



Request for Quote

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
 ONE CAPITOL HILL
 PROVIDENCE RI 02908

CREATION DATE : 19-MAR-12
 BID NUMBER: 7449566
 TITLE: REFLECTIVE SHEETING/LICENSE PLATES - DOC
 BLANKET START : 01-JUL-12
 BLANKET END : 30-JUN-15
 BID CLOSING DATE AND TIME: 11-APR-2012 11:00:00

BUYER: Cowell Jr, John A
 PHONE #: 401-574-8114

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 DOA CONTROLLER
 ONE CAPITOL HILL, 4TH FLOOR
 SMITH ST
 PROVIDENCE, RI 02908
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 DOC CORRECTIONAL INDUSTRIES
 33 POWER ROAD
 CRANSTON, RI 02920
 US

Requisition Number: 1259259

Line	Description	Quantity	Unit	Unit Price	Total
1	7/1/12-6/30/13 - ROLLS SILVER REFLECTORIZED SHEETING 12-1/16" WIDE X 300 YARDS LONG # 4770 "SCOTCHLITE" (ALL ITEMS ON THIS BID, AS PER ATTACHED SPECS)	2,000 00	Square Foot		
2	7/1/13-6/30/14 - ROLLS SILVER REFLECTORIZED SHEETING 12-1/16" WIDE X 300 YARDS LONG # 4770 "SCOTCHLITE"	2,000 00	Square Foot		
3	7/1/14-6/30/15 - ROLLS SILVER REFLECTORIZED SHEETING 12-1/16" WIDE X 300 YARDS LONG # 4770 "SCOTCHLITE"	2,000 00	Square Foot		
4	7/1/12-6/30/13 - ROLLS SILVER REFLECTORIZED SHEETING 7-1/16" X 300 YARDS LONG # 4770	2,000 00	Square Foot		
5	7/1/13-6/30/14 - ROLLS SILVER REFLECTORIZED SHEETING 7-1/16" X 300 YARDS LONG # 4770	2,000 00	Square Foot		
6	7/1/14-6/30/15 - ROLLS SILVER REFLECTORIZED SHEETING 7-1/16" X 300 YARDS LONG # 4770	2,000 00	Square Foot		
7	7/1/12-6/30/13 - ONE (1) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	2,000 00	Square Foot		
8	7/1/13-6/30/14 - ONE (1) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	2,000 00	Square Foot		
9	7/1/14 - 6/30/15 - ONE (1) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	2,000 00	Square Foot		
10	7/1/12-6/30/13 - TWO (2) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	70,000 00	Square Foot		
11	7/1/13-6/30/14 - TWO (2) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	70,000 00	Square Foot		
12	7/1/14-6/30/15 - TWO (2) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	70,000 00	Square Foot		
13	7/1/12-6/30/13 - THREE (3) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	2,000 00	Square Foot		
14	7/1/13-6/30/14 - THREE (3) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1.2 AND 3 COLORS 12-1/16"	2,000 00	Square Foot		

It is the Vendor's responsibility to check and download any and all addenda from the RIVIP. This offer may not be considered unless a signed RIVIP generated Bidder Certification Cover Form is attached and the Unit Price column is completed. The signed Certification Cover Form must be attached to the front of the offer



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Line	Description	Quantity	Unit	Unit Price	Total
	WIDE X 300 YARDS LONG "SCOTCHLITE"				
15	7/1/14-6/30/15 - THREE (3) COLOR - ROLLS PRINTED WITH IMAGE (GRAPHIC) 1 2 AND 3 COLORS 12-1/16" WIDE X 300 YARDS LONG "SCOTCHLITE"	2,000.00	Square Foot		
16	7/1/12-6/30/13 - ROLLS SHORT RUN GRAPHIC, EACH DESIGN IS DONE WITH 4-COLOR PROCESS, PRICING IS THE SAME FOR ALL COLORS, 12-1/16" X 100 FT, 100 YD AND 200 YD "SCOTCHLITE"	20,000.00	Square Foot		
17	7/1/13-6/30/14 - ROLLS SHORT RUN GRAPHIC, EACH DESIGN IS DONE WITH 4-COLOR PROCESS, PRICING IS THE SAME FOR ALL COLORS, 12-1/16" X 100 FT, 100 YD AND 200 YD "SCOTCHLITE"	20,000.00	Square Foot		
18	7/1/14-6/30/15 - ROLLS SHORT RUN GRAPHIC, EACH DESIGN IS DONE WITH 4-COLOR PROCESS, PRICING IS THE SAME FOR ALL COLORS, 12-1/16" X 100 FT, 100 YD AND 200 YD "SCOTCHLITE"	20,000.00	Square Foot		

