3.6 BITUMINOUS PRIME COAT

3.6.1 Description

This work shall consist of the careful cleaning of the surface to be primed and furnishing and applying bituminous material in accordance with these Specifications to the area shown on the Drawings or as directed by the Engineer.

3.6.2 Materials

3.6.2.1 Bituminous Materials

Bituminous material shall be a MC 30 or MC 70 cut back bitumen and shall conform to the requirements of Section 3.4. The bituminous material shall be approved by the Engineer and may be prepared by cutting back 80/100 penetration bitumen with kerosene in the ratio of 100 parts by volume of bitumen to 40 – 60 parts by volume of kerosene depending on the porosity of the surface.

3.6.2.2 Blotting Material

Blotting material shall be approved clean dry sand or stone screenings free from any cohesive materials or organic matter. Not more than 10 per cent of the sand shall be finer than the 75 micron sieve.

3.6.3 Construction Methods

3.6.3.1 Weather Limitations

Prime coat shall be applied at a time when the surface to be treated is dry or slightly damp, when the ambient temperature is above 13ºC and rising, or above 16ºC if falling, and when the weather is dry.

3.6.3.2 Equipment

The Engineer may approve Construction equipment and methods (including labour intensive methods) other than those specified hereinafter provided that the contractor can demonstrate his ability to carry out the work to a satisfactory standard using his proposed equipment and methods to the complete satisfaction of the Engineer. Such approval shall be in writing and may be withdrawn at any time if the work is found to be unsatisfactory in any respect.

The equipment used by the Contractor shall include, unless otherwise approved by the Engineer, a power brush, a pressure bituminous distributor, and, when necessary, equipment for heating bituminous material.

The distributor shall have pneumatic tyres and shall be so designed, equipped, maintained and operated that bituminous material at constant temperature may be applied uniformly on variable widths of surface up to 4 metres at readily determined and controlled rates of from 0.2 to 2.0 litres per square metre with uniform pressure, and with an allowable variation from any specified rate not to exceed 0.1 litre per square metre. Distribution equipment shall include an instrument for measuring the speed of travel accurately at low speeds, and the temperature of the contents of the tank.

The spray bar on the distributor shall be controlled by a man riding at the rear of the distributor in such a position that operation of all sprays is in his full view.
The tanks of distributors shall be fitted with accurately calibrated dipsticks or contents gauges.

All measuring equipment on the distributor shall have been recently calibrated and an accurate and satisfactory record of such calibration shall be supplied to the Engineer. If, after beginning the work, the distribution of bituminous material is found to be in error, the distributor shall be withdrawn from the work and calibrated to the satisfaction of the Engineer before any further work is undertaken.

The Engineer may require such tests, as he considers necessary to check the performance of the distributor. As and when directed by the Engineer, the Contractor, at his own expense, shall make the distributor and its equipment available for field testing and shall supply any assistance required for this purpose. Any distributor, which does not operate satisfactorily or conform to the requirements of the Specifications in all respects, may be rejected by the Engineer for further use on the Works.

3.6.3.3 Cleaning Surface

Immediately before applying the bituminous material, all loose dirt and other objectionable material shall be removed from the surface with a power brush. When so ordered by the Engineer, a light application of water shall be made just before the application of bituminous material.

3.6.3.4 Application of Bituminous Material

Bituminous material shall be applied at the rate, or rates, either shown in the Contract Documents or as directed by the Engineer. The rate sprayed can be verified using STP 10.12. This will usually be from 1.0 to 2.5 litres per square metre, and at a temperature within the range called for in Table 3.4-6 for the particular material being used. Any prescribed application shall be divided into two applications when necessary to prevent bitumen flowing off the surface, and additional bituminous material shall be applied where surface conditions indicate it to be necessary, if the Engineer so directs. No further courses shall be applied until the prime coat has dried and the solvent evaporated.

When so directed, the prime coat shall be applied in lanes of approximately one-half or less of the width of the completed surface. A lane of prime coat shall be applied, allowed to penetrate for not less than 48 hours, then covered with blotting material if required, and opened to traffic before bituminous material is applied to the adjacent lane. In covering the first primed lane, a strip at least 200 mm wide shall be left uncovered where it joins the second traffic lane to permit an overlap of the bituminous material.

The surface of structures and trees adjacent to the areas being treated shall be protected in such manner as to prevent their being splashed or damaged. No bituminous material shall be discharged into a borrow pit or gutter.

3.6.3.5 Maintenance and Opening to Traffic

Traffic shall not be permitted on the primed surface until the material has penetrated and dried and, in the opinion of the Engineer, will not be picked up by traffic. Where the Engineer deems it impracticable to detour traffic, the Contractor shall spread the minimum quantity as determined by the Engineer, of blotting material necessary to avoid picking up, and traffic shall be allowed to use areas so treated. Any areas containing an excess or deficiency of priming material shall be corrected by the addition of sand or bitumen as directed by the Engineer. Such corrections of faulty work shall be carried out at the Contractor’s expense.
3.6.4 Measurement

The quantity of bituminous material shall be measured for payment in square metres; however, in the case of plant placed materials a record of the number of Litres of bituminous material placed will also be kept.

The measured quantity shall be the theoretical required to comply with the Contract, or shall be the quantity used and accepted. This should be within ± 5% of the theoretical quantity unless there is a change in the area of coverage.

3.6.5 Payment

This work measured as provided above, shall be paid for at the Contract unit price per unit of measurement. The prices and payment shall be full compensation for preparation of the surface and furnishing and placing the materials and application of blotting materials including all labour, equipment, tools and incidentals necessary to complete the work prescribed in this Section.

Pay item shall be:

3/6/1 Bituminous Prime Coat (plant placed) Square Metre

or

3/6/1 Bituminous Prime Coat (hand placed) Square Metre