

# VERMONT AGENCY OF TRANSPORTATION

## CONSTRUCTION & MATERIALS BUREAU

### MATERIAL TESTING & CERTIFICATIONS SECTION



# APPROVED AGGREGATE SOURCE

## GUIDANCE DOCUMENT

October 28, 2024

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## PURPOSE

The purpose of the Aggregate Source Program is to evaluate aggregate sources for use as materials on Vermont Agency of Transportation (VTrans) construction projects. This guide defines the process that VTrans will employ to approve aggregate sources.

## DEFINITION OF AN APPROVED AGGREGATE SOURCE

An aggregate source is approved for use on projects when VTrans has determined that the source can produce aggregates that are in conformance with the material specifications detailed in the current edition of the [Vermont Agency of Transportation's Standard Specifications for Construction](#). A pit and quarry co-located at the same address will be considered separate aggregate sources. Materials covered by the Approved Aggregate Source Program are shown below in Table 1. Recycled concrete aggregate (RCA) and processed glass aggregate (PGA) materials are covered under the Approved Material Source – Recycled Material Aggregate Program, located on the Materials Acceptance Program (MAP) webpage: <https://vtrans.vermont.gov/highway/construct-material/test-cert/certification>

Materials not listed below are not subject to Aggregate Source Approval.

**TABLE 1: UNBOUND AND BOUND MATERIALS COVERED BY AGGREGATE SOURCE PROGRAM**

Material Type	Material Code and Material Name						
Unbound Aggregate	704.04 Gravel for Subbase	704.05 Crushed Gravel for Subbase	704.06 Dense Graded Crushed Stone for Subbase	704.12(a) Aggregate Surface Course	704.12(b) Aggregate Surface Course, Paths and Trails	704.12(c) Aggregate Shoulders	704.16 Drainage Aggregate
Bituminous Concrete Aggregate	704.10(b) Fine Aggregate for Bituminous Concrete			704.10(a) Coarse Aggregate for Bituminous Concrete			
Structural Concrete Aggregate	704.01 Fine Aggregate for Concrete			704.02 Coarse Aggregate for Concrete			

## APPROVED AGGREGATE SOURCE LIST (AASL):

The Approved Aggregate Source List (AASL) is a list of aggregate sources that VTrans has approved. This list will indicate each material specification the aggregate source has been approved to supply. This list will be amended as necessary to change expiration dates upon renewal and add new sources to the list as they become

approved. The AASL will be published on the Aggregate Source Program webpage: <https://vtrans.vermont.gov/highway/construct-material/aggregate-source-program>

## AGGREGATE SOURCE APPROVAL PROCESS:

The following details the process for an aggregate source to become approved and/or maintain approval.

### SUBMITTAL PROCESS

1. Producer (owner/operator of source) completes the applicable '**VTrans Aggregate Source Request Form**' located on the Aggregate Source Program webpage: <https://vtrans.vermont.gov/highway/construct-material/aggregate-source-program>. Upon receipt of the Aggregate Source Request Form, the Producer that submitted the form will receive an email confirming that VTrans has received the form.
2. Producer provides VTrans with one or both of the following according to Tables A1 & A2 in Appendix A:
  - A. Test Results
    - a. Test results from a third party laboratory that meets the requirements of the [VTrans Qualified Lab Program](#) and is listed as an [Approved Laboratory](#), or an AASHTO Accredited laboratory, with the exception of petrographic analysis, which shall meet requirements stated in ASTM C295. Test results must be dated within 12 months of the submittal. Test results shall include test data to support the material(s) the producer is requesting approval for, along with the following information:
      - i. Material code and material name
      - ii. Sample date
      - iii. Test date
      - iv. Name of technician performing the test.
      - v. Test method designation (example: AASHTO T 96)
      - vi. All required reporting fields from the applicable AASHTO/ASTM standard.
    - b. Test results shall be sent to: [AOT.AggregateSources@vermont.gov](mailto:AOT.AggregateSources@vermont.gov)
  - B. Test Samples
    - a. Representative sample(s) shall be delivered to the lab selected on the '**VTrans Aggregate Source Request Form**'. The sample(s) shall meet sampling size requirements as shown in Appendix B Table B1.

The specific tests required for approval depend on the material specification and whether the request is for a new source or a renewal of an existing source. The Producer may reach out to the email below to determine if the source is considered an existing source. An existing source is a source for which VTrans has historical data that is dated within the last five years and that data is associated with the material(s) the source wishes to be approved for.

