

## Attachment 6

### DETAILED SPECIFICATIONS

#### REFERENCES:

References are made herein to the New York State Department of Transportation Standard Specifications, Construction and Materials, dated May 7, 2015 and all current addenda. A copy may be obtained through the Department's Publication Unit at 518/457-4401 for information or on their website at the following address:

<https://www.nysdot.gov/portal/page/portal/main/business-center/engineering/specifications/updated-standard-specifications>.

For information regarding how to become an approved source or to make arrangements for inspection of materials when required, contact the Materials Bureau at 518/457-4582.

#### ITEMS:

Item 203.06, Select Fill

Item 203.07, Select Granular Fill

Item 203.20, Select Granular Subgrade

Material furnished for the above items shall meet the material requirements in Sub-Sections 203-2.01 and 203-2.02, B, C, and E.

Item 304.11, Subbase Course, Type 1

Item 304.12, Subbase Course, Type 2

Item 304.13, Subbase Course, Type 3

Item 304.14, Subbase Course, Type 4

Item 304.14A, Subbase Course, Type 4A

Material furnished for the above items shall meet the material requirements in Sub-Sections 304-2.01 and 304-2.02 except that the requirement for stockpiling shall be waived. The gradation shall be as specified under 304-2.20 A Gradation, except that the gradation for Item 304.14A shall be equal to the gradation for Item 304.14 with the additional requirement that 100% shall pass the 1 inch sieve.

Item 17304.1011, Type 1011 Course Material A (Crushed Concrete) Recycled

Material furnished under the above item shall meet the material requirements in the included specification except that the requirement for stockpiling and testing shall be waived.

Item 605.0901, Underdrain Filter, Type I

Item 605.1001, Underdrain Filter, Type II

Item 605.1101, Underdrain Filter, Type III

Material furnished under the above items shall meet the material requirements and gradation in Sub-Section 605-2.02 except that the requirement for stockpiling shall be waived.

Item 620.02, Fine Stone Fill

Item 620.03, Light Stone Fill

Item 620.04, Medium Stone Fill

Item 620.05, Heavy Stone Fill

Material furnished under the above items shall meet the material requirements in Sub-Sections 620-2.01 and 620-2.02 except that the requirement for stockpiling shall be waived.

Item 620.06, Rip Rap Stone

Material furnished under the above item shall meet the material requirements in Sub-Section 620-2.03 except that requirements for stockpiling shall be waived.

Item 620.08, Bedding Material

Material furnished under the above item shall meet the material requirements in Sub-Section 620-2.05.

**DETAILED SPECIFICATIONS** (Cont'd)

ITEMS (Cont'd)

- Item 703-0201X, Crushed Stone
- Item 703-0202X, Crushed Gravel
- Item 703-0203X, Screened Gravel

Materials furnished under above items shall meet the material requirements in Sub-Section 703-02. Gradation shall be as specified in Sub-Section 703-02. Size as indicated.

- Item 703-03, Mortar Sand

Materials furnished under above item shall meet the requirements in Sub-Section 703-03.

- Item 703-04, Grout Sand

Materials furnished under above item shall meet the material requirements in Sub-Section 703-04.

- Item 703-06, Cushion Sand

Materials furnished under above item shall meet the material requirements in Sub-Section 703-06.

- Item 703-07, Concrete Sand

Materials furnished under above item shall meet the requirements in Sub-Section 703-07.

- Item 712-15A, Gabion Stone, basket height equal to 12 inches

- Item 712-15B, Gabion Stone, basket height greater than 12 inches

Materials furnished under above items shall meet the materials requirements for gabion stone in Sub-Section 712-15. Size as indicated.

- Item A1 - A5, Crusher Run

<u>Item</u>	<u>Maximum top size</u>	<u>Additional requirements</u>
A1	1 inch	No more than 50% passing ¼ inch sieve
A2	#1	Mixture of stone dust and #1
A3	1 inch	None
A4	1.5 inches	None
A5	2 inches	None

Materials furnished under above items shall consist of a well-graded, sound, durable, crusher run type material. Maximum top size as indicated.

