



## BID INVITATION

## STANDARD CONDITIONS

## H-04-036H

1. **ACCEPTANCE AND REJECTION:** The Arkansas State Highway and Transportation Department (AHTD) reserves the right to reject any or all bids, to accept bids in whole or in part (unless otherwise indicated by bidder), to waive any informalities in bids received, to accept bids on materials or equipment with variations from specifications where efficiency of operation will not be impaired, and to award bids to best serve the interest of the State.
2. **PRICES:** Unless otherwise stated in the Bid Invitation, the following will apply: (1) unit prices shall be bid, (2) prices should be stated in units of quantity specified (feet, each, lbs., etc.), (3) prices must be F.O.B. destination specified in bid, (4) prices must be firm and not subject to escalation, (5) bid must be firm for acceptance for 30 days from bid opening date. In case of errors in extension, unit prices shall govern. Discounts from bid price will not be considered in making awards.
3. **BID BONDS AND PERFORMANCE BONDS:** If required, a **Bid Bond** in the form of a cashier's check, certified check, or surety bond issued by a surety company, in an amount stated in the Bid Invitation, must accompany bid. **Personal and company checks are not acceptable as Bid Bonds.** Failure to submit a Bid Bond as required will cause a bid to be rejected. The Bid Bond will be forfeited as liquidated damages if the successful bidder fails to provide a required Performance Bond within the period stipulated by AHTD or fails to honor their bid. Cashier's checks and certified checks submitted as Bid Bonds will be returned to unsuccessful bidders; surety bonds will be retained. The successful bidder will be required to furnish a **Performance Bond** in an amount stated in the Bid Invitation and in the form of a cashier's check, certified check, or surety bond issued by a surety company, unless otherwise stated in the Bid Invitation, as a guarantee of delivery of goods/services in accordance with the specifications and within the time established in the bid. **Personal and company checks are not acceptable as Performance Bonds.** In some cases, a cashier's check or certified check submitted as a Bid Bond will be held as the Performance Bond of the successful bidder. Cashier's checks or certified checks submitted as Performance Bonds will be refunded shortly after payment has been made to the successful bidder for completion of all terms of the bid; surety bonds will be retained. Surety bonds must be issued by a surety company authorized to do business in Arkansas, and must be signed by a Resident Local Agent licensed by the Arkansas State Insurance Commissioner to represent that surety company. Resident Agent's Power-of-Attorney must accompany the surety bond. Certain bids involving labor will require Performance Bonds in the form of surety bonds only (no checks of any kind allowed). In such cases, the company issuing the surety bond must comply with all stipulations herein and must be named in the U. S. Treasury listing of companies holding Certificates of Authority as acceptable sureties on Federal Bonds and as acceptable reinsuring companies. Any excess between the face amount of the bond and the underwriting limitation of the bonding company shall be protected by reinsurance provided by an acceptable reinsuring company.
4. **TAXES:** The AHTD is not exempt from Arkansas State Sales and Use Taxes, or local option city/county sales taxes, when applicable, and bidders are responsible to the State Revenue Department for such taxes. These taxes should not be included in bid prices, but where required by law, will be paid by the AHTD as an addition thereto, and should be added to the billing to the AHTD. The AHTD is exempt from Federal Excise Taxes on all commodities except motor fuels; and excise taxes should not be included in bid prices except for motor fuels. Where applicable, tax exemption certificates will be furnished by the AHTD.
5. **"ALL OR NONE" BIDS:** Bidders who wish to bid "All or None" on two or more items shall so stipulate on the face of bid sheet; otherwise, bid may be awarded on an individual item basis.
6. **SPECIFICATIONS:** Complete specifications should be attached for any substitution or alternate offered, or where amplification is necessary. Bidder's name must be placed on all attachments to the bid.
7. **EXCEPTIONS TO SPECIFICATIONS:** Any exceptions to the bid specifications must be stated in the bid. Any exceptions to manufacturer's published literature must be stated in the bid, or it will be assumed that bidder is bidding exactly as stated in the literature.
8. **BRAND NAME REFERENCES:** All brand name references in bid specifications refer to that commodity or its equivalent, unless otherwise stated in Bid Invitation. Bidder should state brand or trade name of item being bid, if such name exists.
9. **FREIGHT:** All freight charges should be included in bid price. Any change in common carrier rates authorized by the Interstate Commerce Commission will be adjusted if such change occurs after the bid opening date. Receipted common carrier bills that reflect ICC authorized rate changes must be furnished.
10. **SAMPLES AND LITERATURE:** Samples or technical literature must be provided within 14 days of AHTD request unless AHTD extends time. Failure to provide samples or literature within this period may cause bid to be rejected. When required, samples of items must be furnished free of charge, prior to or after the opening of bids, and, if not destroyed, will be returned upon request at the bidder's expense. Each individual sample must be labeled with bidder's name and item number. Request for return of samples must be made within 10 days following submission of sample. Samples from successful bidders will be retained for comparison with items actually furnished.
11. **GUARANTY:** Unless otherwise indicated in Bid Invitation, it is understood and agreed that any item offered or shipped on this bid shall be newly manufactured, latest model and design, and in first class condition; and that all containers shall be new, suitable for storage or shipment and in compliance with all applicable laws relating to construction, packaging, labeling and registration.
12. **BACKORDERS OR DELAY IN DELIVERY:** Backorders or failure to deliver within the time required may constitute default. Vendor must give written notice to the AHTD, as soon as possible, of the reason for any delay and the expected delivery date. The AHTD has the right to extend delivery if reasons appear valid. If reason or delivery date is not acceptable, vendor is in default.
13. **DEFAULT:** All commodities furnished will be subject to inspection and acceptance by AHTD after delivery. Default in promised delivery or failure to meet specifications authorizes the AHTD to cancel award or any portion of same, to reasonably purchase commodities or services elsewhere and to charge full increase, if any, in cost and handling to defaulting vendor. Applicable bonds may be forfeited.
14. **ETHICS:** *"It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a State contract upon an agreement of understanding for a commission, percentage, brokerage, or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the contractor for the purpose of securing business."* (Arkansas Code, Annotated, Section 19-11-708).

