# ATTACHMENT 10

# DETAILED SPECIFICATIONS

# COLD PATCH

# IFB #23148

# Contents

# ITEM 15402.2010 - STOCKPILE PATCHING MATERIAL
# DETAILED SPECIFICATIONS – COLD PATCH

## 1 DESCRIPTION:

Stockpile patching material is a mixture composed of aggregate and bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

## 2 MATERIALS REQUIREMENTS:

### A. Aggregates

Fine aggregate shall conform to Section 703-01, Fine Aggregate. Coarse aggregate shall conform to Section 703-02, Coarse Aggregate. Crushed stone, crushed gravel, or approved crushed slag may be used.

### B. Mineral Filler

Mineral filler, if used, shall conform to the requirements of Section 703-08, Mineral Filler.

### C. Bituminous Material

The bituminous material shall conform to the requirements of Section 702, Bituminous Materials, or the Producer may elect to use an alternative bituminous material with or without modifying agents. Prior approval for the use of alternative materials shall be obtained from the Director, Materials Bureau, or agency authorized representative. For any bituminous material not listed in Section 702, the Producer shall provide specifications for the alternative material to the Materials Bureau.

### D. Anti-Stripping Mixtures

An anti-stripping agent, approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

## 3 COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted in Table 1 (see below). The Producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the Producer prior to production. The following information shall be provided with the Job Mix Formula submission:

1. Aggregate gradation band and aggregate types.
2. Bituminous Material - amount and type.
3. Description and quantities of additives.
4. Temperature ranges for material preparation

**TABLE 1 - STOCKPILE PATCHING MATERIAL**
**GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES**

| Sieve Size | Coarse Mix | | Intermediate Mix | | Fine Mix | |
|---|---|---|---|---|---|---|
| | % Passing | Tolerance [1] | % Passing | Tolerance [1] | % Passing | Tolerance [1] |
| **1 inch** | 100 | - | - | - | - | - |
| **1/2 inch** | 95-100 | - | 100 | - | 100 | - |
| **1/4 inch** | 55-75 | ±5 | 90-100 | - | 90-100 | - |
| **1/8 inch** | 15-40 | ±6 | 12-40 | ±6 | 35-60 | ±6 |
| **No. 80** | 0-5 | ±2 | 0-5 | ±2 | 2-10 | ±3 |
| **No. 200** | - | - | - | - | 0-5 | ±2 |
| **Bituminous Material %[2]** | 4.0 – 7.5 | ±0.4 | 4.0 – 8.0 | ±0.4 | 5.5 – 8.0 | ±0.4 |

[1] All aggregate percentages are based on the total weight of the aggregate.

[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives

# ITEM 15402.2010 - STOCKPILE PATCHING MATERIAL (Cont'd)
# DETAILED SPECIFICATIONS – COLD PATCH

## 4 PREPARATION OF MIXTURES:

Stockpile patching material shall be produced using one of the following methods:

### A. Hot Mix Asphalt Batch Plant

*Material shall be provided in accordance with the specifications for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein.*

Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

### B. Portable Pugmill

*Material shall be provided in accordance with the specifications for Section 302 – Bituminous Stabilized Course of the New York State Department of Transportation, Standard Specifications, except as modified herein.*

The moisture content requirement shall be waived.

## 5 INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of the preparation of mixtures. If inspection is not performed at the time of mixture preparation, samples from the stockpile will be tested by the Department, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

The following stripping test shall be conducted on the plant mixed material:

### A. Stripping Test

A suitable size sample of the stockpile patching material shall be permitted to cure at normal laboratory temperature for at least 24 hours after which it shall be placed in a glass jar, fitted with a tight cover, and completely covered with distilled water. The jar and contents shall then be allowed to stand for a period of 24 hours at normal laboratory temperature (approximately 70ºF). The sample shall then be shaken vigorously for a period of 15 minutes. 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 shall be visually examined for stripping of the bituminous film from the aggregate. The aggregate surface shall be at least 90 percent coated with the bituminous film.

The initial approval of a mixture or the initial acceptance of material shall in no way preclude further examination and testing if unsatisfactory results are achieved. The acceptance at any time shall not bar its future rejection.

# ITEM 15402.2030 – MODIFIED STOCKPILE PATCHING MATERIAL DETAILED SPECIFICATIONS – COLD PATCH

## 1 DESCRIPTION:

Modified stockpile patching material is a mixture composed of aggregate and modified bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

## 2 MATERIALS REQUIREMENTS:

### E. Aggregates

Fine aggregate shall conform to Section 703-01, Fine Aggregate. Coarse aggregate shall conform to Section 703-02, Coarse Aggregate. Crushed stone, crushed gravel, or approved crushed slag may be used.

