

Greg Dwight

From: spo
Sent: Wednesday, February 09, 2011 12:47 PM
To: spo
Subject: SPO ALERT - FOCUS GROUP for Re-Bid of T0720A0005 Glass Beads
Attachments: 01 Specifications.doc

SPO ALERT

Date: February 9, 2011

To: State Agencies and Cooperative Members

From: SPO on behalf of the Arizona Department of Transportation

Re: FOCUS GROUP for Re-Bid of T0720A0005 Glass Beads

ADOT Procurement will be holding a focus group to rebid T0720A0005 Glass Beads contract. Please bring any requirements you would like to discuss at this meeting.

The meeting will be held on:

Date: Thursday – February 24, 2011

Time: 1:00 P.M. - 3:00 P.M.

Location: ADOT Procurement - 1739 W. Jackson, Modular A - Procurement Conference Room

Please RSVP before February 18, 2011 for yourself or your alternate agency representative attendance via email at ghenry@azdot.gov

SPO ALERTS are available
online at <http://spo.az.gov>

SECTION 1 SPECIFICATIONS

ARIZONA DEPARTMENT OF TRANSPORTATION
Procurement Group
1739 West Jackson Street, Suite A, Mail Drop 100P
Phoenix, Arizona 85007-3276
Phone: (602) 712-7211

SOLICITATION NO. ADOT11-00000408

1. PURPOSE

Pursuant to the Arizona Procurement Code, A.R.S. §41-2501 *et seq.*, the State of Arizona Department of Transportation (ADOT) in conjunction with its political subdivisions, here into referred to as the Department, has a requirement for a contract for the procurement of various gradations and types of glass beads to be applied (dropped on) to liquid applied pavement marking materials such as waterborne traffic paint and extruded thermoplastic. The primary use for these glass beads will be for traffic paint. This Invitation for Bid (IFB) is to establish a contract with a company(ies), herein referred to as the Contractor.

This contract shall provide the Department with the option to order glass beads in a variety of configurations and container types. The glass beads and their coatings (as applicable) shall be specifically designed and manufactured for the purposes specified herein. The contractor shall have specific knowledge and experience in manufacturing and application of glass beads for the pavement marking industry. Additionally the contractor shall have adequate manufacturing, containering, storage and shipping capacity to meet the Department's supply needs and provide consistent and periodic technical and field service, training and inspection support and processes with regards to the proper use and application of glass beads.

2. GENERAL REQUIREMENTS

The glass beads and the applicable coatings shall be designed and made in a way so they are specifically designed to be fully functional and durable as a retroreflecting element on and within a liquid applied pavement marking when properly applied in the field by the Department's maintenance crews using existing pavement marking equipment.

The beads shall be transparent, clean, colorless glass, smooth and spherically shaped, free of milkiness, pits or excessive air bubbles that would interfere with their performance. The beads shall be essentially free of sharp angular particles. The beads when viewed under normal sun light within a bag or tote shall have a water white or pure white color.

The glass beads supplied shall be a free flowing ready mixed blend (or gradation) of appropriately sized glass spheres that is free of contaminates such as dirt, trash, little dark colored objects and/or other objects that are not a part of the mixture of different size glass beads per the gradation requirements herein referenced that would cause them not to function properly or appear as they should. All glass beads shall be uniformly dispersed. The beads shall not cake, clump or stick in the container.

The glass beads shall be manufactured in such a manner that they are within specified tolerances and consistent in coating formulation, gradation, function and performance from order/batch to order/batch.

This contract provides the Department with the option to order different types and gradations and container types of glass beads. The glass bead options are intended to allow the Department with the opportunity to try different types of beads, bead application rates and/or coatings for the same or different applications. This in turn will allow the Department the ability to find which glass bead liquid pavement marking combinations result in the better overall performance and value. The contractor shall aid the Department in this glass bead optimization endeavor by providing technical assistance in the lab and field. The cost associated with providing this support shall be considered incidental to the contract items.