DETAILED SPECIFICATIONS for Item 17304.1011 begin on next page

DETAILED SPECIFICATIONS for Abrasives A & B begin on page 4

**DETAILED SPECIFICATIONS** (Cont'd)

Item 17304.1011, Subbase Course, Type 1011

**GENERAL:**

All material acceptable for this item shall be stockpiled and shall be sound, hard, durable, and well graded from coarse to fine. Unless otherwise stated in this specification, material tests and quality control methods pertaining to the work of this section will be performed in conformance with the procedures contained in the appropriate Departmental publications in effect on the advertising date of the project. These publications are available upon request to the Regional Director or the Director, Soil Mechanics Bureau.

**OPTIONS:**

**MATERIAL A:**

Material furnished for Material A shall be well-graded from coarse to fine and free from organic or other deleterious materials. At least 95 percent of the material, by weight, shall consist of the following:

1. Recycled Portland Cement Concrete Aggregate (RPCCA).
2. Recycled Portland Cement Concrete Aggregate mixed with stone, sand, gravel or blast furnace slag.

The requirements stated under GENERAL shall apply with the following modifications:

- A. The stockpile shall be no larger than the contract quantity plus thirty (30) percent of that quantity. The stockpile shall be no smaller than 1000 cubic yards or the contract quantity, whichever is less.
- B. A minimum of four samples will be obtained, as directed by the Soils Engineering Laboratory Supervisory from the Soil Mechanics Bureau or representatives, in the presence of:
  1. The Engineer in charge, or representative, and;
  2. The Soils Engineering Laboratory Supervisor, or representative, and;
  3. The Regional Soils Engineer, or representative.
- C. The Soils Engineering Laboratory Supervisor may reject the stockpile, without sampling, based on an on-site inspection of the stockpile.
- D. Transfer of the stockpile material for use on other projects will not be allowed.
- E. The State reserves the right to modify existing Departmental testing methods to evaluate the RPCCA.

This material shall conform to the following gradation:

<u>Passing Sieve</u>	<u>Percent by Weight</u>
2 inch	100
½ inch	30-65
#40	5-40
#200	0-10

The Plasticity Index of the material passing the #40 mesh sieve shall not exceed 5.0.

The Magnesium Sulfate soundness loss after 4 cycles shall be 20 percent or less.

**MATERIAL B:**

All of the material shall be sound, hard, durable, and consist solely of stone which is the product of crushing ledge rock.

This material shall conform to the following gradation:

<u>Passing Sieve</u>	<u>Percent by Weight</u>
½ inch	100
¼ inch	70-100
#10	40-75
#40	15-40
#200	5-15

The Plasticity Index of the material passing the 40 sieve shall not exceed 5.0.

**DETAILED SPECIFICATIONS** (Cont'd)

**ABRASIVES – GRADATION A–SPECIFICATION**

**SCOPE**

This specification covers the material requirements and basis of acceptance for abrasives used to treat snow and ice on pavements.

**MATERIAL REQUIREMENTS**

Material for use as Winter Abrasives shall be either

1. Natural Sand; or
2. Manufactured Sand, including sand made from crushed stone, crushed gravel, ore tailings, crushed slag, lightweight aggregate, or other suitable material.

All abrasives shall consist of hard, strong, durable particles which are free from a coating or any injurious material and injurious amounts of clay, loam or other deleterious substances.

Abrasives meeting specification will be accepted unless the Director of the Office of Transportation Maintenance, using test results or service records, determines that

1. Material contains sufficient unsound or undesirable material to be harmful.
2. Particles degrade due to weathering either in storage or in service, so as to be ineffective.

The method of accounting for delivery (in US Tons) involves collecting weight tickets from scales that have been certified by the appropriate Municipal jurisdiction and are signed by deliveries of less than 200 tons are ordered, all material must be delivered as a single (multiple trailer) bulk delivery. Deliveries shall consist of not more than 1,000 tons per day. Deliveries will be accepted between the hours of 7:30 a.m. and 3:00 p.m. only, unless exceptions are specifically granted by the Resident Engineer or his/her designee.

