# ASPHALTIC CONCRETE JOB MIX FORMULA
## DOTD Form 03-22-0730

MATT MENU SELECTION - 31

Louisiana Department of Transportation and Development
**ASPHALTIC CONCRETE JOB MIX FORMULA**

DOTD 03-22-0730 (5/97)
METRIC / ENGLISH

Metric/English M (M / E)

Proj. No. ____ JMF No: Plant Code H312 Mix Code 51 Seq. No. 160

Plant Type 3 (1 = Batch Screenless 2 = Batch Hot Bin 3 = Drum Mixer 4 = Continous)

ADT/Lane 950 Mixing Time: Dry ___ Wet ___

Prod. Rate: kg/Batch (lb/batch) ____ Mg/Hr (Tons/Hr) ____

F.A.P. ____ Proj. Cont. ____ Proj. Engr. ____

| | CODE | SOURCE | PERCENT | SP.GRAV. | FR. RATE (1-4) |
|---|---|---|---|---|---|
| Asphalt Cement (AC) | 541 PAC-30 | 4197 James Corp. | 4.0 | 1.03 | |
| Crushed Aggregate | 434 1"X0 Novaculite | AA145 Mid State | 33.6 | 2.71 | 2 |
| Crushed Aggregate | 434 1"X0 Novaculite | AA145 Mid State | 38.4 | 2.71 | 2 |
| Screenings | | | | | |
| Reclaimed Materials | | | | | |
| Coarse Sand | 430 C. Sand | A305 Trinity | 17.3 | 2.67 | |
| Fine Sand | F. Sand | AG01 Speedy | 16.7 | 2.65 | |
| Anti-Strip (AS) | AD-HERE LAZ | 51730 ARR-MAZ | 0.6 | JMF Limits: .05 - 0.7 | |
| Lime | | | | | |
| Other | | | | | |
| Other | | | | | |

| | Contractor's Results Average | MARSHALL TEST PROPERTIES 1 | 2 | 3 | 4 | Department Validation Average | JMF Limits |
|---|---|---|---|---|---|---|---|
| Spec. Gravity | 2.432 | | | | | | |
| Theo. Gravity | 2.534 | | | | | | |
| % Theo.Gravity | 96.0 | | | | | | |
| % Voids | 4.0 | | | | | | 3.0 - 5.0 |
| % VMA | 13.4 | | | | | | 13.0+ |
| % VFA | 70 | | | | | | 68 - 78 |
| Stability, kN(lb) | 12.9 18 | | | | | | 7.55 Design |
| Flow, 0.1mm (1/100 in) | 23 | | | | | | 15 - 38 |

| RECOMMENDED FORMULA mm/µm | In. | LOOSE MIX RESULTS 1 | 2 | Avg. | JMF Limits |
|---|---|---|---|---|---|
| 63 | 2 1/2 | | | | |
| 50 | 2 | | | | |
| 37.5 | 1 1/2 | | | | |
| 31.5 | 1 1/4 | | | | |
| 25.0 | 1 | 100 | | | 100 |
| 19.0 | 3/4 | 96 | | | 90 - 99 |
| 12.5 | 1/2 | 83 | | | 77 - 89 |
| 9.5 | 3/8 | 72 | | | — |
| 4.75 | No. 4 | 56 | | | — |
| 2.00 | No. 10 | 40 | | | 34 - 45 |
| 425 | No. 40 | 22 | | | — |
| 180 | No. 80 | 11 | | | — |
| 75 | No. 200 | 5.0 | | | 3.0 - 7.0 |
| %AC Extract. | | 4.0 | | | 3.6 - 4.4 |
| % Crushed | | 100 | | | 85% |
| Mix Temp.C (F) | | 157 | | | 143 - 171 |
| %AC (Met/Sc) | | 4.0 | | | 3.9 - 4.1 |
| %AS (Meter) | | 0.6 | | | 0.5 - 0.7 |

**DEPARTMENT RESULTS**

| | |
|---|---|
| Adjustment Factor | 1.00 |
| Tensile Str.,Control, kPa (PSI) | 1171 |
| Tensile Str.,Ratio (TSR), % | 87 |
| Ross Count, % (T 195) | 100 |
| % Ret. Asph. Coating (TR 317) | |
| Effective AC, % | |
| Absorbed AC, % | |
| % Natural Sands | 25 |
| Sand Equivalent | 72 |
| Moisture Content of Mix, % | |
| Opt. Mixing Temp. C (F) | |
| Opt. Compaction Temp.C (F) | |
| Abson Recov.,Pa.S(Poises) | |

Submitted for the Contractor by: 0532 Signature Date: 07-07-97

Proposal Approved ( Yes No ) Lab: ____ Date: ____

Approved (Yes No) ____ Lab.Engr. ____ Date: ____

Revised Specs.: ____ Date First Used: ____

Remarks ____

Use ____

APPROVED FOR PROJECT BY: ____

**Asphaltic Concrete Job Mix Formula (03-22-0730)** - continued

An approved Asphaltic Concrete Job Mix Formula is required when a certified plant begins initial operations for a Department project. If any significant changes are made in the mixture, a new job mix formula must be submitted. This includes changes in materials, sources and material results, as well as modifications to any equipment which may affect the job mix formula.

