

ROAD SALT SPECIFICATIONS

I. GENERAL SPECIFICATIONS

The bidder of any product that is delivered and/or applied, which is found to be contaminated and is cause for environmental or other concerns, will be responsible for all clean up expenses. This includes but is not limited to clean up measures as needed for the following: storage facility, yard, equipment, and roadside.

- A. A submitted product that contains any constituent in excess of the following established total concentration limits as tested in accordance with the listed test methodology from Section V will not be acceptable. Results are stated as Parts per Million (ppm).

1. Arsenic	5.0
2. Barium	100.0
3. Cadmium	0.20
4. Chromium	1.0
5. Copper	1.0
6. Cyanide	0.20
7. Lead	1.0
8. Mercury	0.05
9. Phosphorus	2500.0
10. Selenium	5.0
11. Zinc	10.00

Note: Solid Salts are to be diluted to a 25% (W/V) concentration and then tested as if the material was a liquid sample. Report only the values determined from the 25% solution for all of the parameters as compared to the specification limits. Do not back calculate the concentration of the parameters to the dry weight of the material.

- B. The bidder will be liable, as determined by the Purchaser for causing any unanticipated extraordinary damages to equipment used in the storage or distribution of the chemical products.
- C. The Purchaser has the right to accept or reject products based on the materials used to produce or present in the product. These materials will be assessed for the potential of causing a decrease in the public safety. The right to accept or reject a product based on composition rest solely with the Purchaser.
- D. Award will be made to the lowest responsible, responsive bidder except as specified herein. Past performance may be taken into consideration as a basis for award.

II. ORDERS, DELIVERIES, AND INVOICING OF PRODUCTS.

- A. All orders will be placed by email or phone. The official order date will be the date of phone call or the email, if sent by the Purchaser before 2:00 p.m. (all order times reflect bidder's time), and the next day if sent by the Purchaser after 2:00 p.m. The bidder will call or email back to the Purchaser a confirmation of receipt and an estimate of the order shipment date within 2 business hours.
- B. Deliveries will be made during normal working hours (Monday through Friday between the hours of 7:00 a.m. and 4:00 p.m. CST or MST, respective of the time zone the delivery is made in, with a minimum of 24 hours advance notice of arrival time, unless otherwise requested or agreed to by the Purchaser. Any deliveries made without proper advance notification or outside of the established delivery times, unless otherwise authorized in advance, will be assessed an initial liquidated damages assessment of 25% of the purchase price of the product.
- C. Delivery will be made within twenty-five (25) calendar days or less of ordering. The Purchaser will not order more than ten (10) loads per order each week for each location. During the months of November 1 to April 1, if the bidder fails to deliver within 25 calendar days, a liquidated damages assessment of \$250 will be assessed. The liquidated damages assessment will be deducted from

the payment of the invoice for the specific load of product not delivered according to the terms of this agreement. If the Supplier has not made satisfactory arrangements with the Point of Delivery by the required delivery date, the Purchaser may at their discretion order from another Supplier and will bill the contract holder for any additional costs. Consistently late deliveries may result in contract termination.