### F. Mineral Filler

Mineral filler, if used, shall conform to the requirements of Section 703-08, Mineral Filler.

### G. Bituminous Material

The bituminous material shall be one of the brand names identified on the Department's Approved List for Materials and Equipment. This list can be found on the Department's website, www.nysdot.gov under Publications.

### H. Anti-Stripping Mixtures

An anti-stripping agent, approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

## 3 COMPOSITION OF MIXTURES:

The aggregate gradation and bituminous material quantities shall meet the requirements noted in Table 2 (see below). The Producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the Producer prior to production. The following information shall be provided with the Job Mix Formula submission:

1. Aggregate gradation band and aggregate types.
2. Bituminous Material - amount and type, including any additives.
3. Description and quantities of additives.
4. Temperature ranges for material preparation

**TABLE 2 – MODIFIED STOCKPILE PATCHING MATERIAL**
**GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES**

| Sieve Size | General Limits | Job Mix Formula |
|---|---|---|
| | % Passing | Tolerance [1] |
| 1/2 inch | 100 | - |
| 1/4 inch | 90-100 | - |
| 1/8 inch | 12-37 | ±6 |
| No. 80 | 2-10 | ±3 |
| No. 200 | 0-2 | - |
| Bituminous Material %[2] | 5.0 – 7.0 | ±0.4 |

[1] All aggregate percentages are based on the total weight of the aggregate.

[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives

# ITEM 15402.2030 – MODIFIED STOCKPILE PATCHING MATERIAL (Cont'd)
# DETAILED SPECIFICATIONS – COLD PATCH

## 4 PREPARATION OF MIXTURES:

Modified stockpile patching material shall be produced using one of the following methods:

### C. Hot Mix Asphalt Batch Plant

*Material shall be provided in accordance with the specifications for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein.*

Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

### D. Portable Pugmill

*Material shall be provided in accordance with the specifications for Section 302 – Bituminous Stabilized Course of the New York State Department of Transportation, Standard Specifications, except as modified herein.*

The moisture content requirement shall be waived.

## 5 INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of the preparation of mixtures. If inspection is not performed at the time of mixture preparation, samples from the stockpile will be tested by the Department, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

The following stripping test shall be conducted on the plant mixed material:

### B. Stripping Test

A suitable size sample of the plant mixed material shall be permitted to cure at normal laboratory temperature for at least 24 hours after which it shall be placed in a glass jar, fitted with a tight cover, and completely covered with distilled water. The jar and contents shall then be allowed to stand for a period of 24 hours at normal laboratory temperature (approximately 70°F). The sample shall then be shaken vigorously for a period of 15 minutes. The water shall then be poured from the jar and the sample removed to a flat surface and permitted to air dry after which it shall be visually examined for stripping of the bituminous film from the aggregate. The aggregate surface shall be at least 90 percent coated with the bituminous film.

The initial approval of a mixture or the initial acceptance of material shall in no way preclude further examination and testing if unsatisfactory results are achieved. The acceptance at any time shall not bar its future rejection.

# ITEM 15402.2040 – FIBER REINFORCED STOCKPILE PATCHING MATERIAL DETAILED SPECIFICATIONS – COLD PATCH

## 1 DESCRIPTION:

Fiber reinforced stockpile patching material is a mixture composed of aggregate, polymer fibers and bituminous material. The material shall be capable of storage in a stockpile and remain uniform, workable and have satisfactory setting properties at the time of delivery.

## 2 MATERIALS REQUIREMENTS:

### A. Aggregates

Fine aggregate shall conform to Section 703-01, Fine Aggregate. Coarse aggregate shall conform to Section 703-02, Coarse Aggregate. Crushed stone, crushed gravel, or approved crushed slag may be used.

### B. Mineral Filler

Mineral filler, if used, shall conform to the requirements of Section 703-08, Mineral Filler.

### C. Bituminous Material

The bituminous material shall conform to the requirements of Section 702, Bituminous Materials, or the Producer may elect to use an alternative bituminous material with or without modifying agents. Prior approval shall be obtained from the Director, Materials Bureau, or agency authorized representative, for the use of alternative materials. For any bituminous material not listed in Section 702, the Producer shall provide specifications for the alternative material to the Materials Bureau.