If the Resident Engineer or his/her designee, as a result of visual inspection, suspects that abrasives being delivered may not be within the specification limits, he/she shall immediately notify the supplier of the nature of the suspected problem(s) both verbally and in writing. Upon receipt of notification the supplier shall cease making deliveries until the Department has had 3 working days (not counting the day of notification) to sample and test the suspect material. The supplier may request permission to continue deliveries after notification, and the Resident Engineer may approve the request at his/her discretion. However, any material delivered after notification must be stockpiled separate from earlier deliveries. Any action deemed necessary by the test results will be applicable to the Lot delivered the day of notification and to any subsequent Lots delivered during the 3-day testing and sampling period.

**CERTIFICATION AND GRADATION ANALYSIS**

Bidders are required to submit a current gradation analysis (sample taken within 6 months of bidding) for each proposed source of supply on their bids. This requirement is waived if the proposed source meets the requirements of 703-01, Fine Aggregate, and appears on the current Approved List of Fine and Coarse Aggregates and which is published on the Department web site, [www.nysdot.gov](http://www.nysdot.gov). Attachment 1 of the proposal is to be used for recording the gradation test results or indicating the NYS DOT Approved Source Number. The gradation test, if required, may be performed by the producer, bidder or an independent testing laboratory. On Attachment 1, the bidder is further required to certify that the gradation analysis represents the material to be supplied and that sufficient acceptable material is available to meet the requirements of the item(s) bid. Bids shall be rejected if the certified gradation is not in conformance with the “Special Gradation” for the locations bid. If the certification sheet is not properly executed (completely filled out and signed), the bid shall be declared incomplete.

**DETAILED SPECIFICATIONS** (Cont'd)

**INCOMPLETE BIDS**

Bidders will have ten (10) calendar days from issuance of notice by the Department to provide missing gradation or other information. Failure to provide the missing information within the specified time period shall be cause for rejection of the bid.

**GRADATION (Particle Size/Shape)**

The gradation requirements for the various items in this proposal are listed in the Gradation Reference Chart in this specification. **NOTE:** The Specification Gradation Column is to be used for bidding purposes. The Rejection Gradation Column will only be used at the time of delivery to determine the acceptability of the load.

Gradation acceptance at the final point of sampling (which depending upon the production operation could be the Producer’s Stockpile, the Production Operation or Pit, or the Delivery Location) shall be measured against the Rejection Gradation. Material which falls between the Specification Gradation and the Rejection Gradation will be paid at a reduced rate. The reduced price shall be based upon the average values of at least two samples representing a pit location, lot, stockpile, or process. Material which is found to fall outside the Rejection Gradation on one or more sieve sizes shall be rejected, and no payment will be due the contractor for such rejected material.

If, after delivery, the sand gradation is found to be out of tolerance, a deduction from the price shall be made based on the following:

$$\text{Reduced price/ton} = \text{delivered contract price} \times (1.00 - X)$$

X = decimal equivalent of the total % out of gradation less the tolerance. The % out of tolerance for each sieve shall be to the nearest 1%. The total of the individual sieve tolerance deviations shall be used as X.

**GRADATION ACCEPTANCE**

Gradation acceptance of abrasive material shall be based on the condition that the material meets the specification requirements. Acceptance shall be determined at the final point of sampling. Depending on the production operation and uniformity of delivered material, the final point of acceptance sampling could be the producer’s stockpile, production operation, pit or a lot of delivered material. Depending on the production operation, the Department may require that exclusive stockpiles be built, tested and approved prior to delivery. If the material deviates from the specification gradation requirements shown in the Gradation Reference Chart, an adjusted price may be paid for the material. The adjusted price shall be based on the average values of at least two samples representing a pit location, lot, stockpile or process.

**GRADATION REFERENCE CHART**

<b>Gradation Reference</b>	<b>Sieve Size</b>	<b>Specification Gradation</b>	<b>Rejection Gradation</b>
A	½”	100	100
A	3/8”	100	95 – 100
A	#4	80 – 100	70 – 100
A	#50	0 – 18	0 – 22
A	#200	0 – 3	0 – 5

**SAMPLING**

Sampling will be performed by Department personnel or their representatives and will depend on the operation of the successful low bidder. Where stockpiles exist, the material will be sampled in the stockpiles prior to delivery. Where material is being processed shortly in advance or at the time of delivery, the process will be sampled. Where the material is unprocessed, specific working areas of the source will be sampled prior to delivery. All delivered materials are subject to random and/or specific sampling if a problem is suspected. Sampling methods, locations and point of final acceptance will be determined by the Department of Transportation.

