

**NDSU** UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE

# North Dakota Local Technical Assistance Program (NDLTAP)

## Pavement Preservation

Part 1 (webinar) of a 3-part series  
June 17-18, 2020



Dale C. Heglund, PE/PLS  
NDLTAP Program Director

*"Helping local transportation leaders grow"*

**NDSU**

UPPER GREAT PLAINS  
TRANSPORTATION INSTITUTE  
NORTH DAKOTA LOCAL TECHNICAL ASSISTANCE PROGRAM



## PART 1 PAVEMENT PRESERVATION SERIES CRACK SEALING, SPRAY PATCHING, ROADWAY CONDITION REVIEW

3 Hours

## PART 2 PAVEMENT PRESERVATION SERIES EQUIPMENT AND BEST PRACTICES

We

Virtual

1 Hour – Road

Wednesday, June 17, 2020 • Virtual Training (Webinar) • 1:00 PM – 2:00 PM CST

Registration link for the webinar:

<https://ugpti.webex.com/ugpti/onstage/g.php?MTID=e78bd8d3002792e230513cec995f8a7>

Event Password: YZpHvP3w38

Call in Info: 1-415-655-0001 Access Code: 127 305 8632

### Course Description:

This webinar will cover the equipment that is available for various pavement preservation practices. The session will cover best practices when using various equipment for crack sealing, crack filling and asphalt patching. A detailed overview will be provided for those attending the field training on June 18.

### Instructors:



**Rodney Ness.** Swanton Equipment, ND Representative. Prior to joining the Rodney had 31 years with Burleigh County. He built upon his operator skills road superintendent. His commitment to fellow employees, the public, safety for a top-notch road network.



**Gerard Feist.** NDLTAP Asphalt Consultant, prior to joining NDLTAP in 2018, asphalt roadway repair and preventive maintenance efforts with Burleigh County knowledge in the areas of crack sealing, routing cracks, rubberizing cracks, patching, complete overlays, new paving, and pothole repair. Gerard has w streets, and parking lots and is well versed in equipment maintenance.



**Chris Stebbing.** Upper Midwest Territory Manager for Crafcro, covering MN been with Crafcro 8 years. His past work history includes 10 years as a territory Paving Materials selling High-Performance Patching Material, and 12 years and county governments as laborer, mechanic, equipment operator, and Supervisor in northern Minnesota.

**Target Audience:** City and County personnel that perform pavement reviews and/or make training focus will be on street patching and crack sealing.

If you have questions about this event contact NDLTAP @ 701-328-9855 [ndltap@ugpti.org](mailto:ndltap@ugpti.org)

If you have a request for an accommodation related to a disability or have special dietary needs, please contact Amanda Jean Miller at [amanda.jean.miller@ndsu.edu](mailto:amanda.jean.miller@ndsu.edu) at least two working days prior to the event.

This program is offered with sponsorship from FHWA, ND Department of Transportation, Western Dakota Energy Association, ND Insurance Reserve Fund, ND Township Officers Association, the Northland Chapter of the American Traffic Safety Services Association, and ND chapter of the American Public Works Association.

NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status. Old Main 201, 701-231-7708, [ndsu.ese@ndsu.edu](mailto:ndsu.ese@ndsu.edu).

## PART 3 PAVEMENT PRESERVATION SERIES METHODS OF PRESERVATION

Field Training

5 Hours – Road Scholar Credits

**TENTATIVE • Thursday, June 18, 2020**

We are tentatively planning to hold this event in an in-person format. If it is determined that we cannot do so safely in compliance with state and local guidelines, by limiting the number of participants, and by following social distancing guidelines, we will notify registrants of a cancellation or plans to offer in alternative format by no later than one week before the event.

**Thursday, June 18 – Field Training • 9:00 AM – 3:00 PM CST**

City of Mandan Public Works Building, 411 6th Ave SW, Mandan ND

**\$25 Registration Fee (includes printed training materials and other workshop supplies). NDLTAP will invoice post event.**

Lunch provided by Swanton Equipment. Refreshment breaks provided by Brock White.

**REGISTRATION DEADLINE: JUNE 11, 2020 Class limit is 35**

**Field training/hands-on street repairs by all participants (9 am – 3 pm)**

This work will be on a street section. A participant who are required to bring high visibility vests, safety glasses, gloves and clothes that can get oil stained.

The class participants will be divided into 6 learning groups:

- Mill and hot mix patch
- Joint seal/rubber
- Spray patching
- Crack seal – PG 58-28
- Mastic depressed joint repair
- American Road Patch

### Instructors:



**Rodney Ness.** Swanton Equipment, ND Representative. Prior to joining the Swanton team in 2013, Rodney had 31 years with Burleigh County. He built upon his operator skills to take on the position of road superintendent. His commitment to fellow employees, the public, safety and quality set the stage for a top-notch road network.



**Gerard Feist.** NDLTAP Asphalt Consultant, prior to joining NDLTAP in 2018, asphalt roadway repair and preventive maintenance efforts with Burleigh County. He has extensive knowledge in the areas of crack sealing, routing cracks, rubberizing cracks, cold mix patching, spray patching, complete overlays, new paving, and pothole repair. Gerard has worked on rural roads, streets, and parking lots and is well versed in equipment maintenance.



