

CITY OF EAST PROVIDENCE, RHODE ISLAND

SPECIFICATIONS

PLANT MIX BITUMINOUS MATERIALS

BID NO. EP15/16 - 5

1. Description: Material shall consist of fine and coarse aggregates, mineral filler and liquid asphalt as hereinafter described in strict accordance with specifications outlined hereafter.
2. Aggregates: Aggregates shall meet State of R.I. Specifications insofar as soundness fractured faces, free from clay, loam, and other foreign matter, etc., and shall be uniformly graded as indicated under each bituminous material item.
3. Liquid Asphalt: This material shall conform to all the requirements of the Asphalt Institute, the A.A.S.H.O. and the State of R.I. Standard Specifications.
4. Mineral Filler: Mineral filler shall be composed of limestone, or Portland Cement dust with at least 85% passing a 200 mesh sieve and will be added as directed to obtain specified amount of fines.
5. Anti-Stripping Compound: Anti-stripping compound will be added where specified under various materials and shall be Darakote or approved equal.
6. Plant Requirements: All bituminous materials shall be mixed in a plant of the Twin-Shaft-Pug-Mill type or Drum Mix type. All asphalt plants must be on the approved list as designated by the R.I. Division of Roads & Bridges for Paving Material Manufacturers under Standard Specification Rev. of 1971 and latest revisions. Plant shall be equipped with adequate device to maintain proper weights, temperatures and mixing, and the City will reject burned or improperly mixed materials. Goods will be weighed on a truck scale approved and sealed by the State or City Sealer of Weights and Measures. Slips showing the calculations and signed by a sworn weigher will be furnished with each transaction. Weight on slips shall be printed by hand or machine. Written words will not be acceptable. The use of truck body measurements, batch counting, or other estimating processes will not be permitted. The City may at its option, assign a representative for the purpose of enforcing specifications at the source of manufacture. Supplier must give the City twenty-four (24) hours notice prior to mixing patch.
7. Source of Material: All bidders shall furnish with their bid proposal, a statement indicating the source of materials to be used in the manufacture of all bituminous mixtures, and successful bidder/s shall not vary the source without approval of the City.

8. TECHNICAL SPECIFICATIONS:

A. GENERAL REQUIREMENTS: The mixture shall be sufficiently workable for placing with shovels, rakes, or other hand tools, and shall readily compact by hand tamping, power rolling, or under the action of traffic at temperatures as low as 25°F, immediately after manufacture or over a period of at least six (6) months in a stockpile. If the mixture has been stored in a warm area (50°F - 70°F) it shall be immediately usable in air temperatures as low as 15°F. The mix shall remain in place when used to patch wet or dry pavements and shall be stable under normal traffic.

B. AGGREGATE: The aggregate shall be a mixture of stone and sand carefully blended within the following gradation limits:

Total Percent Passing Sieves With Square Openings

1/2"	3/8"	No. 4	No. 16	No. 50	No. 100	No. 200
98-100	85-100	60-78	35-55	8-18	0-8	0-4

NOTE: 40% of the aggregate retained on the No. 4 sieve shall have a fractured face (this requirement may be waived if mixture passes the Stability Test). This portion of the aggregate shall also pass the WET COATING TEST for Emulsified Asphalt, if not the aggregate shall not be used.

C. EMULSIFIED ASPHALT: Emulsified Asphalt shall meet the following requirements:

Furol Viscosity at 77°F	50+
Residue by Distillation, %	65 +
Settlement, 5 days, %	5-
Sieve Test, %	0.10-
Wet Coating Test	Pass
Tests on Residue:	
Pen. at 77°F, 100g., 5 sec.	200+
Soluble in Carbon	
Tetrachloride, %	97.5
Ash	2-

D. WET COATING TEST: One hundred grams of aggregate proposed to be used in the work, passing a 3/8" sieve and retained on a No. 4 sieve shall be placed in a 16-ounce seamless ointment box, or equivalent container and barely covered with distilled water. Eight grams of Emulsified Asphalt, at 125°, shall be added to the wet aggregate and mixed for two minutes using a stiff spatula. The mixture shall then be rinsed twice with approximately its own volume of water. At least 90% of the aggregate particles shall be fully coated with bitumen. Any thin brownish, translucent areas are to be considered fully coated.

