

# Texas Overlay Tester

CS-TOT

ASTM WK26816 (PROPOSED DRAFT)



State-of-the-art test equipment for determining the crack initiation and crack propagation experienced within asphalt mixtures



## INTRODUCTION

In recent years many mixture design methods have produced materials that are stiffer, leaner and more resistant to rutting, however, such materials are often more susceptible to fatigue and reflection cracking. The Texas Overlay Tester (CS-TOT) was designed to simulate the expansion and contraction movements that occur in the vicinity of joints or cracks and which result in reflection cracking in overlays. With the CS-TOT it is possible to characterize both the crack initiation and crack propagation properties of asphalt mixtures. Cox & Sons has developed the CS-TOT, which is a dedicated, state-of-the-art piece of equipment for carrying out this test.

## KEY FEATURES

- Dedicated no compromise Texas Overlay machine
- Designed according to the proposed ASTM
- Integral surface mounted **Touch+** touch screen control
- Double GSF cold rolled container slides for ultra accurate inline sample deformation
- Intelligently designed specimen gluing and “zero stress” carrying frame
- Interface SSM environmentally sealed S-Type load cell
- Fitted with high performance hydraulic actuator and powerpack
- Ergonomically designed for easy operation
- Made in California

## SPECIFICATIONS

Measurement Interval (s)	0.01
Waveform Type	Cyclic triangular and constant displacement or a combination
Maximum Displacement mm (inch)	0.6 to 5.1 (0.025 to 0.2)

## SPECIFICATIONS CONTD.

Resolution of Displacement Measurement $\mu\text{m}$	1 (0.00004 inch)
Control Loop Rate Hz	>1000
Load Cell Capacity kN	25 (5500 lb)
Load Cell Accuracy (%FS)	0.25
Cycle Time (s)	5 to 1000
Cycle Time Measurement Resolution (%)	0.1
Temperature Control Range $^{\circ}\text{C}$	-5 to 40 (23 to 104 $^{\circ}\text{F}$ )
Temperature Control Accuracy $\pm^{\circ}\text{C}$	0.5 (0.9 $^{\circ}\text{F}$ )
Ambient Temperature Range $^{\circ}\text{C}$	15 to 30 (59 to 86 $^{\circ}\text{F}$ )
Test End Conditions	(0 to 100)% load reduction and/or (0 to 10000) cycles
Specimen Dimensions	
Length mm (inch)	150 $\pm$ 2 (5.9 $\pm$ 0.08)
Height mm (inch)	38 to 50 $\pm$ 0.5 (1.5 to 2 $\pm$ 0.02)
Width mm (inch)	76 (3)
Plate Dimensions	
Length mm	300 (11.8 inch)
Width mm	150 (5.9 inch)
Height mm	Optional 13 or 19 (0.51 or 0.75 inch)
Base Plate Material	Stainless Steel
Base Plate Hardness (Brinell Hardness)	> 95 (Not lower than that of 6061-T6 aluminum)
Plate Groove Depth x Width mm (inch)	1.5 x 1.3 (0.059 x 0.051)
Plate Groove Separation mm (inch)	6.35 (0.25)
Initial Separation of Plates mm (inch)	2 (0.079)
Vertical movement of sample (% of crack opening)	<3
Dimensions (WxDxH) mm (inch)	1580 x 650 x 1100 (62 x 25 x 43)
Weight Kg (lb)	500 (1102) (approx.)
Electrical supply	CS-TOT: 1 Ph 240 V 50 Hz CS-TOT60: 1 Ph 110 V 60 Hz

## ACCESSORIES

- CS-TOT-DC(T)  
Disc shaped compact tension fixtures
- CS-TOT-SCB\*  
Semi-circular bending \*(-5  $^{\circ}\text{C}$  to + 40  $^{\circ}\text{C}$ )
- CS-TOT-ZS  
“Zero Stress” carrying frame to align the two base plates and fix the specimen prior to testing with specimen alignment
- CS-TOT-SPBAR  
¼ inch (6.25 mm) spacer bar for plate separation and alignment
- CS-TOT-4.5WEIGHT  
4.5 kg (10 lb) weight (in the shape of the specimen to ensure load is spread evenly and does not overhang the edges of the specimen)
- CS-TOT-CALKIT  
Calibration kit