hex wrench set
- 1 x Chain
- 2 x Dial gauge extension
- 8 x 5N
- Instruction manual
- Packing list
- Test sheet

You might also like

- HST21

Weights & Dimensions

- Weight: 26 kg
- Length: 700mm
- Width: 350mm
- Height: 400mm

Essential Services

- Sturdy Bench top

Ordering information

To order this product, please call PA Hilton quoting the following code: HSM30

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