- D. Orders larger than ten (10) loads per order will require an agreement between the Purchaser and Supplier for delivery status. If the bidder cannot deliver the entire order as agreed upon, the balance must be delivered on daily deliveries beginning immediately after the first delivery, until the order is fulfilled, or as agreed to by the Purchaser.
- E. During the months of November 1 to April 1, Purchaser may place “emergency orders.” Delivery of the order within 48 hours of placement of the order will carry a 10% premium above the contract price. The 10% premium is to compensate supplier for the short notice expenses supplier may incur and to offer an incentive for supplier to make every effort to make delivery within the shortened time frame. Supplier is to notify Purchaser within 2 hours of placement of the order stating whether the Supplier will or will not attempt delivery within the 48-hour time frame. If the Supplier is unwilling to attempt delivery within the 48-hour time frame, Purchaser may go to alternate bidders in an attempt to fill the order. If the Supplier states that they will attempt to make the 48-hour delivery, but fails to do so, “as bid” contract prices will be paid.
- F. Liquidated damages assessed for late deliveries caused by what the Supplier feels are “uncontrollable circumstances” will within seven (7) calendar days of receipt of notice that liquidated damages will be assessed, contact the Operations Support Program Manager. The decision of the Operations Support Program Manager to accept or to deny the claim will be final and in the best interest of the Agency. Lack of a backhaul will not be accepted as an “uncontrollable circumstance.”
- G. If there is an unforeseen shortage of product at the point of origin/mine and the Supplier is restricted to allocations, it will be the Supplier’s responsibility to provide the purchaser a certified letter from the point of origin/mine stating the reason for the allocation. Failure to provide a certified letter will result in liquidated damages of \$250 for each undelivered load ordered.
- H. The bill of lading for each shipment must contain the following information:
 - 1. Name of product.
 - 2. Supplier and manufacturer of product.
 - 3. Delivery destination.
 - 4. Total number of units being delivered.
 - 5. Total weight of delivery using a certified scale ticket.
 - 6. Transport information—Name of transporting company, tank, trailer, or rail car number, point and date of origin.
- I. The invoice must include all of the above and the following information.
 - 1. A copy of the original bill of lading.
 - 2. Contract unit of measure.
 - 3. Total number of units delivered.
 - 4. Contract unit price for product delivered.
 - 5. Total price for the units delivered.
 - 6. Purchase Order Number if applicable.
- J. If a Bidder has more than 50 loads on order from the Purchaser, they will be responsible for providing a report summarizing their orders to the Purchaser. This report will be provided weekly after November 1 and should be emailed to the Operations Support Program Manager, Christina Bennett, at christina.bennett@state.sd.us. The report will contain at least the following information:
 - 1. Date of report
 - 2. Location to deliver product to
 - 3. Total loads ordered by location
 - 4. Number of loads delivered as of date on report
 - 5. Number of loads left to be delivered

K. Fuel Cost Adjustments – Compensation adjustments for the costs of motor fuels will be determined by the Purchaser in accordance with the following provisions:

1. For Salt Deliveries - The Purchaser will base the price change on a four- or five-week average, to the nearest hundredth of a dollar (\$0.01) using the rounding procedures from the DOT Materials Manual, located on the Purchaser's web site. , The Purchaser will use the "Weekly Retail On Highway Diesel Prices" for "All Types" using Midwest Prices as reported in the Energy Information Administration (EIA) of the US Department of Energy weekly publication. A 4-week average will be used for months having 4 Mondays and a 5-week average will be used for months having 5 Mondays. The amended contract price will be reviewed monthly during the last week of the month by the Operations Support Office of the SDDOT; therefore, initiating a new contract price effective for deliveries made the following month through the Office of Procurement Management. Should fuel prices increase or decrease beyond 10% from the base price of \$3.781 as determined from the EIA publication – Midwest Div. on May 29th, 2023, the contract price will be amended as follows:

Calculations have shown that fuel consumption is approximately 50% of the total transportation costs for the delivered loads. Therefore, when a fuel cost adjustment is needed according to the terms of this contract the following procedure will be used. A base price of \$35.00/ton has been assumed for salt materials being delivered to the sites. The total transportation costs are then determined by subtracting the base price for salt, \$35/per ton, from the Supplier's bid price for that delivery location. Then 50% of that amount will be used for the calculated fuel cost.

Example: The bid price of salt is \$75.00/ton. Then the transportation cost would be (\$75.00-\$35.00) or \$40.00/ton. Then 50% of that amount or \$20.00/ton will be used for the calculated fuel cost.

The percentage applied to the calculated fuel cost would be the amount over 10% to the nearest 0.1%.

Example: The current four- or five-week average fuel price, rounded to the nearest hundredth of a dollar, is \$5.00/gal and the published price as of May 29th, 2023, is \$3.781/gal. The total percentage increase in fuel price is $\$5.000 - \$3.781 = \$1.219 / \3.781 or 32.2%. Therefore, the amount applied to the calculated fuel cost would be 32.2% - 10% or 22.2%.

Therefore, the cost increase applied to the contract price would be 22.2% times the calculated fuel cost.