Delivery: _____

Terms of Payment: _____

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Contract Terms and Conditions

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Terms and Conditions

BID STANDARD TERMS AND CONDITIONS

TERMS AND CONDITIONS FOR THIS BID

MULTI YEAR AWARD

THIS IS A MULII-YEAR BID/CONTRACT. PER RHODE ISLAND STATE LAW 37-2-33, CONTRACT OBLIGATIONS BEYOND THE CURRENT FISCAL YEAR ARE SUBJECT TO AVAILABILITY OF FUNDS. CONTINUATION OF THE CONTRACT BEYOND THE INITIAL FISCAL YEAR WILL BE AT THE DISCRETION OF THE STATE. TERMINATION MAY BE EFFECTED BY THE STATE BASED UPON DETERMINING FACTORS SUCH AS UNSATISFACTORY PERFORMANCE OR THE DETERMINATION BY THE STATE TO DISCONTINUE THE GOODS/SERVICES, OR TO REVISE THE SCOPE AND NEED FOR THE TYPE OF GOODS/SERVICES; ALSO MANAGEMENT OWNER DETERMINATIONS THAT MAY PRECLUDE THE NEED FOR GOODS/SERVICES.

PURCHASE AGREEMENT BID

BIDDING (a) A single price shall be quoted for each item against which a proposal is submitted. This price will be the maximum in effect during the agreement period. Any price decline at the manufacturer's level shall be reflected in a reduction of the agreement price to the State. (b) Quantities, if any, are estimated only. The agreement shall cover the actual quantities ordering during the period. Deliveries will be billed at the single, firm, awarded unit price quoted regardless of the quantities ordered (c) Bid price is net F O B. destination and shall include inside delivery at no extra cost. (d) Bids for single items and/or a small percentage of total items listed, may, at the State's sole option, be rejected as being non-responsive to the intent of this request **ORDERING** (a) The User Agency(s) will submit individual orders for the various items and various quantities as may be required during the agreement period (b) Exception - Regardless of any agreement resulting from this bid, the State reserves the right to solicit prices separately for any extra large requirements for delivery to specific destinations.

DELIVERY PER AGENCY

DELIVERY OF GOODS OR SERVICES AS REQUESTED BY AGENCY.

SPECIFICATION FOR PRE-CLEARED LICENSE PLATE SHEETING

Preclear Reflective License Plate Sheeting

January 2009

SPECIFICATION FOR PRE-CLEARED LICENSE PLATE SHEETING

January 2009

SECTION I - GENERAL

This specification shall cover the materials, performance characteristics, quality, and testing of retroreflective sheeting and support services necessary to produce finished license plates.

A. DESCRIPTION:

1. The retroreflective license plate shall consist of retroreflective (hereinafter referred to as "reflective" only) sheeting laminated to a specified aluminum substrate that is then embossed and message roll coated according to the sheeting manufacturer's recommendations.
2. The reflective sheeting shall consist of lens elements enclosed within a transparent resin and shall have a pre-coated pressure sensitive adhesive backing protected by a removable liner. The pre-printed design, in the reflective sheeting, shall be buried below the sheeting surface to insure reliable long-term durability.
3. The reflective sheeting, when applied to the license plate substrate and blanked to finished size, shall contain at the discretion of the Associate Director of Correctional Industries and the Director of Motor Vehicles in consultation with Rhode Island State Police:
 - a. Identifying marks for purposes of on-vehicle traceability, warranty enforcement and anti-counterfeiting in accordance with these specifications. The warranty marks shall be buried below the sheeting surface for durability and shall incorporate the manufacturer's production run number that designates the source of manufacture, year of manufacture, and specific lot from which the material was supplied. The warranty marks shall not interfere or detract from the graphic design or reduce sheeting brightness and shall be durable for the service life of the license plate.
 - b. Three-dimensional security marks that run from the top to the bottom of the plate or from the left to the right side of the plate. The security image shall consist of a double sine wave pattern where one wave appears to float above and one wave appears to float below the directional warranty image of the reflective sheeting. The virtual security thread shall be durable for the service life of the license plate.
 - c. Prospective bidders shall demonstrate their capability to provide these security devices.
 - d. The Director of Motor Vehicles retains the discretion to request this anti-counterfeit feature into the reflective license plate sheeting.
4. Pre-printed reflective sheeting shall conform to the design, colors and sheeting type as approved by the state and reflective sheeting manufacturer. When using white background sheeting, all graphic inks shall be transparent to facilitate the same daytime/nighttime appearances.