E. MIXTURE: The mixture shall meet the following composition and laboratory test requirements when freshly made or when sampled from the stockpile at any time up to six (6) months from the date of mixing.

E1-2 ITEM I AND ITEM II: HOT-MIX BITUMINOUS MATERIAL

The following types of Hot-Mix Asphaltic and Bituminous Concrete Materials to Conform to

Rhode Island Standard Specifications.

1. Asphaltic Concrete-Surface Course for Roadway Class "I" Type "I-1"
2. Asphaltic Concrete-Binder Course for Roadway Class "I" Type "I-1"
3. Sidewalk Mix - Class "I" Type "I-1"
4. Bituminous Concrete - Class "I" Type "I-2"
5. Curb and/or Barn Mix

8. BILLING:

The Vendor may bill bi-weekly or monthly for quantities actually purchased. Said invoices shall be corroborated by copies of either a delivery or truck weight tickets.

9. AWARD

The City reserves the right to purchase any of the above Classes or Types of Asphaltic Concretes required. The price bid to cover all of the Classes or Types described above. Bid price shall be PRICE PER TON loaded into City trucks at Supplier's Plant.

10. TESTING OF BITUMINOUS MATERIALS:

During the term of the Contract, a sample of the bituminous mix may be taken from the delivery by the City at random and forwarded to an independent laboratory for examination and analysis. Bituminous mix not conforming to the specifications or found unsatisfactory, will be rejected and replaced without charge to the City. The cost of the laboratory testing of plant mix bituminous materials that is found to be defective will be charged back to the Vendor. All bidders must state the exact location of their plant where materials will be loaded into the trucks. In cases where two or more locations will exist, each location must be listed with an estimate of the months such locations will be utilized.

ITEM III: MODIFIED COLD PATCH MATERIAL

1. DESCRIPTION

This material shall be a plant mixed pavement patching material capable of storage in a stockpile composed of mineral aggregates and a modified bituminous material, approved by the City of East Providence Engineering Division. The mix provided shall meet the gradation contained herein.

Material shall be provided in accordance with the general specifications for Section 400 of the Rhode Island Department of Transportation Standard Specifications as addended, except as modified herein.

The material shall be uniform, workable, and have satisfactory setting properties at the time of delivery.

2. MATERIALS

A. AGGREGATES:

Course aggregate shall be either crushed ledge stone, crushed granite, or crushed gravel and shall meet the requirements of Section M.01 materials for surface course aggregates. Fine aggregate may be natural sand, stone screenings, or a blend of the two.

- b. MINERAL FILLER: Mineral filler, if used, shall conform to the requirements of Section M.03.024 Filler.
- c. BITUMINOUS MATERIAL: The bituminous material shall be Sylvax UPM supplied by the Sylvac Chemical Corp., or Super Rode Rite supplied by ELF Aquitaine, or Quality Pavement Repair 2000 (QPR2000) liquid blend supplied by U.S. Pro-Tee., or an approved equal.

3. COMPOSITION OF MIXTURES

The aggregate gradation and bituminous material quantities shall meet the requirements specified by the manufacturer of the bituminous material to be used. When not specified by the manufacturer, the formula with the allowable tolerances shall be within the following master range for gradation:

Bituminous material percentage is based on the total weight of the mix and shall include any additives.

<u>SIEVE SIZE</u>	<u>% PASSING (1)</u>	<u>TOLERANCE</u>
1/2"	100	
3/8"	95-100	+ - 5
#4	55-75	+ - 7
#8	10-35	+ - 4
#100	2-8	+ - 2
#200	0-2	+ - 1
Bituminous Material (2)	5.0-7.0	+ - 0.4

All aggregate percentage are based on the total weight of the aggregate.

4. PREPARATION OF MIXTURES

The aggregate shall be introduced into the pugmill or enter the coating zone of a drum mixer at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 215 degrees F.

#### **5.ACCEPTANCE AND PICKUP**

The City of East Providence will inspect the finished product at the plant site prior to pick -up by City trucks.

The City reserves the right to pick-up material in small or large quantities.

#### **6. ADDITIONAL TERMS & CONDITIONS:**

The bidder will provide the City with a charge credit amount for asphalt returned by City work crews where indicated on the bid form