Example: $\$20.00 \times 22.2\% = \$4.440/\text{ton}$, therefore, use \$4.440/ton increase. So, \$75.00/ton plus \$4.440/ton for an amended contract price of \$79.440/ton.

The same calculations would hold true if the cost of fuel were to fall more than 10% below the published price on May 29th, 2023.

III. FIELD INSPECTION, UNLOADING, SAMPLING AND TESTING

All material is subject to field inspection, sampling, and testing on an as delivered basis. Sampling and field testing is the prerogative of the Purchaser. The Supplier will not off load any material without affording the Purchaser an opportunity to conduct the field inspection, sampling or the testing. Off loading of material without affording the Purchaser an opportunity to conduct said work will deem the delivered material non-compliant and is subject to total rejection. The Supplier will only off load material without field inspection, testing and sampling by the Purchaser, when an agency representative grants prior approval.

A. FIELD INSPECTION

Before allowing any product to be unloaded, Purchaser's personnel will adhere to the following procedures:

1. Document and maintain records on all deliveries, including those that are rejected.

2. Check to assure that the product is being delivered according to the terms of the contract. This includes but is not limited to the following:
 - a. Date of the order.
 - b. Date and time of delivery.
 - c. Verification of advance delivery notification.
 - d. Was the material delivered within the allowable times?
 - e. Name of Delivery Company and license plate numbers.
 - f. Are any liquidated damage assessments required?
 - g. Is the product being delivered the material that was ordered?
 - h. Document all procedures prior to unloading of product.
 - i. Verify that all papers required of a delivery are present, complete, and legible.
 1. Accurate, complete and legible bill of lading and/or invoice.
 2. Legible and current MSDS sheet.
 3. Certified weight slip.
3. Visually inspect the load to determine if there are any obvious reasons why the load should be rejected.
4. Material portraying uncharacteristic traits when delivered may be immediately rejected at the option of the Purchaser or their representative at the delivery location.
5. Any problems noted at the point of delivery by the Purchaser's personnel will be documented and relayed to their agency representative for action.

B. UNLOADING

1. Provided that all the required information is in place, and the material appears to be the correct material as ordered, begin the unloading process.
2. The delivery truck will unload solid bulk materials into a windrow.
3. Visually inspect the delivered product again while unloading. If problems are noted that is a cause for rejection of the load, immediately halt the unloading process. Take photos, if applicable, and record any pertinent information. Conduct the following procedures if the material is to be rejected.
 - a. If material fails the field inspection or testing, reload the product and reject the load.
 - b. Take a sample of the material in accordance with appropriate sampling procedures.
 - c. Send samples directly to the Purchaser's designated testing laboratory.
 - d. Immediately advise the DOT Area Engineer of any ordering, delivery, storage, or product quality issues.

C. SAMPLING AND TESTING

1. One sample may be taken from the delivered shipment for laboratory testing after the shipment has passed the initial inspection and is approved for unloading. This sample will be used for testing at the agency's expense to ensure product quality. Clearly, label samples for identification. Send the sample directly to the Agency's Designated Testing Laboratory. Be sure the Transmittal form is placed in the box and contains at least the following information: Manufacturer or Supplier's name, name of product, lot number of product, shipping date, date received, name of delivery point, quantity of material delivered, and name and phone number of person who received the load and took the samples. Test results from the Agency's Designated Laboratory will be final. Test results will be forwarded to the bidder within 2 business days of receipt from the testing laboratory.
 - a. The delivery truck will unload the solid material in a windrow. Samples of the windrow materials should be obtained from the complete cross section of the windrow. Portions of the sample will be taken from the top, center, and bottom in the proportion to the cross-section area at that point,

and well within the stack, if practical. Care should be taken to obtain a complete and representative sample. The sample will be placed into a wide mouth 1-gallon container with a screw top lid as soon as the sample has been taken to avoid exposing the sample unduly to atmospheric moisture.

- b. Samples sent to the laboratory will be tested for conformance to specifications. Each type of product may be tested for those parameters listed in the General Specifications and in the appropriate Category requirements. If the product is suspected of containing other deleterious materials which may be harmful to people, equipment, the roadway or the environment, samples may be tested for those properties as well.