**Chris Stebbing.** Upper Midwest Territory Manager for Crafcro, covering MN, IA, NE, ND, SD and MT. He's been with Crafcro 8 years. His past work history includes 10 years as a territory manager for Unique Paving Materials selling High-Performance Patching Material, and 12 years in Public Works in both city and county governments as laborer, mechanic, equipment operator, and Supervisor. Chris is native to northern Minnesota.

**Target Audience:** City and County personnel that perform pavement reviews and/or make pavement repairs. The training focus will be on street patching and crack sealing.

If you have questions about this event contact NDLTAP @ 701-328-9855 [ndltap@ugpti.org](mailto:ndltap@ugpti.org)

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Wednesday, June 17, 2020 • Virtual Training (Webinar) – 9:00 AM – Noon

Registration Link: <https://ugpti.webex.com/ugpti/onstage/g.php?MTID=e9c05>

Event Password: Xu2xe4FEU4

Call in Info: 1-415-655-0001 Access Code: 127 122 6740

### Topics covered:

- Roadway condition
- Crack sealing
- Spray patching
- Types of repairs
- Repair material review
- On-line photos – resources
- First-aid and safety

### Instructor:



**Tom Wood.** Pavement Specialist with WSB & Associates, I has worked for the Minnesota Department of Transportation maintenance methods with the Office of Materials and as specializing in surface treatments for hot-mix asphalt pav and the SemMaterials Group.

**Target Audience:** City and County personnel that perform pavement reviews and/or make training focus will be on street patching and crack sealing.

If you have questions about this event contact NDLTAP @ 701-328-9855

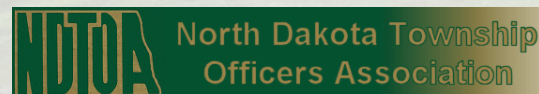
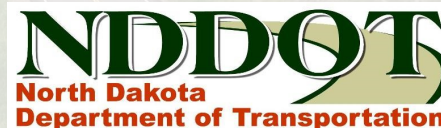
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*for the good of all counties!*



