

Id: South Africa HVS		South Africa
Institution: Gauteng Department of Public Transport, Roads and Works CSIR Built-environment		

Type: mobile linear testing

Construction (commissioned):

- Mk I : 1968
- Mk II : 1970
- Mk III : 1977
- Mk IV* : 1998



Dimensions

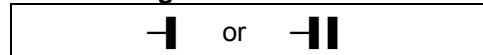
Pavement test section length	8.0 m
Effective testing length (at constant speed)	6.0 m

Loading

Range of Wheel Load ^(*)	30-205 kN
Transverse distribution	1600 mm
Loading direction	⇔ ⇐
Sinusoidal Dynamic Loading	

^(*) Wheels loads (half axle) are converted to the corresponding axle loads.

Axle configuration



Speed

Vehicle Speed (max.)	13 km/h
Test frequency (max.) (passes/hour/section)	1000
Practical output (loadings/month/section)	550 000

Sections

No. of Sections	1
Thickness	any
Width	any



Measured Variables

	Surface	Asphalt	Unbound Layers	Subgrade
Temperature	x	x	x	x
Moisture content			x	x
Suction				
Deflection (transient)	x	x	x	x
Vertical Tyre Stress	x			
Horizontal Tyre Stresses	x			
Vertical Strain	x	x	x	x
Permanent deformation	x	x	x	x
Density		x	x	x

Environmental control

Placement	In & Outdoors
Air temperature	Ambient & Controlled
Pavement temperature	Ambient & Controlled
Air moisture	No control
Freeze-thaw cycles	possible
Water table	No control
Rainfall	Natural & Simulated Surface or In-depth

Contact people:

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Brief description of Topics/Tests carried out during recent years
Hot-mix Asphalt study to evaluate the rutting resistance of various asphalt mixes
Structural strength and bearing capacity determination of Foam and Emulsion treated base materials
Vehicle-pavement Interaction. Quantification of vertical and horizontal (longitudinal and transversal) contact stresses of various tyre types, axle configurations and tyre pressures.
Concrete study to investigate the influence of the environment and accelerated loading on joint deterioration of doweled and plain aggregate interlocking joints. Determination of the residual life of in-service CRCP pavement sections. Evaluation of Ultra Thin Continuously Reinforced Concrete Pavement (UT-CRCP) types. The applicability of using UT-CRCP of layer thicknesses of between 35 to 50mm to be used as an overlay or rehabilitation option for heavily trafficked highways.
Forthcoming topics / tests <ul style="list-style-type: none"> 1) Evaluation of High Modulus Asphalt mixes 2) Examination of Ultra Thin CRCP for low volume roads applications 3) Hot-mix asphalt study to evaluate the fatigue properties of various asphalt mixes