IV. CHEMICAL PRODUCT CATEGORIES

Non-Corrosion Inhibited Sodium Chloride Specifications

In addition to the General Specifications, the following requirements also apply:

For Bid Item Numbers 1-27

1. Anti-Caking agent must be included to ensure that the material remains free from hard caking and suitable for its intended purpose.

Material will be tested in accordance with Part V.3 of these specifications.

2. Moisture Content: A maximum moisture content of 0.5% by weight will be allowed. If the Sodium Chloride is delivered with visibly more than 0.5% moisture, the shipment may be accepted provided the material is still suitable for use and a specification deviation reduction in payment will be made to compensate for all moisture over 0.5%. If the material is not suitable for use, the shipment will not be accepted.

Water in excess of 0.5% of dry salt weight will not be paid for. The amount of salt to be paid for, when moisture exceeds 0.5% will be computed as follows:

Pay Weight = $100.5 \times \text{Wet Wt. of Salt} \div 100 + \% \text{ of moisture}$

Material will be tested in accordance with Part V.1 of these specifications.

3. Salt for highway use is to be treated with either Ferric Ferrocyanide, also known as Prussian Blue, or Sodium Ferrocyanide, also known as Yellow Prussiate of Soda (YPS), to prevent the salt from caking. The amount of Prussian Blue added is 70 to 165 parts per million (PPM), equivalent to 0.33 to 1.14 pounds per ton of salt. YPS is added in the amount of 50 to 250 PPM, equivalent to 0.1 to 0.5 pounds per ton of salt. If used, the presence of these products will not be assessed towards the total cyanide concentration when testing this product. However, the total cyanide concentration of the original material must meet specifications as shown in I.A.

Bidders must bid this product with the anti-caking agent. Bidders must note on the Sample Checklist if the sample contains Prussian Blue or YPS anti-caking agent.

4. Material must be clean and free from extraneous matter. The material must be homogenous or manufactured in such a manner to assure that the corrosion inhibitor, anti-caking agent and the chemical product does not segregate.

For Bid Item Numbers 1-25: (Road Salt)

1. Gradation of product will be Type 1, Grade 1 or Grade 2, per ASTM D 632

Test Method: Number C 136

PHYSICAL REQUIREMENTS AND TOLERANCES

Gradation—ASTM D 632, Type I, Grade 1

Permissible Variations - None

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2"	100
3/8	95 -100
#4	20 - 90
#8	10 - 60
#30	0 - 15

Gradation – ASTM D632, Type 1, Grade 2

Permissible Variations - None

<u>Sieve Size</u>	<u>Percent Passing</u>
3/4"	100
#4	20-100
#8	10-60
#30	0-15

Gradation limits are established for material at the point of delivery. The specified gradations incorporate the 5% deviation allowed by ASTM D 632 on certain sieve sizes.

Gradations outside the above limiting tolerances will be assessed a specification deviation of 25%.

For Bid Item Numbers 26-27 (Brining Salt):

1. Gradation of product will be Type 1, Grade 1 per ASTM D 632-01

Test Method: Number C 136

PHYSICAL REQUIREMENTS AND TOLERANCES

Gradation—ASTM D 632, Type I, Permissible Variations, 5%

Grade 1, Sodium Chloride allowed for each sieve size

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2"	100
3/8	95 -100
#4	20 - 90
#8	10 - 60
#30	0 - 15

Gradations outside the above limiting tolerances will be assessed a specification deviation of 25%.

Purity of Material will be 98% NaCl (by weight) or better with a maximum 0.5% moisture. Material found to be less than 98% NaCl (by weight) will be assessed liquidated damages as follows:

<u>Purity</u>	<u>Liquidated Damages</u>
93% - 98%	25%
Below 93%	50%

There will be a maximum insoluble residue of 1% as determined by ASTM E534 "Standard Test Method for Chemical Analysis of Sodium Chloride". Except, the test method will be modified by dissolving 100 grams of sodium chloride sample into the prescribed volume and filtering the entire solution through a Whatman No. 541 (or equal), 125 mm diameter filter paper seated in a Buchner Funnel.

