

Roscommon County Road Commission

**Overband Crack Fill
Stand-Alone Application**

Description: Clean cracks in hot mix asphalt (HMA) pavements and place the specified materials into and over the crack.

Materials:

1. The contractor will select the material from one of the following alternates.

Alternate #1: A field blended liquid mixture.

Penetration grade asphalt cement	85 - 100 dmm
Rubber-R-Road Product # R-570	5 percent by weight
Polyester Fibers	5 percent by weight

Alternate #2: A plant blended liquid mixture of a polymer modified asphalt cement and polyester fibers in the following proportions. The polyester fibers are field blended.

Polyester Fibers	0.5 - 1.0 percent by weight
Polymer modified asphalt cement	Remainder by weight

Alternate #3: Asphalt Rubber Plus, Type 2.

A product from Crafc0, Inc.

2. Material Acceptance Criteria.

A. **Penetration Grade Asphalt Cement** - A general Certification from an approved manufacturer is required for this material.

B. **Rubber R- Road (Product # R-570)** - This material will be treated as a Qualified Product for the purpose of project documentation.

C. **Polyester Fibers** - A general Certification is required for this material. The polyester fibers shall meet the following requirements:

Length	6.4 mm ± 0.05 mm
Crimps, (ASTM D-3937)	None
Tensile Strength, (ASTM D-2256)*	480 MPa minimum
Denier, (ASTM D-1577)*	3.0 to 6.0
Specific Gravity	1.32 to 1.40
Melting Temperature	245 degrees C minimum
Ignition Temperature	540 degrees C minimum

*This data must be obtained prior to cutting the fibers.

D. **Polymer Modified Asphalt Cement** - A general Certification from an approved manufacturer is required for this material. The Polymer Modified Asphalt Cement shall meet the following requirements.

Test		
R&B Softening Point, degrees C	80 min	ASTM D 36
Elastic Recovery, 25 degrees C, 10 cm pull	85% min	AASHTO T301
Ductility, 25 degrees C, 5cm/min, cm	40 min	ASTM D 113
Force Ductility, 25 degrees C, 30-40 min	8.0 lbs/in ² min	AASHTO T300

E. **Prepackaged Material Certification.** This material will be treated as a Qualified Product for the purpose of project documentation.

Construction:

A. Equipment.

1. **Compressed Air System.** Furnish and use a compressed air system that produces a continuous, high-volume, high pressure air stream of clean dry air to prepare cracks. Equip the air compressor with a moisture separator to remove all oil and water from the air supply. Provide a compressor that can produce a minimum of 100 psi and continuous 150 cfm air flow.
2. **Melter Applicator.** Provide a melter applicator consisting of a boiler kettle equipped with pressure pump, hose and applicator wand. Equip the hose with a shutoff control. Place a mechanical full sweep agitator in the kettle to provide continuous blending. Equip the unit with thermometers to monitor the material temperature and the heating oil temperature. Provide thermostatic controls that allow the operator to regulate material temperature up to 425 °F.
3. **Application Wand.** Apply the material by a round application head having a concave underside. Apply 4 inches wide for standard coverage. With the prior written approval of the Engineer, application width may be increased to a maximum of 6 inches to provide complete and uniform coverage over multi-crack areas. Apply sealant at a thickness of 1/8 to 3/16 inch.
4. **Heat Lance.** Use of a heat lance is allowed to assure that no residual moisture is present in the crack or on the pavement surface where the overband is to be applied. Do not attempt to seal soaked pavement cracks by drying the pavement surface with a heat lance.