The glass bead contractor shall periodically, or as requested by the Department, obtain samples of the paint and thermoplastic products being supplied to the Department. The contractor shall then do the necessary lab work using appropriate test methods to investigate the retroreflective performance of the supplied glass beads with these materials. The contractor shall inform the Department and the paint or thermoplastic contractors of their findings

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and make suggestions for improvements, if and as necessary and applicable. The objective of this testing is to have the bead, paint and thermoplastic formulations work as a system so they are able to achieve the highest retroreflective potential as possible. It will also help the Department determine the amount of primary pigment being used and the dispersion of this pigment in these materials is as it should be and if not what needs to be done to better optimize the formulation. Therefore, the contractor shall have the necessary personnel and lab resources to conduct tests like this on a routine basis. The costs necessary to conduct these tests, including trips to take samples from Department's stores statewide, shall be considered incidental to the contract items.

Pricing shall include all incidentals and Free-On-Board (FOB) Destination, freight prepaid, delivery in an open van trailer in the specified containers at a variety of sites within the state of Arizona, the actual delivery locations will be specified at the time-of-order. The required delivery time after receipt of order (ARO) is 28 calendar days. However, the Department reserves the right to order in advance and specify the exact location and delivery dates that are in excess of 28 days. The contractor shall be responsible to coordinate glass bead deliveries at times and locations so the Department can schedule to have the equipment (e.g. forklift) and personnel available to unload the shipment. The use of closed vans is prohibited unless specifically requested otherwise by the Department.

All shipments of materials shall be in containers and prepared in such a manner that they conform to the applicable federal, state and local requirements as well as those specified herein.

The minimum order size of glass beads, by bags, totes, super sacks or some combination thereof, will be one truckload. It is assumed that a truckload will be around 45,000 pounds of glass beads. The contractor shall give information regarding containers and what constitutes a truckload order on the Price Sheet. All containers shall be placed on pallets and properly secured and protected to facilitate shipment, handling and storage.

The net weight of each glass bead truckload shipment shall be verified in a manner which is acceptable to the Department and what is consistent to what is normally done. Additionally, the Department reserves the right to spot check the net glass bead shipment weight per an independent scale. The contractor shall make any shipment available for inspection and weighing at a site specified by the Department if requested. For each shipment the contractor shall issue a certificate which shall be titled **Net Weight of Shipment Certificate** or something similar. This certificate shall included detailed information about the weight of the truck, weight of pallets, weight of packaging (bags, totes or super sacks) and the total weight of glass bead materials in that shipment. A copy of each net weight verification certificate shall be included with each shipment and each invoice. The actual amount of the invoice shall be adjusted for any net weight amount below the required order amounts. Weights above the ordered amount will not be illegible for any additional payment.

All of the requirements herein specified are not intended to restrict the contractor in their design and formulation of a glass beads product. The Department reserves the right to test for some or all of these requirements based on samples taken during the plant inspection, sample supplied by the contractor or field samples taken by the Department from actual deliveries. A successful result in all of the categories does not relieve the contractor from the other performance requirements of these specifications and the uniform terms and conditions.

3. GLASS BEAD ITEMS

The basic gradation types are either to be the ADOT's Standard Specification Section 708 glass bead gradation, American Association of State Highway and Transportation Officials (AASHTO) Standard Specification for Glass Beads Used in Traffic Paint (AASHTO Designation: M 247-81, Type I), a high performance variation of these small bead gradation (e.g. Texas DOT's Type II) and the Federal Highway Administration (FHWA) FP-92 or 96 Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects Type III gradation.

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The glass bead contract items are as follows:

<u>Item No.</u>	<u>Description</u>
1	ADOT Standard Specification Section 708 Glass Bead
2	AASHTO M-247 Type I Glass Bead
3	AASHTO M-247 Type I with 80% Rounds Glass Bead
4	High Performance Glass Bead (Texas DOT Type II or Similar)
5	FP-96 Type III Glass Bead
6	FP-96 Type III High Performance Glass Bead

4. MATERIAL REQUIREMENTS:

Basic Characteristics:

The glass beads and coatings shall be designed to be applied on a variety of liquid pavement marking materials that are applied at a number of different thicknesses in new and restripe applications and still achieve adequate or better no track drying, night-day visual and durability performance.

