

Solving Problems in Meeting Specifications

Problem	Possible Cause	Action
<i>Emulsion Viscosity Too Low</i>	Asphalt content low	Increase asphalt content
	Emulsifier choice	Choose viscosity building emulsifier
	Asphalt source	Consider asphalt peptizer
	Asphalt source	Add 0.05-0.2% thickener
	Low salt content in asphalt	Decrease calcium chloride content
<i>Emulsion Viscosity Too High</i>	Asphalt content high	Decrease asphalt content
	Emulsifier choice	Choose viscosity-reducing emulsifier
	High salt content in asphalt	Increase calcium chloride content (cationic grades) or sodium chloride (anionic grades)
<i>Storage Stability Failed, Creaming or Sedimentation</i>	Particle size too large	Check formulation, manufacturing conditions
	Density difference between water and asphalt too large	Reduce solvent (creaming) or increase solvent (sedimentation). Add calcium chloride to water phase (cationic grades)
	Wrong type of solvent	Change solvent
	pH too low or too high	Adjust pH
	Viscosity too low	See above
<i>Sieve Residue High</i>	Emulsifier content too low or wrong type	Increase amount or change type of emulsifier
	Production problems	See 'Solving Problems in Manufacture'
	Storage and handling problems	See 'Solving Problems in Storage and Handling'
<i>Cement Mix Failed</i>	Emulsifier content too low or wrong type	Increase amount or change type of emulsifier
	pH wrong	Lower pH (SS) or raise pH (CSS)
<i>Breaking Index Too High or Demulsibility Too Low</i>	Too much emulsifier	Reduce emulsifier content (but check other properties). Consider alternative emulsifier.
<i>Coating Test Failed</i>	Poor coating	Add more solvent. Change emulsifier.
	Breaks too fast	Adjust formulation, e.g. increase emulsifier
	Washes away	Adjust formulation, e.g. decrease emulsifier
	Bad aggregate	Use dope in the asphalt. Change aggregate.
<i>Asphalt Content Low</i>	Production problems	See Solving Manufacturing Problems
<i>Oil Distillate Too High</i>	Too much solvent	Reduce solvent content
	Asphalt contains solvent	Check base asphalt

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<i>Problem</i>	<i>Possible Cause</i>	<i>Action</i>
<i>Penetration or Softening Point Outside Limits</i>	Wrong type of solvent used	Use solvent with lower boiling range
	Not suitable type of asphalt	Select different asphalt grade or add flux oil to emulsion recipe
<i>Ductility Outside Limits</i>	Not suitable type of asphalt	Select different asphalt grade
<i>Too Much Insoluble Material Present</i>	Low quality asphalt	Check asphalt
	Too much calcium chloride	Lower calcium chloride

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