- B. Pre- Construction Meeting.** The Engineer will hold a meeting before beginning the work to discuss the following.
1. The Contractor's detailed work schedule.
 2. The traffic control plan
 3. Required project documentation.
 4. Inspection of the condition and adequacy of equipment.
 5. The Contractor will designate an authorized Contractor's representative.
- C. Crack Preparation.** Clean cracks using compressed air and other tools necessary to remove all loose dirt, vegetation and foreign material. Clean cracks no more than 10 minutes ahead of filling operation.
- D. Application.** Apply the material to dry and thoroughly cleaned cracks. Apply as follows unless otherwise specified.
1. **Stand Alone Overband Crack Fill.** Limit filling cracks to more than 1/8 inch wide or 3 feet long. Seal cracks with varying widths, portions of which are 1/8 inch or greater, along their entire length.
- E. Mixing Procedure.** When using field mixed material, add the polyester fibers to the polymer modified asphalt cement and thoroughly mix the kettle. Do not exceed 400 °F in the field mix or prepackaged material.
- F. Required Project Documentation.** Provide Engineer, on a daily basis, a report with the following information.
1. Job number and route name or number.
 2. Date, air temperature (°F), a.m. and p.m. weather.
 3. Beginning and ending locations for the day, including lane(s) and direction.
 4. Quantity of material used for the day, including lot number.
 5. Traffic control typically used, number of traffic control moes, and checks on the traffic control conducted
 6. Unique or different situations on the project.
 7. Contractor and Contractor's Authorized Representative's signature.
- G. Weather Limitations:** Material shall be placed when the air temperature is between 45 °F and 85 °F. No material shall be placed unless the pavement is dry and the cracks are free of moisture.
- H. Protecting the Work.** The contractor must allow the material to cool sufficiently before opening to traffic. Blotting any materials such as sand, aggregate, sawdust, or paper is prohibited. Any damage by traffic to the treated pavement areas shall be repaired by the Contractor at no expense to the Roscommon County Road Commission.

I. **Acceptance of Work.** When work is complete on the project, or on a route or job included in the project, schedule an inspection of the work with the Engineer. The Engineer will note all deficiencies including areas exhibiting adhesion failure, cohesion failure, missed cracks, or other factors that show the work is not acceptable. Redo work identified by the Engineer as not acceptable.

Notify the Engineer upon completion of required corrective work, or upon completion of work on the route, job, or project if corrective work is not required.

Measurement and Payment:

Contract Item (Pay Item)

Pay Unit

Overband Crack Fill, Roadbed.....Roadbed Mile

Overband crack fill includes preparing and filling cracks; providing the required documentation; and all corrective action. **Overband Crack Fill, Roadbed** will be measured along the roadway centerline and will include the traffic lanes, the paved shoulders, and all auxiliary lanes.

Desired Completion Date: This project is desired to be completed no later than November 10, 2009. This date may vary due to the weather limitation specs.

**Roscommon County Road Commission
2009 Overband Crack Filling**

Overband Crack Filling of Primary Roads

CR 100	M-18 to Cr 300	5.50 miles
CR 100	CR 103 to M-18	5.00 miles
CR 103	N. Higgins to CR 100	4.50 miles
CR 400	M-18 to CR 401	3.00 miles
CR 200	CR 104 to Birch Rd.	2.00 miles
CR 300	CR 100 To Long Point Dr.	3.30 miles
CR 602/603	From M-18 to F-97	5.00 miles
Total Mileage of Overband crack filling:		28.30 miles

Overband Crack Filling of Local Roads

Backus Twp _____

East Nestel Rd.	CR 107 to End HMA	.250 miles
Woodcock Way	E. Nestel to Starwood	.12 miles
Starwood Ct.	Woodcock Way to Cul-de-sac	.046
Total for Backus Twp:		0.42 miles

Denton Twp

4 th Street	M-55 to End	.077 miles
5 th Street	M-55 to End	.070 miles
14 th Street	M-55 Dogwood	.126 miles
Antler Trail	Reindeer to reindeer	.350 miles
Arrowhead	Widdis to Widdis	.280 miles

Aspenwood	All	.482 miles
Birch Street	M-55 to Houghton View Drive	.052 miles
Boatman	Reserve to Roberts	.380 miles
Bryan J	CR 100 to Old Trail	.292 miles
Burril Drive	M-55 to Iroquois	.422 miles
Castlewood Court	Wooden Key to End	.067 miles
Cottage Street	Iroquois to lake	.134 miles
Deer Run Blvd.	Reindeer to Meadow Lane	1.124 miles
Frisco Drive	Frisco Loop	.383 miles
Gazelle Drive	Northland to Whitetail	.196 miles
Grand Ave.	M-55 to Grove	.271 miles
Grove Street	M-55 to End	.172 miles
Gulfwood Court	Ridgewood to End	.054 miles
Hickory Court	Aspenwood to End	.037 miles
Huntington Road	Reserve to James	.135 miles
James Road	M-55 to Huntington	.178 miles
Linwood Drive	Wildwood to Lake James	.058 miles
Meadow Lane	Deer Run to Deer Run	.575 miles
Northland Drive	Antelope to Emery	.500 miles
Oak Street	M-18 to End	.231 miles
Pine Street	M-18 to End	.122 miles
Roberts Drive	M-55 to Huntington	.189 miles

