Traffic control

Traffic control is a vital part of all TMS construction. The main purpose of traffic control is to protect construction workers. It also prevents collisions between road users and construction equipment. The traffic control set up should direct traffic through the work zone and past hazards that the construction presents. Motorists should easily understand the traffic control set up.


Quality control

The right treatment and the best materials cannot overcome poor construction. Proper construction processes must be followed. Quality control is the process of ensuring that the construction plans, agency policies, and contract specifications are being followed. This process ensures that a satisfactory product has been constructed and the likelihood of a successful, long-lasting surface is increased.

Quality control should start before the actual application begins. This includes ensuring that all necessary equipment and materials are on site before construction begins, the pavement has been cleaned, and any necessary maintenance such as crack sealing has been previously performed.

Quality control should also involve making sure that the equipment is in proper working order. The spray bar should be set at the right height. The spray nozzles should be clean and properly aligned. All of the gates should be in proper working order on a chip spreader. The equipment manuals should contain a checklist that describes a pre-construction inspection. It’s wise to check on a regular basis items such as these that could hinder the construction.

Quality control also ensures that proper techniques are being followed during construction and making sure that any re-work is promptly performed. During construction make sure that all joints are straight and clean and that areas with an inadequate amount of aggregate receive a second pass by the chip spreader (a light application) or a few shovels full of aggregate are spread to prevent bleeding. It’s important to ensure that the binder has not set before the aggregate is placed.

The crew applying the surface has the greatest ability to perform the quality control function. Crew members have direct control over the process and are in the best position to know what’s being done well and what’s being done poorly. They also can watch one another’s work and communicate whether a change needs to be made. This responsibility for quality control should be communicated to the crew members and their responsibilities should be properly defined.

Following is a list of a seal coat crew members’ jobs and their quality control activities:

**Distributor truck drivers**

Before starting, they should make sure that

- Traffic control is in place.
- Aggregate is on site.
- Their distributor truck is functioning properly with all of the nozzles properly aligned and cleaned and the spray bar at the right height.
- Pavement has been swept.
- Necessary equipment such as the chip spreader (with aggregate truck attached) and rollers are on site and prepared to begin construction.

During construction drivers should

- Maintain a proper distance in front of the chip spreader and slow down if the chip spreader is not keeping up.
- Be aware of the amount of emulsion left in the tank.
**Chip spreader operators**
Before starting, they should make sure that
- Gates are properly opened and aligned.
- Belts and feeds are functioning properly.

During construction operators should
- Maintain communication with the distributor truck operator.
- Tell the distributor truck operator when to stop because the chip spreader is running out of aggregate. This will prevent the chip spreader from running out of chips and prevent the binder from sitting too long without being covered.
- Watch the distributor truck’s application to make sure it’s consistent and there are no streaks (caused by plugged or poorly aligned nozzles or incorrect spray bar height). Let the driver know if more or less binder should be applied.

**Pneumatic tire roller operators**
Before starting, they should make sure that the tires are at the specified air pressure.

During construction roller operators should
- Watch the chip spreader’s application to make sure the proper amount of chips is applied and that they’re evenly spread over the pavement.
- Make sure the chip spreader isn’t changing directions too quickly, causing the aggregate to come unbound from the binder.

Quality control should also be performed by an inspector, the foreman of an in-house construction crew, or the street superintendent to ensure that the final product is of good quality and that no rework should be performed.

A series of pamphlets called “Pavement Preservation Checklist Series,” developed by the Foundation for Pavement Preservation and the Federal Highway Administration, provide useful information on the construction of crack sealing, seal coating, slurry seal/micro-surfacing, and thin HMA overlays. These pamphlets also define various quality control techniques for all types of surfaces and have a checklist of items that can be used for quality control purposes. These checklists can also be used to define the quality control roles of the various workers on a crew.

**Construction plan**
A construction plan is essential for the success of a TMS—it’s the first form of quality control on the project. The team that develops the construction plan should include the engineer, maintenance superintendents, and maintenance foreman. The plan should ensure that traffic control signs and barriers are delivered and set up, all equipment is brought to the site on time and in good working condition, and all materials are delivered on time or that the necessary trucks have been reserved to deliver the materials during construction.

Although a specific plan is not necessary for each project, it’s advantageous to develop one for each type of surface such as a seal coat or a slurry seal. The plan may be a short checklist of items. Specific plans for individual projects may consist of scheduling the work, ensuring that all equipment and materials are available or ordered, and traffic control rental or setup has been ordered.

The previously mentioned “Pavement Preservation Checklist Series” provide helpful insight when developing construction plans.

**Documentation**
Agencies should keep detailed documentation of the surfaces applied to roads. This should include application rates of the binder and aggregate, material types, costs, and any other information that might be useful in the future such as a brief description of the work performed or any problems that were encountered. This documentation is useful when looking back to discover which surfaces were successful or unsuccessful. It also helps to know what lies beneath the surface when reconstruction or rehabilitation is going to be performed. Individual agencies should develop a documentation process that’s consistent with other documentation they’ve developed.