



**ALABAMA DEPARTMENT OF TRANSPORTATION
CONSTRUCTION BUREAU**

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Kay Ivey
Governor

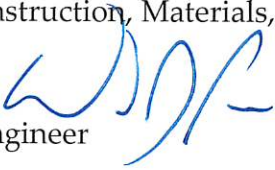
John R. Cooper
Transportation Director

May 6, 2020

Construction Information Memorandum No. 3 - 2020

TO: Region Engineers

ATTN: Area Operations, Construction, Materials, and Local Transportation Engineers

FROM: Winston J. Powe, PE 
State Construction Engineer

RE: OGFC Best Practices Guidelines

Paving contractors should always follow industry-recognized best practices when placing any bituminous plant mix. Over the past few years, the Department has seen raveling and other structural failures on some open graded friction course (OGFC) projects, along with less than expected drainage performance. These problems point to the fact that an OGFC is, in general, less forgiving when best practices are not utilized.

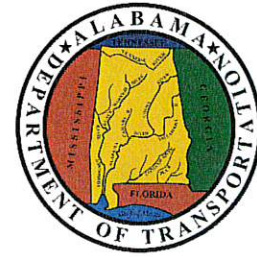
In an effort to improve the quality of OGFCs placed on our roadways, the Alabama Asphalt Pavement Association (AAPA) has developed, with the support of the Department, the attached **OGFC Best Practices Guidelines**. Both the Construction and Materials & Tests Bureaus recommend that the various topics addressed in the Guidelines be included in preconstruction conference discussions when the project scope includes the placement of OGFC.

Keep in mind that while we assume all AAPA members would follow the recommendations of the Guidelines, it is not an enforceable publication. The contractor's work is still to be governed by the contract documents (standard specifications, plans, and special provisions).

Please ensure that all personnel managing your construction projects are familiar with these Guidelines.

WJP/JLB/jlb
Attachment

pc: Mr. George Conner, PE	Mr. Don Arkle, PE	Mr. William Adams, PE
Mr. Scott George, PE	Mr. Stacey Glass, PE	Mr. Steve Walker, PE
Mr. Terry McDuffie, PE	Mr. Ed Phillips, PE	Mr. Clay McBrien, PE
FHWA	ARBA	AAPA
ALBCA	ACIA	ACEA
CIM File		



OGFC BEST PRACTICES GUIDELINES (05/06/2020)

PAVING PREPARATIONS

References

- Sections 106, 410, and 420 of ALDOT Standard Specifications. It is recommended to always check specific Project Contract and Project Plans for any Special Provisions and/or Project Notes which may supersede Standard Specifications.
- ALDOT-259: Open-Graded Asphalt Concrete Friction Course Design Method.
- ALDOT List II-6: Hot Mix Asphalt Release Coating for Truck Beds.

Pre-Paving Meeting

- Have all key field and plant personnel present to discuss the upcoming OGFC project. Be sure to include others including trucking foreman, plant foreman and members of the placement crew so that a clear communication is known from day one.
- Discuss lane restrictions with the Engineer and see if there are any opportunities to place OGFC during daylight hours to assist with higher ambient temperature, etc. Placement during the day is critical to help with loss in mix temperature, laydown operations, and overall mix quality. The optimal time to request to place OGFC during daylight hours is prior to the project letting.
- It is recommended that the Engineer have an additional QA Inspector to monitor the paver and the tacking operations (i.e. break time prior to placing OGFC). It is also recommended that an additional QA Inspector be stationed at the asphalt plant to monitor mix temperature, truck cleanliness, and use of release agents. QC Personnel should be closely monitoring all these operations.

Milling

- Ensure that care is taken when micro milling or milling into bridges and away from bridges.
- Ensure that milling is done to proper depth or slightly above the average milling depth for the mainline to provide a good tie into the bridges. Care should be taken not to damage the concrete approach slabs if present. Portable milling machines such as skid steer machines may be used to transversely mill to get a vertical edge at the bridges.
- If feasible allow the road to dry for at least 2 days for the pavement to properly dry and remove fines often not completely removed by the initial sweeping operations.