**TESTING METHOD**

Gradation testing shall be performed on samples by sieving in conformance with NYSDOT Materials Bureau Test Methods 703-1P and 703-2P. Moisture content shall be determined by AASHTO Test Method T-255.

DETAILED SPECIFICATIONS (Cont'd)

REJECTED MATERIALS

When materials are rejected, they must be removed by the Contractor within ten (10) days of notification of rejection. Rejected items not removed by the Contractor within the said ten (10) days shall be regarded as abandoned by the Contractor. The Department then shall have the right to dispose of said abandoned material as its own property by virtue of the contractor's failure to facilitate timely removal. The Contractor shall promptly reimburse the Department for any and all costs incurred in effecting such disposal.

WEIGHT/VOLUME CONVERSION

Locations (delivery sites) where volumetric delivery is acceptable shall be specifically identified in the Bid Proposal. These are typically areas where certified scales and weigh masters are not available within a reasonable distance of the delivery site. In those cases, the weight/volume conversion ratio shall be determined by the Resident Engineer with assistance from the Regional Materials Group as necessary. There are two acceptable methods for establishing weight/volume conversion:

Method 1

Each delivery truck shall have its "level struck" (all material in the dump body being level with the top of the sides of the dump body); volume determined by the Resident Engineer. This will be the payment volume for each load delivered. A representative of the Resident Engineer shall record each load delivered and certify that the truck contained at least the payment (level struck) volume.

Equipment required for Method

- 1 – ¼ cu. ft. container (typically used for measuring the air content of plastic concrete)
- 1 – 20 oz. rubber mallet
- 1 – straight-edge suitable for striking the abrasive level with the top of the container.
- 1 – smooth working surface.
- 1 – scale having a minimum 40 lb. capacity and accuracy of  $\pm 0.3$  lbs.
- 1 – flat shovel

Method 1 Sampling of Abrasives

A representative sample of about ½ cu. ft. of abrasives shall be obtained from a prepared stockpile according to procedures found in Appendix "A" of Materials Method 9.1 "Plant Inspection of Portland Cement Concrete" prior to delivery.

Testing the Sample for Unit Weight

1. The sample shall be air or oven dried until it is visibly dry.
2. Thoroughly mix the "room temperature" sample into a pile on the smooth surface with a flat shovel and "quarter" the pile.
3. Remove about 1/16 cu. ft. (about two quarts) of material from one of the quarters. Place it in the ¼ cu. ft. container and roughly level it off.
4. Strike the container firmly three items about midway on the side at one point. Repeat the striking procedure at three more points about 90 degrees apart on the container.
5. Repeat steps 3 & 4 three more times with material from each of the remaining three "quarters" of the same pile. Be sure that ¼ cu. ft. container is "overfull" after material from the fourth quarter of the sample pile is placed in it.
6. Screen the material level with the top of the container.
7. Weight the "level full" container on the scales and record the weight in pounds.
8. Subtract the weight in pounds of the empty ¼ cu. ft. container from the weight recorded from step #7 above. This is the weight, in pounds, of ¼ cu. ft. of the abrasive material. To obtain the weight, in tons, of 1 cu. yd. of the abrasive material, multiply the weight of the ¼ cu. ft. by 0.054.

**DETAILED SPECIFICATIONS** (Cont'd)

**WEIGHT/VOLUME CONVERSION** (Cont'd.)

**Method 2**

Each delivery truck shall have its “level struck” weight of abrasives determined by a weigh master on a certified weight scale. This is obtained by subtracting the empty weight of the truck from the certified loaded “level struck” weight. As in Method 1, each load delivered shall be recorded by a representative of the Resident Engineer and be certified that the truck contained at least the same volume of the “level struck” weight previously recorded.

**DELIVERY LOT**

A delivery lot shall be the total of one eight-hour day’s delivery during normal Residency working hours.

