M A S S

INTERCHANGE

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Identify and Control Poison Ivy

(Avoid the itch)

If not avoided or properly controlled, poison ivy and other poisonous plants such as poison oak and poison sumac can present a serious problem. Contact with the leaves, stems, roots and fruit can cause skin irritations ranging from itchy, burning rash to severe infections accompanied by enlarged glands and fever. Adults and children should learn to recognize and avoid this plant.

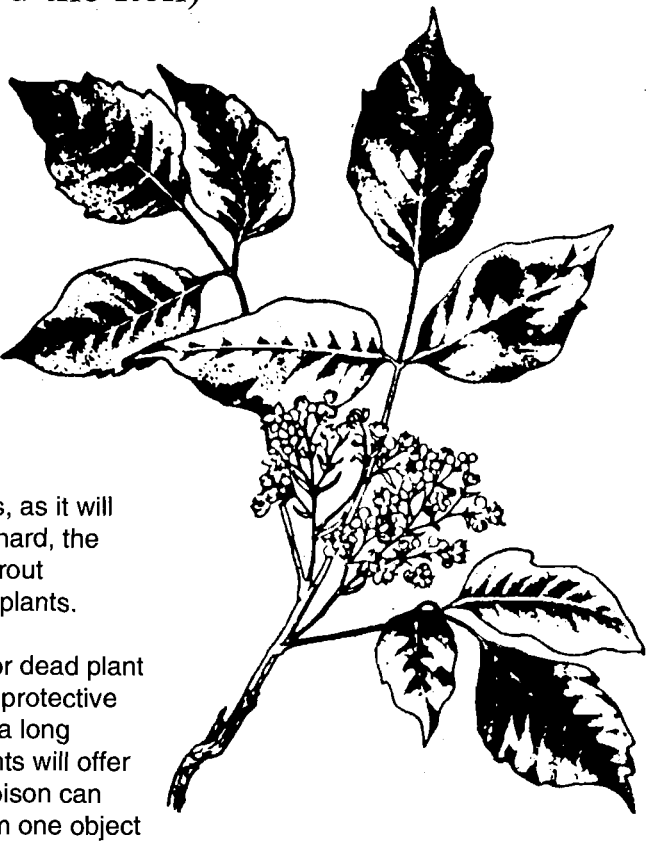
Poison ivy can be found growing in the shade of the woods, on a dry, sunny hillside or even in backyards among ornamental shrubs and vines. It can be found in the form of a dense, trailing vine, an erect woody shrub or a climbing vine supported by trees, fence posts or other objects.

This plant can be identified by its compound leaves, having three leaflets from 2 to 3 inches up to 10 inches long growing from each node on the stem. They may be shiny or dull with smooth, toothed or lobed margins. Some plants may produce clusters of inconspicuous, greenish white flowers in early spring which develop into white, waxy appearing fruit in the fall borne on slender stems between the leaves and woody twigs. Climbing vines will develop aerial roots, to help secure the vine to the tree or supporting object, giving the stem a fuzzy appearance.

Control

Poison ivy and poison oak can be pulled out by hand in early spring and late fall when the soil is thoroughly moist. When pulling the plant out of the ground, remove the root system as well as the leafy section. If the root or stem breaks, as it will when the soil is dry and hard, the remaining section will sprout vigorously to grow more plants.

When handling live or dead plant material be sure to wear protective clothing. Heavy gloves, a long sleeve shirt and long pants will offer some protection. The poison can easily be transferred from one object to another making it important to wash all contaminated articles in several changes of strong soap and water to prevent any further infection. Do not wash contaminated clothes with other clothes.



Poison ivy growing as a vine on a tree should be severed at the base of the tree and pulled off the tree. An herbicide such as Ortho Poison Oak

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***Poison Ivy**...continued from Page 1*

and Poison Ivy Killer* or Ortho Brush Killer* applied to the freshly cut base will prevent new shoots from sprouting. These vines will not injure the tree except when growth is so heavy as to eventually shade out the tree. Poison ivy growing among ornamental shrubs can also be cut at the base and the herbicides applied to the cut to prevent resprouting.