Producers are encouraged to submit samples for Agency testing not during the construction season, as defined in Section 101 of the [Standard Specifications for Construction](#). All sample deliveries shall be coordinated through email ([AOT.AggregateSources@vermont.gov](mailto:AOT.AggregateSources@vermont.gov)) and must be delivered to one of the following locations:

VTrans Central Aggregate Lab	VTrans Northwest Aggregate Lab	VTrans Southern Aggregate Lab
2178 Airport Road, Unit B	5 Barnes Avenue	84 US Route 4
Berlin, VT 05641	Colchester, VT 05439	Mendon, VT 05701
802-279-5488	802-917-8291	802-498-3888

## EVALUATION PROCESS

Test results are evaluated by VTrans for conformance with the applicable sections of the current edition of the Standard Specifications for Construction. If test results are conforming, then the source is approved, and an expiration date established. Expiration dates are established based on an analysis of test results, rock type, historical data, and associated data trends for each source over time and by material type. Expiration dates may vary by material type for a source and are based on the defined risk levels below:

1. Low-Risk: Up to three years after the date of approval.
2. Medium-Risk: Up to two years after the date of approval.
3. High-Risk: Up to one year after the date of approval.

The source is added to the AASL for the material specifications for which it was evaluated within the timeframes specified below in Table A3. A notice will be sent to the contact email address on the request form notifying them of the outcome of VTrans' evaluation of their submission.

## RESPONSIBILITIES

VTrans shall be responsible for implementing, maintaining, and updating the AASL as well as responding to customer questions/inquiries. The Producer shall be responsible for ensuring that all pertinent information needed to be considered for aggregate source approval has been provided to VTrans. Producers that wish to stay current on the AASL shall be responsible for knowing their source(s) expiration date and following these guidelines for renewal.

## APPENDIX A: Test Requirements for Approval

**TABLE A1: APPLICABLE TESTS FOR APPROVAL**

Property	Test Method	Unbound Aggregate		Bituminous Concrete Aggregate		Structural Concrete Aggregate	
		New	Renewal	New	Renewal	New	Renewal
<b>Approval Method: Providing Samples or Test Results</b>							
Resistance to Degradation (LA Wear)	AASHTO T 96, Grade B <sup>1</sup>	X	X	X	X	X	X
Resistance to Degradation (Micro-Deval)	AASHTO T 327, Table 2 <sup>1,2</sup>			X	X		
Percentage of Fractured Particles	ASTM D5821 <sup>1</sup>	X	X	X	X	X	X
Flat & Elongated Particles (5:1)	ASTM D4791 <sup>1</sup>	X	X	X	X	X	X
Specific Gravities	AASHTO T 84 & T 85			X	X	X	X
Organic Impurities	AASHTO T 21					X	X
Soundness (Sodium Sulfate)	AASHTO T 104 <sup>3</sup>	X	X <sup>4</sup>	X	X <sup>4</sup>	X	X <sup>4</sup>
<b>Approval Method: Test Results Only</b>							
Gradation	AASHTO T 11 & T 27 <sup>2</sup>	X	X				
Petrographic Examination	ASTM C295 <sup>2</sup>			X	X <sup>4</sup>	X	X <sup>4</sup>

Notes:

1. Coarse aggregates only.
2. For information purposes only, no material requirements for approval.
3. Fine aggregates only.
4. Upon VTrans request. Advance notice will be provided to Producers when additional testing is required.

**TABLE A2: UNBOUND AGGREGATE TEST REQUIREMENTS**

Property and Test Method	Material Code and Material Name						
	704.04 Gravel for Subbase	704.05 Crushed Gravel for Subbase	704.06 Dense Graded Crushed Stone for Subbase	704.12(a) Aggregate Surface Course	704.12(b) Aggregate Surface Course, Paths & Trails	704.12(c) Aggregate Shoulders	704.16 Drainage Aggregate
Resistance to Degradation (LA Wear) – AASHTO T 96, Method B <sup>1</sup>	X	X	X	X	X		X
Gradation – AASHTO T 11 & T 27 <sup>2</sup>	X	X	X	X	X	X	X
Percentage of Fractured Particles – ASTM D5821 <sup>1</sup>		X		X	X	X	
Flat & Elongated Particles (5:1) – ASTM D4791 <sup>1</sup>			X				
Soundness (Sodium Sulfate) – AASHTO T 104 <sup>3,4</sup>							X

**Notes:**

1. Coarse aggregates only.
2. For information purposes only, no material requirements for approval.
3. Fine aggregates only.
4. Upon VTrans request. Advance notice will be provided to Producers when additional testing is required.



**TABLE A3: AGENCY DECISION TIMEFRAMES**

Submitted Test Result Review	15 days
Agency Testing	30 days

Notes:

1. Days are defined as workdays (Monday – Friday)
2. Timeframe begins when all samples/test results are received.

## APPENDIX B: SAMPLE SIZE

**TABLE B1: SAMPLE SIZE REQUIREMENTS**

<b>Size of Aggregate Field Sample (AASHTO R 90)</b>	
Nominal Maximum Size of Aggregate in. (mm)	Approximate Minimum Mass of Field Sample lb (kg)
#4 (4.75 mm) or <	25 lbs. (10 kg)
3/8 in. (9.5 mm)	25 lbs. (10 kg)
1/2 in. (12.5 mm)	35 lbs. (15 kg)
3/4 in. (19.0 mm)	55 lbs. (25 kg)
1 in. (25.0 mm)	110 lbs. (50 kg)
1 1/2 in. (37.5 mm)	165 lbs. (75 kg)
2 in. (50 mm) or >	220 lbs. (100 kg)