Refer to the Department's latest Application of Quality Assurance Specifications for Asphaltic Concrete Mixtures and LA DOTD Mix Design Procedures for detailed information and policy for Asphaltic Concrete Job Mix Formulas.

| | |
|---|---|
| **METRIC / ENGLISH** M **(M or E)** | This entry field is located on the MATT Menu and is a required entry. Please note that results must be entered in the proper format based on the reporting unit selected, M or E. |

*JMF No.* *The Job Mix Formula Number consists of the Plant Code, Mix Code, and Sequence No. of the plant's mix design for the specific mix type.*

| | | |
|---|---|---|
| **Plant Code** | H312 | Plant Code must represent a valid, certified asphaltic concrete plant. Required entry. Plant Codes are located in the Plant Codes portion of this book. |
| **Mix Code** | 51 | The Mix Code identifies the type mix being used. Required entry. Mix Type codes are located in the Material Codes portion of this book. |
| **Seq. No.** | 160 | Sequence No. is assigned by the District Laboratory in numerical order starting with 001. Enter leading zeros if necessary. |

**Plant Type** 3 1=Batch Screenless 2=Batch Hot Bin 3=Drum Mixer 4=Continuous ADT/Lane _____ Mixing Time: Dry ___ Wet ___

Prod. Rate, kg/Batch (lb/Batch) _____ Mg/Hr (Tons/Hr) ___

F.A.P. No. _____ Proj. Contr. _____ Proj. Engr. _____

The appropriate plant type code is required to identify the type of production process used. Enter the Average Daily Traffic, Mixing Times and Production Rate. Blanks are permitted and leading zeros may be omitted. Also identify the F.A.P. No.(if applicable), Contractor and Project Engineer.

| | CODE | | SOURCE | | PERCENT | SP. GRAV. | FR. RATE |
|---|---|---|---|---|---|---|---|
| Asphalt Cement (AC) | 5411 | PAC-30 | 41917 | James Corp. | 4.0 | 1.03 | (1 - 4) |
| Crushed Aggregate | 4344 | 1"xo Novaculite | AA445 | Mid-State | 33.6 | 2.71 | 2 |
| Crushed Aggregate | 4344 | 1"xo Novaculite | AA445 | Mid-State | 38.4 | 2.71 | 2 |
| Screenings | | | | | | | |
| Reclaimed Materials | | | | | | | |
| Coarse Sand | 4310 | C. Sand | A3105 | Trinity | 17.3 | 2.67 | |
| Fine Sand | | F. Sand | AG011 | Speedy | 6.7 | 2.65 | |
| Anti-Strip (AS) | | AD-HERE LAZ | 57130 | ARR-MAZ | 0.6 | JMF Limits: | 0.5-0.7 |
| Lime | | | | | | | |
| Other | | | | | | | |
| Other | | | | | | | |

This portion completed by the Contractor.

**Asphaltic Concrete Job Mix Formula (03-22-0730)** - continued

**Material Code** All Material Codes must be valid codes within the proper subsystem. Refer to the MATT System Codes portion of this book for the individual lists of valid material codes. Identify the type of material in the blank spaces provided.

*Note: Material codes for Asphalt Cement are included in the Miscellaneous Subsystem.*

**Source Code** Source Codes for Asphalt Cement is a required entry and must be an active code listed on QPL-41.

Source Codes for Crushed Aggregate must be active codes listed on QPL-2 or on the Non-QPL Aggregate list for crushed shell.

Source Codes for Screenings and Coarse Sand must be active codes listed on QPL-2.

Source Codes for Reclaimed Materials and Fine Sand must be active codes listed on the Non-QPL aggregate listing.

Source Codes for Anti-Strip (AS) must be active codes listed on QPL-57.

Source Codes for Lime must be active codes listed on QPL-34.

Source Codes for Other must be active codes from the Miscellaneous Subsystem.

Identify the source of materials in the blank spaces provided.

