

ROAD PAVEMENTS – UNBOUND MATERIALS

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minimum number of passes shall be half the number given in Table 8/1 for the appropriate mass per metre width of one vibrating roll but if one roll differs in mass per metre width from the other, the number of passes shall be calculated as for the roll with the smaller value. Alternatively the minimum number of passes may be determined by treating the machine as having a single vibrating roll with a mass per metre width equal to that of the roll with the higher value.

- (c) Vibratory rollers operating without vibration shall be classified as smooth-wheeled rollers.
- (d) Vibratory rollers shall be operated with their vibratory mechanism operating at the frequency of vibration recommended by the manufacturer. All such rollers shall be equipped, or provided with devices indicating the frequency at which the mechanism is operating and the speed of travel. Both devices shall be capable of being read by an inspector alongside the machine.
- (v) Vibrating-plate compactors are machines having a base-plate to which is attached a source of vibration consisting of one or two eccentrically-weighted shafts:
 - (a) The mass per square metre of base-plate of a vibrating-plate compactor is calculated by dividing the total mass of the machine in its working condition by its area in contact with compacted material.
 - (b) Vibrating-plate compactors shall be operated at the frequency of vibration recommended by the manufacturer. They shall normally be operated at travelling speeds of less than 1 km/h but if higher speeds are necessary, the number of passes shall be increased in proportion to the increase in speed of travel.
- (vi) Vibro-tampers are machines in which an engine driven reciprocating mechanism acts on a spring system, through which oscillations are set up in a base-plate.
- (vii) Power rammers are machines which are actuated by explosions in an internal combustion cylinder; each explosion being controlled manually by the operator. One pass of a power rammer shall be considered to have been made when the compacting shoe has made one strike on the area in question.

- (viii) Combinations of different types of plant or different categories of the same plant will be permitted; in which case the number of passes for each shall be such proportion of the appropriate number in Table 8/1 as will together produce the same total compactive effort as any one operated singly, in accordance with Table 8/1.

803 Granular Material Type A

- 1 Type A granular material shall be gravel or crushed rock. The material shall be well-graded and lie within the grading envelope of Table 8/2.
- 2 The material passing the 425µm BS sieve, when tested in accordance with BS 1377: Part 2, shall have a plasticity index of less than 6.
- 3 The material passing the 20 mm BS sieve shall have a CBR of 50 per cent or more when tested in accordance with BS 1377: Part 4 at the maximum dry density and optimum moisture content for the material as determined by the vibrating hammer method test in accordance with BS 1377: Part 4.
- 4 The material shall be laid and compacted at a moisture content within the range 1 per cent above to 2 per cent below the optimum percentage determined in accordance with the vibrating hammer method test in BS 1377: Part 4, and without drying out or segregation.
- 5 The material shall have a ten per cent fines value of 130 kN or more when tested in compliance with BS 812 : Part 111. The test sample shall be in a soaked condition at the time of test.
- 6 The aggregate source, when tested in accordance with BS 812 : Part 121, shall have a soundness value greater than 75, or such lower value as may be required in Appendix 7/1. Thereafter for routine testing of such aggregates, the water absorption value of the coarse aggregate shall be determined as in BS 812 : Part 2. If the absorption value of the coarse aggregate is greater than 2%, the soundness test shall be carried out on the material delivered to site.

Table 8/3: Granular Material Type B

Range of Grading	
BS Sieve Size	Percentage by mass passing
75 mm	100
37.5 mm	85-100
10 mm	40-70
5 mm	25-45
600 µm	10-22
75 µm	0-8

The particle size shall be determined by the washing and sieving method of BS 812 : Part 103

Table 8/4: Granular Material Type C

Range of Grading	
BS Sieve Size	Percentage by mass passing
75 mm	100
37.5 mm	80-100
20 mm	60-80
10 mm	40-65
5 mm	25-50
600 µm	8-20
75 µm	0-8

The particle size shall be determined by the washing and sieving method of BS 812 : Part 103

- 4 The material shall have a ten per cent fines value of 130 kN or more when tested in compliance with BS 812 : Part 111. The test sample shall be in a soaked condition at the time of test.
- 5 The flakiness index shall be less than 45 when determined in accordance with BS 812: Section 105.1.
- 6 The aggregate source, when tested in accordance with BS 812 : Part 121, shall have a soundness value greater than 75, or such lower value as may be required in Appendix 7/1. Thereafter for routine testing of such aggregates, the water absorption value of the coarse aggregate shall be determined as in BS 812 : Part 2. If the absorption value of the coarse aggregate is greater than 2%, the soundness test shall be carried out on the material delivered to site.

- 3 The material passing the 20 mm BS sieve shall have a CBR of 150 or more when tested in accordance with BS 1377: Part 4 at the maximum dry density and optimum moisture content for the material as determined by the vibrating hammer method test in accordance with BS 1377: Part 4.
- 4 The material shall be laid and compacted at a moisture content within the range of the optimum to 2 per cent below the optimum percentage determined in accordance with the vibrating hammer method test in BS 1377: Part 4, and without drying out or segregation.
- 5 The material shall have a ten per cent fines value of 130 kN or more when tested in compliance with BS 812: Part 111. The test sample shall be in a soaked condition at the time of test.
- 6 The aggregate source, when tested in accordance with BS 812: Part 121, shall have a soundness value greater than 75, or such lower value as may be required in Appendix 7/1. hereafter for routine testing of such aggregates, the water absorption value of the coarse aggregate shall be determined as in BS 812: Part 2. If the absorption value of the coarse aggregate is greater than 2%, the soundness test shall be carried out on the material delivered to site.

805 Granular Material Type C

- 1 Type C granular material shall be screened or crushed gravel. The material shall be well-graded and lie within the grading envelope of Table 8/4.
- 2 The material passing the 425 µm sieve shall have a liquid limit, determined in accordance with the cone penetrometer method (definitive method) in BS 1377: Part 2, not greater than 20 for limestone and 21 for all other rock types.