The glass beads shall be such that they can achieve the required coverage (e.g. width of line) and wet thickness at application speeds up to 10 miles per hour with a one paint application spray gun. With a two paint application spray gun arrangement (one followed by another) the material should be able to achieve the same or similar performance at 16 to 18 mph. The two paint and two bead gun arrangement at a high speed is the typical method which the Department uses to re-stripe all major highways within Arizona under traffic with its own maintenance forces. This application speed is necessary to maintain traffic. With glass beads applied, this material upon drying shall produce an adherent reflectorized marking capable of resisting the mechanical and weather wearing elements presented by urban and rural roadway environments in Arizona.

Material:

The ADOT, AASHTO, High Performance Glass Bead and FP-96 Type III glass bead gradations can be manufactured of predominately recycled glass. The FP-96 Type III High Performance glass bead gradation shall be manufactured from more pure raw glass material (e.g. often called direct melt) that shall have clear more white appearance than the other type of beads herein specified.

Glass Bead Coatings:

Unless ordered otherwise all glass beads shall be coated with a dual moisture proof and adhesion type of coating. The exact formulation of this coating technology shall be determined by the contractor. The contractor can also offer no coating or different coatings as noted on the price sheet. Coatings can be material specific (e.g. coating for paint, coating for thermoplastic).

The coating shall have a moisture proof function that prevents the glass beads from being negatively effected by moisture that can build-up in bead storage tanks and/or containers. The coating shall prevent the beads from absorbing moisture. The coating shall also have an adhesive enhancing function that shall help the glass bead develop a durable bond to the types of waterborne traffic paint and extruded alkyd thermoplastic that the Department uses. Additionally the coating should also help enhance optimal (50 to 60% of the bead diameter) bead embedment.

Moisture Content:

The glass beads shall have a moisture content of less than 0.25% by weight.

Crushing Resistance:

As a minimum all type beads shall comply with the crush resistance requirements of AASHTO M 247-81.

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Types of Beads / Gradation Requirements:

A total of six types of glass beads are specified with four different gradation requirements. The bead type and gradation requirements are as follows:

Glass Bead Type 1: ADOT Standard Specification Section 708 Glass Bead

Gradation shall be per the 2000 version of ADOT Standard Specification for Road and Bridge Construction Section 708 glass bead gradation per subsection 708-2.02 Reflective Glass Beads (Spheres); (B) Physical Requirements; (1) Gradation: (page 624).

Glass Bead Type 2: AASHTO M-247 Type I Glass Bead

Gradation shall be per the American Association of State Highway and Transportation Officials (AASHTO) Standard Specification for Glass Beads Used in Traffic Paint - AASHTO Designation: M 247-81, Type I standard gradation.

Glass Bead Type 3: AASHTO M-247 Type I with 80% Rounds Glass Bead

The same gradation requirements as the type 2 except it shall have 80% rounds.

Glass Bead Type 4: High Performance Glass Bead (Texas DOT Type II or Similar)

The exact gradation and rounds requirement for this glass bead shall be as offered by the contractor. The only requirement is that the reflective potential of this glass bead has to exceed the reflective potential of types 1-3 and meet or exceed the gradation requirements of the Texas DOT DMS-8290, Glass Traffic Bead, August 2004 Type II Gradation requirements in the bigger bead sizes. The gradations offered shall include the economy of the smaller bead types while including enough of the larger type beads to optimize retroreflective potential. The percentage of rounds can vary between gradation sieve sizes.

Glass bead Type 5: FP-96 Type III Glass Bead

Gradation shall be per the Federal Highway Administration (FHWA) FP-92 or 96 Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects Type III glass bead gradation.

Glass Bead Type 6: FP-96 Type III High Performance Glass Bead

The same gradation requirements as the type 5 glass bead, except it shall be made of a clear or direct melt glass materials.

The sampling and testing method for all gradations shall be ASTM D 1214.

Retroreflectance:

The minimum target lab test retroreflectivity of the type 1 and 2 glass beads is based on a Department specification 15 wet mil draw down paint or a 60 mil draw down of thermoplastic shall be:

<u>Marking Color</u>	<u>Retroreflectance (Millicandelas)</u>
White	300
Yellow	120

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Refractive Index:

The ADOT standard type 1 glass beads shall have a refractive index range of between 1.5 to 1.57.