Probably the most effective and safest way to control poison ivy is through the use of an herbicide such as ammonium sulfamate (Ammate X* and Ortho Brush Killer*), glyphosate (Roundup*) and 2,4-D and MCPP (Ortho Poison Oak and Poison Ivy Killer*). These are applied as a drenching spray to all parts of the plant during late spring or summer when the plants are actively growing. Leaves should begin to turn brown in 10 days to 2 weeks after spraying. The chemicals will be absorbed and translocated throughout the entire plant, killing the roots and tops. Avoid spraying the foliage of desirable trees or shrubs and be sure to spray when the air is calm to avoid damage to these plants. Read the label carefully before applying and follow the recommendations on the label.

NEVER BURN POISON IVY AS THE SMOKE IS EXTREMELY POISONOUS!

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*Trade name - No endorsement is implied.

This poison ivy article is reprinted with permission from a Poison Ivy Fact Sheet, published by the Cooperative Extension Services at UMass/ Amherst.

Licensing and Provisions are reprinted with permission from a September, 1993 memo, which was published by the Department of Food and Agriculture, Commonwealth of Massachusetts.

Are You in Conformance with the New Pesticide Licensing Provisions?

Provisions

A recent change to the Massachusetts Pesticide Control Act by the state legislature will now require that all applicators of pesticides in public and private places used for human habitation be licensed or certified. Residential properties with three or less apartments are exempt from this requirement.

The types of workers that must now be licensed to apply pesticides include but is not limited to landlords, apartment building maintenance staff, office building grounds keepers, golf course superintendents, the staff or janitors of restaurants, schools, town halls, etc. Apartment and condominium maintenance personnel may not spray pesticides in an apartment for ants or other pest problems without a license.

The new law not only covers chemicals used to control insects but also many other chemicals which are not generally thought of as pesticides. For example, a groundskeeper at an office complex using a fungicide on the grass, a weed and feed fertilizer herbicide mix, or an herbicide to control poison ivy or weeds, must now be licensed.

Requiring this group of workers to be licensed will assure the general public and building occupants that the applicator has demonstrated a basic understanding and knowledge of pesticide use and can use them in a proper and responsible manner.

Licensing requirements

In accordance with the Massachusetts Pesticide Control Act and the current pesticide regulations, the Department of Food and Agriculture conducts written examinations to measure competency to use pesticides in Massachusetts.

Individuals using general use (over the counter) pesticides must at a minimum obtain an Applicator License. Those needing to use State or Federally Restricted pesticides (available only from licensed dealers) must become Certified. In order to become licensed or certified, applicators must first pass a written exam. Training is by means of self-study manuals.

In addition to passing the written exam, insurance coverage is required. The amount is dependent upon the type of pesticide certification or license desired. Generally, comprehensive general liability coverage relating to bodily injury and property damage and an endorsement that modifies any pollution exclusions provisions for "sudden and accidental" mishaps as it relates to the purposeful use of pesticides on the property of another is also required.

For further information or a complete Pesticide Examination Information Bulletin that contains detailed, step by step instructions for obtaining a Pesticide License or Certification, contact the Pesticide Bureau at (617) 727-3020.

Watch for Baystate Roads training this fall which will help you prepare for the Applicator License exam.

High Tech on the Highways:
Mass Highway Dept.'s new ARAN

OK — it may look like a lime-green ambulance, but it does much more. Fitted with three on-board computers, thirty-six ultrasonic sensors, three gyroscopes, two lasers, two accelerometers, and a satellite-based location system, this equipment has enough high-tech options to make any electronics or computer junkie "green" with envy. This is Mass Highway's new ARAN, a state-of-the-art Automatic Road ANalyzer. Built by Roadware Corporation to Mass Highway's specifications, the ARAN was delivered in April and will be "cruising" the highways this summer.