The Supplier is to provide a Certified Test Report at the beginning of the year demonstrating compliance with the above noted specifications. The Supplier is to provide a Certificate of Compliance with each load that the material provided meets the above brining salt specifications for purity of NaCl and gradation.

V. TEST METHODS

1. Moisture Content of Solid Chemical Products.

Test Method: According to ASTM E 534

2. Gradation

Test Method: According to ASTM D 632. The sample size will be a minimum of 300 grams and be hand shaken through each sieve until the sample has been adequately processed. Caution: Care should be used when running the gradation test, as the salt is very soft and can be resized by over-shaking. Salts that contain sticky organic matter inhibitors may require additional attention with a rubber policeman to ensure that the sample passes the screens correctly as the sticky inhibitors will tend to clump up smaller particles of salt and prohibit them from being analyzed correctly.

3. Visual Inspection and Field Observations.

Test Method: Visual inspection and field observations to assure that the material remains clean and free of extraneous matter, free from hard caking, does not segregate, and remains suitable for the intended purpose and as otherwise outlined in Section IV. NOTE: Purchaser may use any laboratory test method necessary to verify conclusions from visual inspections.

4. Total Phosphorus

Test Method: Total Phosphorous as described in "Standard Methods for the examination of Water and Wastewater", APHA-AWWA-WPCF.

5. Total Cyanide

Test Method: Total Cyanide as described in "Standard Methods for the examination of Water and Wastewater", APHA-AWWA-WPCF.

6. Total Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Selenium and Zinc.

Test Method: Atomic Absorption Spectrophotometry or Plasma Emission Spectroscopy as described in "Standard Methods for the examination of Water and Wastewater", APHA-AWWA-WPCF.

7. Total Mercury

Test Method: Cold Vapor Atomic Absorption Spectrophotometry as described in "Standard Methods for the examination of Water and Wastewater", APHA-AWWA-WPCF.

VI. LIQUIDATED DAMAGES FOR DEVIATIONS FROM SPECIFICATIONS

Liquidated damages will be assessed based on product costs. Determination of the liquidated damages to be applied will be based on the testing procedures as outlined in the specifications. Liquidated damages are to be accumulatively applied. In other words, a shipment failing two tests will be assessed the sum of the liquidated damages of the two tests. This summation is to continue until zero payment is due but cannot continue into the negative.

The Supplier will be required to replace any rejected product, plus any stored product contaminated by the rejected product, at the Supplier's cost. The Supplier will remove and replace any rejected product with product

that meets the product specifications, together with handling and transportation charges, at no additional cost to the SDDOT. Removal includes the removal of all product contaminated by the non-specification product. SDDOT personnel will establish the amount of stored product that was contaminated.

Two shipments per contract year of product found by SDDOT to be beyond any specification range will be grounds for contract termination.

SDDOT will not pay for product delivered until SDDOT receives satisfactory test results from its testing lab. SDDOT may use the product prior to receipt of test results. Use does not constitute acceptance. SDDOT reserves the right to price adjust or reject all product received.

No forbearance on the part of the SDDOT will constitute a waiver, nor bind the SDDOT to a waiver of any similar or succeeding breach of same or any other term or provision of these specifications.

A. LIQUIDATED DAMAGES FOR CHEMICALS CONTAINING SODIUM CHLORIDE –

A liquidated damages assessment of 25% will be assessed on materials outside of the acceptable gradation limits as specified in each of the appropriate category specifications.

A liquidated damages assessment will be taken on excessive moisture content as specified in each of the appropriate category specifications.

A liquidated damages assessment will be taken on excessive impurities as specified in the Brining Salt category specifications.

B. LIQUIDATED DAMAGES FOR TOTAL METALS, TOTAL PHOSPHORUS, AND TOTAL CYANIDE

Materials tested for the total concentration of Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Zinc, Phosphorus and Cyanide and found to have exceeded the specification limits are subject to Liquidated Damages. The liquidated damages will be taken according to the following table.

<u>Percentage Over the Specified Limit</u>	<u>Liquidated Damage</u>
0 to 5.0	10%
5.1 to 20.0	15%
20.1 to 40.0	25%
40.1 to 75.0	35%
75.1 to 100.0	50%
Over 100.1	100%