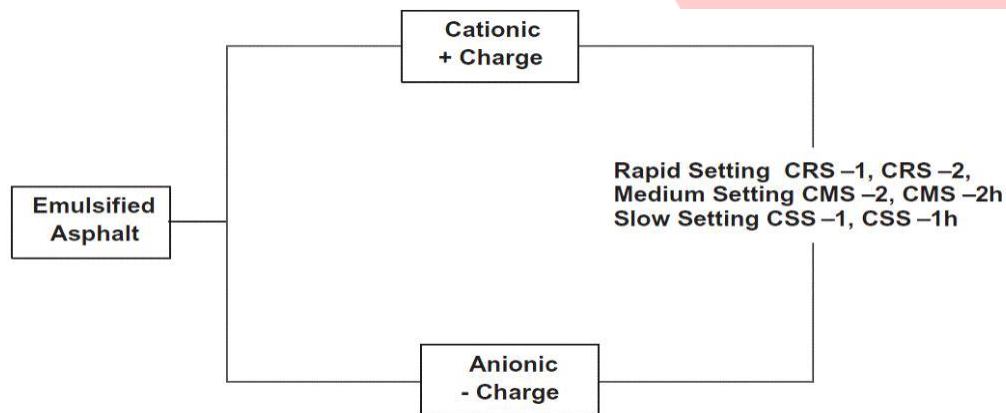


SPECIFICATION OF EMULSION BITUMEN CSS

GENERAL DESCRIPTION OF EMULSION ASPHALT CSS

BITUMEN EMULSIONS CSS ARE USUALLY MADE BY PASSING THE MIXTURE OF HOT BITUMEN AND WATER PHASE BETWEEN A ROTATING DISC, CONE OR WHEEL AND A STATOR. IN THE EMULSIFICATION PROCESS, HOT BINDER IS MECHANICALLY SEPARATED INTO MINUTE GLOBULES AND DISPERSED IN WATER TREATED WITH A SMALL QUANTITY OF EMULSIFYING AGENT. THE WATER IS CALLED THE CONTINUOUS PHASE AND THE GLOBULES OF BINDER ARE CALLED THE DISCONTINUOUS PHASE. BY PROPER SELECTION OF AN EMULSIFYING AGENT AND OTHER MANUFACTURING CONTROLS, EMULSIFIED ASPHALTS ARE PRODUCED IN SEVERAL TYPES AND GRADES:



BY CHOICE OF EMULSIFYING AGENT, THE EMULSIFIED ASPHALT MAY BE: (1) ANIONIC - BINDER GLOBULES ARE ELECTRO-NEGATIVELY CHARGED. (2) CATIONIC - BINDER GLOBULES ARE ELECTRO-POSITIVELY CHARGED. ALSO, BY VARIATION IN MATERIALS AND MANUFACTURE EMULSIFIED ASPHALTS OF BOTH ANIONIC AND CATIONIC TYPES ARE MADE IN SEVERAL GRADES. SOME OF THESE GRADES AND THEIR USES ARE: (1) ANIONIC - NON -VIRGINIA GRADES RS-2

TACK AND SEAL COAT,

SS-1H SLOW SET SLURRY AND TACK, (2) CATIONIC - VIRGINIA GRADES CSS-2



TACK AND SEAL COAT, CSS-1 TACK, CSS-1H TACK CSS-1H TWO TYPES FOR SLURRY (RAPID SET AND SLOW SET) AND TACK; CSS-2 PRIME, TACK, SEAL, AND COLD MIX. (CONTAINS 7-12% SOLVENT) BECAUSE

PARTICLES HAVING A LIKE ELECTROSTATIC CHARGE REPEL EACH OTHER, ASPHALT GLOBULES ARE KEPT APART UNTIL THE EMULSION IS DEPOSITED ON THE SURFACE OF THE SOIL OR AGGREGATE PARTICLES. EMULSIFIED ASPHALTS CAN BE USED WITH COLD AS WELL AS HEATED AGGREGATES, AND WITH AGGREGATES THAT ARE DRY, DAMP, OR WET.

ADVANTAGE OF USING EMULSION ASPHALT CSS

NO PETROLEUM SOLVENT REQUIRED TO LIQUEFY

LITTLE OR NO HYDROCARBON EMISSIONS

IN MOST CASES, USED WITH NO ADDITIONAL HEAT

THE ABILITY TO COAT DAMP AGGREGATE

CAN USE COLD MATERIALS AT REMOTE SITES

WIDE VARIETY OF EMULSION TYPES AVAILABLE TODAY

APPLICATION OF EMULSION BITUMEN CSS

THE ADVANTAGES OF ASPHALT EMULSIONS CSS ARE RELATED TO THEIR CHEMICAL AND PHYSICAL MAKEUP, THESE ADVANTAGES LEAD DIRECTLY TO THE APPLICATIONS TO THE APPLICATIONS IN WHICH EMULSIONS ARE USED.

1. SEALING (CSS-1, CSS-2, M-80, VPRIME, PRECOATING EMULSION)
2. SLURRY SURFACING (CQS, CQS-1H, LMCQS, MICROSYSTEMS)

3. PATCHING/CRACKFILLING (CSS,CSS-R, CSS, CSS-R, SS-1)
 4. FOG SEAL (SS-1, CSS, CSS-R, CSS, CSS-R)
 5. COLD MIX (CSS, CSS-R, SPECIALTY EMULSIONS)
 6. TACK COATING (CSS-1, CSS, SS-1, SPECIALTY EMULSIONS).
 7. DUST LAYING (CSS,SS-1, SPECIALTY EMULSIONS)
 8. STABILIZATION/RECYCLING. (CSS, CSS, SPECIALTY EMULSIONS).
 9. WATERPROOFING/ROOFING/HOME. (SPECIALTY EMULSIONS).
 10. AGRICULTURE. (SS-1, CSS, SPECIALTY EMULSIONS).

PACKING OF EMULSION BITUMEN CSS

PACKING OF EMULSION BITUMEN CSS IS IN NEW THICK STEEL DRUM ON PALLET TO PREVENT ANY LEAK INSIDE OF CONTAINER ALSO BULK IN BITUTAINER AND TANKER.

GUARANTY/WARRANTY OF EMULSION ASPHALT CSS

ATDM GUARANTY THE QUALITY OF EMULSION CSS WITH ARRANGEMENT OF INTERNATIONAL INSPECTOR TO CHECK QUALITY AND QUANTITY OF THE BITUMEN ON EACH SHIPMENT DURING THE LOADING TO VESSEL AND CONTROLLING THE PRODUCTION BY QC TEAM VIA BATCH TEST REPORT BEFORE SHIPPING. ATDM GUARANTY THE QUALITY TO MEET WITH ASTM/EN 15322:2009

ANALYSIS OF BITUMEN CSS

PROPERTY	UNIT	SPEC.	METHOD
<u>Kinematic Viscosity 50°C</u>	Centistokes (CST)	20-100	<u>ASTM D2170</u>
<u>Residue on Sieving, 600 Micron IS</u>	Mass Percentage (%)	0.05 max	<u>ASTM D244</u>
<u>Storage stability after 24 hours</u>	Percentage (%)	2 max	<u>ASTM D244</u>
<u>Binder Residue by Evaporation</u>	Percentage (%)	50 min	<u>ASTM D244</u>
<u>Setting Time</u>	Minutes (')	15	<u>ASTM D244</u>

Penetration, 50 °C	1/10 Millimeters (mm)	60-200	ASTM D5

OUR APPROVALS