5. In addition to a square foot price for pre-printed reflective sheeting, each bidder shall include pricing of unprinted white reflective sheeting (annual and multi-year) and any colored sheeting offered. The specifications contained herein shall apply to all standard size plate classifications and are inclusive of all special category plates issued by the state wherein reflective material is requested.

B. PREQUALIFICATION

Before any bid is considered, the vendor shall meet the following criteria:

1. To assure high quality license plate performance, durability and service, the successful sheeting manufacturer shall provide the state with proof of successful L/P manufacturing in other states. The successful manufacturer shall:
 - a. Show evidence of successful manufacture and application of preprinted license plate sheetings, thinners, and roll coat inks as parts of a totally integrated license plate system.
 - b. Provide state-of-the-art application equipment at no charge, as a fundamental component of a totally integrated license plate system. The successful bidder shall show manufacturing experience in other states. The sheeting manufacturer shall provide a list of equipment and flow diagrams with the bid.
 - c. The sheeting manufacturer shall provide a list of equipment and flow diagrams with the bid.
 - d. Provide list and qualifications of experienced, full-time graphic design, customer service, technical service and sales service personnel.
 - e. Provide expert installation service and on-site technical service within 48 hours at no charge; provide immediate toll-free call-in technical service.
 - f. Provide next day delivery of stocked equipment parts; provide customer with detailed list.
 - g. Ship sheeting rolls via "bulk-pack" configuration per layer for ease of handling in the tag shop.
 - h. Conform to all performance requirements of this specification as specified in Section II and as tested by the State designated testing lab. If not already pre-qualified, bidder shall provide official verification and documentation to state in advance of bid issuance that all prequalification requirements are met.
 - i. Properly warrant the plates produced from the manufacturer's sheeting by posting a \$1,000,000 product bond during the duration of this issue. At the discretion of the State, the sheeting manufacturer shall also provide buried directional warranty mark in the sheeting in accordance with Section IV.B, which facilitates on-vehicle traceability and warranty enforcement.
 - j. Prospective bidders shall supply one 300-ft. roll of sheeting printed, unless already provided by the vendor or pre-qualified by the state, for each long-run and each short-run graphic design used in the State to demonstrate the supplier's production capability in providing special graphic designs.

- k. Unless already provided or currently pre-qualified by the state, prospective bidders shall supply a minimum of one finished license plate sample for each license plate design for regular and special issue plates, currently used by the state, unless already provided by the vendor or pre-qualified by the state, to ensure compatibility with color, print resolution and other visual aspects.
 - l. Supply evidence of successfully supplying reflective sheeting and equipment to another state in a total license plate reissue within a 12-month period.
 - m. Prior to contract award, any sheeting vendor whose equipment has not been successfully used by State of Rhode Island license plate manufacturing facility, shall install application and registry equipment at the license plate manufacturing location, and provide reflective sheeting for production in order to demonstrate over a period of 30 days that the equipment meets these specifications. The sheeting vendor shall cover costs during this 30-day period. This shall include reimbursement to the State of Rhode Island for all aluminum used in this testing, compensation for any labor dedicated by Rhode Island Correctional Industries employees for this trial period and will be liable for any damage to other State of Rhode Island equipment
2. The sheeting supplier will provide all necessary samples for the agency or their designated testing facility to certify the material compliance with these specifications. At the request of the agency, the sheeting supplier may also be required to compensate the agency or their testing agents for the cost of any material testing.
 3. A corporate officer shall certify that all license plate sheetings and roll coat inks purchased by the state are covered by the sheeting manufacturer ISO 9001 Registration.
 4. The sheeting manufacturer shall submit technical data exhibiting characteristics of all materials proposed. Information submitted shall include detailed processing conditions for each phase of license plate manufacture. Such information shall also include times and temperatures required for curing roll coat pastes used in the production of completed license plates.
 5. Vendors failing to conform to any of these prequalification requirements shall be disqualified.

C. PERIODIC EVALUATION:

The state reserves the right to periodically evaluate the performance of materials. Samples for periodic evaluation of performance will be selected at random from materials submitted on state purchase orders. Failure of materials to comply with the requirements of this specification shall be cause for removal.