*Some of NDLTAP Partners*

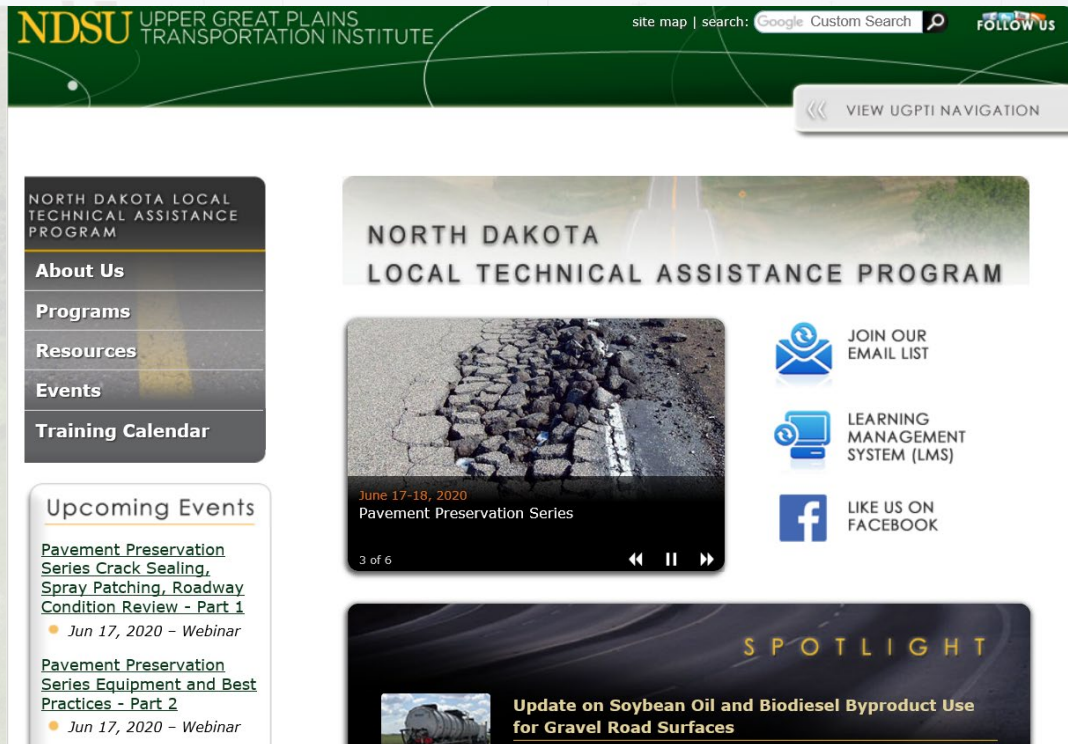


# Continuous Learning





# NDLTAP – “Your Road Resource of Choice”



The screenshot shows the NDLTAP website with a green header. The header contains the NDSU logo, the text 'UPPER GREAT PLAINS TRANSPORTATION INSTITUTE', a 'site map' link, a 'Google Custom Search' bar, and a 'FOLLOW US' link with social media icons. Below the header is a 'VIEW UGPTI NAVIGATION' button. The main content area is divided into three columns. The left column has a dark sidebar with links: 'About Us', 'Programs', 'Resources', 'Events', and 'Training Calendar'. The middle column features a large video player titled 'NORTH DAKOTA LOCAL TECHNICAL ASSISTANCE PROGRAM' showing a road repair. Below the video is a 'Pavement Preservation Series' video player with a date of 'June 17-18, 2020'. The right column has three social media links: 'JOIN OUR EMAIL LIST' with an email icon, 'LEARNING MANAGEMENT SYSTEM (LMS)' with a computer icon, and 'LIKE US ON FACEBOOK' with a Facebook icon. At the bottom, there is a 'SPOTLIGHT' section with a video titled 'Update on Soybean Oil and Biodiesel Byproduct Use for Gravel Road Surfaces' and a small image of a tanker truck.

**NDSU** UPPER GREAT PLAINS  
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site map | search: Google Custom Search | FOLLOW US

VIEW UGPTI NAVIGATION

**NORTH DAKOTA LOCAL TECHNICAL ASSISTANCE PROGRAM**

**About Us**  
**Programs**  
**Resources**  
**Events**  
**Training Calendar**

**Upcoming Events**

Pavement Preservation Series Crack Sealing, Spray Patching, Roadway Condition Review - Part 1  
• Jun 17, 2020 - Webinar

Pavement Preservation Series Equipment and Best Practices - Part 2  
• Jun 17, 2020 - Webinar

**NORTH DAKOTA LOCAL TECHNICAL ASSISTANCE PROGRAM**

June 17-18, 2020  
Pavement Preservation Series

3 of 6

**JOIN OUR EMAIL LIST**

**LEARNING MANAGEMENT SYSTEM (LMS)**

**LIKE US ON FACEBOOK**

**SPOTLIGHT**

**Update on Soybean Oil and Biodiesel Byproduct Use for Gravel Road Surfaces**

# Gerard Feist

## NDLTAP Asphalt Consultant



**Gerard Feist**  
Asphalt Consultant

**North Dakota Local Technical Assistance Program**

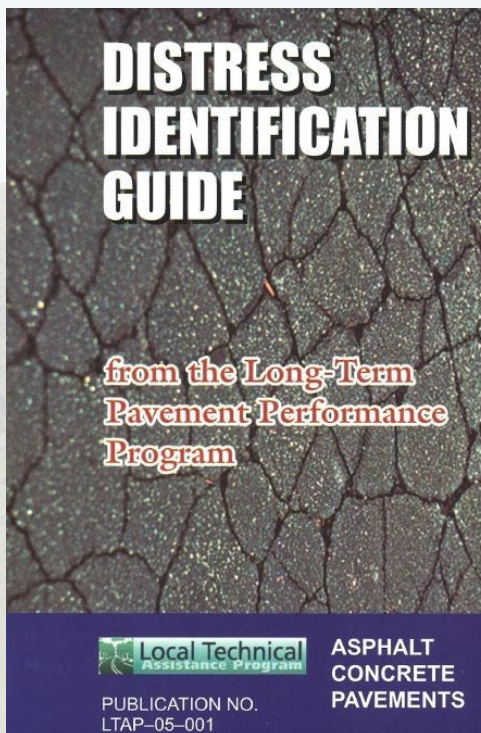
[gjfeist2@gmail.com](mailto:gjfeist2@gmail.com)  
701-595-2017

Bismarck  
[ndltap.org](http://ndltap.org)

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<https://www.ndltap.org/resources/downloads/asphalt-distress-identification-guide.pdf>



# Welcome

North Dakota  
**ASPHALT**  
conference

NDSU | UPPER GREAT PLAINS TRANSPORTATION INSTITUTE  
NORTH DAKOTA LOCAL TECHNICAL ASSISTANCE PROGRAM



U.S. Department  
of Transportation  
**Federal Highway  
Administration**



**NDDOT**  
North Dakota  
Department of Transportation

**DAKOTA ASPHALT  
PAVEMENT ASSOCIATION**

# LEARN EVOLVE IMPLEMENT SUCCEED

North Dakota Asphalt Conference

Bismarck, ND - April 6-7, 2021





Tools in the toolbox

What's old is new again

Innovation





## My Favorite Quote

*“Cracks need to be sealed, because where I come from water can’t jump.”,*  
Tom Wood,  
MnDOT/WSB



# Chris Stebbing



Chris Stebbing  
Crafco, Inc.  
Territory Manager, Upper Midwest  
Cell (970) 261-4966



Delivering Confidence Through Innovation, Quality and Value Since 1976



# Crack Treatments

NDLTAP

*Pavement Preservation Series*

*Part 2*

*Bismarck, ND*

*June 17th, 2020*

# What is Crack Treatment?

- Crack Treatments - methods in which cracks or joints are directly treated through sealing or filling operations.
- Crack Treatments have proven to be the most cost-effective pavement preservation method for enhancing surface treatments and extending overall pavement life.