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SUPPLY CONTRACT FOR ASPHALT CONCRETE COLD PLANT AND HOT MIX MATERIALS  
BID FORM

CONTRACT NO. **H-04-036H**

BIDDER: \_\_\_\_\_

Separate Bid Form must be submitted for each separate plant location.

Plant Location \_\_\_\_\_ Telephone \_\_\_\_\_

Prices shall be bid per ton - FOB State Trucks at plant location. Prices bid are subject to discount of \_\_\_\_\_% for payment of invoices within \_\_\_\_\_ days.

Item (10) is the price per ton per mile (excluding material price) for bidder to haul material to AHTD designated location. Delivery time is negotiable. AHTD reserves the right to select delivery option.

Material furnished must meet the applicable requirements of AHTD Standard Specifications of 2003 and attached Special Provision and Supplemental Specifications (Specifications are accessible on our web site at [www.ahtd.state.ar.us/contract/progcon/general/stdspecs.htm](http://www.ahtd.state.ar.us/contract/progcon/general/stdspecs.htm).) as noted herein.

- |    |  |                   |                   |                   |
|----|--|-------------------|-------------------|-------------------|
| 1. | ACHM Base Course<br>Section 405                                      | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |
| 2. | ACHM Binder Course<br>Section 406                                    | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |
| 3. | ACHM Surface Course(12.5 mm)<br>Section 407                          | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |
| 4. | ACHM Surface Course (9.5 mm)<br>Section 407                          | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |
| 5. | ACHM Surface Course(12.5 mm)<br>Section 407<br>(Limestone Aggregate) | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |
| 6. | ACHM Surface Course (9.5 mm)<br>Section 407<br>(Limestone Aggregate) | _____             | _____             | _____             |
|    |  | w PG64-22 per ton | w PG70-22 per ton | w PG76-22 per ton |

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SUPPLY CONTRACT FOR ASPHALT CONCRETE COLD PLANT AND HOT MIX MATERIALS  
BID FORM

CONTRACT NO. **H-04-036H**

BIDDER: \_\_\_\_\_

- |     |  |       |              |
|-----|--|-------|--------------|
| 7.  | Asphalt Concrete Cold Plant Mix<br><b>MC-800</b> Cutback – Section 411 | _____ | per ton      |
| 8.  | Asphalt Concrete Cold Plant Mix<br><b>Summer Grade</b> – Section 411   | _____ | per ton      |
| 9.  | High Performance Cold Mix<br><b>Summer Grade</b> – Special Provision   | _____ | per ton      |
| 10. | Haul Price   | _____ | per ton/mile |

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SUPPLY CONTRACT FOR ASPHALT CONCRETE COLD PLANT AND HOT MIX MATERIALS  
BID INFORMATION

CONTRACT NO. **H-04-036H**

1. The Arkansas State Highway and Transportation Department, hereinafter referred to as “the Department,” will enter into a term contract with the successful bidder(s) to furnish requirements of various Asphalt Concrete Cold Plant and Hot Mix Materials for the period set forth in the Bid Invitation.
2. Bid shall be submitted on the form furnished herewith. Bid envelope shall be sealed and marked so as to clearly indicate its contents and will be received at the locations noted on the Bid Invitation. Bids received after the date and time set for opening will be returned unopened to the bidder.
3. A bid may be withdrawn, modified, or corrected by the bidder after it has been submitted provided written request to do so is filed with the Equipment and Procurement Division prior to the time set for opening bids. Telegrams, faxes or letters received before time set for opening bids will be accepted and attached to the unopened bid, and the bid will be considered withdrawn, modified, or otherwise changed accordingly. No proposal may be withdrawn, modified, corrected, or otherwise changed after the time set for opening bids.
4. The Department reserves the right to enter into agreement with as many bidders as may be necessary to assure an adequate supply of material to meet statewide requirements.
5. Under terms of this contract, the Department is not obligated to purchase any specific quantity or to make purchases at any specific time during the contract period.
6. Transportation cost and/or length of haul will be taken into consideration in placing individual orders.
7. Where awards are made to corporations organized in states other than Arkansas, bidders shall at their own expense furnish a certified copy of certificate of authority and license to do business in Arkansas, which will remain on file with the Department. No contract will be executed in favor of such corporation until certificate shall have been furnished.
8. Material must be certified as meeting applicable specifications, in accordance with subsection 102.14 of the Standard Specifications, prior to acceptance.
9. If a contract supplier should move a plant or wish to supply from another certified plant, the Department may elect to purchase material meeting required specifications from the new location, upon written request from the contract supplier, if prices are equal to or below the contract price bid by that supplier.

CONTRACT NO. **H-04-036H**

10. If a contract supplier is unable to load and start shipment of materials within seventy-two (72) hours after receipt of an individual order, he shall immediately notify the ordering District and the Department's Equipment and Procurement Division in Little Rock. In such event, the Department shall have the right to cancel the order and purchase the material on the open market. Any increase in cost occasioned by purchasing the material from other than the contract supplier may be billed to the contract supplier or deducted from payments due. This provision is not intended to allow any supplier 72 hours to make shipments of material ordered where immediate shipment is designated and required to avoid loss to the State.
11. Invoices for material furnished should be submitted to the headquarters of the District ordering the material. Invoices submitted to the Little Rock Central Office will cause delay in payments.
12. The Department reserves the right to cancel this contract, or any part thereof, upon giving the vendor fifteen days notice of its intent to terminate. The contract shall automatically terminate as of the date given in said notice. Otherwise, prices bid shall remain in effect for the contract term.
13. Cooperative Purchasing. Other tax-supported entities\* in Arkansas (cities, counties, state agencies, school districts, etc.) may purchase commodities covered in this Contract on an individual basis under the same specifications and conditions, and at the pricing set forth by each vendor, all at the discretion of each vendor in each case. Prices could be reduced by a vendor for minor alterations in conditions (changing minimum order quantities, etc.) as agreed by both parties, but could not be raised above the contract bid price under any circumstances. Vendors would not be required to sell to any such entity under this Contract, and those entities would not be obligated to purchase from the Contract.

