

# TSRST Apparatus

CS-TSRST

AASHTO TP10- THERMAL STRESS RESTRAINED SPECIMEN TEST (TSRST), AASHTO DESIGNATION- TP XX (UTSST)



Optimize low temperature performance of asphaltic concrete mixtures



## INTRODUCTION

The Thermal Stress Restrained Specimen Test (TSRST) is used to determine the low temperature cracking susceptibility of asphalt concrete. In the early 1990s the TSRST was developed by OEM with Oregon State University (OSU) as part of the Strategic Highway Research Program. The test method became AASHTO TP10.

The TSRST test has also been included as one of the tests within EN12697-46. OEM-Cox have developed the TSRST device to perform tests included in this standard. Now as a multipurpose low temperature testing machine the TSRST has been renamed the Asphalt Pavement Thermal Testing System (APTTS).

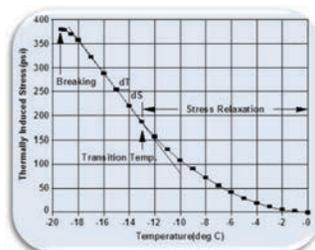
With over 20 years of experience, and as the original developers of the TSRST OEM-Cox are the recognized word experts in the field.

## KEY FEATURES

- Cool or heat an asphaltic concrete specimen at a constant rate or hold a constant temperature
- Simulate actual field conditions with user programmable temperature profiles
- Perform cyclic temperature testing
- Minimizes radial and/or transverse forces with dual clevis and rod end assemblies
- Made in USA

## SOFTWARE

The TSRST4.5 software controls your test, logs data, plots the data points and produces graphs.



## SPECIFICATIONS

Specimen dimensions	
Prismatic	40 x 40 x 160 - 60 x 60 x 250 mm (1.6 x 1.6 x 6.3 - 2 x 2 x 9.8 inch)
Cylindrical	Ø 40 x 160 - Ø 60 x 250 mm (Ø 1.6 x 6.3 - Ø 2 x 9.8 inch)
Temperature	-50 to +50 °C (-58 to 122 °F)
Force	22.5kN (5000lbf) max
Screw Jack travel	±150 mm (±6inch)
Transducers	
Displacement (AASHTO TP10)	
Range	±0.5 mm (±0.2 inch)
Resolution	0.05 µm (2 millionths of an inch)
Accuracy	±0.1% Full Scale
Transducers	
Displacement (prEN12697-46)	
Range	±2.5 mm (±0.1inch)
Resolution	<0.05 µm (2 millionths of an inch)
Accuracy	±0.1% Full Scale
Transducers	
Load	
Range	22.5 kN (5000lbf)
Resolution	0.5 N (0.11lbf)
Accuracy	±0.1% Full Scale
Transducers	
Temperature	
Range	-70 °C to + 180 °C (-94 to +356 °F)
Resolution	0.1 °C (0.18°F)
Accuracy	0.3 °C (0.54°F)
Cooling agent	Liquid nitrogen (LN2)

## ACCESSORIES

CS-TSRST-AIRCHIL	Air dryer and chiller
CS-TSRST-T0073	Specimen Alignment Stand - 1 recommended
CS-TSRST-T0174	Fixture, Calibration, 2250 kgf- 1 recommended
CS-TSRST-T0030	Platen, Specimen (two required per specimen) - 12 recommended
CS-TSRST-T0075	Assembly, Alignment Rod (two required per specimen) - 8 recommended
CS-TSRST-T0076	Proof Test Assembly - 1 recommended
CS-TSRST-T0120	Alignment rod, unthreaded for gluing (2 required)



Calibration, Annual Service and Maintenance Contracts are available for most of our equipment. Please email us at [info@jamescoxandsons.com](mailto:info@jamescoxandsons.com) to inquire for further details.