D. TECHNOLOGICAL IMPROVEMENTS

The existing sheeting manufacturer may, with agreement of the state, incorporate technological improvements that better optimize the license plate production process and/or license plate performance. This may include any automated license plate manufacturing systems as approved by the Rhode Island Division of Motor Vehicles and the Rhode Island Department of Correctional Industries.

SECTION II - PERFORMANCE STANDARDS

A. LICENSE PLATE SHEETING

1. Substrate

The sheeting shall be laminated to properly conversion coated aluminum substrate recommended by the sheeting manufacturer.

2. Diffuse Daytime Color

Through instrumental color testing, the diffuse daytime color of the reflective sheeting shall conform to color requirements as determined spectrophotometrically in accordance with ASTM E-1164 and E-1349, utilizing either 45/0 or 0/45 degree illumination/viewing conditions as described in E-1164 and E-1349 for retroreflective materials. Chromaticity and the Luminance Factor based on CIE tristimulus values for the 2° observer and illuminant D65 shall be calculated in accordance with ASTM E-308.

The color specification limits for white license plate sheeting are listed on the following chart. (See Appendix I for other sheeting colors).

COLOR SPECIFICATION
Chromaticity Coordinates

Pairs	White Corner Points		Luminance Factor
	x	y	Y%
1	.303	.287	42 min.
2	.368	.353	
3	.340	.380	
4	.274	.316	

3. Adhesive and Protective Liner:

- a. The precoated adhesive shall form a durable bond to flat conversion coated license plate surfaces as recommended by the reflective sheeting manufacturer.

- b. The protective liner attached to the adhesive shall be removable by peeling without soaking in water or other solvents and shall be easily removed after accelerated storage for four hours at 150°F (66°C) under weight of 2.5 lbs. per square inch (1.14KG per 6.45 sq. cm). The liner shall be non-printed to permit reuse.

4. Roll Coating

- a. The reflective sheeting shall be roll coated and compatible with transparent and opaque colors manufactured by the sheeting manufacturer.
- b. The sheeting manufacturer shall supply roll coat inks that meet State and Federal VOC regulations.
- c. The roll coat ink shall be durable for the service life of the license plate and shall not fade, crack or peel from the surface of the license plate.

5. Inventory Control

- a. To assist the license plate tag shop with inventory control problems, the sheeting manufacturer shall mark the sheeting with an integral, directional image that incorporates the lot number so that the tag shop can employ first in/first out principles.

B. FINISHED LICENSE PLATES

Test panels shall be prepared in accordance with Section III, Para. A.

1. Retroreflective Characteristics

- a. The coefficient of retroreflection for the sheeting shall be measured on flat, clean, finished license plate test panels prepared per III A and shall have the following minimum values at 0.2° observation angle, expressed as candlepower per foot-candle per square foot (candelas per lux per square meter) of material. Measurements shall be conducted in accordance with ASTM E-810, "Standard Test Method for Coefficient of Retroreflection of Retroreflective Sheeting". Measurements on reflective sheeting with a preprinted graphic design shall be taken in an unprinted sheeting area.

Color	Entrance Angle	
	-4°	40°
White	50	16
Yellow	25	10
Orange	25	10
Lemon-Yellow	25	10
Gold	25	10
Green	18	7
Blue	18	7
Red	9	3

