

## Volume I

### Section 1.2

# MITIGATION OF AGGREGATE PROBLEMS AT POINT OF USE

#### 1.2.1 PURPOSE

This procedure establishes a standardized method for assuring that aggregate materials incorporated into Florida Department of Transportation (Department) projects consistently meets applicable specification and uniformity requirements. Authority, responsibilities and duties for monitoring are set out, as well as an action plan to be implemented when a problem is indicated.

#### 1.2.2 AUTHORITY

Section 120.53, Florida Statutes.

Section 334.044(2), (4), (10)(a) and Section 334.24, Florida Statutes.

Chapter 14-103 (Construction Aggregates) Florida Administrative Code

#### 1.2.3 SCOPE

Principal users of this document include the State Materials Office (SMO), District Materials and Research Offices (DMROs), and the District Construction Office (DCO).

#### 1.2.4 PROCEDURE

**FAC Rule Chapter 14-103** provides that when an approved source is using the Full Quality Control (QC) Certification System (FCS), the producer may ship and certify aggregate for Department use prior to the Department obtaining the results of its Verification (VT) sampling and testing. Aggregates are certified to points of use such as roadway projects, and asphalt and concrete plants. Independent Verification (IV) sampling and testing at the point of use is necessary in some instances to supplement the Department's Quality Assurance procedures performed at the aggregate source. This IV program focuses on the engineering properties of aggregates determined from the QC tests performed by producers that are not required at the points

of use, for example, Gradation, Minus 200, Limerock Bearing Ratio, and L.A. Abrasion etc.

#### **1.2.4.1 IV Sampling and Testing**

DMRO personnel should take IV samples at the point of use when the DMRO has reason to believe from project level inspection, or other visual observation that defective material is present. The District Materials and Research Engineer (DMRE) may determine the frequency of IV sampling as needed. A flow chart is included to facilitate following the lines of action.

When initiated by visual observation, take IV samples from selected locations with evidence of distress (areas of yielding base in roadway [an indication of plasticity], discolored or contaminated material, overly coarse or fine gradation, or excess fines, etc.). When initiated by another cause, take samples at a minimum frequency to cover the expected affected roadway LOTs or stockpiles associated with a project.

The DMRO will send the samples to the appropriate materials laboratory for testing aggregate properties as deemed necessary. Send at least one split sample out of a maximum number of ten IV samples to the SMO for testing. The DMRE shall evaluate the IV test results.

#### **1.2.4.2 IV Evaluation**

If the results of all IV aggregate tests meet specifications, accept the aggregate. If not, the DMRE will determine the disposition of the aggregate at a production facility, and should make a recommendation to the District Construction Engineer (DCE) as to disposition of any material on the roadway based on the provisions in ***Specifications Section 6***.

##### **1.2.4.2.1 Concurrent Actions: Source and Point of Use**

If an assignable cause for the material failure exists at the point of use, do not review and investigate the aggregate source. Otherwise, the DMRE, in conjunction with SMO, will review the results of the IV data, the mine QC and VT data and past performance of the material, and take any or all of the following actions:

The DMRE shall notify the SMO and initiate an investigation at the source of the materials to determine probable cause. DMRE shall inform the SMO of any findings. If warranted, the DMRE may change the certification system of the source for any or all products.

The DMRO will take IV samples at randomly selected locations at a frequency of one per roadway LOT, from all materials certified subsequent to initiation of initial IV testing. Take these samples immediately after material is placed on the roadway, if possible, or delivered to the point of use. This frequency shall be maintained until released by the DMRE. Follow the acceptance guidelines of **Section 1.2.4.2**.

**Roadway Base Only:** The DMRO will take a separate set of IV samples at the same frequency in **Section 1.2.4.1** from the *roadway base* placed prior to initiation of the first IV samples to the extent deemed necessary by the DMRE to determine whether that base should be accepted, left in place at reduced payment or removed and replaced.

The DMRE shall evaluate these IV samples and, after consultation with the SMO, shall make the recommendation to the DCE as to disposition of this material based on the provisions of **Specification Section 5**.

#### **1.2.4.2.2 Aggregate Source**

If the results of the DMRO investigation of the aggregate source indicate that no problems are present, or if they were, have been corrected, resume acceptance with source certification and Department verification. If the source does not correct problems, follow acceptance procedures in **Section 1.2.4.2.3**. The DMRE may investigate and recommend that the SMO investigate the aggregate source in accordance with the **FAC Rule Chapter 14-103** to determine the source's approval or certification status. The SMO will determine the on-going acceptance status of the source of material as per the requirements of the **FAC Rule Chapter 14-103**. The DMRE, DCE, and the appropriate Project Administrator (PA) will be notified of this action.

#### **1.2.4.2.3 Assigned Point-of-Use Acceptance**

While the source is under DMRO or SMO investigation, acceptance of the product at all points of use being supplied from the source should be based on IV samples taken at the point of use at a frequency matching the source. These samples shall be taken immediately after the material is placed on the roadway, project-site or plant stockpile.

The PA will immediately notify the contractor in writing that acceptance of the material is now based on point-of-use tests and advise the

contractor of the risk of material being rejected on the basis of such samples.

#### **1.2.4.3 Disposition of Material**

The DMRE shall evaluate the IV samples taken and visually examine any of the subject in-place material on the project. After consultation with the DCO and the SMO, the DMRE shall make the recommendation to the DCE as to disposition of this material based on the provisions of ***Specification Section 6***. The DMRE should document the resolution of any IV and VT data not in specification compliance.

#### **1.2.5 TRAINING**

None required.

#### **1.2.6 FORMS**

None required.

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