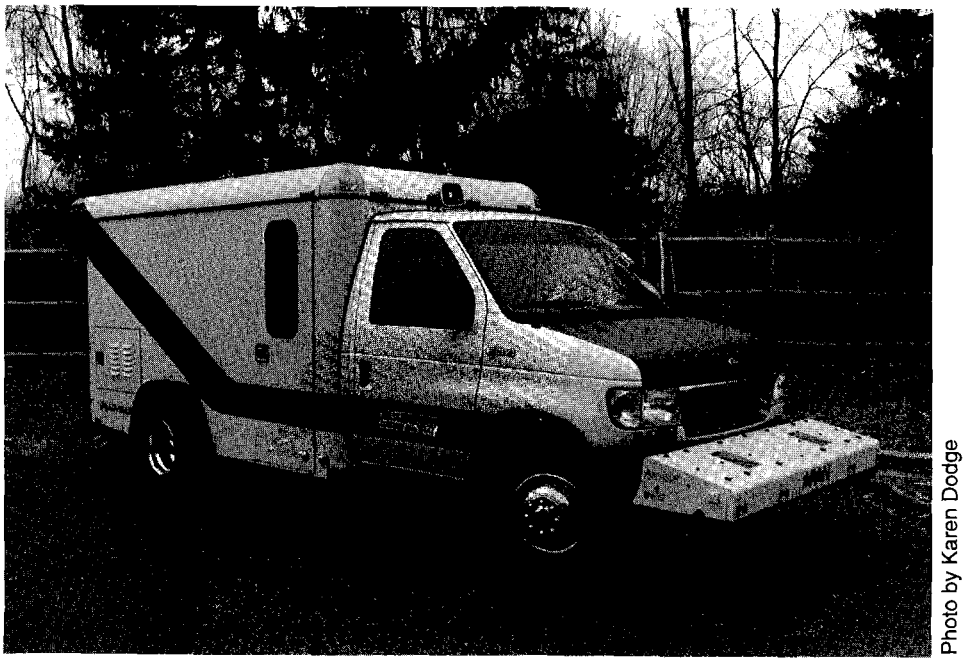


Photo by Karen Dodge

According to Matt Turo, Mass Highway's Pavement Management Engineer, the ARAN will mark a quantum leap forward in the Department's ability to evaluate and analyze roadway conditions for the programming of roadway rehabilitation projects. The Ford van chassis has been highly modified with a variety of subsystems which allow engineers to collect and analyze data related to road roughness, pavement condition, roadway profile, rut depths, and other geometric properties of the roadway. The ARAN is also equipped with a high-resolution video system to record right-of-way images and a satellite-linked Global Positioning System to provide coordinate locations "as-you-drive". All of these systems may be operated simultaneously at highway speeds to collect data, which may be later analyzed at either of its two workstations.

Under optimal conditions, the new ARAN will provide the Department with the capability to evaluate and analyze the state-highway network on an annual basis. This process will be performed more efficiently, accurately, and with greater safety than ever before possible. Designed for flexibility and growth, the ARAN system will keep Mass Highways on the cutting edge of Pavement Management technology for years to come.