Each entity wishing to purchase from the Contract would make contact directly with the appropriate vendor(s). The Highway Department would remain "out of the loop" for such transactions: all contact, orders, invoices, payments, etc. regarding such transactions must take place exclusively between the tax-supported entity and the vendor. The Department would be held harmless of any and all liability arising from such transactions.

\*Tax-supported entities are defined as those receiving more than half of total funding from appropriated tax funds.

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

SUPPLY CONTRACT NO. **H-04-036H**

The following Special Provision, Supplemental Specifications and Sections of the *Standard Specifications for HIGHWAY CONSTRUCTION, Edition of 2003*, shall apply. (Specifications are accessible on our web site at [www.ahtd.state.ar.us/contract/progcon/general/stdspecs.htm](http://www.ahtd.state.ar.us/contract/progcon/general/stdspecs.htm).)

<b><u>SECTION NO.</u></b>	<b><u>TITLE</u></b>
105	Control of Work
109	Measurement and Payment
404	Design and Quality Control of Asphalt Mixtures
405	Asphalt Concrete Hot Mix Base Course
406	Asphalt Concrete Hot Mix Binder Course
407	Asphalt Concrete Hot Mix Surface Course
409	Materials and Equipment for Asphalt Concrete Plant Mix Courses
410	Construction Requirements and Acceptance of Asphalt Concrete Plant Mix Binder and Surface Courses
411	Asphalt Concrete Cold Plant Mix

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SPECIAL PROVISION TO ACCOMPANY SUPPLY CONTRACT NO. H-04-036H  
ASPHALT CONCRETE HOT MIX AND COLD MIXES

**Sections 109, 405, 406, 407, 409, 410, and 411**, of the *Standard Specifications for HIGHWAY CONSTRUCTION, Edition of 2003*, are hereby amended as follows:

**Subsections 405.06, 406.05, and 407.05, Method of Measurement** are amended to provide that ACHM Base Course, ACHM Binder Course, ACHM Surface Course (12.5 mm & 9.5 mm), and ACHM Surface Course (12.5 mm & 9.5 mm, Limestone Aggregate) respectively, will be measured by the ton of mix.

The requirements of subsection 109.01(f) Measurement of Quantities will apply to this contract.

**Subsections 405.07, 406.06, and 407.06, Basis of Payment** are amended to provide that the following listed pay items will be paid for at the unit price bid per ton for the respective item.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
1. ACHM Base Course Section 405	Ton
2. ACHM Binder Course Section 406	Ton
3. ACHM Surface Course(12.5 mm) Section 407	Ton
4. ACHM Surface Course (9.5 mm) Section 407	Ton
5. ACHM Surface Course(12.5 mm) Section 407 (Limestone Aggregate)	Ton
6. ACHM Surface Course (9.5 mm) Section 407 (Limestone Aggregate)	Ton
7. Asphalt Concrete Cold Plant Mix MC-800 Cutback - Section 411	Ton
8. Asphalt Concrete Cold Plant Mix Summer Grade - Section 411	Ton

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SPECIAL PROVISION TO ACCOMPANY SUPPLY CONTRACT NO. **H-04-036H**  
ASPHALT CONCRETE HOT MIX AND COLD MIXES

For the items ACHM Surface Course (12.5 mm) (Limestone Aggregate) and ACHM Surface Course (9.5 mm) (Limestone Aggregate), **Subsection 409.01**, is amended by deleting Wearing Surface Aggregate requirements in Table 409-1 and NOTE 1.

**Subsections 410.01 Description, 410.03 Preparation of Mixture, 410.06 Transporting** (if applicable) will apply to this contract. **Subsections 410.02, 410.04, 410.05, 410.07, 410.08, 410.10, 410.11 and 410.12** will not apply to this contract.

**Subsection 410.09, Acceptance of the Pavement and Adjustments in Payment** is amended as follows:

The Contractor must be on the Department's Qualified Products List for Certified Suppliers of Hot Mix Asphalt and/or Cold Mix Asphalt Producers for Maintenance Supply Contracts and furnish specification material in accordance with the Certification Agreement.

All sampling and testing for acceptance and adjustments will be performed by the Contractor, with the Department performing sampling and testing for verification. Acceptance and adjustments of a standard lot will be based on the average of the Contractor's 4 tests performed on that lot. Acceptance of partial lots or sublots will be based on the Contractor's acceptance sampling and testing. Acceptance of ACHM courses will not be based on the results of tests for pavement smoothness but will be based on the results of tests for the properties listed in Table 410-1 except for density. The Department will perform all tests for acceptance and adjustment on material used to replace material removed by the Supplier.

Asphalt Concrete Hot mixes meeting these applicable Special Provisions and *the Arkansas Standard Specifications for HIGHWAY CONSTRUCTION, Edition of 2003*, may be furnished at the respective bid price per ton of mix for all items in this Supply Contract. Asphalt Concrete Hot Mix designs that are currently approved and that comply with the 2003 Standard Specifications may be used or transferred for use under this Supply Contract.

For the item ACHM Surface Course, **Section 407**, ACHM designs accepted by another state may be allowed for use when an Arkansas mix is not being produced provided the designs and acceptance samples exhibit properties within AHTD specification ranges.

