



## WSDOT Standard Practice QC 9

### *Standard Practice for Approval of Recycled Materials Facilities of WSDOT Recycled Concrete and Returned Concrete*

#### 1. Scope

This standard specifies the requirements for all Recycled Materials Facilities of WSDOT recycled concrete and returned concrete. Recycled concrete aggregate (RCA) from Recycled Materials Facilities that comply with this standard will not require evaluation of LA Wear, and WSDOT Degradation Value. Certification of toxicity characteristics will be required, when requested.

This standard may involve hazardous materials, operations and equipment. It does not address all of the safety problems with their use. It is the responsibility of those using this standard to consult and establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

#### 2. Reference Documents

##### 2.1 WSDOT Standards

M 41-01 *Construction Manual*

M 41-10 *Standard Specifications for Road, Bridge, and Municipal Construction*

M 46-01 *Materials Manual*

#### 3. Terminology

3.1 AASHTO – American Association of State Highway and Transportation Officials

3.2 ASTM – American Society of Testing and Materials

3.3 ASA Database – The ASA (Aggregate Source Approval) is a database containing results of WSDOT preliminary testing of aggregate sources.

3.4 QC – Quality Control, the Recycled Materials Facility's activities that are performed or conducted to fulfill the contract requirements.

3.5 QPL – Washington State Department of Transportation, Qualified Products List.

3.6 RCA – Recycled concrete aggregate.

3.7 Recycled Returned Concrete – Recycled concrete aggregates that are produced from concrete returned to the plant, that was produced from a WSDOT approved aggregate source.

3.8 Returned Concrete – Concrete that was returned to the plant that was produced from a WSDOT approved aggregate source.

- 3.9 Recycled Materials Facility – The facility and location of the plant that produces recycled concrete aggregate materials.
- 3.10 WAQTC – Western Alliance for Quality Transportation Construction
- 3.11 WSDOT – Washington State Department of Transportation.
- 3.12 WSDOT Concrete – Concrete taken from WSDOT roadways and structures.
- 3.13 WSDOT Recycled Concrete – Recycled concrete aggregates that are produced from concrete taken from WSDOT roadways and structures.

#### 4. Significance and Use

This standard practice specifies processes for approving the Recycled Materials Facilities that produce/supply RCA from either returned concrete and/or WSDOT concrete. This is accomplished by a system that evaluates the QC processes of Recycled Materials Facilities and determines if these QC processes will ensure non-contaminated quality RCA. Recycled Materials Facilities that meet this standard will be listed on the QPL as an approved supplier of Tier 2 Recycled Materials for either returned concrete and/or WSDOT concrete.

#### 5. Recycled Concrete Aggregate Quality Control Plan

The Recycled Materials Facility shall have quality control plan on how the facility will ensure that returned concrete and WSDOT concrete are not blended with other recycled materials. This quality control plan should at the minimum include following;

##### 5.1 Recycled Materials Facility

5.1.1 Facility Type

5.1.2 Facility Address

5.1.3 Name, email address, and telephone number of the contact person responsible for the quality control of the facility.

##### 5.2 Prevention of Contamination, Segregation, and Degradation

The handling and storage of RCA shall be in such manner to minimize any segregation or degradation and to prevent contamination by foreign materials. When stockpiles of RCA cannot be stored sufficiently remote from each other to prevent mixing, baffles shall be provided which will prevent intermingling of the different stockpiles.

##### 5.3 Returned Concrete

5.3.1 Shall provide a plan on how returned concrete will be cured, stored, crushed, stockpiled, and segregated from other materials.

5.3.2 Identify what processes will be used to ensure that no contamination will occur with other materials.

5.3.3 Shall provide ASA reports for the aggregate source(s).

## 5.4 WSDOT Concrete

- 5.4.1 Shall provide a plan on how WSDOT concrete is identified, for example;
  - 5.4.1.1 Provide a contract number from WSDOT administered contract that the concrete is reclaimed from.
  - 5.4.1.2 Provide the State Route or Interstate Route along with what the concrete is from, such as;
    - 5.4.1.2.1 Cement Concrete Pavement Panel(s).
    - 5.4.1.2.2 Structure(s)
    - 5.4.1.2.3 Barrier
    - 5.4.1.2.4 Precast units
    - 5.4.1.2.5 Sidewalks
    - 5.4.1.2.6 Other application not identified here, but must be approved by the Engineer/Agency.
- 5.4.2 Shall provide a plan on how the WSDOT concrete will be stored, crushed, stockpiled, and segregated from other materials.
- 5.4.3 Identify what processes will be used to ensure that no contamination will occur with other materials.
- 5.4.4 A new quality control plan shall be required whenever changes occur that causes the existing quality control plan to become inaccurate or invalid.
- 5.4.5 In order to ensure these quality control plans are occurring, WSDOT reserves the right to visit these facilities within one day notice to ensure the Recycled Materials facility is following their approved quality control plans.

## 6. Documentation Requirements

Each Recycled Materials Facility shall provide manufacturer's certification compliance in accordance with Section 1-06.3 of the *Standard Specifications* for the RCA from either returned concrete and/or WSDOT concrete. This certification shall represent a lot of processed RCA which is a maximum of 10,000 tons. The certification shall be in English and include the following;

- 6.1 Name of Recycled Materials Facility
- 6.2 Identification of RCA, WSDOT concrete and/or Returned Concrete
  - 6.2.1 For returned concrete, include the ASA report for the aggregate source.
  - 6.2.2 For WSDOT concrete, provide the following;
    - 6.2.2.1 Contract number from where the concrete was reclaimed from or,
    - 6.2.2.2 Identify the State route or Interstate route and what item the concrete was reclaimed from.
- 6.3 List the applicable standard specification the RCA is to be used for. See table in *Standard Specifications* Section 9-03.21(1)1.

- 6.4 Quantity of RCA
- 6.5 Unique identification number traceable to the date of production, 10,000 tons maximum. Production dates of the RCA
- 6.6 A certification report shall be provided for each lot of RCA.

## 7. Revocation of Qualification

- 7.1 A Recycled Materials Facility may have its qualification status revoked and be removed from the QPL if found in non-conformance with the Standard Specification or this Standard. Causes for removal from the QPL may include, but are not limited to, the following:
  - 7.1.1 Failure to comply with the requirements of This Standard Practice.
  - 7.1.2 Failure to notify WSDOT of changes in QC plan
  - 7.1.3 Producing materials that fails to meet specification requirements.

## 8. Requalification

- 8.1 Once a Recycled Materials Facility has been removed from the QPL, the Recycled Materials Facility may request reinstatement by providing the following written information to WSDOT:
  - 8.1.1 The root cause and corrective action taken to prevent future occurrences of the problem that cause removal from the QPL.
  - 8.1.2 Updated quality control plan.
  - 8.1.3 Other information and test data as determined by WSDOT.
- 8.2 Provided there is a satisfactory resolution of the initial problem, at WSDOT's discretion the Recycled Materials Facility may either be reinstated into the QPL, or the Recycled Materials Facility may be required to reapply to the QPL. All costs of the QPL process shall be borne by the Recycled Materials Facility.