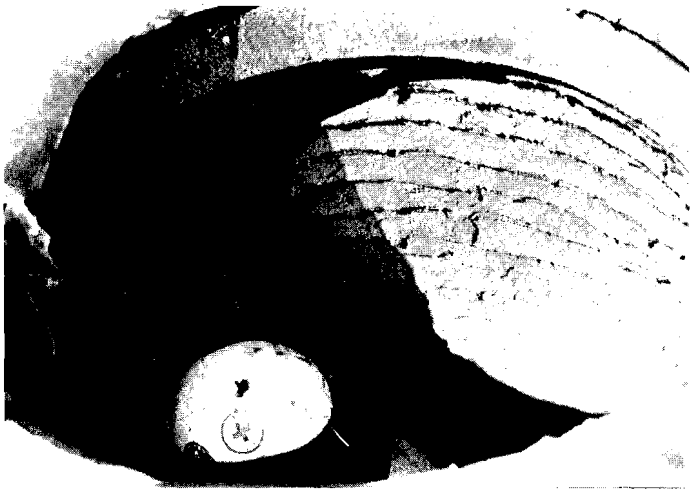
this issue

A System for Manhole Restoration

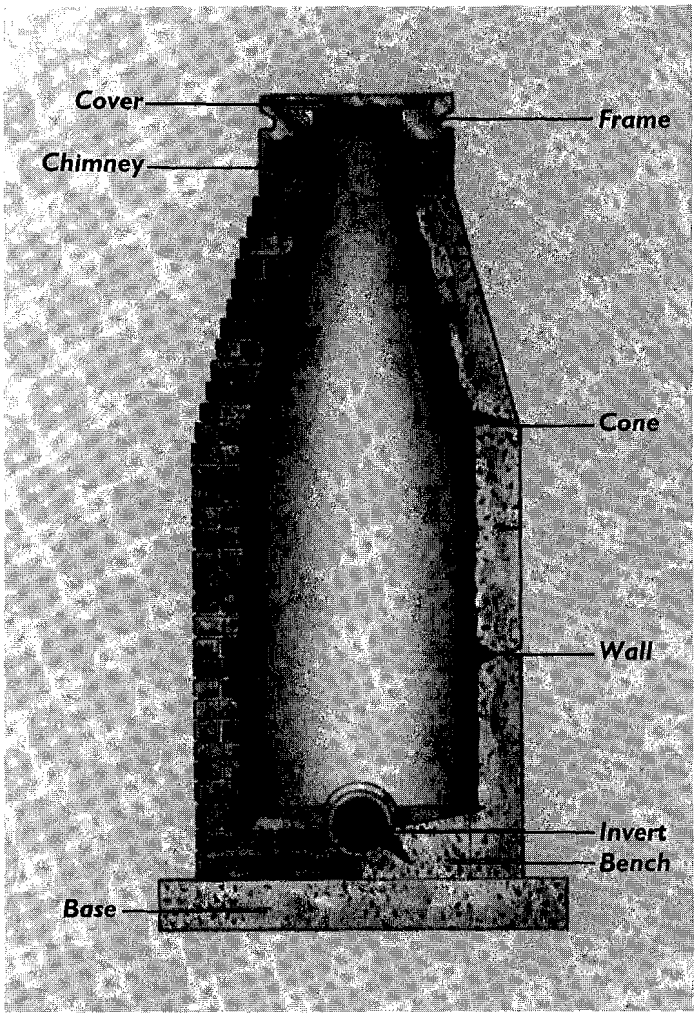
by Chris Ahmadjian

I want to make you aware of a new product on the market. In June, A.H. Harris company invited us to a new product demonstration at their store in Medfield. The product is from Master Builders and is a method for restoring manholes rather than replacing them. When I arrived I was my usual skeptical self, especially during the marketing slide presentation where we heard how great the product was and how it would solve all our problems. But then we went outside for a demonstration, where the material was sprayed on a concrete surface. I lost my skepticism. The stuff did spread easily and it did spray on with little rebound. It hardened quickly and did not slump off the wall even when sprayed very thick. I was quite impressed. The concrete material itself is not new to the market. It has been used for years to reface concrete walls. The only thing new is the idea of using it to restore manholes. Here is the product introduction Master Builders sent us:

"Infiltration of ground water and debris due to structural deterioration of manholes overloads the treatment system increasing public agencies' treatment cost. Contaminants within the manholes can also penetrate the outside environment. A restoration package manufactured by Master Builders Technologies for manholes corrects the causes of inflow, infiltration and exfiltration associated with your sewer system.



A worker in a manhole lined with Emaco S88-CA.



A candidate for restoration.