The AASHTO type 2 and 3 glass beads shall have a refractive index of at least 1.5.

The type 4 glass beads shall have a refractive index range of between 1.51 to 1.55.

The type 5 and 6 glass beads shall have a refractive index range of between 1.50 to 1.52.

The "liquid immersion method" shall be used to determine the refractive index.

Roundness:

The type 1 and 2 glass beads types shall contain a minimum of 70% true spheres.

The type 3 glass beads shall contain a minimum of 80% true spheres.

The rounds for the type 4 glass beads shall be determined by the contractor.

The rounds for the type 5 and 6 glass beads (FP-96 Type III Gradations) shall be a minimum of 75% on retained beads on sieve numbers 12, 14 and 16 and a minimum of 80% true spheres for the sample retained on sieve numbers 18, 20 and 25

Flow Characteristics:

The glass beads supplied shall be readily flowable (under pressure or without) so they can easily be dropped on to achieve an even and complete drop on sprayed water based paint and extruded hot applied alkyd based thermoplastic pavement markings.

The glass beads shall be able to be vacuum tube transferable and readily dispensable per standard gravity or pressure assisted glass bead guns without a build-up of objectionable static electricity.

The glass beads shall be capable of maintaining their free flow characteristics under normal temperature and humidity ranges. It is important to note that the ambient temperature in some areas of Arizona can be 120 plus degrees F without damaging the formulation or serviceability of the material or the traffic striping equipment from which it is being applied.

Additionally, the beads shall be a free flowing non-sticky mix that has no clumps or chunks of beads and/or glass material that does not absorb moisture in storage.

The testing of the dual coated adhesion/moisture proof coated beads for coating and free flow characteristics shall be per a procedure that is consistent with AASHTO M 247-81 specifications (procedure 4.4.1 or 4.4.2) and as specified by the manufacturer and reviewed and approved by the Department. Note that a larger diameter funnel will more than likely be needed to test the larger gradation beads (types 4, 5 & 6).

If the beads have a coating that is not compatible with these testing procedures then the manufacturer shall submit a procedure to the Department for review and approval.

All coated beads shall flow properly and without interruption when tested in accordance to the applicable test procedure.

Specific Gravity:

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The specific gravity of the beads shall be in the range of 2.40 to 2.6 when tested in accordance to the procedure in ADOT's 2000 version of the Standard Specifications under Section 708 - Permanent Pavement Markings, per subsection 708-2.02 Reflective Glass Beads (Spheres): (B) Physical Requirements, (4) Specific Gravity: (pages 624).

Chemical Stability:

The beads as coated shall be chemically stable when stored or applied to traffic marking paints and hot-applied thermoplastics pavement markings.

The beads shall show no tendency toward decomposition, including surface etching, dulling, hazing or discoloration, when exposed to atmospheric conditions typical of the Arizona's diverse alpine to desert environment. Additionally shall be able to demonstrate this chemical stability, by showing no signs of dulling, hazing and/or darkening, when tested in accordance to applicable TT-B Federal Specification 1325C for resistance to acid, calcium chloride, sodium sulfide or similar type of solutions in other types of controlled chemical stability tests.

5. COMPATIBILITY REQUIREMENTS

The glass beads supplied shall be compatible with the pavement marking paint and thermoplastic materials that the Department has on contract. The complete specifications for these contracts can be obtained from the Department's Procurement Group at (602) 712-7211. The glass bead contractor shall coordinate with the Department's paint and thermoplastic contractors regarding the exact formulations being supplied. The cost associated with this coordination effort, including lab work, shall be considered incidental to the contract items.

All glass beads and their containers shall be fully compatible with the pavement marking equipment, processes and basic application methods used by the Department, including airless and gravity feed marking material applications with a single or double glass bead gun arrangement and long line and short line striping equipment. If a material does not conform to this requirement it can be grounds for rejection of a portion of a bid, all of a bid or cancellation of all or a portion of a contract.