**SUSPECTED PROBLEMS DURING DELIVERY**

If the Resident Engineer, or an authorized representative of same, as a result of visual inspection, suspects the abrasives being delivered are not within specification limits, they shall immediately notify the supplier of the nature of the suspected problem(s) verbally and in writing. At that point, all deliveries from that supplier will cease until the Department has had reasonable opportunity to sample and test the suspect material (3 working days, not including the date of written notification). If the supplier requests to continue delivering material after notification in writing, the Resident Engineer may approve that request in writing. However, the material delivered after notification must be kept separate from that which was delivered prior to notification. The action deemed necessary by the test results shall be applicable to the lot delivered the day of notification and any subsequent lots delivered during the three day testing and sampling period. This process shall be utilized at any time when delivery of out of specification material is suspected.

**ADJUSTED BID PRICE AND REJECTION RELATIVE TO GRADATION**

The bid price shall be adjusted for any delivered material outside the limits given under “Specification Gradation” and within the limit of the “Rejection Gradation”. Any material that has one or more sizes that fall outside the Rejection Gradation limits shall be rejected and no payment will be made for that material.

**Example of Bid Price Adjustment of Out-of-Gradation Material**  
**Percent Passing**

<u>Sieve</u>	<u>Example Specification Gradation</u>	<u>Example Rejection Gradation</u>	<u>Example Penalty Factor</u>
1/2”	100	100	
3/8”	100	95 to 100	1
#4	80 to 100	70 to 100	1
#50	0 to 18	0 to 22	2
#200	0 to 3	0 to 5	5

Reduced price per ton = contract price times (1.0-X)

The percent out of tolerance shall be to the nearest 1%. The sum of the individual sieve tolerance deviations (%) times the appropriate penalty factors divided by 100 shall be used as “X”.

**EXAMPLE:** Sand delivered was bid at \$5.00 per ton and is satisfactory in passing the 3/8” and #4 sieve but has 22% passing the #50 sieve and 4% passing the #200 sieve. The reduced price is computed as follows:

$$X = (30\% - 22\%) \times 2 + (4\% - 3\%) \times 5 = 21\% = 0.21$$

$$\text{Reduced price per ton} = \$5.00 \times (1.00 - 0.21) = \$3.95$$

**DETAILED SPECIFICATIONS** (Cont'd)

**ADJUSTED BID PRICE AND REJECTION RELATIVE TO MOISTURE CONTENT**

Excessive moisture content has a significant negative impact on mixing, stockpiling, and storage operations. Abrasives when delivered shall have a maximum moisture content not exceeding 7.0% as determined by AASHTO Test Method T-255 (Moisture Content of Fine and Coarse Aggregate). Abrasives delivered which are found to have moisture content in excess of 7%, but less than 10% may be rejected, or they will be accepted at a reduced unit price (see below). Abrasives found to have moisture content greater than 10% will be rejected.

Material with a moisture content from

- 7.01% to 8.00% may be accepted and paid for at the unit price less 10%;
- 8.01% to 9.00% may be accepted and paid for at the unit price less 20%; and
- 9.01 to 9.99% may be accepted and paid fore at the unit price less 30%

**ATTACHMENT 1**  
**GRADATION A – ABRASIVES**

Bidder's Name: \_\_\_\_\_

DOT Source No. (if available): \_\_\_\_\_

Source Location: \_\_\_\_\_

Source Owned/Operated By: \_\_\_\_\_

Sampled By: \_\_\_\_\_ Date Sampled: \_\_\_\_\_

Stockpile Location: \_\_\_\_\_

*(If different from Source Location)*

**GRADATION ANALYSIS**

<b>Sieve</b>	<b>Retained Wt., Grams</b>	<b>%</b>	<b>Passing Wt., Grams</b>	<b>%</b>
1/2"	_____	_____	_____	_____
3/8"	_____	_____	_____	_____
#4	_____	_____	_____	_____
#50	_____	_____	_____	_____
#200	_____	_____	_____	_____
PAN	_____	_____	_____	_____

Gradation Analysis by: \_\_\_\_\_ Date Analyzed: \_\_\_\_\_

Affiliation (Company or Testing Lab): \_\_\_\_\_

I certify that the above gradation analysis is an accurate representation of the abrasives to be supplied under this proposal and that sufficient material is available to fulfill the contract requirements. I understand that if I am low bidder and I fail to supply the amount of abrasives ordered, or the abrasives which I supply are outside the rejection gradation, the Department of Transportation may charge my firm the difference between my bid price and the actual cost to the Department of obtaining replacement abrasives.

