



**3500 — SPECIFICATION FOR BASE AGGREGATE AND BASE MIX**

**3500.1 DESCRIPTION**

3500.1.1 The work shall consist of crushing and stockpiling base aggregate. When specified, the work shall also consist of pugmilling base aggregate and stockpiling base mix.

3500.1.2 The following definitions shall apply:

3500.1.2.1 Base Aggregate is the aggregate before pugmilling.

3500.1.2.2 Base Mix is the mix after pugmilling.

3500.1.2.3 Mean is the arithmetic average of a set of 'n' test results constituting the sample.

3500.1.2.4 Moving Average is the arithmetic mean of 3 consecutive test results.

**3500.2 MATERIALS**

**3500.2.1 Aggregate**

3500.2.1.1 Base Aggregate shall be composed of sound, hard and durable particles of sand, gravel and rock free from injurious quantities of elongated, soft or flaky particles, shale, loam, clay balls and organic or other deleterious material.

**3500.3 CONSTRUCTION**

**3500.3.1 General**

3500.3.1.1 Base Aggregate and Base Mix shall comply with the requirements listed in Table 3500.3.T1.

**Table 3500.3.T1 - Base Aggregate and Base Mix Properties**

Sieve Designation	Percent By Weight Passing Canadian Metric Sieve Series		
	Type 31	Type 33	Type 35
31.5 mm	100.0		
18.0 mm	75.0 - 90.0	100.0	100.0
12.5 mm	65.0 - 83.0	75.0 - 100.0	81.0 - 100.0
5.0 mm	40.0 - 69.0	50.0 - 75.0	50.0 - 85.0
2.0 mm	26.0 - 47.0	32.0 - 52.0	32.0 - 65.0
900 um	17.0 - 32.0	20.0 - 35.0	20.0 - 43.0
400 um	12.0 - 22.0	15.0 - 25.0	15.0 - 30.0
160 um	7.0 - 14.0	8.0 - 15.0	8.0 - 18.0
71 um	6.0 - 11.0	6.0 - 11.0	7.0 - 12.0
Plasticity Index	0 - 7.0	0 - 6.0	0 - 5.0
Fractured Face %	50.0 Minimum		
Lightweight Pieces %	5.0 Maximum		
All Other Deleterious Material % *	2.0 Maximum		

\* Deleterious material includes all other injurious material other than lightweight pieces.

- 3500.3.1.1.1 A tolerance of 3% in the percent by weight passing the maximum size sieve will be permitted providing 100% of the oversize passes the 40.0 mm sieve for Type 31 and the 22.4 mm sieve for Types 33 and 35.
- 3500.3.1.2 The following will apply to Department-owned or controlled aggregate sources shown on the plans or as described in the Special Provisions:
  - 3500.3.1.2.1 Overburden shall be removed from material deposits in accordance with Specification 2260 For Removal Of Overburden.
  - 3500.3.1.2.2 Rock passing a 610 mm square opening screen and larger than the maximum specified size shall be crushed and incorporated simultaneously throughout the crushing operation.
  - 3500.3.1.2.3 Stockpiles shall be constructed in accordance with Specification 3600 For Stockpiling Aggregates.
- 3500.3.1.3 Binder, filler, and blender sand shall be provided in accordance with Specification 3400 For Binder, Filler And Blender Sand.
  - 3500.3.1.3.1 Binder, filler and blender sand shall be added using a separate conveyor system.
  - 3500.3.1.3.2 Binder, filler and blender sand feeds shall be accurately controlled and coordinated.

### **3500.3.2 Processing**

- 3500.3.2.1 Base Mix production shall comply with the following requirements:
  - 3500.3.2.1.1 The Contractor shall cease operations if the Moving Average for any sieve does not comply with the specified requirements listed in Table 3500.3.T1.
    - 3500.3.2.1.1.1 Failure to cease operations shall subject all subsequent materials to the requirements of General Provision 1400-7 Unacceptable and Unauthorized Work.
  - 3500.3.2.1.2 Upon recommencement of operations, the specified requirements shall be met on each of the initial 2 tests prior to the Department accepting any product.
  - 3500.3.2.1.3 Frequency of testing will be at the discretion of the Engineer.
- 3500.3.2.2 When Base Aggregate is the final product specified, production shall be in accordance with the production requirements for Base Mix.
- 3500.3.2.3 Base Aggregate shall be stockpiled after the crushing operation and prior to pugmilling.
- 3500.3.2.4 During pugmilling operations, the Contractor shall have sufficient Base Aggregate in the stockpile for at least 24 hours of pugmilling operation until crushing is completed.
- 3500.3.2.5 Pugmilling shall be performed in a stationary mixing plant. The mixing unit shall be designed to ensure complete mixing of the materials.
- 3500.3.2.6 The pugmill shall be equipped with spray bars for the addition of water.
- 3500.3.2.7 The moisture content of the Base Mix shall not be greater than 5 % by weight when it leaves the pugmill.

#### **3500.4 MEASUREMENT**

3500.4.1 Base Aggregate and Base Mix will be measured in tonnes.

#### **3500.5 PAYMENT**

3500.5.1 Payment for Base Aggregate will be at the applicable contract unit price per tonne. The unit price will be full compensation for completing the work except for those activities for which specific provision for payment is made in this section.

3500.5.2 Payment for Base Mix will be at the applicable contract unit price per tonne. The unit price will be full compensation for completing the work except for those activities for which specific provision for payment is made in this section.

3500.5.3 If the Contract includes a bid item for:

3500.5.3.1 Removal Of Overburden; payment will be made in accordance with Specification 2260 For Removal Of Overburden.

3500.5.3.2 Hauling Aggregate; payment will be made in accordance with Specification 2405 For Hauling On The Basis Of The Kilometre.