Building
Viksit Bharat

DRG Bitumen
Strengthening Bharat, One Road at a Time

BITUMEN EMULSION

AVAILABLE GRADES		
Rapid-Setting (RS)	**Medium-Setting (MS)**	**Slow-Setting (SS)**
Emulsion-RS-1	Emulsion-MS	Emulsion-SS Water Based
Emulsion-RS-2		Emulsion-SS-1 Oil Based
Micro-Surfacing Emulsion		Emulsion-SS-2

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BENEFITS OF DRG BITUMEN EMULSION

01

Low Viscosity:

Unlike hot bitumen, emulsions have low viscosity at ambient temperatures. It allows applications without heating and thus reduces energy consumption and hazards.

02

Stability:

Emulsions must be stable during storage and transport but separate quickly upon application to bind aggregates effectively.

03

Breaking Mechanism:

When applied to aggregates, the emulsion breaks, leaving a bitumen binder coating on the particles. This process depends on the surfactant type, aggregate surface properties, temperature, and pH.

04

Environment and Storage:

Cold applications reduce energy use and emissions, lowers fire risk, and facilitate easier handling and storage.

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TECHNICAL SPECIFICATIONS OF DRG BITUMEN RAPID-SETTING (RS) EMULSION

Sl.No.	Characteristics	DRG Bitumen Emulsion RS-1	DRG Bitumen Emulsion RS-2	Method of Test	
				IS Code	Annex
i)	Residue on 600 micron IS Sieve, percent by mass, Max	0.05	0.05	-	B
ii)	Viscosity by saybolt furol viscometer, seconds			IS 3117	-
1)	At 25°C	-	-		
2)	At 50°C	20-100	100-300		
iii)	Coagulation of emulsion at low temperature[1]	Nil	Nil	-	C
iv)	Storage stability after 24 h, percent, Max	2	1	-	D
v)	Particle charge	Positive	Positive	-	E
vi)	Coating ability and water resistance:			-	F
1)	Coating, dry aggregate	-	-		
2)	Coating, after spraying	-	-	-	
3)	Coating, wet aggregate	-	-	-	
4)	Coating, after spraying	-	-	-	G
vii)	Stability to mixing with cement (% coagulation), Max	-	-	-	
viii)	Miscibility with water	No Coagulation	No Coagulation		H
ix)	Tests on residue:				
1)	Residue by evaporation, percent, Min	60	67		J
2)	Penetration 25°C/100g/5 sec	80-150	80-150	IS 1203	-
3)	Ductility 27°C/cm, Min	50	50	IS 1208	-
4)	Solubility I trichloroethylene, percent by mass, Min	98	98	IS 1216	-
x)	Distillation in percent volume of distillate recovered at 360°C at			IS 1213	-
1)	190°C	-	-		
2)	225°C	-	-		
3)	260°C	-	-		
4)	316°C	-	-		
5)	Residue at 360°C, percent, Min	-	-		
xi	Water content, percent by mass, Max	-	-	IS 1211	-

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TECHNICAL SPECIFICATIONS OF DRG BITUMEN MEDIUM-SETTING (MS) EMULSION

Sl.No.	Characteristics	DRG Bitumen Emulsion MS	Method of Test	
			IS Code	Annex
i)	Residue on 600 micron IS Sieve, percent by mass, Max	0.05	-	B
ii)	Viscosity by saybolt furol viscometer, seconds		IS 3117	-
1)	At 25°C	-		
2)	At 50°C	50-100		
iii)	Coagulation of emulsion at low temperature[1]	Nil	-	C
iv)	Storage stability after 24 h, percent, Max	1	-	D
v)	Particle charge	Positive	-	E
vi)	Coating ability and water resistance:		-	F
1)	Coating, dry aggregate	Good		
2)	Coating, after spraying	Fair	-	
3)	Coating, wet aggregate	Fair	-	
4)	Coating, after spraying	Fair	-	G
vii)	Stability to mixing with cement (% coagulation), Max	No Coagulation	-	
viii)	Miscibility with water			H
ix)	Tests on residue:			
1)	Residue by evaporation, percent, Min	65		J
2)	Penetration 25°C/100g/5 sec	60-150	IS 1203	-
3)	Ductility 27°C/cm, Min	50	IS 1208	-
4)	Solubility I tricholoethylne, percent by mass, Min	98	IS 1216	-
x)	Distillation in percent volume of distillate recovered at 360°C at		IS 1213	-
1)	190°C	-		
2)	225°C	-		
3)	260°C	-		
4)	316°C	-		
5)	Residue at 360°C, percent, Min	-		
xi	Water content, percent by mass, Max	-	IS 1211	-

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TECHNICAL SPECIFICATIONS OF DRG BITUMEN SLOW-SETTING (SS) EMULSION

Sl.No.	Characteristics	DRG Bitumen Emulsion SS-1	DRG Bitumen Emulsion SS-2	Method of Test	
				IS Code	Annex
i)	Residue on 600 micron IS Sieve, percent by mass, Max	0.05	0.05	-	B
ii)	Viscosity by saybolt furol viscometer, seconds			IS 3117	-
1)	At 25°C	20-100	30-150		
2)	At 50°C	-	-		
iii)	Coagulation of emulsion at low temperature[1]	Nil	Nil	-	C
iv)	Storage stability after 24 h, percent, Max	2	2	-	D
v)	Particle charge	-	Positive	-	E
vi)	Coating ability and water resistance: e)			-	F
1)	Coating, dry aggregate	-	-		
2)	Coating, after spraying	-	-	-	
3)	Coating, wet aggregate	-	-	-	
4)	Coating, after spraying	-	-	-	G
vii)	Stability to mixing with cement (% coagulation), Max	-	2	-	
viii)	Miscibility with water	Immiscible	No Coagulation		H
ix)	Tests on residue:				
1)	Residue by evaporation, percent, Min	-	60		J
2)	Penetration 25°C/100g/5 sec	-	60-120	IS 1203	-
3)	Ductility 27°C/cm, Min	-	50	IS 1208	-
4)	Solubility I tricholoethylne, percent by mass, Min	98	98	IS 1216	-
x)	Distillation in percent volume of distillate recovered at 360°C at			IS 1213	-
1)	190°C	20-55			
2)	225°C	30-75			
3)	260°C	40-90			
4)	316°C	60-100			
5)	Residue at 360°C, percent, Min	50			
xi	Water content, percent by mass, Max	20		IS 1211	-

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