# What is Crack Sealing vs. Filling?



## Crack Sealing:

Placement of specialized treatment materials (sealant) into cracks/joints using unique configurations to **prevent water intrusion** AND **prevent incompressible materials from entering the crack/joint.**



# What is Crack Sealing vs. Filling?

## Crack Filling:

Placement of ordinary treatment materials into low-moving cracks to reduce water intrusion AND reinforce the adjacent pavement.



## **Crack Sealing**

- Use of polymer-modified sealants
- Better suited for Rout & Seal application
- Provides greatest longevity

## **Crack Filling**

- Use of standard rubber or recycled rubber.
- Normally used in Blow & Go application
- Will require frequent re-visits

**CLEAN &  
DRY!!**



# Transverse (ex. Thermal)



# Longitudinal (ex. Cold Joints)





# Block



# Edge





# Fatigue



# Concrete Joints (ex. Saw & Seal or Re-seal)





# Pretreatment for Surface Treatments



# Pavement Condition

- Pavement Condition
  - Good: Crack Sealing increases life expectancy
  - Fair: Crack Sealing increases life expectancy
  - Poor: Crack Sealing increases life expectancy; however all variables of the pavement should be evaluated to determine the appropriate treatment



Good



Fair



Poor



# Seasonal and Environmental Factors

- Spring/Fall application optimal
- DRY, DRY, DRY conditions!!
- Cracks are moderately open

