713-1 Mineral Filler for Cold In-place Recycled Pavement (Revised 2-12-15)

1. MINERAL FILLER FOR COLD IN-PLACE RECYCLED PAVEMENT [713] (REVISED 2-12-15)

Description. This work includes furnishing and incorporating mineral filler into cold in-place recycled pavement.

Materials. Use either lime slurry or cement for mineral filler

Cement. Furnish Type I or II portland cement listed on the QPL, in accordance with Subsection 551.02.

Lime Slurry. Lime slurry consists of either hydrated lime or quicklime mixed with water. The purpose of the lime slurry is to introduce hydrated lime to the milled recycled asphalt pavement. If quicklime is used to produce lime slurry, proportion quicklime to meet the required hydrated lime application rate after slaking.

Quicklime. Provide granular or pelletized quicklime conforming to the following requirements.

Provide certification that quicklime meets the following gradation under AASHTO T 27:

|  |  |
| --- | --- |
| Sieve Size | Percent Passing (by weight) |
| ⅜ inch (9.5 mm) | 100 |
| No. 10 (2.0 mm) | 25 maximum |

Provide certification that quicklime contains 90% minimum calcium oxide (CaO) content as determined by ASTM C25.

Hydrated lime. Provide hydrated lime conforming to the following requirements.

Provide certification that hydrated lime meets the following gradation under AASHTO M 303:

|  |  |
| --- | --- |
| Sieve Size | Percent Passing (by weight) |
| ⅜ inch (9.5 mm) | 99 |
| No. 30 (0.600 mm) | 95-100 |
| No. 200 (0.075 mm) | 75-100 |

Provide certification that hydrated lime contains 85% minimum calcium hydroxide, Ca(OH)2, as determined by AASHTO T 219 for Type I lime or ASTM C 25 for type II lime.

Construction.

Storage Facility. Store mineral filler in weatherproof containers.

Lime Slurry.

Slurry Equipment. Prepare hydrated lime slurry in either a central mixing tank or tank trucks with agitation provided for mixing. Prepare quicklime slurry in mixing equipment designed for quicklime slurry production. The Project Manager may approve other slurrying methods. Equip mixing equipment with scales and meters to accurately proportion lime and water within 0.5% by weight. Provide consistent pumpable lime slurry with the specified percentage of quicklime or hydrated lime. Use a metering device to accurately measure the amount of lime solids required within plus or minus 0.2 percent. Keep batch logs and solids content for each mixed load and submit to the Project Manager at the end of each day. Equipment or methods that result in excessive loss or displacement of lime are prohibited. Prevent injuries to persons and livestock. Immediately pick up or slake any spilled quicklime to eliminate the hazard. Do not perform Dry Lime treatment work when wind or other weather conditions are able to move quicklime from the intended location.

Lime Slurry Transport and Feed Tank(s). Provide agitation to keep lime slurry in suspension while held in the lime slurry feed transport and cold in-place recycle feed tank(s).

Addition of Lime Slurry. Incorporate hydrated lime or quicklime as lime slurry having a minimum dry solids content of 35 percent by weight. Add lime slurry to the pulverized material with a spray bar located on the milling head. Use a metering device to accurately measure the amount of lime slurry required to within ±10%.

Cement. Submit a sequence of operations to the Project Manager for the introduction of cement into the Cold In-Place Recycling 20 calendar days prior to production. Include a description of equipment that will be used for cement introduction.

Equipment. Use equipment capable of milling and mixing road sections to the depths shown in the plans. The equipment must be able to utilize a water spray or injection system capable of uniformly mixing the water, recycled plant mix and portland cement together. Equip spreading and mixing equipment with scales and meters to accurately proportion cement and water within 0.5% by weight. Equipment or methods that result in excessive loss or displacement of cement are prohibited. Prevent injuries to persons and livestock. Immediately pick up or remove any spilled cement to eliminate hazards. Do not perform work involving cement placement or mixing when wind or other weather conditions are able to move the cement from the intended location.

Immediately suspend operations due to detrimental weather conditions (e.g. wind and/or rain).

Spread portland cement uniformly on top of the pavement to be recycled. Do not spread cement in excess of 1000 feet (300 m) ahead of the CIR operation.

Uniformly mix portland cement and milled plant mix surfacing with recycling equipment.

Method of Measurement. Mineral Filler is measured by the dry ton (metric ton). If hydrated lime is used to produce Lime Slurry, the dry ton of Lime Slurry will be equivalent to the tons of hydrated lime added. If quick lime is used to produce the Lime Slurry, the dry ton of Lime Slurry will be the tons of quick lime added multiplied by 1.32.

Basis of Payment. Payment for completed and accepted quantities is made under the following:

|  |  |
| --- | --- |
| Pay Item | Pay Unit |
| Mineral Filler – CIR | Dry Ton (metric ton) |

Replace mineral filler that does not meet specification or is lost or displaced by blowing, washing, or other causes at no cost to the Department.

Payment at the contract unit price is full compensation for all necessary resources necessary to complete the contract work items.