**Road Construction**

**Wet Mix Macadam (WMM)**

It consist of laying & compacting clean, crushed, graded, aggregate and granular material, premixed with water to a dense mass

Main function: to provide structural support

**Bituminous Concrete**

It contains graded smaller aggregates and bitumen (5-7%)

Main function: Wearing course

**Dense Bitumen Macadam (DBM)**

It contains graded aggregates and bitumen (3-5 %)/VG-40

Main function: to provide binding action and strength

**Dense Bitumen Macadam (DBM)**

It contains graded aggregates and bitumen (2-4 %)/ VG-30

Main function: to provide binding action and strength

**Natural base/Granular sub-base**

It contains natural, moorum, gravel, crushed stone or its combination and the materials should be well graded.

Main function: to improve drainage and structural support

**Prime Coat**

**of emulsion SS1 grade;**

**24 hrs curing**

**Tack Coat**

**of CRMB**

**Tack Coat**

**of Rapid setting (RS 1) emulsion**

2 ft to 7ft depending upon the conditions

* Say, if there is 3,00,000 MT demand from particular road project
  + Raw bitumen : 2,50,000 MT
  + Modified bitumen : 49,000 MT
  + Bitumen Emulsion : 1,000 MT
* Polymer Modified Bitumen (PMB) prices are 15-25% higher than ash content modified bitumen.

**Bitumen emulsion**

* Types: RS1, RS2, M, SS1, SS2
* **Composition**

|  |  |  |  |
| --- | --- | --- | --- |
| Sr.No. | Description | % share | Price (Rs./MT) |
| 1 | Bitumen VG10 | 60% | 26,000 |
| 2 | Additives: 5 in nos.  The costliest is Rs.600 per Kg | 3% | 325,000 |
| 2.1 | Emulsifier  Akzo Nobel (0.2% conc.) | 2% (out of 3%) |  |
| 3 | Water | 40-45% | Nil |

* BE plant details
  + Plant and Machinery:
* Manual : Rs. 40-45 Lacs
* Fully Automated Rs.1 Crs. to Rs.1.20 Crs.
  + Capacity : 10 MT per hr
  + Net Profit margin : 7-11% (Automated)
  + RoI : 7 years (Automated)
* Market demand for Bitumen emulsion is maximum 20,000 MTPA – throughout the year.

**On Imports**

* Bitumen import is new concept started 7 years ago
* Karwar port is leading import destination
* Pricing
  + Refinery : Rs.26,000 /MT+ excise duty ≈ Rs.30,000 /MT
  + Import : Rs.22,000 /MT + excise duty + custom duty ≈ Rs.25,250 /MT

**On Viscosity Grade**

* VG-40 is costlier than VG-30
* VG-40 may not be easily available. VG-30 can be imported and converted to VG-40
* VG-30 is Softer, VG-40 is harder
* Max import is VG-30 in big volume
* In monsoon season when there is not much of demand for Bitumen, refineries add Diesel to Bitumen and then offer it as FO 365

**On General information**

* The website for more info : http://www.tikitar.com/