08-08-03

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT  
SPECIAL PROVISION TO ACCOMPANY SUPPLY CONTRACT NO. **H-04-036H**  
ASPHALT CONCRETE HOT MIX AND COLD MIXES

**Section 411** is hereby amended by adding the following:

**Subsection 411.05 Quality Control and Acceptance.**

The Contractor must be on the Department's Qualified products List for Certified Suppliers of Hot Mix and/or Cold Mix Asphalt Producers for Maintenance Supply Contracts and furnish specification material in accordance with the Certification Agreement.

**Subsection 411.06**, will not apply to this contract.

**Subsection 411.08, Basis of Payment** is hereby deleted and the following substituted therefor:

Work completed and accepted, will be paid for at the unit price bid per ton (metric ton) for Asphalt Concrete Cold Plant Mix, which price shall be full compensation for furnishing materials; for heating and mixing; for furnishing acceptable mix designs; for performing quality control and acceptance sampling and testing; and for all labor, equipment, tools, and incidentals necessary to complete the work.

4/9/01  
10/11/01  
3/22/02

1/6/03

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT**

**SPECIAL PROVISION**

**HIGH PERFORMANCE COLD MIX**

Materials furnished must meet the requirements of Specifications for QPR-2000, Sylcrete-EV, UPM, Donnacrete, Koch Patch Magic, or equal, attached to and made a part of this bid.

Materials supplied under this specification will be accepted on receipt and approval of a certification prepared and signed by the Contractor indicating the material complies with the requirements of this specification.

The mixture shall be capable of stockpiling for not less than one year, and when taken from a stockpile, shall be capable of being shoveled, raked, spread and compacted.

The Department reserves the right to sample and test any materials produced under this specification and to reject any material, which does not meet the requirements of the specification. Rejected material shall be replaced or otherwise removed at the expense of the Contractor.

The Contractor will be responsible for manufacturing the High Performance Cold Mix in a hot mix asphalt plant, furnishing the aggregate, liquid asphalt and mix design.

**Method of Measurement.** High Performance Cold Mix will be measured by the ton of mix based upon truck scale weights.

The Contractor's scale printout will be used to certify the weight of mix produced. Final weights of mix may be subject to verification.

**Basis of Payment.** Work completed and accepted and measured as provided above, will be paid for at the unit price bid per ton for High Performance Cold Mix, which price shall be full compensation for mobilization; for liquid asphalt; for asphalt hot plant mixing; and for all labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

<b>Pay Item</b>	<b>Pay Unit</b>
High Performance Cold Mix	Ton

**DETAILED SPECIFICATIONS  
FOR  
BITUMINOUS COLD PATCH MATERIAL  
UPM**

**GENERAL**

These bituminous patching mixes are designed in various seasonal grades for use when the outside ambient temperature is in the range of -15°F (-26°C) to 100°F (38°C). Each grade shall be manufactured specifically to accommodate anticipated climatic conditions.

The bituminous patching mix shall consist of asphalt and aggregate within prescribed quantities to make a mixture which will provide satisfactory coating, workability and adhesion characteristics. The patching mixture will be available in grades to function as a patch during cold and damp or during hot weather in bituminous and concrete pavement. The asphalt blend and aggregate shall conform to the following requirements.

**LIQUID ASPHALT**

The bituminous material shall be UPM Liquid Asphalt Blend, from Unique Paving Materials Corporation. When prepared from a base stock of asphalt cement and blended in accordance with an approved UPM blending formula as prepared by Unique Paving Materials Corporation, the blend shall meet the following requirements:

Kinematic Viscosity @ 140°F (60°C)	ASTM D 2170	350 to 4000 cSt (mm <sup>2</sup> /s)
Flash Point, Tag Open Cup	ASTM D 1310	200°F (93°C) minimum
Percentage of Water	ASTM D 95	Less Than 0.2%
Distillation to 680°F (360°C)	ASTM D 402	See Values Below

Temperature	Volume % Total Distillate		Volume % Original Sample	
	Minimum	Maximum	Minimum	Maximum
to 437°F (225°C)	0	0	0	0
to 500°F (260°C)	0	0.5	0	0
to 600°F (316°C)	10	65	0	18
Residue from distillation to 680°F (360°C)% Volume by Difference			73	95

**TESTS ON RESIDUE FROM DISTILLATION**

Absolute viscosity @ 140°F (60°C)	ASTM D 2171	75 to 425 Poise (10 <sup>-1</sup> Pa × s)
Penetration, Modified with Cone	ASTM D 5*	180 minimum
Ductility, 39°F (4°C), 1 cm/minute	ASTM D 113	100 minimum
Solubility in Trichlorethylene	ASTM D 2042	99.0% minimum

Make this test in accordance with ASTM Method D 5, except utilize a penetration cone in place of the standard penetration needle. The cone shall conform to the requirements given in ASTM Method D 217, except that the interior construction may be modified as one desires. The total moving weight of the cone and attachments must be 150 ± 0.1 gram. Also the level of water in the transfer dish shall be lowered to less than the height of the sample and decant water from the top of the sample before transferring from the bath to the penetrometer.

**AGGREGATE**

The aggregate shall be crushed stone and shall meet the following requirements:

**SIEVE ANALYSIS****ASTM C 136**

Sieve	#9 ASTM D 448 Percent Passing	COMBINATION #9 & #89 Percent Passing	#89 ASTM D 448 Percent Passing
1/2" (12.5 mm)	-	100	100
3/8" ( 9.5 mm)	100	90 - 100	90 - 100
# 4 (4.75 mm)	85 - 100	55 - 85	20 - 55
# 8 (2.36 mm)	10 - 40	5 - 40	5 - 30
# 16 (1.18 mm)	0 - 10	0 - 10	0 - 10
# 50 (0.30 mm)	0 - 5	0 - 5	0 - 5

Soundness Loss (Sodium, 5 cycles)	ASTM C 88	12.0 maximum
Los Angeles Abrasion Loss	ASTM C 131	45.0% maximum
Specific Gravity	ASTM C 127	2.45-2.85
Absorption	& 128	3.0% maximum
Minus 200 Sieve (0.075mm) Wash Loss	ASTM C 117	2.5% maximum

**PREPARATION OF MIXTURE**

The producer will provide a paved stockpile pad or an established material base of the same product as bid in the specifications. The pad or material base shall be solely committed to this product during the contract period.