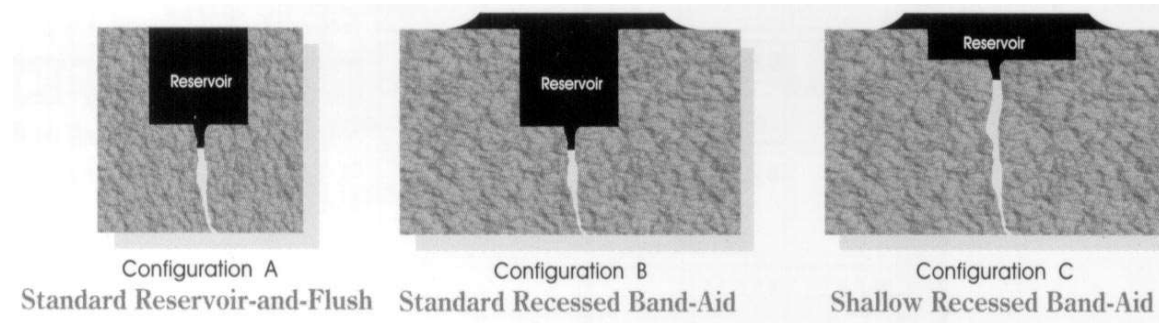


# Other Factors

- Work force availability
- Traffic conditions
- Conjunction with other projects

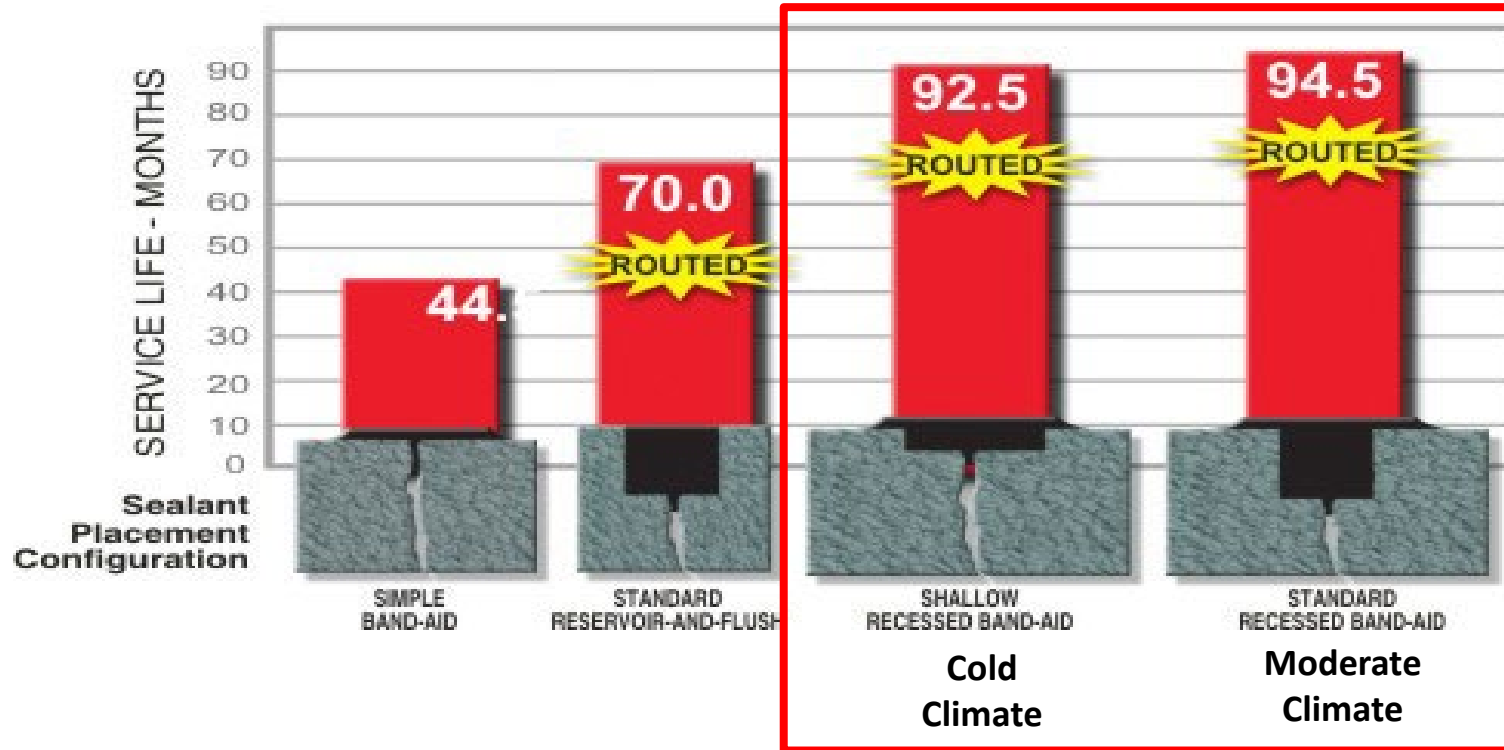


# Placement Configuration for Crack Sealing





# Configuration Performance



# Sealant Specifications

- Sealants must meet various specifications related to climate, flexibility, resilience, surface hardness, etc.
- The most common specification referred to is ASTM D6690 Types I, II, III and IV.
- Some DOTs have developed their own requirements by modifying an ASTM specification to better suit their needs.



# Sealant Selection

## **North Dakota DOT specs include:**

Hot Poured Elastic Joint Sealer

- ASTM D6690 Type II
- ASTM D6690 Type IV – Modified ASTM D6690 Type IV (specific gravity/weight per gallon)

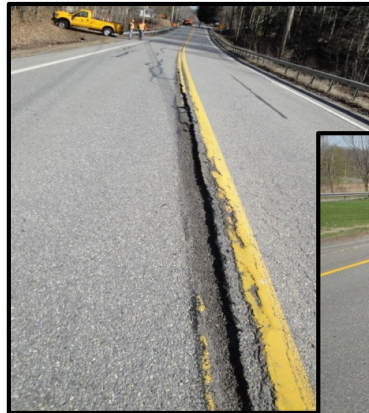


Crack	Crack Width	Crack Density Less than 20%	Crack Density Greater than 20%
Hairline to Large	$\leq 1/8''$ (3mm) – $1\frac{1}{2}''$ (38mm)	Rout & Seal	Seal Rout to clean, if applicable
Wide	$>1\frac{1}{2}''$ (38mm)	Seal with Mastic	

Rout and Seal cracks up  
to  $1\frac{1}{2}''$  (38mm) wide



Use Mastics to seal wide cracks





Delivering Confidence Through Innovation, Quality and Value Since 1976



# Mastics

NDLTAP

*Pavement Preservation Series*

*Part 2*

*Bismarck, ND*

*June 17th, 2020*

# Mastic Composition



Binder- Asphalt modified with polymers and oils to better resist shoving and cracking.

Aggregate – designed to provide mass and stability for compression resistance and to meet load bearing requirements, while still allowing the material to flow.

**NEW SPECIFICATION:**

ASTM D8260 HOT-APPLIED ASPHALT AGGREGATE-FILLED MASTIC



# Mastic Attributes

**Prepackaged/Easy to Apply**

**Flowable/Pourable**

**Aggregate Filled**

**Flexible**

**Bulkable**

**Durable/Resilient**

**Waterproof**

**Highly Adhesive**

**Rapid Set**

**Voidless/No Compaction required**

**Resistant to De-icing Chemicals**



# Wide Cracks

For cracks greater than 1.5" (3.8 cm) wide in both asphalt and concrete



# Longitudinal Cracks

- Mastics repair longitudinal cracks by filling the void and waterproofing the area.
- Unrepaired cracks will allow infiltration of water and debris into the pavement resulting in raveling and potholes.





# Transverse Cracks

- As with longitudinal cracks, the Mastic repair will waterproof transverse cracking and extend the life of the pavement.
- The earlier in the pavement life that the repair is made, the better. Mastics can also repair and waterproof secondary cracking that may be present.



# Potholes



# Joint Failures



Quickly repair centerline  
and edge joint failures





# Filling Rumble Strips

Repair of deteriorated  
rumble strips or filling of  
areas needed to reroute  
traffic



# Level Uneven Pavement



Mastic repairs take the bump out of the road by leveling distresses such as recessed thermal cracking, utility cuts, or where asphalt pavements fail where they meet concrete pavements.

# Bridge Deck Approaches

Mastics are great to taper the entry point, waterproof the area, increase driver safety and smooth the ride.





# Railroad Crossings



Mastic evens out railroad and snowmobile crossings

# Manhole Covers



Improve the ride quality and safety of manholes.

