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Consumer Tips - Commercial Hot Mix Asphalt Paving **A Checklist for a Successful Project**

"Tis the Season"

It is the time of year where many homeowners and businesses are approached by "unidentified" Contractors regarding paving unimproved or gravel driveways, parking mats and/or private roads with hot mix asphalt (HMA). If the facility is already paved, you may be approached by similar Contractors regarding "maintenance" of your driveway. Hot mix asphalt, hot bituminous pavement, asphalt concrete, black top, etc. all describe the same product...a proportioned hot plant mixed blend of aggregate and asphalt cement liquid binder. The economic recession in many parts of the United States appears to have drawn more than the usual influx of out of state Contractors and practitioners. Many of these are legitimate paving Contractors with experience and background in the hot mix asphalt paving industry. However, many may have questionable backgrounds and experience. Following are some general questions to ask and data to gather to make your own informed judgment as a consumer.

- 1) How long has the Contractor been in the paving business...specifically the HMA paving business? What type (and amount) of equipment will be utilized in performing the work? HMA paving is a highly coordinated process and proper thickness, grade & slope control and long term durability of the pavement are dependent on proper laydown. Even a properly placed asphalt concrete mat, if not placed to a minimum thickness and compacted (with self propelled rollers) to a uniform density, will not stand the test of time. Minimally, an electronically slope & grade controlled self propelled laydown machine of sufficient size for the project, self propelled rollers (number and size), a power broom (for surface preparation and cleanup), sufficient trucks and hauling units (number and type) to supply the laydown production, and equipment to shape and prepare the existing area prior to paving (and the experienced people to operate them) should be a consideration. In addition, if there is a lot of handwork around corners, curbs and utility protrudence (e.g. water valves, light poles, etc.), the number of personnel and availability of hand tools should be considered. References for past work, particularly in the local area, can be helpful in making your decision. If these questions aren't answered correctly, a warning flag should be raised.

- 2) What is the specification for the HMA, who will be supplying (producing) the HMA and how far will it be hauled? The SD and ND Departments of Transportation maintain a specification for several different mixture types and uses. These specifications control aggregate (gravel) type, mixture properties, asphalt liquid requirements, asphalt content (amount of asphaltic cement in the mixture) and many other performance measures. If you are not requesting a specified HMA mixture, you'll get what you ask for...probably a misplaced mixture for your particular use or one that is not a proportioned mixture of proven quality produced in controlled conditions at a hot plant. The asphalt content, or amount of asphaltic cement liquid in the mixture, is particularly important for proper performance of the pavement. Stationary hot plants for HMA are located in Brookings, Mitchell, Sioux Falls, Huron, Aberdeen, Pierre, Rapid City and a few other locations in South Dakota. In North Dakota, stationary hot plants are located in Fargo, Jamestown, Bismarck, Dickinson, Grand Forks, Devils Lake and at times other locations. In addition, local HMA Producers/Contractors set up and operate portable hot plants when projects of sufficient size warrant like local county projects and SDDOT or NDDOT projects on the state highway system. Typically, these portable plants are available only during the course of a project and may be operational only for a period of weeks or months but are available for material purchase if contacted ahead of time. These plants, stationary and portable, are typically the only locations where a paving contractor can obtain specified hot mix asphalt. The distance the hot mix asphalt needs to be hauled can be very important to the end quality of your pavement. HMA is a temperature sensitive material with respect to placement and compaction. If the material can not be hauled, delivered, and placed for laydown, compaction and finishing, typically before the temperature falls below 175 deg. F., the quality of your finished mat and the expected life of your pavement will suffer. Certainly, calling the "named" supplier can be helpful in confirming that there is an HMA supply contract in place for the Contractor performing the paving. Again, if these questions can't be answered a warning flag should be raised.
- 3) What are the terms of the contract, how will the material or unit be measured and paid for, and who will prepare the site? As with any transaction, proper terms of the contract are the basic building block of a successful project. As noted above, seasonal impacts (e.g. rain, wind, temperature) can affect your finished pavement so schedule is very important. The area to be paved will affect the "units" necessary to complete the work. Width (including tapers on the edge of the mat), length, and thickness should all be considered. HMA procured from a mixing plant is typically measured and paid for in tons (2,000 lbs. = 1 ton) and weighs somewhere in the neighborhood of 142-148 pounds per cubic foot. If the terms of the contract specify "area" coverage, in other words a unit of square feet or square yards, it is very important to denote a **minimum thickness** and establish the limits (length and width) of what you expect to be paved! An asphalt paver or laydown machine is basically a self propelled, self-leveling, free-floating screed. It will fill in low spots and "skins" through high spots of the existing ground. The better the site is prepared, the more uniform the thickness will be on the completed mat. Typically, a thin asphalt pavement requires at least a 2-1/2" thickness to adequately pave with 3/4-inch aggregate HMA mixture placed on a stable base. This typically is also the minimum thickness for light loading of the mat (e.g. occasional RV, minimal heavy trucks). If loaded trucks leave ruts, track or visually deflect the base you are placing your mat on, a thin lift asphalt pavement can be expected to prematurely fail. Marginal base support will require a 4" or thicker pavement in order to perform satisfactorily. No asphalt pavement will perform if placed on a weak, wet, poorly drained base.