The asphalt shall be heated to a temperature between 185° - 265°F (85° - 130° C).

The mixture shall consist of an aggregate and asphalt combined in a pug mill in the following proportions:

Asphalt	5.0 to 6.5%
Aggregate	95.0 to 93.5%

The mixture may be prepared with no heat to the aggregate when determined as acceptable by laboratory testing.

Heat should be applied to the aggregate when determined as necessary by Unique Paving Materials' laboratory testing prior to production of the mixture or by a technical representative of Unique Paving Materials.

Under any of the above conditions the minimum amount of heat necessary to obtain coating or facilitate the operation of the plant may be utilized not to exceed under any circumstance 175°F (80°C).

When producing in a batch plant, wet mix time in the pug mill should be typically in the range of 30 to 45 seconds or until the aggregate is uniformly coated (greater than 95%) ASTM D 2489.

**PRODUCTION SUPERVISION**

A technical representative from Unique Paving Materials Corporation will be present at every production for quality assurance of the mix. This supervision shall be at the expense of Unique Paving Materials Corporation.

**MIXTURE**

The UPM asphalt cold mix shall meet the following requirements:

Coating	ASTM D 2489	Greater than 95%
Stripping in distilled water <sup>1</sup>	Visual	Less than 5%
Extraction of Bituminous Material	ASTM D 2172	3.5 min. 9.0% max.
Sieve Analysis of Extracted Aggregate	ASTM C 136	See Aggregate Specification
Minus 200 (0.075mm) Of Extracted Aggregate	ASTM C 117 & ASTM C 136	4.0% Maximum <sup>2</sup>
Shelf Life of 100 Tons or more		One Year Minimum

**Note 1:** Place approximately 100 grams in a 250 ml glass beaker and cover with distilled water for 24 hours before observation.

**Note 2:** This value shall not be confused with the 2.5% maximum allowed for the Minus 200 (0.075mm) Wash Loss on the raw aggregate before the production of UPM. That value is necessary to minimize the effect of the plant when producing the finished UPM Cold Mix.

**CONTRACT**

Before being awarded a contract, a successful bidder will be required to furnish an affidavit that this product meets or exceeds the above specifications. The affidavit shall have attached, an analysis done by an independent testing laboratory, certifying that the material conforms to these specifications. If the successful bidder does not submit the affidavit of the lab analysis, they will not be awarded the contract. The material tested shall be obtained from a stockpile with a minimum 100 ton quantity.

**PERFORMANCE GUARANTEE**

The supplier of the material shall guarantee the performance of the patching mix to meet the following requirements.

- A. The material shall remain workable to accommodate climatic conditions, in an uncovered stockpile of 100 tons or more, if applicable, for a period of not less than 12 months. Smaller quantities must be reasonably covered.
- B. Repaired potholes shall not show any significant signs of shoving, rutting, tracking, kick-up or ravel-out within a period of 12 months from the time of repair.

In the event the material furnished does not meet all of the above requirements, the supplier shall replace the unsatisfactory with acceptable material. The acceptable material shall be provided and delivered at no extra charge to the Department.

BDSPCUPM98-1

# QPR High Performance Permanent Cold Patch

## *MATERIAL SPECIFICATION*

### DESCRIPTION

This material shall be a plant or pugmill mixed, high performance pavement patching material capable of storage in an uncovered outdoor stockpile for a minimum of 12 months. It shall be composed of laboratory approved mineral aggregates and modified bituminous QPR® Liquid Blend capable of coating wet aggregates (up to 4% moisture) without stripping and have stripping resistance of retained coating of not less than 95%. The permanent asphalt repair shall be uniform, remain flexible and cohesive to -15° F. and be capable of retaining adhesive qualities in wet applications. The patching materials shall be able to repair asphalt, concrete, surface treated roads and shall not require removal and replacement if ever the pavement is overlaid.

### MATERIALS

#### A) Aggregate

The aggregate shall consist of 100% crushed stone or a laboratory approved equivalent under ASTM C-136. All aggregate is to be from approved sources, and representative samples of both fine and coarse aggregate shall be from the plant site and laboratory tested. Sampling and testing methods shall be in accordance with accepted local practice.

Gradation analysis to comply with all local requirements. Recommended gradation analysis is as follows:

<u>SCREEN SIZES</u>	<u>PERCENTAGE PASSING</u>
3/8"	100
#4	20 - 85
#8	2 - 30
#16	0 - 10
#50	0 - 6
#200	0 - 2

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

ASTM	C-88	Soundness Loss	12.0% Max.
ASTM	C-131	Los Angeles Abrasion	40.0% Max.
ASTM	C-117	-200 Sieve (by wash)	2.0% Max.
ASTM	C-127, 128	Absorption	1.0 - 2.0% Max.
ASTM	C-127, 128	Specific Gravity	2.55 - 2.75% Max
ASTM	C-123	Soft Aggregates	3.0% Max.

#### Aggregate Acceptance

Aggregate compatibility approval must be obtained from the QPR quality control facility in Brantford, Ontario prior to material mixing at any mixing plant.