Silver Drive	CR100 to CR100	.278 miles
Springwood Drive	M-55 to Waldenwood	.615 miles
S. Townline Road	M-55 to Broadway	.189 miles
Walnut Drive	M-18 to End	.240 miles
Wavewood Court	All	.060 miles
Widdis Drive	M-55 to Arrowhead	.166 miles
Wildwood Drive	Lake James to End	.266 miles
	Total for Denton Twp:	8.80 miles
Gerrish Twp		
Hitchcock Ave.	CR 103 to Pine Bluffs	.34 miles
Oakwood Rd.	Maplehurst to CR100	.50 miles
	Total for Gerrish Twp:	.84 miles
Higgins Twp		
Blazed Trail	Joyce Kilmer to N. Maple Valley	1.00 miles
Joyce Kilmer	M-18 to Ausable	1.09 miles
N. Central Dr.	Bennett to Township Line	.095 miles
	Total for Higgins Twp:	3.04 miles
Markey Twp		
Autumn Lane	CR 104 to Autumn	.778 miles
Avalon Dr.	Englewood to Winchester	.225 miles
Breaugh Ct.	Lakeview to Windemere	.081 miles
Breckenridge Dr.	CR 300 to CR 102	.683 miles

Danta Dr.	Sheffield to Glenhurst	.521 miles
Elk Ct.	Glenhurst to Cul-de-sac	.071 miles
Fairbanks Dr.	Leisure to Weaver	.066 miles
Friar Tuck	Maid Marian to Robin Hood	.116 miles
Glenhurst Dr.	Sheffield to CR100	.355 miles
Hammond Dr.	Mallard to Rapson	.080 miles
Heidi Ct.	Kirkshire to Cul-de-sac	.082 miles
Larkmoor Lane	Wendy to Ridgedale	.11 miles
Little John	Maid Marian to Robin Hood	.116 miles
Lansing Rd.	Flint to Redwood	1.497 miles
Maid Marian	Robin Hood to Robin Hood	.356 miles
Maplewood Dr.	Flint to Shady Grove	.541 miles
McDonald Dr.	Schmidt to Miller	.125 miles
Miller Dr.	CR 100 to McDonald	.101 miles
Palmetto Lane	School to Avalon	.076 miles
Pebble Ave.	Sheffield to Danta	.044 miles
Prospect Drive	CR 102 to Breckenridge	.206 miles
Raven Way	Ridgedale to Sheffield	.228 miles
Robin Hood	Flint to School	.596 miles
Rustic Ct.	Kirkshire to Cul-de-sac	.084 miles
Schmidt Ave.	CR 100 to End	.149 miles
School Rd.	Flint to Redwood	1.50 miles
Shady Grove Lane	Maplewood to Maplewood	.422 miles

Sheffield Dr.	Ridgedale to Kirkshire	1.096 miles
Somerset Terrace	Ridgedale to Glenhurst	.185 miles
Valencia Dr.	Danta to Wendy	.082 miles
Weaver Dr.	Fairbanks to Split	.211 miles
Wendy Lane	Valencia to Larkmoor	.127 miles
Winchester Dr.	Avalon to Wellington	.220 miles
Windemere Dr.	Turtle to CR 100	.191 miles
	Total for Markey Twp:	11.32 miles

**Roscommon County Road Commission
2009 Overband Crack Fill
Bid Sheet**

	<u>Quantity</u>	<u>Unit Price</u>	<u>Total Bid</u>
Overband Crack Fill, Roadbed	52.72 miles	\$/mile*	\$

* Roadbed Miles

*Roscommon County Road Commission reserves the right to add and/ or subtract projects in the best interest of.

*Bid includes all traffic control as required.

*Alternate bids, with a complete description of work performed, can be submitted on a separate copy of page # 11 and marked here.

Alternate Submitted Yes / No (circle one)

Company Name

Telephone Number

Mailing Address

Fax Number

City, State, Zip

Date

Authorized Company Representative Signature