

The Contractor General Quality Control Plan for HMA Placement shall include the following information in accordance with Standard Specification Section 4.06:

1. Title Page and Date

2. Table of Contents

- a. Sections and corresponding page numbers

3. Paving and Quality Control Personnel

- a. Quality Control Manager (QCM)
 - i. Name & Contact Information
 - ii. Qualifications, authority and responsibilities
- b. Process Control Technician(s) (person in charge of placement procedures; typically, the paving foreman).
 - i. Name & Contact Information
 - ii. Qualifications, authority and responsibilities
- c. Quality Control Technician(s) (Material sampling, Density testing and rolling patterns, and core extractions; full-time dedicated personnel or third-party testing laboratory)
 - i. Name(s) & Contact Information
 - ii. Qualifications, authority and responsibilities (Must be NETTCP) certified- see 4.06.03-10)
 - iii. Name & Contact Information of the Radiation Safety Officer (RSO) if using a nuclear density gauge for testing.

4. Paving Equipment and Release Agent

- a. A complete list of all equipment that the company owns/rents. The list must indicate the makes, models and types of all the equipment and, that they meet this and all other paving related specifications. This list will include (but not limited to) pavers, MTV, rollers, plate compactors, automatic grade/slope controls, Notched Wedge Joint and secondary joint compaction devices (max 14" width if plate compactor), tack truck/wagon, etc.
- b. Brand and Product Name of Asphalt Release Agent including where and how it is to be used.

5. Best Practices – provide information and elaborate on the categories below.

- a. Procedure to deal with equipment breakdown (Specify personnel responsible for repairing, removing and/or replacing the affected equipment, address procedures and actions to be taken, etc.)
- b. Procedure to install temporary transitions at both butt joints and longitudinal joint drop-offs. This includes driveways, side streets, and structures
- c. Procedure for constructing and checking permanent transverse butt joint construction, including proper preparation of the transverse joint area prior to starting to pave, use of starting blocks, and monitoring for smoothness compliance including driveways, side streets, and at relevant structures.
- d. Procedure for generating a Compaction Curve for thin lifts (<1.5 inches) to establish a rolling pattern including cessation temperature and compaction temperature range.
- e. Inclement weather procedures (Specify personnel responsible, address procedures, etc.)
- f. Cool weather paving. Defined as any asphalt concrete placement that occurs below 50 degrees. List all potential adjustments that may be considered and made

when paving below 50 degrees. This would include, but not limited to, adjustments to mix delivery temperature, including the use of an approved warm mix additive or increasing the amount if it is already being used, increasing the number of haul trucks, decreasing paver speed, and increasing the number of rollers. When cool weather paving is performed, any adjustments warranted to the paving operation shall be included in the **Project Summary Pre-Pave Form for that specific paving event.**

- g. Process for compacting in tight areas where rollers can't reach. Specifically, but not limited to, how to compact asphalt against the face of different types of curbing; adjacent to, or under beam rail; adjacent to or under bridge rail; adjacent to or under vertical bridge or median parapets; around catch basins, etc... Using a hand tamper should only be allowed for very small areas of one square foot or less. Any areas larger than one square foot must use some type of mechanical compaction device. Describe what mechanical device(s) will be used and how.

6. Protection of roadway structures/utilities

7. Process Control, Quality Control, Sampling and Testing Equipment

- a. Process for evaluating subbase, bituminous concrete surface, or other prior to placement.
 - i. Cross slopes if required.
 - ii. Standing water
 - iii. Saturated, pumping, or frozen ground
 - iv. Process for balancing the operation.
- b. Sweeping operations
- c. Visual inspection:
 - i. tack coat application.
 - ii. monitoring for material segregation
 - iii. haul units (i.e. triaxles, trailer dumps)
 - iv. temperature
- d. Make and model of infrared guns planned to be used for monitoring mix temperature (See 4.06.03-6)
- e. Process for establishing and modifying rolling patterns to meet density requirements, including cool weather paving (<50 degrees) adjustments to rolling operations.
- f. Type of testing device(s) for density
- g. Procedure for process control cores (For the density gauge correlation process)
- h. Minimum density monitoring frequency at time of placement (as performed by your QC technician.)

8. Troubleshooting

- a. Procedures for taking corrective action, during production and placement, of non-conforming materials or workmanship (i.e. equipment problems, density, mat or joint issues)

9. Protection of Existing/Finished Construction

- a. Tracking tack coat material
- b. Dumping/clean out surplus materials off-site.
- c. Oil/Hydraulic spills

10. Core Sampling of Bituminous Concrete for Acceptance

- a. Planned procedure

11. Dispute Resolution for Density

- a. Planned procedure

12. Corrective Work

- a. Procedure for identifying and correcting non-compliant work.