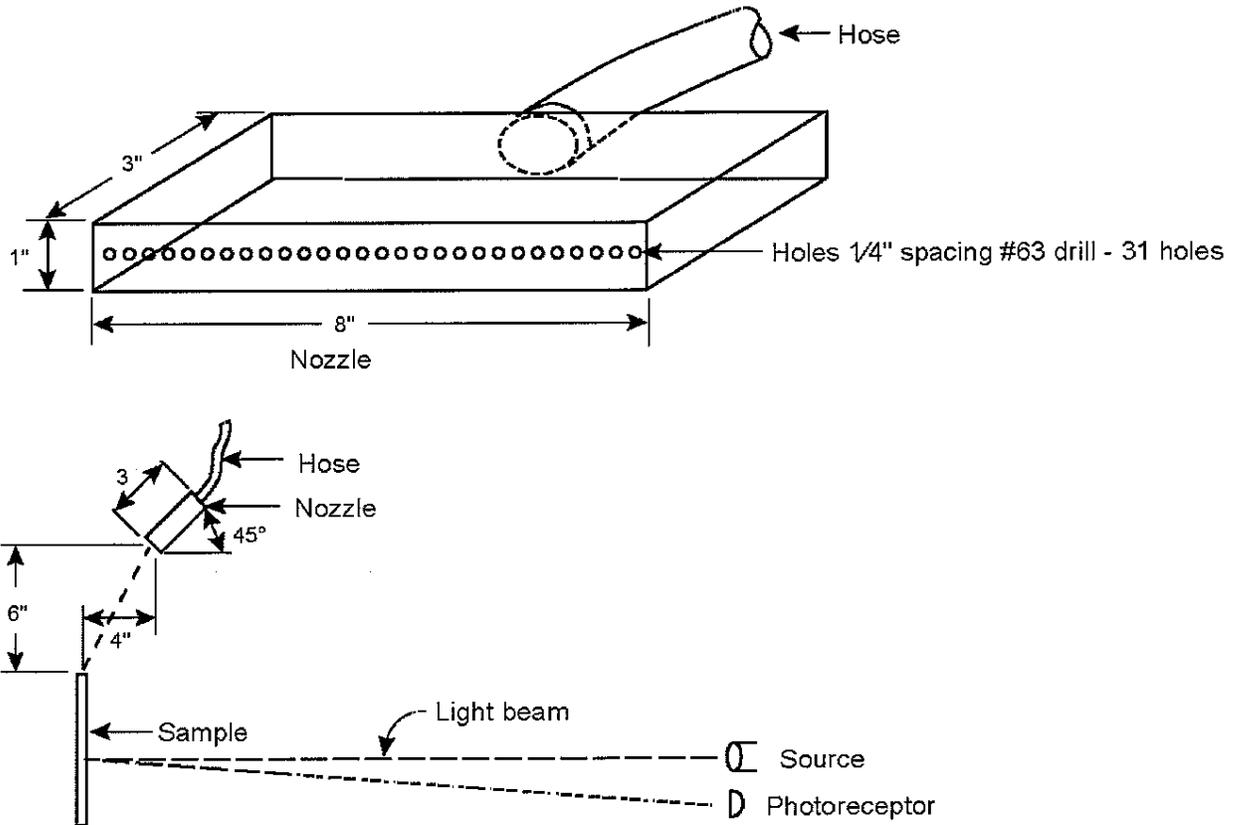
2. Resistance to Accelerated Weathering

- a. The sheeting shall be weather resistant and show no appreciable discoloration, crazing, cracking, blistering, lifting or dimensional change and the surface shall continue to be essentially smooth to provide direct application of validation stickers, determined after the following accelerated weathering tests:
- b. Laboratory testing – 2,000 hours in Xenon arc weatherometer using ASTM G 155 -Type BH, Method A. Samples shall maintain 70% of retroreflective table values shown in II, B. 1.
- c. Outdoor accelerated testing – Samples shall be placed in a 24 month unprotected outdoor exposure, facing the equator and inclined 45 degrees from the vertical. Retroreflective measurements, taken after cleaning, shall result in 70% or more retention of the table values shown in II, B. 1.

3. Rainfall Performance

a. The Coefficient of Retroreflection of the same finished license plate test panels, measured on the same flat area of the test panels, totally wet by rain, shall not be less than 90 percent of the values specified above. The photometric performance during rainfall shall be determined as follows:

1) Test set-up for rainfall performance:



Place source and photoreceptor in horizontal plane

- 2) Place the test panel in an upright position 6 inches (15.2 cm) below and 4 inches (10.1 cm) in front of the nozzle as shown below:
- 3) Apply sufficient water pressure so that the upper surface of the spray envelope strikes the top of the panel.
- 4) With water falling on the panel, measure the coefficient of retroreflection. Wet performance measurements shall be conducted at 0.2° observation and -4° entrance angles in accordance with ASTM E-810.

4. Daytime/Nighttime Color

- a. To assist in positive daytime/nighttime identification of license plates, the color of the reflective background of the sheetings, including any pre-printed design, shall be similar in daylight and by illumination at night.

5. Flexibility - Embossing

- a. The sheeting shall, when correctly applied to treated aluminum, conform to the minimum/maximum tolerances for embossing and/or debossing dies as used by the manufacturing facility that supplies finished plates to the state and as recommended by the sheeting manufacturer.
- b. Finished, embossed/debossed license plates shall show no appreciable wrinkling, cracking, or squirming at or around embossed/debossed areas.