# Surface Pre-Treatment

Many types of distresses need to be repaired before a surface treatment...



- Mastics can be used as a pre-treatment for future surface treatments.
- Distresses such as alligator cracking, fatigue cracking, utility cuts and more can be repaired with Mastics to improve the performance of the surface treatment to be applied

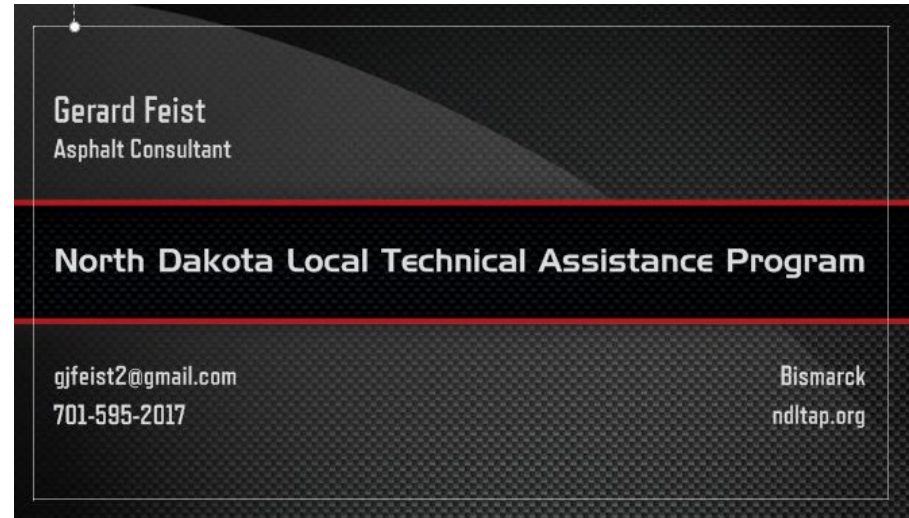




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# Gerard Feist

## NDLTAP Asphalt Consultant









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NDLTAP Pavement Preservation Series

















































# Contact Information

Gerard Feist

NDLTAP Asphalt Consultant

701-595-2017 (M)

[gjfeist2@gmail.com](mailto:gjfeist2@gmail.com)

# Rodney Ness

## Swanston Equipment - ND Sales Representative







# DURA PATCHER

- Easy 4 step process
- Low Maintenance
- Ergonomic No-stress Boom
- Vent-Flo Nozzle



**The Spray Patching Process-** The spray patcher removes the pothole in one quick and cost effective 4 step process.

1. Clean the area with compressed air.
2. Apply an emulsion tack coat.
3. Fill the hole with coated aggregate.
4. Cover with dry aggregate so traffic can resume immediately.



## Low Maintenance/Hi-Performance-

The DuraPatcher air-driven system utilizes virtually no moving parts in the delivery system. No augers, conveyors or other wear parts are required making it the most reliable in the industry. Aggregate is gravity fed from the tow vehicle completing the worry-free package. The system will deliver aggregate up to 2.5 inches in diameter without plugging or adjustment.

**Ergonomic No-stress Boom-** The 3 piece boom design provides the ultimate in support for the operator moving the delivery hose. The boom/slide system easily moves throughout the entire 18 foot working radius allowing for smooth patching anywhere in the work zone.

**Vent-Flo Nozzle-** The specially designed Vent-Flo nozzle properly coats the aggregate with the right amount of emulsion regardless of aggregate size. The mix is applied at an angle to the repair allowing maximum placement and best operator safety. The vent holes diffuse/slow down the air stream to minimize rock overspray and maximize placement into the repair.

**Heated Emulsion Tank-** The emulsion tank provides enough product to apply over 10 tons of patch before refilling. The heating blankets allow the patcher to be plugged in to keep emulsion at a "ready-to-go" temperature.

800-328-3874

**CPMG** **CIMLINE PAVEMENT**  
**MAINTENANCE GROUP**

CIMLINEPMG.COM

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Vent-Flo Nozzle with optional heater



Gravity feed delivery



Ergonomic No-Stress Boom



Over night heating system.

## Other Patching Products from CPMG



DuraTruck



DuraMax



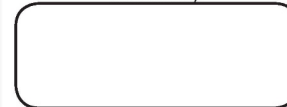
DuraTank

## SPECIFICATIONS

Emulsion Capacity (US gallons):	250
Aggregate Capacity:	N/A
Engine:	74HP IT4 Diesel
Heating Method (overnight):	Electric Blanket
Heat Rating (watts):	2 x 1500 W
Tank Insulation:	R 15
Blower:	450 CFM at 1500 RPM, 10 PSI
GVWR (lbs):	10,400
GAWR (lbs):	2 x 6000
Axle/Suspension:	2 (leaf spring)
Brake Type:	Electric
Clean Out:	15 gallons
Fuel Capacity:	18 gallons
Trailer Construction:	2" x 6" x 1/4" rectangular tube
Drain Valve:	3 in.
Temperature Gauge:	5 in.
Dimensions (l x w x h):	194" x 96" x 91"
Shipping Weight (lbs):	5,560
Warranty:	Two Year Limited

Due to continuous improvement, specifications are subject to change without notice.