The Department will consider changes to its equipment and/or application methods if the contractor can provide sufficient evidence that such changes will result in some benefit. The contractor's effort in evaluating, including field work, the Department's application procedures and equipment (all crews) shall be considered incidental to the contract items.

The statewide striping trucks have an on-board tank capacity of approximately 400 gallons of white and 400 gallons of yellow paint. The regional striping trucks have an on-board tank capacity of 55 gallons of white and 55 gallons of yellow paint.

The interstate strippers use an in-line two paint gun two glass bead gun application method. The order of the guns, in the direction of travel, is paint-paint-bead-bead. The arrangement allows the Department to re-stripe roadways, under traffic, at an application speed of around 18 mph.

The regional strippers use a standard one paint gun one bead gun arrangement. Typically, the regional crew applies paint at speeds of around 18 mph under traffic.

The interstate striping crews have two axle paint and glass bead supply trailers. These Wilson Trailer Company Road Brute trailers, which were purchased in 1997, have been customized for their use. The trailers have a large glass bead storage tank and an area that is capable of storing six 345 gallon totes in a group of four and two. The regional crews typically use a flat-bed truck for paint and glass bead re-supply.

6. BRAND NAME OR EQUAL

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All glass beads and the related coatings supplied to the Department shall only be made with those materials that have a proven capacity to provide the needed function, performance and durability per the requirements stated herein. There are currently a number of glass bead products that have been determined, through evaluation and/or testing, to be equivalent to the requirements of these specifications. The listing of these brands is not intended to limit or restrict competition. Rather, it is to set the standard quality, design, performance and characteristics of the products herein specified. Non-listed products will be considered if sufficient evidence (e.g. results from other pavement marking application and performance field tests), technical information and assurances (a history of good product performance and user satisfaction) is given and the Department is able to determine that those products are capable of achieving the same or better performance than those name brands listed. Additionally, the Department may request samples of non-listed products to conduct lab and field tests. It is important to note that the listed products are in no-way relieved of any requirement stated herein.

FP-92 or 96 Type III Gradation Glass Beads:

Potters Industries Visibead (L-511)

Or equivalent big gradation type glass bead.

High Performance FP-92 or 96 Type III Gradation Glass Beads:

Swarco Megalux-Beads (FP-96, Type III)

Potters Industries Visibead Plus II (L-511)

Or equivalent clear/direct melt glass big gradation type glass bead.

7. CONTAINERS

The glass beads shall be available in at least four container types: 50 pound bags, 550 pound drums (or totes), 2,000 pound tri-wall totes and 2,400 pound super sacks. The containers supplied shall be as requested by the Department. The actual pounds of glass beads supplied in each container shall be per the pounds indicated on the price sheet. Under-filling of any container below the required poundage of glass beads is prohibited and will be subjected to monetary penalty, contract suspension or contract cancellation.

All glass bead containers shall be capable of withstanding normal shipping and handling without damage or loss of function. All containers shall be shipped and delivered on pallets, unless specified otherwise by the Department at the time of order. All containers shall be rated (plus a safety factor) for the weight of beads they are intended to contain. All containers shall be weather tight and shipped in such a manner that protects them from leakage, harm, weather or degradation while in transit, handling or when stored. The packaging shall be such that it is suitable to store these materials outdoors for short periods of time (e.g. less than six months) without damage or deterioration. The contractor agrees to warranty the performance of all containers by replacing any damaged glass beads, without cost to Department, which occurs because of defective or ineffective containers.

The contractor shall take appropriate measures to ensure that all containers are filled with the specified pounds of glass beads. Such measures could include:

1. Have a weight based or volumetric based factory filling procedure that ensures that all containers are filled to the specified weight. All scales and measuring devices used in such a procedure need to be calibrated and checked for proper operation on a routine basis.
2. Determine and label each container with its unfilled weight and filled weight.
3. Containers shall be capable of holding more glass beads than the specified weight and then overfilled slightly to ensure compliance.

All containers shall be suitably labeled as to their contents, date of manufacture and weight. The minimum information on the label shall be the contractors name/address/phone number, type of glass beads (classification plus brand

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name/code), gradation type, coating, percent rounds, batch number, weight and any other required state/county/federal warning/hazard/regulatory information.