6. Cleanability.

- a. Finished license plates, manufactured in accordance with the recommendations of the reflective sheeting manufacturer, shall be easily cleansed of normal dirt accumulation by washing with water and mild detergent. A test panel shall be sprayed with water-suspended soils collected from the underside of vehicle fenders, mixed with water in the proportion of five pounds (2.27 kg) of soil to one gallon (3.78 liters) of water, and poured through a paint strainer.
- b. The mixture shall then be sprayed onto the panel while particles are in suspension. After the panel is thoroughly dry, it shall be cleaned by washing with a mixture of water and mild detergent, rinsed with clean water and wiped dry for examination. The panel shall show no appreciable difference when compared to a new clean panel.

7. Solvent Resistance

- a. License plate panels prepared per III.A shall be sufficiently solvent resistant to withstand exposure to mineral spirits, turpentine, toluene, xylene, and methyl alcohol without dissolving, wrinkling, puckering, blistering or edge lifting.
- b. Test panels shall be 1" x 6" strips cut from license plate blanks. Strips of the license plate shall be immersed in a container with 4 inches of each solvent separately, at room temperature. Solvents and immersion time shall be as follows:
 - 1) Mineral spirits and turpentine - immersed for 10 minutes.
 - 2) Toluene, xylene and methyl alcohol - immersed for 1 minute.
- c. At the end of the immersion time remove the samples from the containers and allow to dry before examining for any wrinkling, puckering, blistering, edge lifting or dissolving of the sheeting and adhesive. Failure of samples shall be cause for rejections.

8. Gasoline Resistance

- a. Finished license plates shall be sufficiently gasoline resistant to withstand exposure to gasoline when tested as follows.
- b. Test panels shall be immersed in a commercially available unleaded gasoline for a period of one minute. After removal from the gasoline the test panels will be air-dried. The test panels shall show no evidence of dulling, whitening, softening, puckering, blistering, crinkling, or dissolving of the exterior film, inks, or adhesive, or separation from the aluminum substrate.

SECTION III - TEST PANELS AND QUALITY CONFORMANCE

A. TEST PANELS

1. Finished license plate test panels 6" x 12" (15.2cm x 30.5cm) must be provided for testing and evaluation within ten (10) calendar days if required by the state, and shall be produced of the same materials, on the same equipment and by the same general processes of substrate preparation, laminating, embossing or debossing, roll coating and oven drying as the production plates, in accordance with the sheeting manufacturer's recommendations. Note the following test panel exceptions for II. B. (1, 6, 8, 9) testing.

2. Special test panels for photometric, cold weather resistance and solvent resistance testing shall be produced as above, except that they shall not be embossed or debossed (for ease of testing) and they shall not be roll coated. These test panels must be cured for a minimum of 25 minutes at 260°F (to simulate oven drying) and must be conditioned for at least 24 hours at 72° ± 4°F (22° ± 2°C) and 50% ± 2% R.H. prior to testing.

B. QUALITY CONFORMANCE

1. Failure of the reflective sheeting to meet any requirement specified herein shall be cause for refusal to accept materials until evidence has been provided by the manufacturer that corrective action has been taken to eliminate deficiencies.

SECTION IV - PERFORMANCE LIFE & WARRANTIES

A. PERFORMANCE LIFE

1. Reflective sheeting applied and processed into finished license plates according to the sheeting manufacturer's instruction shall be considered to perform effectively for the service life specified (excluding those plates showing mechanical damage) if:
 - a. The plates show no fading, cracking, blistering or peeling which will significantly impair the intended visibility or legibility of the plate, and if
 - b. The clean rear plate retains at least 9 candlepower per foot-candle per plate (.84 candelas per lux per plate) for the length of the intended issue being bid. (up to a period of 5 years).¹
2. Measurements shall be conducted at 0.2° observation angle and -4° entrance angle. Coefficient of Luminous Intensity shall be measured using the test method outlined in ASTM E-810 except that the coefficient of luminous intensity shall be determined in accordance with ASTM E-808-01 Para. 3.2.2 and ASTM E-809-02 Para. 12.3. Note: Reflective license plates with a graphic preprinted design may not meet this requirement as large graphic printed areas may affect the reflectivity levels of the finished license plates.

