



DRAFT TANZANIA STANDARD

Test methods - Power and road speed indicator tests for a bituminous binder distributor

TANZANIA BUREAU OF STANDARDS

0 National foreword

The Tanzania Bureau of Standards is the statutory national standards body for Tanzania, established under the Act.No.3 of 1975, amended by Act.No.2 of 2009.

This draft Tanzania Standard is being prepared by BCDC 5 Roads Technical Committee under the supervision of the Building and Construction Standards Divisional committee (BCDC).

In the preparation of this Tanzania Standard, reference was made to ***SANS 3001-BT22:2016 Power and road speed indicator tests for a binder distributor, published by SOUTH AFRICAN NATIONAL STANDARD***

1 Scope

This Tanzania Standard describes a method to determine that the power and road speed of a bituminous binder distributor are within the tolerances required to ensure the uniform distribution of binders on road surfaces.

2 Definitions

For the purposes of this Tanzania Standard, the following definitions shall apply:

2.1 Binder distributor

self-propelled vehicle for spraying bituminous binder at a set application rate and even distribution

2.2 Bitumen

non-crystalline solid or viscous mixture of complex hydrocarbons obtained from crude oil by a refining process.

2.3 Bituminous binder

any bitumen material used in construction to bind together aggregate or seal a road surface.

2.4 Bitumen emulsion

emulsion of bitumen and water incorporating an emulsifier to ensure stability.

3 Apparatus

3.1 **Stopwatch**, that is capable of recording for 5 min reading to 1s.

3.2 **Measuring tape**, of length at least 30 m.

3.3 **Fluid**, consisting of any bituminous binder or oil.

3.4 **Binder distributor**, in operating condition.

4 Procedures

4.1 Power

4.1.1. Ensure that the tank is filled with testing fluid and in a stationary position on a reasonably level surface.

4.1.2. Accelerate the distributor forward and record the time it takes to reach an indicated speed of 300 m/min (18 km/h). If the time taken is 2 s or less, the power of the distributor is acceptable.

4.1.3. Repeat the test if the time taken is more than 2 s. Check the distributor engine and submit the distributor for re-testing if the time is still more than 2 s.

4.2 Road speed indication

4.2.1. *Mark out a 150 m test section on a flat, straight section of road using the measuring tape.*

4.2.2. *Select a starting point outside the test section so that the distributor can attain a speed of 300 m/min before entering the section.*

4.2.3. *Drive the distributor over the 150 m test section at a series of uniform speeds starting at 60 m/min and then using increments of 60 m/min up to 300 m/min, timing each run using the stopwatch.*

NOTE In the case of a fifth wheel, because some road speed indicators may be damaged by operating in reverse, the separate wheel driving the indicator should be lifted from the road before the distributor is reversed.

5 Calculations

5.1. Calculate the actual road speed from the stopwatch readings.

5.2. Plot a graph of actual road speed versus indicated road speed.

5.3. If the difference between the actual speed and the indicated speed is more than 5 % of the latter, repeat the test.

5.4. If the difference in 5.3 remains greater than 5 % the road speed indicator shall be rectified, or replaced by the owner, and the test repeated.

6 Test report

The test report shall be issued in the form of a certificate supplied after each successful procedure giving the following information:

6.1. the time, in seconds, taken to reach 300 m/min, to one decimal place; and

6.2. the actual and indicated road speeds and their differences in tabular form, to the nearest meter per minute, and a graph of indicated versus actual road speed.

Bibliography

- **TZS 1941: 2017**, Civil engineering specifications— Anionic bitumen road emulsion.
- **TZS 1942: 2017**, Civil engineering specifications – Cationic bitumen road emulsion.