

## **STANDARD: ASTM E670, ASTM E1551**

It is a trailer mounted device that is connected to a suitable tow vehicle and is able to measure the coefficient of friction of the pavement surface through continuous friction trace and side force measurement to reduce the risk of road accidents. It consists of a measuring trailer, an electronic control device, a laptop and software. The trailer-mounted measuring equipment moves forward under the towing of the tow vehicle. Through the skidding of the test wheels with special non-treaded tires at a certain angle, the sideways force perpendicular to the driving direction is generated. High-precision sensors measure and transmit the measured data to computer software for processing, and ultimately provide users with tables and curves of pavement position and friction coefficient. The measurement is controlled by computer software and the water output is automatically adjusted according to the driving speed so that the water film thickness between the test wheel and the road surface is 0.05~1 mm.

## **COMPONENT**

This equipment includes below parts :

- ⊙ Trailer-mounted measuring equipment (including electronic control system, front-end industrial computer, etc.);
- ⊙ Water film thickness control system;
- ⊙ Infrared temperature measurement system
- ⊙ Connection device
- ⊙ Laptop





## TECHNICAL SPECIFICATIONS

Test speed	20 km/h~100 km/h
Working temperature	-25℃~+60℃
Relative humidity	≤100%
Test wheel (special non-treaded type) tire pressure	70±0.035Kpa.
Friction test accuracy	Average sideways force coefficient ±2%
Distance test accuracy	±0.1% plus tire wear (can be changed to pile number according to distance and can be corrected)
Test wheel weight when touching the ground (left and right wheels)	77.56±0.5kg
Trailer connection	Precision ball joint towing hook, or traditional ring hook
SFC range	0-100
Water film thickness	0.5mm or 1mm in front of the test wheel, error ≤15%.
Water flow rate	The flow rate can be controlled, using a variable frequency water pump
Watering system power supply	Provided by the tow vehicle, no external power generation device is required
Watering system	The water output can be adjusted according to the test speed to ensure that the water film thickness is relatively constant during the test
Data acquisition	Computer bus high-speed data acquisition
Data transmission	Data transmission via Ethernet
Computer system	Supports Windows 2000/XP/Vista/Windows 7 operating systems
Monitoring image	Dual-channel image monitoring
Trailer dimensions	1.5×0.8×0.8m (length×width×height)
Working voltage	Powered by the tow vehicle, DC 12V



# TPCFT-2 CONTINUOUS FRICTION TESTER



Laptop



Water pipe



Water pump



Network cable



Inverter power input cable



Battery



Inverter



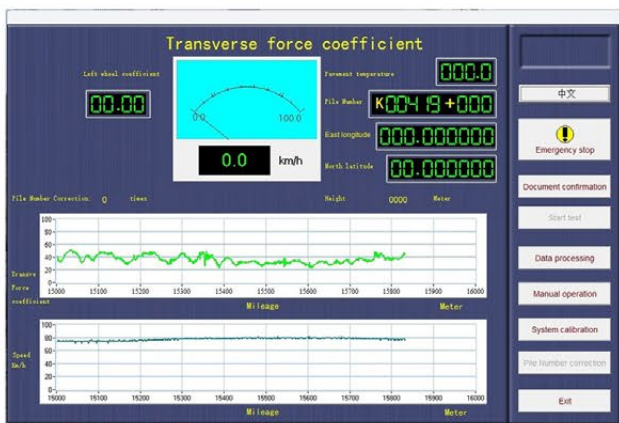
Power cable of CFT trailer



Watering system connection cable

## SOFTWARE

The trailer-mounted measuring equipment is integrated with a high-performance industrial computer, and the software operation, control and acquisition are all on this industrial computer. The measuring laptop used by the operator is remotely connected to the industrial computer via a network cable. The entire measurement process is controlled by software. It collects and processes the measurement data into curves and tables, and users can export editable and printable Excel reports. The software interface is easy to understand, simple to operate and user-friendly.



Testing System of Transverse Force Coefficient

Filename: C:\Users\DL\Desktop\test.mec

File Number	Vehicle Direction	Lane	Lateral Force Coefficient	Temperature	Speed (km/h)	Note 1
E0419+000-E0419+005	Upward	Travel lanes	37.7	16.0	66.2	
E0419+005-E0419+010	Upward	Travel lanes	37.7	15.9	65.8	
E0419+010-E0419+015	Upward	Travel lanes	43.2	15.8	65.0	
E0419+015-E0419+020	Upward	Travel lanes	44.3	15.7	66.2	
E0419+020-E0419+025	Upward	Travel lanes	39.6	15.8	65.3	
E0419+025-E0419+030	Upward	Travel lanes	42.2	15.8	66.2	
E0419+030-E0419+035	Upward	Travel lanes	39.4	15.8	66.4	
E0419+035-E0419+040	Upward	Travel lanes	44.9	15.7	66.5	
E0419+040-E0419+045	Upward	Travel lanes	42.3	15.7	66.4	
E0419+045-E0419+050	Upward	Travel lanes	39.7	15.6	66.6	
E0419+050-E0419+055	Upward	Travel lanes	36.7	15.5	66.2	
E0419+055-E0419+060	Upward	Travel lanes	37.7	15.6	68.2	
E0419+060-E0419+065	Upward	Travel lanes	46.0	15.6	67.0	
E0419+065-E0419+070	Upward	Travel lanes	47.8	15.8	67.0	
E0419+070-E0419+075	Upward	Travel lanes	47.6	15.9	67.4	
E0419+075-E0419+080	Upward	Travel lanes	46.1	15.9	67.8	
E0419+080-E0419+085	Upward	Travel lanes	43.5	15.9	68.4	
E0419+085-E0419+090	Upward	Travel lanes	42.6	15.0	68.2	
E0419+090-E0419+095	Upward	Travel lanes	53.0	16.0	68.2	

Buttons: Original Excel, Filter by 50 km/h, Design SFC 50.0, Temperature correction.