The fifty pound bags shall have an overlapped pinch bottom style multiple ply paper-plastic bag. The exact construction of the bags, drums, totes and super sack is to be per the manufacturer, but it shall still meet the function requirements as stated herein.

The drums and totes shall have removable/replaceable lids.

All super sacks shall be suitably designed and constructed for their intended use. This includes, when full, being able to be lifted by a crane or forklift when on a pallet. All super sacks shall have the appropriate outlets at the top and bottom of the sack that is compatible with the Department's glass bead transfer procedures.

8. STORAGE

All materials shall have a rated shelf or storage life of twelve (12) months from the date of delivery to the Department. The contractor shall be responsible for determining how the Department stores glass beads at each delivery location. If the method of storage is not acceptable or there are concerns, then it is the responsibility of the contractor to notify the Department of these concerns in writing. The contractor is relieved of their warranty if the Department does not properly handle or store glass beads. The contractor shall inform the Department of any acceptable techniques that can be used to store glass beads, either in their original containers, transfer tanks or in the tanks of striping vehicles. Storage techniques that are overly restrictive or result in significant labor are not acceptable.

9. PRODUCT USE AND CARE INSTRUCTIONS:

Every shipment of products to the Department shall include sufficient documentation and instruction booklets/sheets to ensure that the Department has access to the needed information to ensure proper use and care of the products shipped.

The instruction booklets/sheets shall provide complete and comprehensive information on the how the items delivered are to be handled, used, stored and maintained. If any changes, modifications, refinements, additions or alterations of any kind are made to the products and our instructions throughout the life of this contract the contractor shall make sure the Department is provided with updated information as soon as possible. Additionally, the contractor shall revise and develop additions to the instruction booklets if requested by the Department.

The instruction booklets/sheets shall be clearly marked as to what product they apply to. As a minimum, the instructions shall have the following information:

- (1) Information about the company supplying the products including a customer service phone number (an 800/888 number is preferred, but not required).
- (2) Step by Step instructions on how the products are to be stored, handled, cleaned, maintained and used.
- (3) Information on how application rates are to be determined and maintained.
- (4) Trouble shooting guide on problems that might be encountered. The contractor can provide additional information at their discretion. The Department will review the content of the instruction booklet/sheet, if the content is not acceptable or requires changes or additions the contractor shall revise them as requested. The Department shall have the right to reproduce any material for Department purposes only.

10. MANUALS

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The contractor shall provide eight (8) copies of the installation instruction manual initially (one for each of the Department's eight striping crews). Additional manuals shall be supplied as required for the training sessions and as requested by participating agencies.

The manuals supplied shall provide complete and comprehensive information on the items to be supplied. If any changes, modifications, refinements, additions or alterations of any kind are made to these items throughout the life of this contract that affect the manuals the Contractor shall update all manuals that have been received by the Department. Additionally, the Contractor shall revise and develop additions to the manual if requested by the Department.

The manuals shall be organized and submitted in one inch, three ring binders that are clearly marked as the "Installation Manual" for the item to be supplied (e.g. "Glass Beads"). The manual shall be indexed and shall also have tabs that separate the manual into logical sections. As a minimum the manual shall consist of the following sections: 1) information about the company supplying the products, 2) information about the product covered by the manual, 3) specific instructions on how the items are to be applied (importance of bead rate, wet film and bead rate calibration procedures, importance of bead shrouds, embedment issues, etc.), 4) other information / recommendations on how to use, care, store and ship the product and 5) copy of this IFB / Specifications and 6) MSDS sheets. The Contractor can add additional information at their discretion.

The manual shall also include the name and phone number (an 800/888 number is preferred, but not required) of a customer service representative. This customer service representative should be a person who is authorized and trained to handle questions about the glass bead products being supplied. The person should be able to provide detailed technical input on application techniques and solutions to potential problems to the Department's striping crews in the field. **As a minimum, a customer service representative shall be available Monday through Friday between 8:00 am to 4:00 pm Mountain Standard Time, excluding holidays.** The customer service phone line shall have voice mail so that messages can be left after business hours. All Department calls for information and help shall be answered in a timely and professional fashion.