**DETAILED SPECIFICATIONS** (Cont'd)

**ABRASIVES – GRADATION B – SPECIFICATION**

**SCOPE**

This specification covers the material requirements and basis of acceptance for abrasives used to treat snow and ice on pavements.

**MATERIAL REQUIREMENTS**

Material for use as Winter Abrasives shall be either

1. Natural Sand; or
2. Manufactured Sand, including sand made from crushed stone, crushed gravel, ore tailings, crushed slag, lightweight aggregate, or other suitable material.

All abrasives shall consist of hard, strong, durable particles which are free from a coating or any injurious material and injurious amounts of clay, loam or other deleterious substances.

Abrasives meeting specification will be accepted unless the Director of the Office of Transportation Maintenance, using test results or service records, determines that

1. Material contains sufficient unsound or undesirable material to be harmful; or
2. Particles degrade due to weathering either in storage or in service, so as to be ineffective.

The method of accounting for delivery (in US Tons) involves collecting weight tickets from scales that have been certified by the appropriate Municipal jurisdiction and are signed by deliveries of less than 200 tons are ordered, all material must be delivered as a single (multiple trailer) bulk delivery. Deliveries shall consist of not more than 1,000 tons per day. Deliveries will be accepted between the hours of 7:30 a.m. and 3:00 p.m. only, unless exceptions are specifically granted by the Resident Engineer or his/her designee.

If the Resident Engineer or his/her designee, as a result of visual inspection, suspects that abrasives being delivered may not be within the specification limits, he/she shall immediately notify the supplier of the nature of the suspected problem(s) both verbally and in writing. Upon receipt of notification the supplier shall cease making deliveries until the Department has had 3 working days (not counting the day of notification) to sample and test the suspect material. The supplier may request permission to continue deliveries after notification, and the Resident Engineer may approve the request at his/her discretion. However, any material delivered after notification must be stockpiled separate from earlier deliveries. Any action deemed necessary by the test results will be applicable to the Lot delivered the day of notification and to any subsequent Lots delivered during the 3-day testing and sampling period.

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**DETAILED SPECIFICATIONS** (Cont'd)

**INCOMPLETE BIDS**

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**GRADATION (Particle Size/Shape)**

The gradation requirements for the various items in this proposal are listed in the Gradation Reference Chart in this specification. **NOTE:** The Specification Gradation Column is to be used for bidding purposes. The Rejection Gradation Column will only be used at the time of delivery to determine the acceptability of the load.

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If, after delivery, the sand gradation is found to be out of tolerance, a deduction from the price shall be made based on the following formula:

$$\text{Reduced price/ton} = \text{delivered contract price} \times (1.00 - X)$$

X = decimal equivalent of the total % out of gradation less the tolerance. The % out of tolerance for each sieve shall be to the nearest 1%. The total of the individual sieve tolerance deviations shall be used as X.

**GRADATION ACCEPTANCE**

Gradation acceptance of abrasive material shall be based on the condition that the material meets the specification requirements. Acceptance shall be determined at the final point of sampling. Depending on the production operation and uniformity of delivered material, the final point of acceptance sampling could be the producer’s stockpile, production operation, pit or a lot of delivered material. Depending on the production operation, the Department may require that exclusive stockpiles be built, tested and approved prior to delivery. If the material deviates from the specification gradation requirements shown in the Gradation Reference Chart, an adjusted price may be paid for the material. The adjusted price shall be based on the average values of at least two samples representing a pit location, lot, stockpile or process.

**GRADATION REFERENCE CHART**

<b>Gradation Reference</b>	<b>Sieve Size</b>	<b>Specification Gradation</b>	<b>Rejection Gradation</b>
B	1/2”	100	100
B	3/8”	100	95 – 100
B	#4	80 – 100	70 – 100
B	#50	0 – 25	0 – 30
B	#200	0 – 5	0 – 8

**SAMPLING**

Sampling will be performed by Department personnel or their representatives and will depend on the operation of the successful low bidder. Where stockpiles exist, the material will be sampled in the stockpiles prior to delivery. Where material is being processed shortly in advance or at the time of delivery, the process will be sampled. Where the material is unprocessed, specific working areas of the source will be sampled prior to delivery. All delivered materials are subject to random and/or specific sampling if a problem is suspected. Sampling methods, locations and point of final acceptance will be determined by the Department of Transportation.

