



Transport
Roads & Maritime
Services

Test method T620

Tack coat bond strength

NOVEMBER 2012



Revision Summary

Ed/Rev Number	Clause Number	Description of Revision	Authorisation	Date
		Reformatted and Revision Summary Added	D.Dash	Jan 2000
Ed 2/ Rev 0	All	Reformatted RMS template	J. Friedrich	November 2012

Note that Roads and Maritime Services is hereafter referred to as 'RMS'.

The most recent revision to Test method T620 (other than minor editorial changes) are indicated by a vertical line in the margin as shown here.

Test method T620

Tack coat bond strength

1. Scope

This test is a field procedure intended to provide data on the performances of tack coatings when tested on the specific surfaces to be treated with asphalt. It can only be used as a comparative measure.

2. Apparatus and Equipment

- (a) Open bottom ring moulds, approximately 100 mm in internal diameter and approximately 100 mm in height, into which asphaltic concrete can be rammed.
- (b) A metal rammer with at 50.0 ± 0.5 mm face diameter and a drop mass of 2.7 kg +5g/-10g equipped with a suitable device to control the height of the drop to a free fall of 300 ± 1.5 mm.
- (c) A semi-circular stirrup at least 50 mm wide which will fit neatly around the asphaltic concrete test cylinders and which has a hook or eye to provide a connection to a spring balance.
- (d) The hook or eye shall be as close to the base as possible and at not more than half the height of the collar from its base.
- (e) A spring balance having a dial at least 150 mm in diameter, capable of reading to 100N and graduated in units of 10N.
- (f) A 4:1 ratio pulley block and suitable rope.
- (g) An anchorage for the pulley block which will cause the load applied to the asphaltic concrete cylinder to produce a simple shear force on the interface between the cylinder and the surface to be sealed. The load should be not more than 0.5° off parallel to the road surface under the test cylinder. (The rope may be anchored by holding it to the road under the wheel of a truck.)
- (h) A supply of hot asphaltic concrete and suitable trays and spatulas to measure it out

3. Procedure

- (a) Select a typical section of road surface to be treated and lightly broom to remove loose gravel or other loose material.
- (b) Apply by spray or brush a uniform coating of the proposed tack coating material prepared as directed by the supplier of the material.
- (c) Allow the tack coating to cure in accordance with the supplier's directions.
- (d) Use a very light application of oil on the inner surface of the compaction mould as a release agent, taking care that no oil contaminates the tack coating.
- (e) Place in the mould sufficient asphaltic concrete at normal rolling temperature to give a compacted cylinder 75 mm to 85 mm in height.
- (f) Prepare four briquettes by applying 25 blows with the rammer to each briquette in such a manner as to compact the asphalt as uniformly as possible.
- (g) Allow the briquettes to cool and cure for a period of one hour.
- (h) Test two briquettes directly as specified in (i) and (j) below and treat two briquettes with water allowing the water approximately 30 minutes to take effect, then test as in (i) and (j) below.
- (i) Assemble the stirrup, spring balance pulley block and anchor to apply a shear force to the test specimen. If the rope is anchored to the road under the wheel of a utility so that the distance from the specimen to the wheel is 3.3 metres, the rope will be within the prescribed limit of tolerance for parallelism with the road.
- (j) Apply the load to the specimen steadily and without shock at a rate of about 10N per second until the joint fails by shearing.

- (k) Carry out the test on each of the tack coating materials under review. Apart from variations necessary to meet the supplier's directions for the use of his product, all tests are to be carried out under similar conditions of temperature, time and using identical equipment and procedures.

4. Reporting

- (a) Record the load at which each test cylinder is removed from the test surface as an average of the two tests and for both the dry and wet samples, indicating the range of results for each test.
- (b) Record the rate of application of the tack coating material.
- (c) Record the time and ambient conditions during the period of curing of the tack coating.