CRACK SEAL SUBTASK GROUP

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- Review MTAG Crack Seal Chapter
- Crack Sealing vs Crack Filling
- LTPP Bind Pavement Temperatures
- Current CalTrans Sealing Specs
- Proposed Spec Changes/Improvements

MTAG Chapter 3 – Crack Sealing

- Crack Types
- Crack Treatment Criteria
- Crack Sealing
- Crack Filling
- Materials
- Crack Preparation
- Installation
- Construction
- Finishing
- Troubleshooting

Sealing vs Filling

Sealing - Working Cracks (> 1/8″ movement)

- Thermal Transverse > 20‘ spacing

Filling - Non-Working Cracks (< 1/8″ movement)

- Longitudinal, Block, Close Transverse

Sealing vs Filling

Sealing – Install flexible, extensible sealant into widened reservoirs

Filling – Install stiffer traffic resistant products into cleaned, prepared cracks

Pavement Temperatures

FHWA LTPP Bind determines high and low pavement temperatures

California Pavement Temperatures (98%)

76 – 10	Death Valley
70 – 10	Indio, Barstow, San Bernardino
64 – 10	LA, Sacramento
64 – 16	Bishop, Yosemite, Lancaster
64 – 22	Susanville, Mt. Shasta

California Pavement Temperatures (98%)

58 – 10	San Francisco, Oakland
58 – 16	Mono Lake
58 – 22	Lodgepole
58 – 28	Tahoe
52 – 10	Eureka, Half Moon Bay

FHWA Application Note – Using LTPP Bind V2.1 To Improve Crack Sealing in Asphalt Concrete Pavements. Dec 2003

Sealant/Filler properties should be chosen to function over the temperature range experienced.

CalTrans SSP-37-400

- Emulsion Crack Sealant
- Polyester Fiber Asphalt
- Modified Asphalt Crack Sealant
- Low Modulus Asphalt Crack Sealant
- Preparation
- Application
- Measurement and Payment

Proposed Materials Specification Changes

Emulsified – Review & Update if Needed

Fiber Asphalt – Eliminate

Modified Asphalt – 3 Temperature Grades

Low Modulus – 2 Temperature Grades (rename)

Proposed Modified Asphalt Sealant Specification

Test	Cold	Moderate	Hot
Softening Point	82°C min	90°C min	98°C min
Cone Penetration	50-70	35-55	20-40
Resilience	40% min	40% min	40% min
Viscosity, 204C	20-100 poise	20-100 poise	20-100 poise
Flexibility	-16°C	-10°C	-4°C
Asphalt Compatibility	pass	pass	pass
Tensile Adhesion	500% min	500% min	400% min

Polymer Asphalt Crack Sealant

Test	Cold	Hot
Softening Point	82°C min	98°C min
Cone Penetration	50-90	20-40
Resilience	30-60%	30-60%
Viscosity, 204C	40 poise max	40 poise max
Flexibility	-28°C	-16°C

Treatment Selection

- Pavement condition evaluation – seal or fill
- Temperature extremes to select material type

Installation Methods - Sealing

- Reservoir Cutting
- Cleaning
- Application
- Finishing
- Measurement and Payment

Installation Methods - Filling

- Crack Cleaning
- Application
- Finishing
- Measurement and Payment