Distributed By:



**CPMG** **CIMLINE PAVEMENT**  
**MAINTENANCE GROUP**  
cimlinepmg.com 800-328-3874

FULL PRODUCT LINE



NDLTAP Pavement Preservation Series











## ETNYRE Vertical Tanks for Modified Asphalt Emulsions Storage

- 7000 gallon capacity
- Gravity discharge
- Insulated and jacketed.
- Fully automatic electric heat controls.
- Electric driven emulsion agitation system.
- Safety access ladder and top platform.
- Optional electric pumping system (load - unload).

Ideal asphalt emulsion storage system for filling smaller street patcher and maintenance type units.





#### MAGMA STANDARDS



2" x 6" Frame



Engine Monitor



LED Lighting



Lowest Height, Largest door



Torsion axles



Performance Tank Design



The reputation of the MAGMA for simple, safe, sustainable operation lives on with the MAGMA M Series which marks a new chapter for Cimline with signature safety green paint. Going green means more than a paint color change as the MAGMA comes standard with lower emissions, lower fuel consumption and quieter operation for a better work environment. MAGMA's most popular features of low-profile design, high production and easy to use operator features continue to make Cimline the leader in crack sealing.

**ERGONOMIC SIMPLICITY:** MAGMA offers the highest levels of operator comfort with a completely redesigned delivery system. The No-Stress boom swivels around the heated sealing hose unlike any other machine, minimizing hose stress and providing industry leading operating range. Add the new heated wand option for even better comfort and ease of use.

**COMMUNITY AND OPERATOR FRIENDLY:** The clean Tier IV compliant Diesel engine runs at lowest possible RPM for the best combination of performance and fuel economy. The standard noise abatement muffler when combined with the engine cover option reduces noise levels up to 40% when compared to other models.

#### SIMPLE-SEAL CONTROLLER:

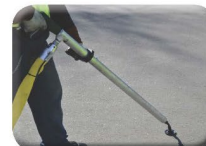
Simple-Seal is the next generation of digital control providing the easiest operation yet. Simply set the mode switch to "RUN". When the (3) Green LED's come on, start working. At the end of the day set mode switch to "CLEAN OUT" run for 2 minutes and set mode switch to "OFF". The control box never needs to be opened for normal operation.



Stress-free boom rotates around hose



40% noise reduction when combined with optional engine cover and insulation kit



Electric heated wand option



Optional heated draw-off option



Optional engine cover



Optional rotary screw air compressor

## SPECIFICATIONS:

	MAGMA M1**	MAGMA M2**	MAGMA M4
Material Capacity US Gallons (liters)	150 (568)	230 (871)	410 (1552)
Engine (g/e)	25 Diesel 40 Compressor Model	25 Diesel 40 Compressor Model	25 Diesel 40 Compressor Model
Heating Method	Diesel	Diesel	Diesel
Heat Rating (BTUs)	250,000	290,000	400,000
Material Pump GPM (LPM)	20 (76)	20 (76)	20 (76)
GVWR lbs. (kg)	5200 (2359)	6840 (3103)	9520 (4318)
GAWR lbs. (kg)	7000 (3175)	7000 (3175)	10,000 (4536)
Axles/Suspension	1 (torsion type)	2 (torsion type)	2 (torsion type)
Brake Type	Electric <sup>c</sup>	Electric <sup>c</sup>	Electric <sup>c</sup>
Loading Height in. (mm)	50 (1270)	48 (1219)	54 (1372)
Loading Doors	Single Curbside	Dual	Dual
Fuel Capacity gal. (liters)	33 (125)	33 (125)	33 (125)
Hydraulic Oil Capacity gal. (liters)	33 (125)	33 (125)	33 (125)
Heat Transfer Oil gal. (liters)	22 (83)	30 (114)	40 (151)
Dimensions L x W x H in. L x W x H mm	156 x 82 x 93 4318 x 2134 x 2337	170 x 79 x 92 4191 x 2210 x 2286	185 x 90 x 90 4698 x 2286 x 2286
Shipping Weight lbs. (kg)	4,120 (1,869)	4,540 (2050)	5,420 (2459)
Warranty	ONE YEAR BUMPER TO BUMPER		

<sup>c</sup>Due to continuous improvement, specifications are subject to change without notice.

<sup>a</sup>Also available with surge brakes.

<sup>\*\*</sup>Also available without pump.



M1 without pump



M1 with Pump



M2 with pump



M4 dual hose, dual pump and conveyor

800-328-3874



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FULL PRODUCT LINE



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INNOVATION  
IN PRESERVATION

## R3



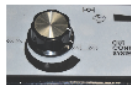
Dust Suppression Tank



Quick Stop Anti-Kickback



Large Depth Gauge



Cut-Control Option Knob

The key to effective crack sealing is preparation. Extend the life of your pavement by routing a reservoir, cleaning with a heat lance then applying properly heated rubberized sealant. The R3 asphalt crack router utilizes the latest technology to provide accurate, high-performance routing. The R3 dust suppression safely mitigates dust for up to 45 minutes of constant cut time.