**B) Bituminous Material**

The modified bituminous liquid blend shall be QPR® which meets the following requirements:

ASTM D-1310	Flashpoint (TOC):	200° F (94° C.) minimum
ASTM D-2170	Kinematic Viscosity at 60° C (140° F):	300-4000
ASTM D-95	Water:	0.2% maximum

**ASTMD-402 Distillate Test (Volume of original sample):**

To 457° F (225° C)	None
To 500° F (260° C)	0 - 5%
To 600° F (315° C)	0 - 25%
Residue from distillate at 680° F (360° C)	72 - 95%

**RESIDUE TESTS**

ASTM D-2171	ABS. Viscosity at 140° F (60° C):	125-425 poises
ASTM D-5	Penetration: .	200 Minimum
ASTM D-113	Ductility at 39° F (4° C) 0.4 in./Min:	100 Minimum
ASTM D-2042	Solubility in Tricloroethylene:	99% Minimum

QPR® Liquid Blend shall be shipped from authorized blending terminal locations. Liquid shall be completely blended at terminal under supervision of authorized Quality Control personnel. No additives, modifiers, or extra ingredients are to be introduced into the liquid blend at any time after shipment from terminal. A copy of bill of lading and material certification shall accompany every shipment. Liquid Blend shall be shipped in insulated tankers to maintain oil temperature during transportation.

**PLANT MIX**

The cold mix shall consist of aggregates meeting material as specified in Section *A) Aggregate*, and the bituminous liquid blend meeting material specified in section *B) Bituminous Material* as indicated in the proposed job mix formula. Bituminous material shall be accepted at the supplier's source and at the plant site on the basis of a supplier material certification.

The preferred mixing ratio shall be 5.5% liquid blend or 110 lbs. per finished ton (2000 lbs.) of mixed material. Continuous on-site testing will determine exact final mixing ratio which will be identified in the final job mix formula. All aggregate percentages are based on the total weight of the aggregate. The bituminous liquid blend content is based on the total weight of the mix.

The job mix formula information shall provide:

- Aggregate gradation band and aggregate type.
- Bituminous material - amount and type including any additives used.
- Temperature ranges for material preparation.

**MANUFACTURING PREPARATION & OPERATION****Hot Mix Plant Production**

The mixture is to be produced through a conventional hot asphalt plant only under the direct supervision of a qualified QPR sales representative and finished product will not exceed 180°F. The bituminous liquid blend shall not be heated above 200°F. The final mixture must be tested in accordance with QPR on-site quality control requirements.

## **Pugmill Production**

The mixture can be produced through a cold manufacturing process (PUGMILL). The QPR® Bituminous Liquid Blend shall be heated between 200°F to 220°F. The QPR® Liquid Blend temperature is elevated to help with the adhesion process between the bituminous liquid and the aggregate. The finished mix will not exceed 180°F when produced through the Pugmill. The final mixture must be tested in accordance with the QPR on-site quality control requirements.

## **STOCKPILE INSPECTION**

Prior to production, the stockpile site is to be inspected for any contaminant such as dirt, sand or debris that may affect the quality of the QPR® High Performance Cold Patch. The stockpile area should be a hard surface, preferably paved with concrete, or a bituminous surface.

## **ENVIRONMENTAL TOXICITY TESTING**

The modified bituminous cold patch QPR® must have an independent test conducted by a certified laboratory as to toxicology results in a Static Acute Bio Assay Procedures for Hazardous Materials which determines effect of runoff into waterways, lakes, ponds and groundwater.

## **SPECIFICATION SAMPLING**

A one quart sample of the QPR® Liquid Blend will be retained at the asphalt depot prior to shipping. On delivery of the tank truck, an additional one-quart sample will be taken by the QPR sales representative and is to be retained by the customer/producer for a period of one year, or until the stockpile is depleted.

## **QPR® QUALITY CONTROL**

On each load, a Quality Control Report will be prepared by the QPR quality control technician. All phases of production of the plant operation and the material testing on each 150 tons of production will be prepared and entered accordingly in each category. Site tests will be completed which include Spot Test, Strip Resistance, Coating Observation and Roll Test.

## **HEATING OF FINISHED PRODUCT**

QPR® should not be heated above 70<sup>0</sup>F (21<sup>0</sup>C) when utilizing a hot box.

## **TRAINING OF INSTALLATION CREWS**

Blue Circle will make available a complete training program for all road crews to ensure correct patching methods, along with updates on this subject.

## **STOCKPILING**

One (1) year shelf life. QPR® may be stockpiled up to 12 months in an uncovered outdoor stockpile.

QPR® High Performance Cold Patch, when applied according to our directions to deteriorated concrete or bituminous pavement surfaces, is guaranteed to adhere permanently to the repaired area for the life of the repair or until the surrounding pavement area fails. Blue Circle will replace actual volumes of QPR® at no charge for any QPR® High Performance Cold Patch that should ever ravel or release from a repaired area.

'QPR', the QPR2000 Logo and 'Quality Pavement Repair 2000' are registered trademarks of QPR Inc.

## SYLCRETE-EV Extra Value Cold Mix

**SYLCRETE EV** is a performance guaranteed cold mix asphalt for the year 'round overlays and the repair of potholes and utility trenches in both asphalt and concrete.

### PERFORMANCE FEATURES

- **Workable down to -10 F**
- **Sticks to wet potholes**
- **Full year stockpile life**
- **Can be paved over**
- **Hot mix adhesion**
- **No tack coat needed**
- **Guaranteed 95% effective**
- **Does not stip in water**

### MATERIALS

#### **A: Aggregates**

Aggregates will consist of approved crushed aggregate, complying to AASHTO M43 (aggregate size designation) modified in the following manner in accordance with ASTM C- 136 standard test method.\*

<b>Sieve</b>	<b>#9 Patching Gradation % Passing</b>	<b>#89 Patching Gradation % Passing</b>	<b>Overlay Gradation % Passing</b>
1/2 inch		100	100
3/8 inch	100	90-100	85-100
# 4	85-100	20-55	50-70
# 8	10-40	5-30	
#10			32-42
#16	0-10	0-10	
# 30	0-7	0-7	
#40			11-26
# 50	0--5	0-5	
# 80			4-14
- 200 (sieve)	0-2.5	0-2.5	1-6

<b>Physical Properties</b>		
ASTM C-88	Soundness Loss (Sodium-5 Cycles)	12.0% Max.
ASTM C- 131	Los Angeles Abrasion Loss	45.0% Max.
ASTM C-127-28	Absorption	0.05%-2.0%
ASTM C-127-28	Specific Gravity	2.45-2.80
<b>Other Deleterious Matter</b>		
ASTM C- 123	Soft pieces	3.0% Max.
ASTM C-295	Coal and Lignite	1.0% Max.
ASTM C- 142	Shale, Chirt, Shady Material, etc.	2.5% Max.