**DETAILED SPECIFICATIONS** (Cont'd)

**TESTING METHOD**

Gradation testing shall be performed on samples by sieving in conformance with NYSDOT Materials Bureau Test Methods 703-1P and 703-2P. Moisture content shall be determined by AASHTO Test Method T-255.

**REJECTED MATERIALS**

When materials are rejected, they must be removed by the Contractor within ten (10) days of notification or rejection. Rejected items not removed by the Contractor within the said ten (10) days shall be regarded as abandoned by the Contractor. The Department then shall have the right to dispose of said abandoned material as its own property by virtue of the contractor's failure to facilitate timely removal. The Contractor shall promptly reimburse the Department for any and all costs incurred in effecting such disposal.

**WEIGHT/VOLUME CONVERSION**

Locations (delivery sites) where volumetric delivery is acceptable shall be specifically identified in the Bid Proposal. These are typically areas where certified scales and weigh masters are not available within a reasonable distance of the delivery site. In those cases, the weight/volume conversion ratio shall be determined by the Resident Engineer with assistance from the Regional Materials Group as necessary. There are two acceptable methods for establishing weight/volume conversion:

**Method 1**

Each delivery truck shall have its "level struck" (all material in the dump body being level with the top of the sides of the dump body); volume determined by the Resident Engineer. This will be the payment volume for each load delivered. A representative of the Resident Engineer shall record each load delivered and certify that the truck contained at least the payment (level struck) volume.

Equipment required for Method

- 1 – ¼ cu. ft. container (typically used for measuring the air content of plastic concrete).
- 1 – 20 oz. rubber mallet
- 1 – straight edge suitable for striking the abrasive level with the top of the container.
- 1 – smooth working surface.
- 1 – scale having a minimum 40 lb. capacity and accuracy of  $\pm 0.3$  lbs.
- 1 – flat shovel

**Method 1 Sampling of Abrasives**

A representative sample of about ½ cu. ft. of abrasives shall be obtained from a prepared stockpile according to procedures found in Appendix "A" of Materials Method 9.1 "Plant Inspection of Portland Cement Concrete" prior to delivery.

**Testing the Sample for Unit Weight**

1. The sample shall be air or oven dried until it is visibly dry.
2. Thoroughly mix the "room temperature" sample into a pile on the smooth surface with a flat shovel and "quarter" the pile.
3. Remove about 1/16 cu. ft. (about two quarts) of material from one of the quarters. Place it in the ¼ cu. ft. container and roughly level it off.
4. Strike the container firmly three items about midway on the side at one point. Repeat the striking procedure at three more points about 90 degrees apart on the container.
5. Repeat steps 3 & 4 three more times with material from each of the remaining three "quarters" of the same pile. Be sure that ¼ cu. ft. container is "overfull" after material from the fourth quarter of the sample pile is placed in it.
6. Screen the material level with the top of the container.
7. Weight the "level full" container on the scales and record the weight in pounds.
8. Subtract the weight in pounds of the empty ¼ cu. ft. container from the weight recorded from step #7 above. This is the weight, in pounds, of ¼ cu. ft. of the abrasive material. To obtain the weight, in tons, of 1 cu. yd. of the abrasive material, multiply the weight of the ¼ cu. ft. by 0.054.

**DETAILED SPECIFICATIONS** (Cont'd)

**WEIGHT/VOLUME CONVERSION** (Cont'd.)

**Method 2**

Each delivery truck shall have its “level struck” weight of abrasives determined by a weigh master on a certified weight scale. This is obtained by subtracting the empty weight of the truck from the certified loaded “level struck” weight. As in Method 1, each load delivered shall be recorded by a representative of the Resident Engineer and be certified that the truck contained at least the same volume of the “level struck” weight previously recorded.

**DELIVERY LOT**

A delivery lot shall be the total of one eight hour day’s delivery during normal Residency working hours.