¹ Assumes white sheeting background

B. WARRANTY PROVISIONS

1. The sheeting shall be imaged with a directional, integral warranty mark, so as to be traceable to the specific manufacturer's production run numbers from which the material originated. If at any time during the specified performance life of the reflective material provided, a one half of one percent sample of clean, rear plates produced from a given production run (identified by the integral warranty mark) reveals that 10 percent or more of that sample are found to be defective in visual or brightness performance requirements as defined herein, the vendor shall be responsible for replacement of all plates manufactured from that specific lot of material. The finished plate shall be guaranteed by the sheeting vendor for 5 years.
2. The sheeting manufacturer shall be responsible for all replacement costs associated with a specific lot; a maximum liability assessment of \$5.00 per plate will be invoked for failed plates associated with a specific lot. Reimbursement of the State shall be in dollars and/or materials equal to the assessed damage, at the State's discretion.
3. To assure effective identification, the warranty marks shall be approximately 1.125 inches in diameter on standard 6" x 12" plates and shall be of a design mutually agreed upon by the State and the sheeting manufacturer. The manufacturer may vary the number, design and placement of the marks for motorcycle or smaller license plate sizes.
4. The warranty marks shall be verifiable on a license plate once properly affixed to the vehicle's designated mounting area, from an approximate head-on distance of six (6) feet; warranty marks shall not be observable at 2 feet or 20 feet or when the viewer steps to one side from the head-on viewing position so as not to compete or conflict with vital plate information.
5. The warranty marks shall be verifiable under both ambient light and retroreflected light at night, shall not interfere or conflict with the plate design or aesthetics, shall not alter sheeting colors or reduce sheeting brightness below specified levels and shall be required at the discretion of State.

C. Three-dimensional Security Mark

1. The retroreflective sheeting shall also have a three-dimensional security mark that runs vertically or horizontally through standard vehicle registration plates for purposes of security and anti-counterfeiting in accordance with these specifications. The three-dimensional security mark shall be buried beneath the surface of the sheeting and shall consist of two sinusoidal waves where one wave appears to float above and one wave appears to float below the warranty marks of the retroreflective sheeting. The virtual security thread shall be durable for the service life of the license plate and shall be implemented at the discretion of the State.

2. The three-dimensional security mark shall be verifiable under both daylight and retroreflected light, shall not interfere or conflict with the plate legibility, and shall not reduce sheeting brightness below minimum specified brightness levels when measured in accordance with ASTM E 808 and ASTM E 809.
3. The three-dimensional security mark shall be visible in the unprinted areas of the plate from within a standard police vehicle under high beam headlight illumination, as well as outside of the vehicle, on a license plate properly affixed to the vehicle's designated mounting area, from an approximate distance of 0 to 50 feet (0 to 15 meters) at a head-on viewing angle. The two sinusoidal wave images shall be visibly distinct from an approximate distance of 0 to 20 feet (0 to 6 meters). The three-dimensional security mark shall not be visible when viewed at an angle greater than 45 degrees from the head-on viewing position.
- 4.

SECTION V - SUPPORT SERVICES

A. PLATE DESIGN SERVICE

1. The reflective sheeting manufacturer shall maintain a full-time professional design service to assist the state in creating a license plate of high legibility, recognition and desired aesthetics.
2. Consistency of printing and roll coat inks must be maintained throughout the contract period. The vendor must provide for and maintain a compatible color match to existing and/or selected designs by the state. The sheeting manufacturer will be required to furnish sheeting based on the current license plate design/format or any approved state design. Failure to match and maintain colors in accordance with this section will be cause for contract cancellation.
3. Prior to the bid, the sheeting manufacturer shall provide a sample of existing designs in use by the State on finished plates, unless already provided or pre-qualified by the State. This shall include providing one 300-ft. roll of sheeting printed for each long-run and each short-run graphic design used in the State to demonstrate the supplier's production capability in providing special graphic designs and a minimum of one finished license plate sample for each license plate design for regular and special issue plates, currently used by the state, to ensure compatibility with color, print resolution and other visual aspects.
4. Supply of these sample plates is required with a bid submission or bid will be disqualified.
5. Special-plate-category designs shall be provided in standard roll form so that they can be manufactured into finished plates by the same process and on the same machinery as used for the basic design(s) covered by this contract. The successful bidder must be able to provide these designs in quantities as limited as one 300-ft. roll of material. Any variance in price related to volume or the number of colors used in a particular design must be noted in the vendor's bid.

6. The state reserves the right to redesign any or all of the plates required under these specifications during any resulting contract period.