\* Depending upon the intended application, alternate aggregate gradations and specifications may be recommended by Sylcrete Corporation.

### **B: Bituminous Material**

The bituminous Material shall be SYLCRETE-EV Liquid Asphalt Blend from Sylcrete Corporation. When prepared from a base stock of either 85-100 pen, 120 150 pen, AC-10, AC-20, AR-2000 or AR-4000, and blended in accordance with and approved by Sylcrete Corporation, it shall meet the following requirements.

ASTM D-1310	Flash Point (TOC): 275 F Minimum
ASTM D-2170	Kinematic Viscosity at 60 C (140 F): 300-4000
ASTM D-95	Water: 0.2% Maximum
ASTM D-402	Distillate Test (Volume of original sample): To 225' C (437 F): None To 260' C (500 F): O-5% To 315' C (600 F): O-25%
Residue Tests	
ASTM D-2171	Abs. Viscosity at 60 C (140 F): 125-425 Poises
ASTM D-5	Penetration: 180 Minimum (using cone method)
ASTM D-113	Ductility at 21 C (70 F), 1 cm/min.: 100 Minimum
ASTM D-2042	Solubility in Trichloroethylene: 99% Minimum

## **STRIPPING TEST**

A suitable size test sample of the plant mixed material shall be permitted to cure to normal laboratory temperature after which it shall be placed in a glass jar, completely flooded with distilled water, and fitted with a tight cover. The jar and contents shall be allowed to stand for a period of 24 hours at normal laboratory temperatures (approximately 70 F or 21 C). The sample jar shall then be agitated for a period of 60 seconds. The water shall then be poured from the jar and the sample removed to a flat surface and be permitted to air dry after which it will be visually examined for stepping of the bituminous film from the aggregate. The aggregate shall be at least 95% coated with bituminous film.

## COMPOSITION OF MIXTURE

The mixture shall consist of an aggregate conforming to MATERIALS Section A, and a bituminous material conforming to MATERIALS Section B. The mixing ratio shall be to 6.0% liquid blend or 120 lbs. per finished ton. The approved formula shall have an allowable variation of not more than the following minimum and maximum ranges:

	Minimum	Maximum
Job Mix Formula	4.5% (90 lbs/ton)	7.0% (140 lbs/ton)
Residual Asphalt (ASTM D-2172)	3.0%	6.5%

## PREPARATION OF MIXTURE

The approved aggregate should be surface dried. When heat is applied, the mixed temperature shall not exceed 175 F without the authorization of a Sylcrete Corporation representative. The asphalt blend shall be heated to a temperature of between 150 F and 250 F in accordance with the instructions of a Sylcrete Corporation representative. The mixture shall be mixed until all of the aggregates are uniformly coated.

## STOCKPILE LIFE AND PROCEDURES

Following production, SYLCRETE-EV Cold Mix should be allowed to cure at ambient temperature levels prior to use, by storing 24-48 hours in not higher than 6 ft. piles. Once ambient temperature levels are reached, SYLCRETE-EV Cold Mix can be mounded into a single normal height stockpile. The SYLCRETE EV Cold Mix stockpile life is one year from date of production when applied in the same or a warmer ambient temperature range originally designed for the mix. If a mix is originally designed for 20-40 F usage, it can be used for a full 12 months in the same or warmer conditions. However, if a mix is designed for 80-100 F usage, it will be usable 12 months later in that same temperature range, but will not be usable in substantially lower, interim temperatures. SYLCRETE-EV Cold Mix may be stored in an uncovered stockpile of 100 tons or more up to one year. However, in severely cold environments it may be necessary to either cover SYLCRETE-EV Cold Mix stockpiles, or allow quantities of SYLCRETE-EV Cold Mix to be stored at a minimum of 50 F for up to 12 hours prior to application, in order to eliminate ice crystals in the material.

## PLANT AND EQUIPMENT

Storage facilities and all equipment used in the preparation of the mixture shall be approved by the local governing agency. The materials for individual batches shall be measured accurately either by volume or by weight, using approved methods and equipment. A batch type mixer, drum mixer, continuous mixer, or portable pug mill, of approved design and capacity shall be used in mixing the ingredient materials. An approved dryer shall be available for surface drying the aggregate.

## HANDLING PROCEDURES

During the production of SYLCRETE-EV Cold Mix, and the production or handling of SYLCRETE-EV Liquid Blend, normal industry-wide safety precautions such as the prohibition of cigarette smoking, and any other form of ignition or combustion, should be strictly enforced in the general vicinity of such operations. In addition, any asphalt materials used in the production of SYLCRETE-EV Cold Mix Liquid Blend shall not exceed 350' F in temperature. The application of SYLCRETE-EV Cold Mix shall be performed without the addition of supplemental heat. Any effort to heat SYLCRETE-EV Cold Mix prior to or during application could adversely affect performance.

# KOCH PAVEMENT SOLUTIONS PATCH MAGIC High Performance Cold Mix Specifications

**DESCRIPTION**

The following specifications are for a high performance cold mix to be used in repairing potholes on both asphalt and concrete pavements. The aggregate and liquid asphalt will be mixed using a portable pug mill plant. The process shall have the capability of coating damp aggregates with no stripping. Patch Magic shall meet the Stone Coating Tests A & B as detailed herein. The Patch Magic mixture shall be turned over a minimum of one time while stockpiled to insure adequate blending of finished materials.