The Department will review the content of the manual, if the content is not acceptable or requires changes or additions the contractor shall revise the manual as requested. The Department shall have the right to reproduce any material for Department purposes. The costs related to develop and provide manuals shall be considered incidental to the contract items.

11. BI-ANNUAL CUSTOMER SERVICE VISITS

The contractor shall, as a minimum, travel to Arizona on a bi-annual basis (every 6 months) to conduct customer service visits unless requested otherwise by the Statewide Striping Manager or the Traffic Operations Engineer. Service visits shall be coordinated at least two weeks in advance and shall only be done at times when the Statewide Striping Manager is available. The object of each service visit shall be to meet with the ADOT Statewide Striping Manager, Statewide Striping Crew Supervisors (Tucson, Phoenix and Holbrook), Traffic Operations Engineer and each of the traffic region Signing and Striping Managers in Phoenix, Tucson, Prescott Valley and Flagstaff to help ensure that the requirements of the specifications are being met and that the State striping crews are satisfied with the performance of the supplied glass beads and are utilizing it properly. These visits can also be used to address problems, conduct training classes, and observe/check applications in the field and visit striping crews at their home base or in the field. The frequency and number of persons involved in each service visit shall be increased or decreased if requested by the Department. The cost to conduct and maintain this customer service program shall be considered incidental to the contract items.

The current Statewide Striping Manager is Jack Hayes (602)319-7281.

12. QUALITY CONTROL

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The Contractor shall have a viable quality control program that involves sampling and testing of all glass beads that are delivered to the Department. The exact design of the program shall be left up to the contractor. However, the program shall be consistent with what is typically used in the industry. As a minimum the program shall involve routine verification of the type, quality and purity of raw materials, sampling, testing and record keeping on all products made and shipped. The quality control tests run on each product shall be sufficient to ensure that the products have been successfully made, can function properly and comply with the applicable requirements of the specifications. All products shall have a unique number assigned to them. This number shall be used to correlate and track this product as it is made, handled, shipped and used. All testing equipment shall be kept in good working order and shall be calibrated at regular intervals.

Additionally, this quality control process shall maintain records of these batch tests for a minimum of two years after the beads are made and delivered to the Department. As a minimum, samples of each batch shall be maintained at least twelve months after the batch is delivered to the Department. If requested, the contractor shall fully disclose all quality control records and samples to the Department. This includes making copies of these records and mailing them to the Department within 14 calendar days from the time they are requested. The costs necessary to conduct and maintain an acceptable quality control process shall be considered incidental to the contract items.

A quality control process which is found to be lacking can be grounds for either contract suspension or contract cancellation if the contractor does not take immediate measures to correct problems with it. Additionally, those shipments that are found not to be covered by an acceptable quality control program could be rejected by the Department.

13. POST-AWARD PLANT INSPECTION

The contractor may be required to transport and accommodate representatives from the State to inspect their manufacturing facility and to sample glass beads. The purpose of this inspection will be to verify that the beads being produced meets all of the applicable requirements of the specifications and that appropriate quality control measures are being taken when beads are manufactured, container and shipped. This includes the inspection and verification of raw materials used, batch sampling methods, specification conformance quality control tests, record keeping on batches, container filling methods, verification of the actual weight of beads in containers and amount of beads shipped. The contractor shall bear all transportation and accommodation costs associated with this plant inspection which is expected to take two to three days.

The post-award inspection will coincide with a bead order from the State.

The contractor shall supply adequate sample vessels for the purpose of taking bead samples from the test batches. The samples shall be taken from the main batch via a process that will result in what is believed to be a representative sample of the beads produced. Sufficient samples shall be taken to conduct all of the required tests. The State will retain these samples for testing at the Materials Laboratory. The contractor shall provide for the shipping of the test samples to the State. Additionally, the contractor shall give full access to the State's inspector for a review of the quality control testing and record keeping procedures used to verify batches, labeling, weighed (empty), filled and re-weigh to verify the actual weights of beads placed in containers.

The State reserves the right to repeat the post-award inspection if deemed necessary. Who is responsible for the travel and subsistence costs associated with the repeat inspection will depend on the reason for the inspection. If the inspection is to verify the correction of a contractor problem, product change or to further evaluate a known problem then the contractor will be responsible. If the repeat inspection is due to a State requested change or a random check then the State will be responsible.

