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No. RW/NHVI-67(11)/85 *Dated the 3rd July, 1986*

To,

All Chief Engineers of States/Union Territories dealing with Roads

Subject : Prime coat over WBM/Wet Mix Macadam base course or bituminous wearing surface — Specifications thereof.

In continuation of this Ministry's Circular letter of even number dated 31.1.1986 regarding the subject prime coat over WBM/wet mix macadam base course before laying bituminous binder course or bituminous wearing surface application of. draft specifications for priming of granular base course with bituminous primers are enclosed for adoption on the work.

SPECIFICATIONS FOR PRIMING OF GRANULAR BASE COURSE WITH BITUMINOUS PRIMERS — TO BE INCORPORATED IN TECHNICAL SPECIFICATIONS

The bituminous prime coat is an initial application of a low viscosity liquid bituminous material to an absorbant surface preparatory to any super imposed treatment, or construction. The object of priming is to penetrate the existing surface so as to plug capillary voids, to coat and bond dust and loose mineral particles and thus harden or toughen the surface and promote adhesion between it and the super imposed treatment or construction.

2. Materials

2.1 The choice of a bituminous primer shall depend upon the porosity. Characteristics of the surface to be primed which are classified as :

(i) Surfaces of low porosity;

(ii) Surfaces of medium porosity;

(iii) Surfaces of high porosity.

For details of classification Clauses 3.1, 3.2 and 3.3 of IRC : 16-1965 refer.

2.2 The different ranges of viscosity requirement of primers are as follows :

Type of surface	Standard tar viscosity of primer at 60° (140° F)
Low porosity	0-5
Medium porosity	6-12
High porosity	16-32

The bituminous primer shall be Rapid Curing (RC), Medium Curing (MC) or Slow Curing (SC) cut backs as per ISI 217/61. Normally MC and SC cut backs are proposed to be applied. Apart from bitumen cut backs, emulsions, coaltar-pitch, creosote etc. also can be used subject to the viscosity and surface requirements as indicated above, being adhered to.

3. **Weather and Seasonal Limitations**

The bituminous primer shall not be applied on a wet surface or during dust storm or when the weather is foggy or rainy. The prime coat for surface treatment should not be applied when the temperature in the shade is less than 10 degree C.

4. **Construction**

4.1 **Equipment**

The primer distributor shall be designed and equipped so that the material should be applied at the specified rate per 10 m^2 as given in Table-1.

4.2 **Preparation of Road Surface**

The surface to be primed shall be swept clean, free from dust and dry. It shall be shaped to the specified grade and section. It should also be free from ruts, any other irregularities and segregated material. Minor depressions and holes may he ignored until the surface is primed, after which they should be patched with a suitable premix material prior to the surface treatment.

4.3 **Application of Bituminous Primer**

The bituminous primer shall be sprayed/distributed uniformly over the dry surface, as prepared as per Clause 4.2 above, using mechanical sprayers. The primer shall be applied at the rate as specified in Table 1 below.

Table 1 Quantity of Bituminous Primers

	Quantity per 10 m^2 (kg)
Primer for surfaces of low porosity	8.5 kg
Primer for surfaces of medium porosity	11.0 kg
Primer for surfaces of high porosity	13.5 kg.

The temperature of the primer at the time of application may vary from 40°C to 80°C. The quantity of primer as given above shall be varied ± 1.5 kg if specifically required, as directed by Engineer-in-charge.

Any pools of excess primer left on any part of the surface should be swept out over the adjacent surface and then a light spreading of sand or stone grit shall be applied.

The primer coat shall be applied only on the top most WBM or any granular layer, over which the bituminous base course/ wearing course to be laid.

4.4 Curing of Primer & Opening to Traffic

It shall always be ensured that while opening to any kind of traffic, that the primed surface is fully cured and is not sticky to avoid being picked up by traffic. Normally the primed surface shall be allowed to cure for not less than 24 hours and during this period no traffic shall be permitted.

4.5 Laying of Subsequent B.T. Courses

Bituminous base course or wearing course shall be laid over the primed WBM or any other granular base course, in the usual manner as per relevant specifications for the same including the requirement of tack coat.

1-Amended vide circular dated 12.08.1986