**SUSPECTED PROBLEMS DURING DELIVERY**

If the Resident Engineer, or an authorized representative of same, as a result of visual inspection, suspects the abrasives being delivered are not within specification limits, they shall immediately notify the supplier of the nature of the suspected problems(s) verbally and in writing. At that point, all deliveries from that supplier will cease until the Department has had reasonable opportunity to sample and test the suspect material (3 working days, not including the date of written notification). If the supplier requests to continue delivering material after notification in writing, the Resident Engineer may approve that request in writing. However, the material delivered after notification must be kept separate from that which was delivered prior to notification. The action deemed necessary by the test results shall be applicable to the lot delivered the day of notification and any subsequent lots delivered during the three day testing and sampling period. This process shall be utilized at any time when delivery of out of specification material is suspected.

**ADJUSTED BID PRICE AND REJECTION RELATIVE TO GRADATION**

The bid price shall be adjusted for any delivered material outside the limits given under “Specification Gradation” and within the limit of the “Rejection Gradation”. Any material that has one or more sizes that fall outside the Rejection Gradation limits shall be rejected and no payment will be made for that material.

**Example of Bid Price Adjustment of Out-of-Gradation Material**

<u>Sieve</u>	<u>Example Specification Gradation</u>	<u>Example Rejection Gradation</u>	<u>Example Penalty Factor</u>
1/2”	100	100	-
3/8”	100	95 to 100	1
#4	80 to 100	70 to 100	1
#50	0 to 25	0 to 30	2
#200	0 to 5	0 to 8	5

Reduced price per ton = contract price times (1.0-X)

The percent out of tolerance shall be to the nearest 1%. The sum of the individual sieve tolerance deviations (%) times the appropriate penalty factors divided by 100 shall be used as “X”.

Example: Sand delivered was bid at \$5.00 per ton and is satisfactory in passing the 3/8” and #4 sieves but has 30% passing the #50 sieve and 6% passing the #200 sieve. The reduced price is computed as follows:

$$X = (30\% - 25\%) \times 2 + (6\% - 5\%) \times 5 = 15\% = 0.15$$

$$\text{Reduced price per ton} = \$5.00 \times (1.00 - .15) = \$4.25$$

**DETAILED SPECIFICATIONS** (Cont'd)

**ADJUSTED BID PRICE AND REJECTION RELATIVE TO MOISTURE CONTENT**

Excessive moisture content has a significant negative impact on mixing, stockpiling, and storage operations. Abrasives when delivered shall have a maximum moisture content not exceeding 7.0% as determined by AASHTO Test Method T-255 (Moisture Content of Fine and Coarse Aggregate). Abrasives delivered which are found to have moisture content in excess of 7%, but less than 10% may be rejected, or they will be accepted at a reduced unit price (see below). Abrasives found to have moisture content greater than 10% will be rejected.

Material with a moisture content from:

7.01% to 8.00% may be accepted and paid for at the unit price less 10%

8.01% to 9.00% may be accepted and paid for at the unit price less 20%

9.01 to 9.99% may be accepted and paid fore at the unit price less 30%

ATTACHMENT 1  
GRADATION B – ABRASIVES

Bidder's Name: \_\_\_\_\_

DOT Source No. (if available): \_\_\_\_\_

Source Location: \_\_\_\_\_

Source Owned/Operated By: \_\_\_\_\_

Sampled By: \_\_\_\_\_ Date Sampled: \_\_\_\_\_

Stockpile Location: \_\_\_\_\_

*(If different from Source Location)*

GRADATION ANALYSIS

<u>Sieve</u>	<u>Retained Wt., Grams</u>	<u>%</u>	<u>Passing Wt., Grams</u>	<u>%</u>
1/2"	_____	_____	_____	_____
3/8"	_____	_____	_____	_____
#4	_____	_____	_____	_____
#50	_____	_____	_____	_____
#200	_____	_____	_____	_____
PAN	_____	_____	_____	_____

Gradation Analysis by: \_\_\_\_\_ Date Analyzed: \_\_\_\_\_

Affiliation (Company or Testing Lab): \_\_\_\_\_

I certify that the above gradation analysis is an accurate representation of the abrasives to be supplied under this proposal and that sufficient material is available to fulfill the contract requirements. I understand that if I am low bidder and I fail to supply the amount of abrasives ordered, or the abrasives which I supply are outside the rejection gradation, the Department of Transportation may charge my firm the difference between my bid price and the actual cost to the Department of obtaining replacement abrasives.