Trucking Operations

- Develop a plan to establish constant flow of asphalt to the job site, being extra careful not to use too many trucks. An excessive number of trucks in front of the paver can cause OGFC materials to cool down or begin to drain down if held for extended amounts of time on site.
- Lack of enough trucks often causes paver stops and provides a less than desirable job.
- Discuss with all truck drivers the importance of having clean truck beds along with the importance of good housekeeping practices during construction (i.e. no garbage in the beds of trucks).

Release Agents

- QA Inspector and QC Personnel should inspect trucks and all equipment prior to loading OGFC mixtures.
- No diesel fuel or solvents should be used inside of trucks, Material Remixing Device (MRD) or the paver. Apply only approved release agents to prevent build up from occurring. The Paver and Material Remixing Device (MRD) should be free of pooled or excess cleaning products.
- Approved release agents are found in ALDOT List II-6: Hot Mix Asphalt Release Coating for Truck Beds.

Plant Operations

- Run the plant so that the paver will not have to wait on mix to arrive on site. Communicate with the roadway foreman and stagger trucks during load out operations to maintain continuous flow of trucks to the Material Remixing Device (MRD) and Paver.
- Run the plant in order to provide consistency in mixing and drying and with the flow of fibers (If used) into the mixture as well as to prevent unnecessary stops in production that could cause swings in mix temperature.
- Do not store OGFC in the silo for excessive periods of time to prevent drain down and excessive buildup inside of the silos.
- Monitor mix temperature on loads leaving the plant to ensure that mix is within approved temperature range.

PAVING OPERATIONS

Tack – Bond Coats

- Ensure that a uniform tack coat is applied in accordance with Section 420 of ALDOT Standard Specifications and Project Contract. Streaked tack shots do not represent a uniform tack coat.
- Special attention must be given to the distributor truck drivers (where applicable) to ensure that the material is applied in advance of paving operations to prevent hauling trucks and paving equipment from being on the fresh tack until the materials has enough time to break. This will help prevent excessive pick up and removal of the tack, especially in the wheel paths.
- The key to this operation is proper planning of the tacking operations.

Roadway Mix Temperature

- QA Inspector and QC Personnel should check trucks and record temperatures to ensure mix temperature is within approved range for OGFC mixtures in accordance with Section 410 of ALDOT Standard Specifications and Project Contract.

Pavers

- When beginning paving operations, start with the truck on site containing mix with highest temperature in order to preheat equipment to highest level.
- Additional measures will be permitted such as adding slotted screens inside of the paver to prevent clumps of mix or fibers from being fed into the paver. These clumps can cause excessive laydown problems that are difficult to repair in the finished mat. Check with your quality control staff and discuss ways to maintain uniform mixture to the screed.
- Paver Speed -Set for the paver to maintain a constant flow of material without unnecessary stopping.
- If trucking operations are not optimized for a short period of time, make all attempts to not allow the paver to stop.
- Adjust paver speed to keep the operation moving and allow the rollers to continue without stops.
- In the event that more than 30 minutes elapses without a fresh load of OGFC mix, consider creating a transverse joint, and removing the paver and Material Remixing Device (MRD) from the paving lane and cleaning out mix to prevent thermal segregation.

Area of Concern When Paving OGFC

- Bridge tie ins, take offs, ramps, and gore areas require special care.
- Load out trucks only as needed for low production paving such as ramps, gore areas, bridges, etc.
- Adjust trucking operations and add extra field staff to assist in areas where hand work is necessary.
- To prevent excessive pick up, special attention must be taken to ensure that trucks do not travel on the fresh mat or onto tacked areas until tack materials have broken.

Compaction

- OGFC mixes are very susceptible to losing temperature due to thin placement rate and open void texture. Paving when ambient temperatures are lower (mostly at night) causes the mix to cool rapidly, often within less than 15 minutes. Ensure the rollers remain close to the paver to provide compaction while the mixture is still hot.
- Closely monitor the rollers so there is no visible fracturing of the aggregate when the mix is placed at specified contract placement rate.
- Be careful to avoid over compaction of the mix. Vibratory Mode should never be used. Maintain open void structure for drainage purposes.