*All the above source codes can be found in the QPL or Non-QPL Codes portion of this book.*

Percent Numeric, leading zeros may be omitted.

Spec. Grav. Include Specific Gravity in the blank spaces provided.

Friction Rate Numeric, must be 1 - 4. (Refer to DOTD Std. Specs. 1003.06) Friction Rating is required if Mix Code is 01, 05, 20, or 22.

| | MARSHALL TEST PROPERTIES | | | | | | |
|---|---|---|---|---|---|---|---|
| | Contractor's Results Average | 1 | 2 | 3 | 4 | Department Validation Average | JMF Limits |
| Spec. Gravity | 2.432 | | | | | | |
| Theo. Gravity | 2.534 | | | | | | |
| % Theo.Gravity | 96.0 | | | | | | |
| % Voids | 4.0 | | | | | | 3.0 - 5.0 |
| % VMA | 13.4 | | | | | | 13.0+ |
| % VFA | 70 | | | | | | 68 - 78 |
| Stability, kN (lb) | 12.90 | | | | | | 7.55 Design |
| Flow, 0.1 mm (1/100 in) | 23 | | | | | | 15 - 35 |

Contractor's results are completed by the Contractor. Enter the appropriate test values. All computer fields are numeric. Blanks are permitted and leading zeros may be omitted.

## Asphaltic Concrete Job Mix Formula (03-22-0730) - continued

| RECOMMENDED FORMULA mm/μm | In. | | LOOSE MIX RESULTS 1 | 2 | Avg. | JMF Limits |
|---|---|---|---|---|---|---|
| 63 | 2 ½ | | | | | |
| 50 | 2 | | | | | |
| 37.5 | 1 ½ | | | | | |
| 31.5 | 1 1/4 | | | | | |
| 25.0 | 1 | 100 | | | | 100 |
| 19.0 | 3/4 | 96 | | | | 90-99 |
| 12.5 | ½ | 83 | | | | 77-89 |
| 9.5 | 3/8 | 72 | | | | — |
| 4.75 | No. 4 | 56 | | | | — |
| 2.00 | No. 10 | 40 | | | | 34-45 |
| 425 | No. 40 | 22 | | | | — |
| 180 | No. 80 | 11 | | | | — |
| 75 | No. 200 | 5.0 | | | | 3.0-7.0 |
| %AC Extract. | | 4.0 | | | | 3.6-4.4 |
| % Crushed | | 100 | | | | 85 |
| Mix Temp.C (F) | | 157 | | | | 143-171 |
| %AC (Met/Sc) | | 4.0 | | | | 3.9-4.1 |
| %AS (Meter) | | 0.6 | | | | 0.5-0.7 |

**DEPARTMENT RESULTS**

| | |
|---|---|
| Adjustment Factor | 1.00 |
| Tensile Str.,Control, kPa (PSI) | 1171 |
| Tensile Str.,Ratio (TSR), % | 87 |
| Ross Count, % (T 195) | 100 |
| % Ret. Asph. Coating (TR 317) | |
| Effective AC, % | |
| Absorbed AC, % | |
| % Natural Sands | 25 |
| Sand Equivalent | 72 |
| Moisture Content of Mix, % | |
| Opt. Mixing Temp. C (F) | |
| Opt. Compaction Temp.C (F) | |
| Abson Recov.,Pa•S(Poises) | |

The appropriate Recommended Formula values and JMF Limits are complete by the Contractor. The Department Results are completed by the District Laboratory. All computer fields are numeric, blanks are permitted and leading zeros may be omitted.

**Submitted for the Contractor by:** 0532 Signature Date: 07-07-97

Proposal Approved ( Yes No ) Lab. _____ Date: _____

**Approved ( Yes No )** _____ Lab. Engr. _____ Date: _____

**Revised Specs.:** _____ **Date First Used:** _____

Remarks

Use

**APPROVED FOR PROJECT BY:** _____

The Contractor's Certified Technician shall enter the Contractor Code, sign, date the form, and submit it to the Department for initial approval. Contractor Codes are located in the Contractor Codes portion of this book.

*Note: If a Contractor Code does not exist, the District Laboratory shall request a contractor code from the Materials Standards Unit.*

The District Laboratory Engineer shall complete the Approval area verifying the mix type meets specification requirements and that all codes are correct and valid. Refer to the Department's latest Application of Quality Assurance Specifications for Asphaltic Concrete Mixtures for validation process.

Enter any applicable comments pertaining to the mix in the Remarks field. This is a 54 character alphanumeric field.

Identify where the mix is going to be used in the Use field. This is a 54 character alphanumeric field.