**MATERIALS**

**AGGREGATE:**

The aggregate to be used in Patch Magic production shall meet the requirements of a Class 2 Mineral Aggregate as defined by AHTD Section 403. Sieve analysis will be determined by AASHTO T 27. Based on the intended application, Koch may recommend alternate aggregate specifications. All aggregates shall be from an approved source and shall be tested by Koch prior to production of the Patch Magic.

**PHYSICAL EMULSION PROPERTIES:**

	Minimum	Maximum
Flash Point, Tag Open Cup	200F	
Residue by Distillation, % by Weight	80	90
Viscosity, Saybolt Furol @ 140F, Sec	100	Pumpable
Stone Coating Test A	90	
Stone Coating Test B	90	

**TEST ON RESIDUE FROM DISTILLATION TO 500F:**

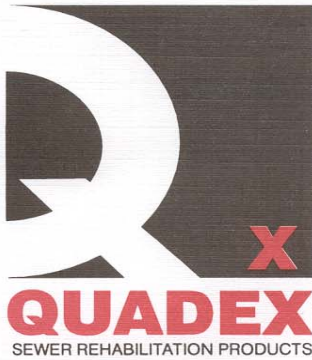
Oil Distillate, % by Volume; ASTM	4	12
-----------------------------------	---	----

**STONE COATING TEST A:**

1. Weigh 200 grams of dry aggregate (aggregate to be used on project) into a beaker.
2. Weigh 4 grams of tap water into the beaker containing the dry aggregate and mix for 30 seconds.
3. Weigh 14 grams of Patch Magic emulsion and add to the beaker containing the damp aggregate and mix vigorously for 120 seconds.
4. Dump contents in beaker onto suitable surface and visually check coating of aggregate. There shall be no evidence of asphalt run-off.

**STONE COATING TEST B:**

1. Weigh 200 grams of dry aggregate (aggregate to be used on project) into a beaker.
2. Weigh 200 grams of tap water into the beaker containing the dry aggregate and mix for 30 seconds.
3. Weigh 14 grams of Patch Magic emulsion and add to the beaker containing the soaked aggregate and mix vigorously for 120 seconds.
4. Pour off excess water from beaker. There shall be no evidence of asphalt run-off. Visually check coating of aggregate with asphalt.



# DONNACRETE

## High Performance Cold Mix

### DESCRIPTION:

Donnacrete HPCM shall be a pug mill plant mixed, open graded, 100% crushed stone, high performance cold mix patching material for the repair of potholes in asphalt and concrete paving. This special blend of modified bituminous asphalt must be capable of coating damp aggregate without stripping. Donnacrete HPCM will remain adhesive in wet or dry conditions whether winter or summer and will remain usable for 12 months in stockpile.

### MATERIALS:

#### Aggregate (Section A)

Aggregates shall consist of approved crushed rock and shall meet the requirements of ASTM-136.

Sieve	% Passing by weight-open graded C136 #89
3/8 inch	90-100
Number 4	20-55
Number 8	5-30
Number 16	0-10
Number 30	0-7
Number 50	0-5
Number 200	0-2.5

ASTM C88	Soundness Loss	12.0% maximum
ASTM C131	Los Angles Abrasion	40.0% maximum
ASTM C117	Minus 200 Sieve Wash	2.5% maximum
ASTM C127	Absorption	3.0% maximum
ASTM C128	Specific Gravity	2.45 - 2.85
ASTM C123	Soft Aggregates	3.0% maximum

#### BITUMINOUS MATERIAL (Section B)

The bituminous material shall be a Donnacrete HPCM approved liquid asphalt blend and shall meet the following requirements.

#### ASPHALT BINDER #1

Test on Emulsion	Minimum	Maximum
Viscosity, saybolt Furol 122F (50C). Seconds ASTM D244	400	-----
Storage Stability, 25 hours, % ASTM D244	-----	1.0
Sieve Test, % ASTM D244	-----	0.1
<b>Distillation to 500F (260C)</b>		
Residue, %	74	-----
Oil distillate, % By volume of Emulsion ASTM D244		12.0
Test of Residue from Distillation		
Penetration, 77F (25C), dmm ASTM D5	300	-----

#### Asphalt Binder #2

#### Test of Original Sample: Specification

Flash Point, TOC, C AASHTO T 201-93	94 min.
Kinematic Visc @ 60C, cSt AASHTO T 201-93	300 - 4000
Distillation, Volume of Original Sample, % To 225c (437F) AASHTO T 78-90	3.0 max
Residue from Distillation @ 360C (680F) AASHTO 78-90	72-95

#### Residue Tests:

Absolute Visc. @ 60C, P AASHTO T 202-91	1200 max
Ductility @ 4C, 1cm/min, cm. ASTM D113	100 min
Solubility in TCE % AASHTO T 44-93	99 min

#### PREPARATION OF MIXTURE:

Donnacrete HPCM shall consist of aggregates meeting Material (Section A) and bituminous material conforming to (Section B). The mixture ratio shall be 4.0 to 8% and 96.0 to 92% aggregate by weight. An approved pug mill plant shall be used to accurately measure and mix the material either by weight or volume.

#### TESTING:

Take a cold sample of cold mix processed through an approved plant and allow to cure until it reaches ambient temperature. Mixture shall meet the requirements of ASTM D1664, where not more than 5% of the aggregate particles shall remain uncoated. Place approximately 100 grams of mix in a glass beaker and cover with distilled water for 24 hours. After 24 hours a visual observation shall show no more than 5% stripping.

#### PERFORMANCE GUARANTEE:

Donnacrete HPCM when mixed and applied according to our specifications to potholes in concrete or bituminous pavement shall meet the following requirements.

- The material shall remain workable for 12 months in uncovered stockpiles based on 100 tons or more.
- Be workable at a minimum temperature of 0 degrees F without being heated.
- Be uniform and not require re-mixing prior to use.
- Adhere to both concrete and asphalt surfaces, which are damp or wet.
- Stripping shall be less than 5%.