B. TECHNICAL SERVICE

1. License Plate Materials and Manufacturing Equipment

- a. The reflective sheeting supplier shall, without additional cost, provide the license plate manufacturing shop with expert technical service and product information until the shop operating personnel are able to manufacture quality license plates. A list of expert technical service personnel, their qualifications and experience must be provided.
- b. To ensure continued quality license plate manufacture, the sheeting manufacturer shall provide the state license plate manufacturing facility with on site technical service.
- c. On-site technical service shall be available within 48 hours of notification by the manufacturing shop of production difficulties

C. EQUIPMENT

1. The reflective sheeting supplier shall provide the necessary equipment for the intended contract period to laminate unprinted or pre-printed sheeting to the substrate inclusive of, but not limited to, the graphic reflective sheeting applicator including stretch control mechanism, and corresponding registry feed controls. The sheeting manufacturer shall certify and show proof that the above equipment is performing as required in a minimum of five other license plate manufacturing sites.
2. All required training shall be completed and equipment installed and operational within thirty (30) days of notice of award of contract. Installation and training shall be acceptable upon consistently running the required line(s) at representative speeds not to exceed 100 strokes per minute with a rejection rate of 2% or less. The acceptability of the blanks shall be determined by the issuing agency in conjunction with the license plate plant management.
3. If the application and registry control equipment is not installed in the time and manner as specified above or if any sheeting or ink fails to meet specifications, the entire order is subject to cancellation and the agency reserves the right to purchase all sheeting and ink covered by the order from an alternate source, with the defaulting contractor reimbursing any cost differential.
4. The sheeting manufacturer shall provide a list of available stocked parts to the license plate manufacturing shop. In event of equipment failure the sheeting manufacturer shall ship stocked replacement parts by express carrier within 12 hours of notification.

5. The successful sheeting manufacturer will reimburse the cost of any waste materials, including metal and sheeting generated because of installation and testing of application and registry equipment to the state. Any salary costs generated because the successful bidder requested to work during other than the normal scheduled work hours of the license plate plant employees will be borne by the vendor.
6. Upon expiration of the existing contract, the existing sheeting manufacturer's equipment shall be removed within thirty (30) days unless an extension of the sheeting contract has been negotiated with the sheeting supplier.

SECTION VI - PACKAGING AND SHIPPING

To ensure easy access and proper inventory control, the reflective sheeting shall be shipped in bulk packages. To prevent roll damage, each pallet of bulk packages shall be designed to prevent double stacking by the shipper. Production run sequence numbers shall be affixed to the outside of each shipping package that corresponds to the materials contained therein. Each roll shall be additionally designated by a core identifier stamped or affixed with a permanent label to the inside of each roll core. A shipping or packaging list shall be affixed to one box on a pallet identifying all production runs contained within the shipment.

SECTION VII - DELIVERY SCHEDULE

All deliveries shall be provided F.O.B. to the state's designated point of delivery. The first expected delivery of reflective sheeting shall be not later than 30 days following official notification of contract award, initial order and receipt of state approved artwork. All subsequent orders shall be F.O.B. destination with expected delivery within 30 days after receipt.

SECTION VIII - ACCOUNTABILITY

The manufacturer shall be accountable for all sheeting from the place of manufacture to the point of delivery. All over-run materials remaining in the manufacturer's possession after discontinuation of any design or the contract's cancellation, shall be destroyed and used for no other purpose.

SECTION IX - PROCESSING

- A. The reflective sheeting processing shall be in accordance with the recommendations of the manufacturer. All processing procedures for reflective material, thinners, solvents and inks must be compatible, or made compatible at the vendor's expense, with equipment and procedures currently employed by the state.
- B. The sheeting manufacturer shall periodically properly remove all waste, thinners, and roll coat inks. In addition, the sheeting vendor shall remove wastes from other consumables used in the production of license plate.
- C. The contractor will be required to deliver, free of charge all thinner and inks on an "as needed" basis. Delivery in the amounts required must be completed within fifteen (15) days after receipt of order.
- D. The contract shall be for projected volumes, which are estimates only. The contract shall be for actual amounts ordered during the selected contract production period. Delivery schedules and quantities must be coordinated with the state's designated manufacturer.

APPENDIX I

COLOR SPECIFICATION

Chromaticity Coordinate

	Color	Corner x	Points y	Luminance Factor Y%
1.	White	.303 .368 .340 .274	.287 .353 .380 .316	42 Min.
2.	Yellow	.498 .557 .479 .438	.412 .442 .520 .472	28-38
3.	Lemon Yellow	.455 .514 .440 .395	.455 .485 .558 .508	40-50
4.	Orange	.505 .550 .600 .478	.354 .412 .360 .385	14-24
5.	Blue	.181 .270 .230 .103	.069 .220 .250 .246	11-20
6.	Green	.210 .280 .180 .080	.275 .385 .520 .310	15-25
7.	Red	.613 .636 .558 .708	.297 .364 .352 .292	5-10
8.	Gold	.435 .475 .420 .385	.465 .420 .370 .420	15-35