### "Quick Stop II Anti-Kickback" System:

Stops all backward travel with its positive locking hubs when the handles are released. The Belly-Bar hands-free emergency engine shut down completes the system.

### Cut Control Option:

Get accurate cuts every time. Simply set the switch to auto and dial in the cut depth. Raise the machine, reposition and flip the switch back to auto. The router will return to the exact depth of the last cut.

### Electric Start 27 hp Kohler Engine:

Industrial strength for low-maintenance, continuous use in the harshest conditions. High horsepower provides smooth routing.

### Easy Access:

Easily gain access to drum for bit removal or cut width maintenance with the flip up shroud. Two-piece drum design is balanced for low vibration and lower cost of replacement.

800-328-3874  
CIMLINE.COM

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# Marathon

## SPECIFICATIONS

Mastic Mixers are only part of the equipment Marathon produces for road maintenance. Contact us for the name of your closest distributor, or for information on our complete line, visit our website at: [www.marathonequipmentinc.com](http://www.marathonequipmentinc.com)



\*MAY BE SHOWN WITH OPTIONAL EQUIPMENT

MM350DT

### MASTIC

### MIXER

Designed to mix mastic repair and bridge joint materials. Heavy duty construction allows mixing of heavy material mixed with aggregate. Diesel and propane models available in 120, 250 and 350 gallon capacities.

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**ETNYRE**

# **MAINTENANCE DISTRIBUTOR**

**Trailer, Truck and Skid Mounted**



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# RENOVA<sup>SM</sup>

**Cut in HALF!**  
**... the cost of your next asphalt repair**

## Use the RENOVA Recycler & Process to:

- Make high grade hot mix from old pavement, millings, RAP
- End your dependence on asphalt plants
- Work year-round, all winter long, cold or wet, 24/7
- Reduce your cost of hot mix by 50-70%
- Achieve zero waste – practice sustainability
- Gain a competitive advantage



**Ask for a demonstration today!**  
**Call 844-778-1788**

The **RENOVA** is a self-contained, easy to operate, versatile, mobile machine that produces hot mix asphalt on site, using existing asphalt extracted directly from the area of your asphalt repair. The **RENOVA** accepts large chunks of old pavement. The **RENOVA** process includes the addition of a proprietary rejuvenant which improves performance and provides durable, longer-lasting repairs.

- The **RENOVA** produces up to 2 tons of recycled hot mix asphalt per cycle in 10-12 minutes or 10 tons per hour.
- A premium quality hot asphalt paving mix, better than new, is produced by the **RENOVA** with the addition of our proprietary “eco-friendly” rejuvenant made of asphalt cement modified with crumb rubber and polymers, creating a permanent repair and eliminating the expense of repeated work.

## Special Features

- Self-contained unit mounted on an 18 foot dual-axle frame pull trailer with steel flooring.
- Specially designed hardened steel heating drum provides maximum heat and proper mixing.
- 1,400,000 BTU burner.
- 26 HP diesel engine with generator.
- 91 gallon diesel fuel tank.





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## KM T-2 Asphalt Recycler

The KM International Asphalt Recycler will produce a quality batch (2,500 lbs. every 20 minutes) of asphalt from recycled pulverized asphalt, millings, or sawcut materials to produce a paving material that will meet Department of Transportation asphalt specifications and standards.

### Recycle asphalt millings or chunks

Currently the cost of cold patch asphalt material, even after being put to bid, can run \$110.00 per ton, or higher. The cost of hot mix asphalt, if available, is around \$75.00 to \$80.00 per ton with prices expected to continually go up in the coming years.

### KM T-2 Asphalt Recycler can produce:

- (2) tons of hot mix using 100% recycled, virgin, or millings asphalt
- Asphalt at \$18.00 to \$20.00 per ton
- Using reclaimed asphalt and uses asphalt shingles if not for "Green" but also \$16.00
- Techniques to save budget if recycled
- Recycle by using your asphalt hard by adding more or less asphalt. Multiple or chunk asphalt in survey land.



page 4



## KM T-2

Asphalt from recycled pulverized  
asphalt, millings, or sawcut materials...





# CP100

COMMERCIAL CLASS PAVER



## CP100

Engine	100hp (74kW) CAT® Tier IVi
Std. Width	8'-15' (2.43-4.59m)
Max Width	17' (5.18m)
Weight	19,750 lbs (8958kg)

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VOLVO DOUBLE DRUM COMPACTOR

# DD29



MORE CARE. BUILT IN.



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# Contact Information

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ND Sales Representative

Swanston Equipment

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701-837-9901 (O)

[rodney.ness@swanston.com](mailto:rodney.ness@swanston.com)



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[www.ndltap.org](http://www.ndltap.org)

## NDLTAP Resources

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- Asphalt
- [Bakken Briefings](#)
- [Bridges](#)
- [Concrete](#)
- [Culverts](#)
- [Erosion and Sediment Control](#)
- [Equipment Loan Program](#)
- [Gravel/Motor Grader](#)
- [GRIT](#)
- [Local Roads](#)
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- [Resource Library](#)
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