The primary product involved in the Manhole Restoration System is Master Builders' Emaco S88-CA, which is easily hand-trowel applied as well as being applied quickly through a low pressure spray pump; without product rebound. Emaco S88-CA is a shrinkage compensated, silica fume enhanced, structural repair mortar used to repair and/or line the vertical and overhead surfaces of concrete and brick manholes; thus greatly improving the chemical, abrasion, and freeze-thaw resistance. Concrete pieces such as storm drains, culverts, sewerpipe, and many more structural concrete members may also be repaired or lined using Emaco S88-CA."

For more information on this product, call Master Builders at (800) 843-2125 or A.H. Harris in Medfield, MA.

Photos by Master Builders

Crack Sealing Comes to Worcester

by Chris Ahmadjian

The city of Worcester will be crack sealing its roads for the first time this year. While planning their program, questions such as which sealant is best, which application method is most cost effective, and which roads should be selected for sealing arose. To help answer these questions, we organized a miniworkshop on the topic.

The workshop was held on May 11, 1994 at the Worcester Department of Public Works. Personnel from the City of Worcester and Massachusetts Highway Department were in attendance. Donna Sears from ARTCO Equipment Sales, Inc., a company that sells crack sealing equipment and liquid, gave a demonstration of various crack sealing methods in the DPW parking lot. In addition, Donna clearly explained the various liquids that are currently on the market. Bob Joubert, New England Region Engineer for the Asphalt Institute, outlined the pros and cons of crack sealing, and Bob Christman, Director of Pavement Management Services for Vanasse Hangen Brustlin, Inc., shared successes and failures he had seen.

We were thrilled to find such distinguished speakers for the miniworkshop and thank them again for their input.

After considering and distilling all the information presented at the workshop, I offer the following conclusions:

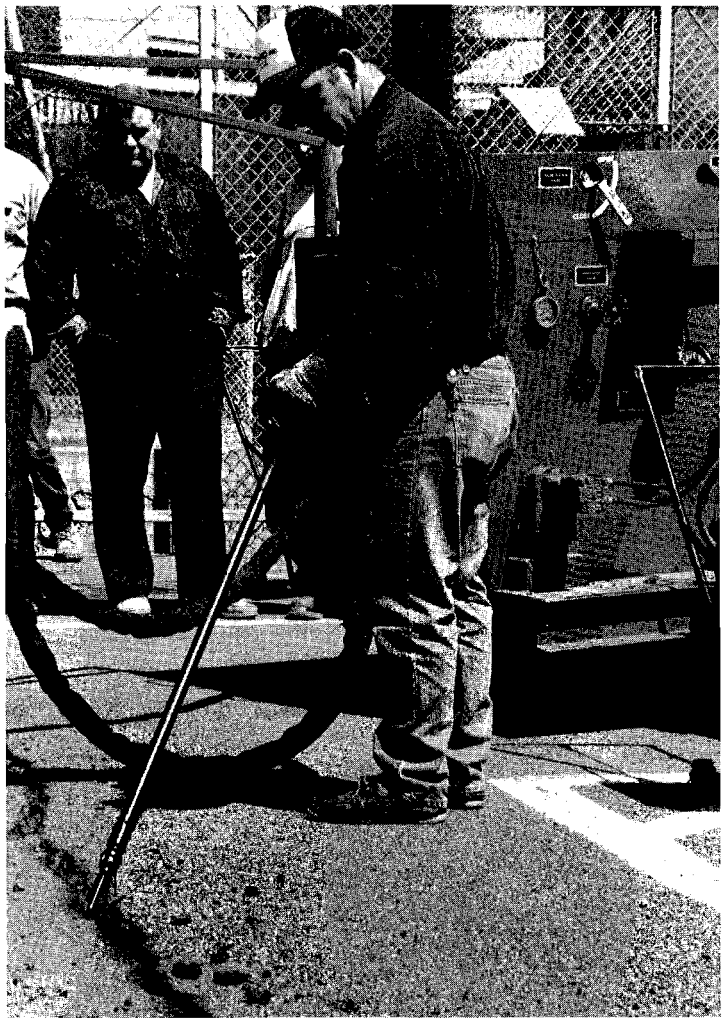


Photo by Chris Ahmadjian

John Kelly from Artco Equipment Sales, Inc., Cohoes, N.Y. applies crack sealant as Ralph Saarinen (Worcester DPW - Engineering Dept.) looks on.

