

# COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE

## APPROVAL GUIDANCE

Aggregate sources that would like to produce coarse aggregate material for use in Portland Cement Concrete (PCC) and are requesting approval to supply to the Oklahoma Department of Transportation for use in Highway Construction Projects, must meet the following requirements listed in sections 1.0 through 3.0.

Additionally, all such coarse aggregate material will be tested and evaluated by the Materials Division of the Oklahoma Department of Transportation, per sections 5.0 and 6.0 listed below. Based on this testing and evaluation, the source may or may not be accepted for use in PCC. Only materials meeting these requirements will be listed on the Approved Rock, Stone and Sand sources list as an approved source of coarse aggregate for use in PCC.

### **1.0 *Geological assessment report for the source***

The geological assessment shall be prepared by a Professional Geologist. The report shall include at a minimum, discussion on the topics as outlined below.

#### **1.1 Description in detail of:**

- Stone or rock type
- Mineralogy of stone or rock type
- Geologic Formation(s) of the associated stone or rock type
- Color(s) of the stone or rock type (weathered and fresh)
- Structure, both local and regional, as associated with the source's geological formations
- Feasibility of aggregate for use in transportation related applications
- Any nearby quarry producing from similar geologic formation

#### **1.2 Photos clearly depicting:**

- Bench(s) or ledge faces that is currently being mined or excavated
- Other bench(s) or ledge faces that are not currently being mined
- Shot rock from a previous blasting or that is temporarily being stockpiled near the mining footprint
- Rock cores drilled
- Stockpiles of various aggregate types (close up and from a distance)

### **2.0 *Source specific information to be on a company letterhead***

- The name of the source (how it should be listed on the Materials Division sources list)
- Legal description of the property (Section-Township-Range) and County where source is located
- Physical address of the source
- If the mailing address is different from the physical address, include the mailing address for correspondence

- GPS coordinates for the location of the scale house for the source (shall be in Decimal Degree format)
- Google Earth image of the source location
- Contact information for source personnel (email, direct and cell phone, and fax phone numbers)

### **3.0 Aggregate material testing by the source**

The source will submit their production coarse aggregate to an ODOT qualified and AASHTO accredited private testing laboratory, for the required tests in section 3.1.

For a list of AASHTO accredited laboratories, you may visit the <http://aashtoresource.org/> website.

For a list of ODOT qualified laboratories, you may visit the <https://oklahoma.gov/odot/business-center/materials/materials.html> website.

#### **3.1 AASHTO (T) and ASTM (D) Tests:**

- |        |                 |
|--------|-----------------|
| • T11  | • T210 (coarse) |
| • T19  | • T255          |
| • T27  | • T327          |
| • T85  | • D4791         |
| • T96  | • D5821         |
| • T112 |                 |

Any additional test results not listed herein (such as Alkali-Silica Reactivity testing, magnesium/sodium sulfate soundness loss, or rapid freezing and thawing of concrete), that the source would like to include with the preliminary testing assessment, will also be considered. It should be noted that the test results submitted are solely for information only, and do not afford the source any type of approval.

### **4.0 Submittal of final report**

A final report containing all of the information listed in sections 1.0 through 3.0 shall be submitted in hard copy format, mailed, to the address listed at the top of this letter, attention Materials Division Engineer.

### **5.0 Sampling, testing and evaluation of production coarse aggregate material by the Materials Division**

Once the required documentation has been received, the Materials Division will review the submittal. A determination will be made whether or not to sample the aggregate materials. If the submittal is deemed acceptable, the Materials Division will contact the producer or their representative to schedule a time and date to sample the material for testing and evaluation. It should be noted that prior to any sampling trip made by the Materials Division the producer must have a substantial amount (no less than 2,000 tons) of stockpiled coarse aggregate material. The stockpile shall be representative of the aggregate material which will be produced for ODOT use. If the quantity of the stockpiled production

coarse aggregate is deemed to not be of a substantial amount upon arrival at the source, the material will not be sampled for testing and evaluation. The aggregate source will not be sampled until such time as there is sufficient material stockpiled and it is the producer's responsibility to adhere to these guidelines.

All sampled material will undergo testing as per section 3.1, in addition to Freeze-Thaw testing by AASHTO T-161, Procedure A modified to 350 cycles. This test method is a lengthy process that can take up to twelve (12) months to complete. While the aggregate is being tested, provisional source approval will **not** be given.

## **6.0 Coarse aggregate material acceptance or denial**

If the coarse aggregate material is of sufficient quality to meet the requirements of ODOT Standard Specification 701.06, as evidenced by Materials Division testing and evaluation, the source may be approved to provide coarse aggregate material for PCC to ODOT Highway Construction Projects for only a specific length of time. The material source will be listed on the Approved Rock, Stone, and Sand Sources list. The material source will be subject to future testing at the discretion of the ODOT Materials Division. Any and all private lab test results submitted to the Materials Division with the final report, or for evaluation, are solely for information only and do **not** afford the material source any type of approval.

If the material is **not** of sufficient quality to meet the requirements of ODOT Standard Specification 701.06, as evidenced by Materials Division testing and evaluation, the source will **not** be approved to provide coarse aggregate material for use in PCC on ODOT Highway Construction Projects. Re-sampling of the material source may only be approved by the State Materials Engineer.

### ***Revision History***

5/1/2023: Coarse Aggregate for Portland Cement Concrete Approval Guidance is the new updated policy that replaces the previous coarse aggregate approval policy.