

VIRGINIA DEPARTMENT OF TRANSPORTATION

MATERIALS DIVISION

MEMORANDUM

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| GENERAL SUBJECT: Gray Iron Castings | NUMBER: MD 403-16 |
| SPECIFIC SUBJECT: Chapter II of the Materials Manual Of Instructions Section 204.32 (a) Castings, Section 209.07 and Approved List No. 61 | DATE: June 10, 2016 |
| | SUPERSEDES: |
| APPROVED: | Charles A. Babish, PE State Materials Engineer Approved: _____ |

EFFECTIVE DATE

- This memorandum is effective **July 1, 2016**
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PURPOSE

- The purpose of this change to Section 204.32, Section 209.07 and Approved List No. 61 is to clarify that gray iron casting manufactured to the requirements of AASHTO M105 and M306 are compliant with VDOT specifications. In 2007, VDOT began specifying AASHTO gray iron castings instead of ASTM A48 to insure the quality and traceability of the gray iron material to the fabricated casting. AASHTO specifications require the marking of casting to identify the foundry and date of casting.
 - Approved List No 61 will only show the manufacturers of the gray iron castings. Suppliers and Distributors of castings will be moved to the miscellaneous suppliers Approved List 44. Acceptance on projects will be based on manufacturers being on Approved List 61, a manufacturer's letter and/or stamped delivery ticket certifying the castings meet AASHTO M105 or M306 and are manufactured in United States of America.
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Changes are **Shaded**

PROCEDURES

- **Sec 209.07 Approved List 61 - Gray Iron Casting **Manufacturers** on QA Program**

To have a product included on the Approved List for "Gray Iron Casting Manufacturers on QA Program" the following shall be submitted to the Central Office Materials Division's Quality Assurance Section: The plant shall submit a location specific QC plan meeting the requirements of Sec. 204.32(a). The plant will also be subject to an inspection upon approval of its QC plan.

- **Section 204.32**

- (a) Steel Castings, Forgings and Shaftings**

- Steel, ductile iron, or malleable castings and steel forgings and shafting will be sampled and tested by the manufacturer. Certified physical and chemical analyses of these tests submitted to the Materials Division will be the basis of approval, and visual inspection in the field will be all that is required, as outlined in Sec. 207. See also Sec. 207 for exceptions to the above in cases where cast steel, ASTM A27, and malleable cast iron, ASTM A47, are used in rest area construction.

Gray-iron, AASHTO M306 and M105, shall be accepted from Gray Iron Casting Manufacturers on QA Program (Approved List 61). Under this program, manufacturers will have approved Quality Control Plans, which define how they intend to maintain all shipping records, inventory records, test report numbers, and other documents needed to assure that materials shipped have the proper acceptance documentation. The Plan will define the responsible parties, and describe when, where, and how the records are maintained. The Quality Control Plan will be reviewed for content by the Central Office, Quality Assurance Section. The Quality Assurance Engineer is responsible for the acceptance or rejection of the Quality Assurance Plan in accordance with the Gray-Iron Quality Control Plan Checklist Found Appendix II-J of this chapter. The Quality Assurance Engineer shall be responsible for the manufacturer's adherence to the approved Quality Control Plan and has the authority to remove non-compliant manufacturers from the list. The approved manufacturers will be added to a list maintained in the Manual of Instructions.

QC Plan Review Checklist for Gray Iron Casting Manufacturers

Information included in the QC Plan:

- Plant Name
- Location
- Coversheet to Facility
- Last Revision Date
- Statement of Commitment to Quality Control
- Plant Personnel Organizational Chart
- Plant Manager
- QC Technician
- Personnel Qualifications
- Line of Reporting
- List of items produced under the plan
- Records
- Types of records kept
- Retention time of records
- Materials Section
- Source of Raw materials/Scrap
- Certifications of materials
- Product Inspection/Verification procedures

Testing/Frequency performed

Problem resolution procedure/Status of out of spec castings

Storage of product

Shipping of product

Example of **Stamped Delivery Ticket and Certification Letter** which includes the following statement:

"We certify that these items conform to AASHTO M306 or M105, Class 35B in accordance with the VDOT Road and Bridge Specifications Section 224.02 (b) and to the VDOT Gray Iron Castings Manufacturers Quality Assurance Program. These items are manufactured in United States of America"

**List No 61
July 2016**

(61) GRAY IRON CASTING MANUFACTURERS ON QA PROGRAM – (Quality Assurance)

Gray Iron Casting Domestic Manufacturers – compliant with Buy America

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| Bingham & Taylor | 601 Nalle Place Culpeper, VA 22701 |
| EJ | 301 Spring Street East Jordan, Michigan, USA 49727 |
| EJ | 270 Red Wing Road Ardmore Industrial Park Ardmore, Oklahoma 73401 |
| Neenah Foundry Co | 2121 Brooks Avenue Neenah, Wisconsin 54956 |
| U.S. Foundry and Manufacturing Corporation | 8351 N.W. 93 Street Medley (Miami), Florida, USA 33166-2096 |

Moved to Miscellaneous Suppliers Approved List 44

~~Gray Iron Casting Domestic and Foreign Distributors may not be compliant with Buy America~~

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| Capitol Foundry of VA., Inc. QA Plan for DI-1, DI-2, DI-12, IC-2, JB, MH-1, MH-F&C-1 | 2856 Crusader Circle Virginia Beach, Virginia 23453 |
| Chesapeake Foundries, Inc. (*P) | 7840D Cessna Avenue Gaithersburg, MD 20879 |

(*P)=Probationary

REFERENCES

- VDOT 2016 Road & Bridge Specification Book Section 224.02 (b) Gray iron castings
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COPY DISTRIBUTION:

Deputy Chief Engineer
Division Administrators
District Administrators
District Location & Design Engineers
District Construction Engineers
District Maintenance Engineers
District Bridge Engineers
District Traffic Engineers

VDOT Resident Engineers
Federal Highway Administration
Virginia Ready Mix Association
Precast Concrete Association of Virginia
Virginia Transportation Construction Alliance
Virginia Asphalt Association
American Concrete Paving Association Mid-Atlantic Chapter
Old Dominion Highway Contractors Association