◆ **If you had a bad crack sealing experience in the past, now may be the time to take another look at this technology.**

There are a number of new and possibly superior liquid products containing rubber and polymers which have entered the market in the last five years. Hardware, such as routers and propane wands have improved in the past several years. Routing is no longer the slow and tedious process it once was.

◆ **Where to crack seal is not something best left to the contractor.**

You need to carefully consider which roads to seal and how much of the chosen roads to seal. Remember, the contractor is usually paid by the gallon.

◆ **Seal roads that are aging, but not gone.**

A roadway that is badly distressed is a good candidate for surface treatment or overlay. No amount of crack sealant will appreciably extend its life.

A good candidate for sealing is a road that was overlaid say five years ago. You notice working transverse thermal cracks and

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calendar

FHWA - Region 1 Thirteenth Annual Pavement Management Conference

September 6-8, 1994
Sponsor: MA Highway Dept. Pvmt. Mgmt. Section
Location: Boston Park Plaza Hotel & Towers
Contact: Matt Turo
(617) 973-7266

15th Annual Massachusetts Highway Association Municipal and Contractors Equipment Show and Old Fashioned Clambake

September 8, 1994
Sponsor: Massachusetts Highway Association
Location: Topsfield Fairgrounds, Topsfield, MA
Contact: Ann Hadley (617) 245-7070

Berkshire County - District 1 Eleventh Annual Equipment Show

September 16, 1994 (rain or shine)
Sponsor: Highway Superintendent's Association
Location: Dalton American Legion, Rte. 9, Dalton, MA
For ticket information, contact:
Rick Galliher, Hinsdale, 655-2304
Jerry Coppola, Richmond, 698-3833
Peter Leidt, Russell, 862-3101
Bill Elovirta, Becket, 623-8988
Warren Anson, Egremont, 528-1106

The 1994 National Traffic Data Acquisition Conference

September 18-22, 1994
Sponsor: CT DOT/FHWA
Location: Hartford Marriot, Rocky Hill, CT
Contact: (203) 258-0300

1994 Western Snow & Ice Conference Equipment Show and Snow Roadeo

October 12-14, 1994
Sponsor: APWA
Location: Greeley, Colorado
Contact: Bill Sterling, (303) 350-9795

26th Annual Conference and Trade Exposition

February 28 - March 3, 1995
Sponsor: International Erosion Control Association
Location: Atlanta, Georgia
Contact: John T. Price
(616) 530-8230

New Publications

Making Pavement Maintenance More Effective, Training Supplement, Strategic Highway Research Program, 1994. This report suggests some immediate improvements in current pavement maintenance techniques such as chip seals, slurry seals, crack sealing in asphalt pavement; and undersealing, and joint and crack sealing in Portland Cement concrete pavements.

Mechanical Behavior of High Performance Concretes, Volume 1 Summary Report, Strategic Highway Research Program, 1993. This report presents a summary of a four-year research program sponsored by SHRP. The report covers the literature search and review, the development of mixture proportions of high performance concrete, and the laboratory studies and field trials of the concretes. Two technical guides on the production and use of high performance concrete are included.

Geosynthetic Mechanically Stabilized Earth Slopes on Firm Foundations - Guidelines for Design, Specification, and Contracting. U.S. DOT/FHWA, January 1993. Developed for use by transportation agencies, this report addresses slopes on firm foundations, and use of geosynthetic reinforcement. Both a material specification and a systems specification approach are discussed.

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Videotapes

MO-188 Don't Trash Grass!