14. TRAINING

SECTION 1 SPECIFICATIONS

ARIZONA DEPARTMENT OF TRANSPORTATION
Procurement Group
1739 West Jackson Street, Suite A, Mail Drop 100P
Phoenix, Arizona 85007-3276
Phone: (602) 712-7211

SOLICITATION NO. ADOT11-00000408

As a part of this contract at least one training session on proper glass bead application is to be held annually. The training sessions are to be coordinated and conducted by the Contractor within 90 days of awarding this contract. The default training location shall be ADOT's Traffic Operation's in Phoenix. However, if requested otherwise the training sessions could be held at various locations throughout the State of Arizona.

The actual training site may be determined at the time the training session is scheduled. The contractor is to contact the Statewide Striping Manager at least two weeks in advance to coordinate each training session's location, meeting room and mutual convenient date and time.

The training session shall be as required to adequately instruct the State striping crews in the proper handling and application of glass beads. This includes the calibration of needed wet mil thicknesses of paint and glass bead application rates. The contractor shall supply each State striping crew with a wet film and glass bead application rate calibration kit. The State currently has a total of eight striping crews (three statewide and five regional crews). Additional calibration kits may be requested by participating agencies.

The training sessions shall fully demonstrate how the items being purchased through this contract are used. The Contractor shall supply whatever is necessary [sample items, tools and materials (including handouts and/or manuals)] to make the demonstrations and properly train State personnel in the use of their product(s) to be purchased through this contract.

The use of supplemental videos and/or slide presentations are encouraged, the Contractor should coordinate with the State on the availability of audio-video equipment. The training session shall be conducted by a factory or factory trained representative(s) that have extensive related experience.

The training session as herein specified shall be repeated, if requested by the Statewide Striping Manager or the regional sign and pavement marking supervisors. The costs related to develop and provide training classes shall be considered incidental to the contract items.

15. SATISFACTORY PERFORMANCE LIFE

All glass bead materials, when applied per the contractor's recommendation, will be considered as providing satisfactory performance life if they do not deteriorate due to natural causes and normal wear that is directly attributable to the glass beads and its coating.

The glass beads supplied shall be designed and formulated to achieve a minimum 12 month performance life when applied at a 15 or more wet mil thicknesses for paint and a 60 mil or more thermoplastic thickness. These performance life requirements assume that the materials are properly prepared and are placed at proper mil thickness per ideal or near ideal surface and weather conditions that allows this type of durability. Additionally, it assumes that the glass beads (at least the smaller gradations, the large gradation application rates will be as recommended by the contractor) are at least at an 8 pound application rate per gallon of paint applied and 10 pounds per every 100 square feet of thermoplastic applied.

Unsatisfactory performance may be grounds for cancellation of all or a portion of a contract.

It should be noted that the periods of time that the contractor is required to warranty the satisfactory performance life of their glass bead products are significantly less than what is stated here. This is done due to the fact that the contractor does not have direct control, other than providing training, instruction manuals and suggestions, over how the glass beads are applied in the field. Thus, due to the variability in weather conditions, surface conditions, application equipment, crew capabilities and other factors, it is recognized that it may be unreasonable to require the contractor to provide a warranty for the entire satisfactory performance life.

SECTION 1 SPECIFICATIONS

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SOLICITATION NO. ADOT11-00000408

1. Significant bead loss and/or sinking that can be directly attributed to a glass bead and/or coating problem.
2. Discoloration of the underlying pavement marking material that is directly attributed to lack of clearness of the glass beads and/or coating.
3. Cracking, crazing, hazing, dulling, darkening, etching or breaking of the glass beads (e.g. lack of chemical and/or environment stability).
4. Underperformance and/or loss of nighttime retroreflectivity as observed at night from a moving vehicle or as defined herein and measured by a portable retroreflectometer.

Other subjective and objective measures, based on this specification and other nationally accepted standards and practices (including FHWA's proposed minimum pavement marking retroreflective guidelines) will be used by the Department to judge unsatisfactory performance.