- 4) If you purchase material by area or square yard/square feet, be sure to agree on the square footage for payment. Do not allow an "estimated" surface area to be paved. If the Contractor is unable to calculate the square footage of the area to be paved, and clearly state it in a written agreement, an immediate warning flag should go up. It may look black on top (i.e. blacktop) but it is not likely to be a blacktop pavement! It is also important to remember that HMA is placed in a "loose condition" and compacted or densified to a finished thickness. Typically, 1-1/4" of loose material in place is required to provide a completed mat thickness of 1". Therefore, for a 2-1/2" thickness finished mat, over 3" thickness of material will be required behind the laydown machine and in front of the rollers.

In addition, proper preparation of the existing surface prior to paving including proper density and moisture can be critical to quality paving. All gravel is not suitable for direct HMA paving. A prime coat (application of liquid asphalt directly to the existing surface if gravel) or tack coat (application of liquid asphalt to an underlying layer of existing asphalt pavement) may be required depending on conditions. With any pavement type, the strength and condition of the material (soil or gravel) underlying the work area can greatly affect the finished result. In summary, good terms and an agreement that spells out responsibilities and procedures for defining and correcting deficient areas are a must.

- 5) Does the Contractor have the proper licenses and insurance to complete the work? In North Dakota and South Dakota sales and excise tax licenses and business licenses are required to perform commercial work. In addition, equipment licensing and mobile equipment registration is required. If the Contractor does not have these licenses, and you don't have a firm telephone number or business address to contact with pavement quality or project issues, your avenues of recourse are very limited. As with any business, your judgment in assessing the company, agreement and answers to the above questions will impact the successful completion of your project.

Asphalt Pavement Maintenance

A similar experience may be experienced by the consumer owning an HMA driveway or private road in regard to being approached by maintenance contractors. Asphalt pavements need to be maintained to achieve their expected life and service. Weather, sun and water are the main culprits. Typically, for most light traffic applications, a fog seal or black seal, should be applied every 5 to 10 years depending on conditions and exposure (winter severity, traffic loading, etc.). In addition, small areas of distress (e.g. potholes, raveling, edge breaks, etc.) should be patched and major cracks sealed prior to the fog seal. A fog seal is a light application of liquid material to the surface of the pavement to both soften age hardening in the pavement and to seal the surface of the pavement to the intrusion of moisture. Sand can be applied as a surface finish and blotter. Many products are available such as rejuvenating agents and coal tar liquids. However, if properly timed and placed, liquid asphalt is sufficient and usually the least expensive. Most paving contractors have a distributor truck and the correct liquid asphalt available to perform this task. For crack sealing, asphalt rubber materials specially formulated for the Dakotas make an excellent crack filler for wider cracks (and can be applied by hand similar to caulking), and the fog seal serves as a filler for the smaller cracks less than 1/8" wide. A consumer can also purchase these products at

building supply outlet or contractor facilities and spread the material by hand with squeegee and broom. Be wary of specialty products...some may even be harmful to the pavement, environment and/or your property. The previous warnings noted with regard to Contractor, equipment, terms of contract and experience are important if you elect to contract maintenance.

Local Contractors have the experience, knowledge and reputation as neighbors to meet your asphalt pavement needs. For contacts in your area go to www.dakota-asphalt.org under the membership pull down menu. Call us if you have questions. And remember, your pavement is an investment no different than the roof on your house or the furnace in your utility closet. As with any other choice, proper research and legwork may save you down the road as the "bitterness of poor quality remains long after the price has been forgotten".

The following check list should be the minimal information you obtain to make your decision.

Check List for Customers (At a minimum!)

1. Ask where the solicitor is from and where their business is located.
2. Ask how long have they been in business.
3. Ask who was their last customer.
4. Ask for three references and call them.
5. Remember there is seldom if ever an "extra load of mix".
6. Asphalt pavements must be placed hot! -If they have an extra load of mix, it is almost guaranteed to be cold by the time the crew and equipment arrives and they get the area ready to be paved.
7. Get a written agreement that includes at a minimum the following:
 - a. Description of work to be done.
 - b. Specify a minimum thickness.
 - c. Specify the area to be paved.
 - d. Include a final total cost – not an estimate.
 - e. Request a 1-year warranty.
8. Ask if they have a contractor's license, require proof.
9. Ask if they are bonded, require proof.
10. Ask if they have sales and excise tax licenses, require proof.
11. Ask if they have workers compensation and insurance, require proof (remember they will be on your property).
12. Obtain a lien waiver.
13. Find out who is supplying the materials, when they are supplying the materials, and how far it will hauled.
14. Ask what type of equipment (and quantity with rollers & trucks) they will be using.

"Rules of Thumb"

You can expect many years of excellent performance from your asphalt pavement when you pay attention to details. Please refer to "***Make the Right Pavement Choice***" at www.dakota-asphalt.org for more information. Following are some general rules of thumb for asphalt paving:

- **Asphalt pavement should be a minimum of three inches thick.**
- **The base upon which the pavement will be placed must be unfrozen, dry, well drained, firm and unyielding.**
- **Asphalt pavements must be placed hot under good weather conditions.**
- **Asphalt pavements must be well compacted after placement.**
- **Asphalt pavement should be plant mixed from a reputable supplier.**