You can have a healthy green lawn by leaving grass clippings where they fall. This videotape teaches you lawn mowing techniques which make your clippings easier to recycle; fertilizer selection and application which reduce water pollution; and watering methods which encourage deep root growth. You'll save yourself lots of time by not bagging, and spend less on fertilizer and garbage bags. And, you'll be doing your part for the environment by reducing waste!

DC-143 Soil Stabilization: Selecting the Modifier

Soil stabilization makes construction easier, faster, and more effective, and adds strength and durability to the pavement. This video discusses the use of cement, bituminous, lime, and lime-flyash as stabilization materials, and classifies them as either passive or active stabilizers. The importance of construction and drainage is also mentioned.

MO-189 Finding Better Ways: New Research into Cost-Effective Pavement Repairs

It is estimated that 18 to 20 billion dollars are spent annually on roadway maintenance projects in the United States alone. This tape from the Strategic Highway Research Project describes current research on the four most common maintenance activities: pothole repairs, spall repairs, crack sealing, and joint filling/sealing. Optimal and conventional materials, procedures, and equipment are compared.

ST-145 Quickchange® Moveable Barrier (General Information tape)

ST-146 Quickchange® Moveable Barrier (High Occupancy Vehicle Tape)

These two videotapes describe the successful use of the Quickchange® Moveable Barrier system. This unique technology provides safety in construction traffic control work zones, and can be used to adapt to quickly changing traffic needs. It is being used as a reversible lane median barrier in New Zealand, and has recently been installed in California, New York and Texas. For loan only.

***Sealing**...continued from Page 5*

open longitudinal joints. Now is the time to seal those joints. The seal will prevent water and incompressibles from entering the joints and when done correctly will extend the life of your pavement.

Seal cracks that are 1/4 to 3/8 of an inch or larger.

Larger thermal or longitudinal cracks will benefit from crack sealing. The volume of water that travels through the larger cracks to your subbase is astonishing and the damage it does is evident every spring.

As a general rule smaller cracks are not worth your sealing effort. Many do not even extend through the entire mat.

Keep overbanding and sealant application in general as thin as possible.

Thick crack sealing, where the overband is 6 inches wide and 1/4 inch thick (to give an extreme example) will liquefy when an overlay hits it and create a tender spot that will be difficult to roll and will bleed. Thick overbands are subject to snow plow shearing as well.

Use caution when crack sealing in high pedestrian areas.

Sealant will soften during the summer for one or several seasons after application. The second time the mayor steps in soft crack sealant outside of the town or city hall and tracks it back to his office, he will first have you clean his carpet and then cancel your crack sealing program.

For more information on crack sealing, we recommend the following two books:

State of the Art Survey of Flexible Pavement Crack Sealing Procedures in the United States (CRREL Report 92-18), September 1992. Available for free from the U.S. Army Corps of Engineers (603) 646-4209 or Baystate Roads Program.

Asphalt Pavement Repair Manuals of Practice (SHRP-H-348) — Available for $15.00 from the FHWA.

Or if you have a specific question, call me and I will put you in touch with one of the excellent workshop speakers.

And you thought your road grader was old....

Photo by Karen Dodge

The Baystate Roads Program, which publishes *Mass Interchange* each quarter, is a Technology Transfer (T2) Center created under the Federal Highway Administration's (FHWA) Local Technical Assistance Program (LTAP). FHWA is joined by the Massachusetts Highway Department, the Department of Civil and Environmental Engineering at the University of Massachusetts/ Amherst, and local public works departments in an effort to share and apply the best in transportation technologies.

In addition to publishing *Mass Interchange*, the Baystate Roads Program facilitates information exchange by conducting workshops, providing reports and publications and videotapes on request, and offering one-to-one technical assistance on specific roadway issues. Because the program relies on input from many sources, inquiries, articles, and ideas are encouraged.

To contact the Baystate Roads Program, call (800) 374-ROAD (in state) or (413) 545-2604.

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