### D. Polymer Fiber

The polymer fiber shall be one of the brand names identified on the Department's Approved List for Materials and Equipment. This list can be found on the Department's website, www.nysdot.gov under Publications. Polymer fiber material shall be ¼ inch (nominal) long and be incorporated into the mix at the mixing plant in the quantities noted below.

### E. Anti-Stripping Mixtures

An anti-stripping agent approved by the Director, Materials Bureau, or agency authorized representative, shall be used as needed to meet the stripping test requirements. This may be incorporated with the bituminous material at the terminal or at the mixing plant.

## 3 COMPOSITION OF MIXTURES:

The aggregate gradation, fiber and bituminous material quantities shall meet the requirements noted in Table 3 (see next page). The producer shall submit a Job Mix Formula to the Department's Regional Materials Engineer, or agency authorized representative, who has jurisdiction over the plant in which the material is to be produced. An approved Job Mix Formula must be received by the producer prior to production. The following information shall be provided with the Job Mix Formula submission:

1. Aggregate gradation band and aggregate types.
2. Bituminous Material - amount and type.
3. Fiber Material - description and quantity.
4. Description and quantities of additives.
5. Temperature ranges for material preparation.

# ITEM 15402.2040 – FIBER REINFORCED STOCKPILE PATCHING MATERIAL DETAILED SPECIFICATIONS – COLD PATCH (Cont'd)

## 3 COMPOSITION OF MIXTURES: (Cont'd)

| TABLE 3 – FIBER REINFORCED STOCKPILE PATCHING MATERIAL GENERAL LIMITS AND JOB MIX FORMULA TOLERANCES | | | | | | |
|---|---|---|---|---|---|---|
| **Sieve Size** | **Coarse Mix** | | **Intermediate Mix** | | **Fine Mix** | |
| | **% Passing** | **Tolerance [1]** | **% Passing** | **Tolerance [1]** | **% Passing** | **Tolerance [1]** |
| **1 inch** | 100 | - | - | - | - | - |
| **1/2 inch** | 95-100 | - | 100 | - | 100 | - |
| **1/4 inch** | 55-75 | ±5 | 90-100 | - | 90-100 | - |
| **1/8 inch** | 15-40 | ±6 | 12-40 | ±6 | 35-60 | ±6 |
| **No. 80** | 0-5 | ±2 | 0-5 | ±2 | 2-10 | ±3 |
| **No. 200** | - | - | - | - | 0-5 | ±2 |
| **Bituminous Material %[2]** | 4.0 – 7.5 | ±0.4 | 4.0 – 8.0 | ±0.4 | 5.5 – 8.0 | ±0.4 |
| **Fiber % [3]** | 0.3 | - | 0.3 | - | 0.3 | - |

[1] All aggregate percentages are based on the total weight of the aggregate.

[2] Bituminous Material (asphalt residue) percentage is based on the total weight of the mix and shall include any additives

[3] Fiber percentage is based on the total weight of the mix.

## 4 PREPARATION OF MIXTURES:

Fiber reinforced stockpile patching material shall be produced using a hot mix asphalt batch plant in accordance with the specification for Section 401 - Plant Production of the New York State Department of Transportation, Standard Specifications, except as modified herein.

Aggregate shall be introduced into the pugmill at a temperature which eliminates free moisture on the aggregate surface. The mixture temperature shall be no greater than 212°F. Automatic batch proportioning and recording equipment is not required.

The fibers shall be pre-weighed and pre-packaged according to batch size, and added in whole units directly into the pugmill before the asphalt is discharged into the pugmill. The net mixing time shall be sufficient to insure uniform coating after all materials are in the pugmill.

## 5 INSPECTION, TESTING & ACCEPTANCE:

The Producer shall contact the Regional Materials Engineer, or agency authorized representative, to arrange for inspection of the preparation of mixtures. If inspection is not performed at the time of mixture preparation, samples from the stockpile will be tested by the Department, or agency authorized representative, to determine the acceptability of the mixture prior to use for patching.

The following stripping test shall be conducted on the plant mixed material:

### A. Stripping Test

A suitable size sample of the plant mixed material shall be permitted to cure at normal laboratory temperature for at least 24 hours after which it shall be placed in a glass jar, fitted with a tight cover, and completely covered with distilled water. The jar and contents shall then be allowed to stand for a period of 24 hours at normal laboratory temperature (approximately 70°F). The sample shall then be shaken vigorously for a period of 15 minutes. The water shall then be poured from the jar and the sample removed to a flat surface and permitted to air dry after which it shall be visually examined for stripping of the bituminous film from the aggregate. The aggregate surface shall be at least 90 percent coated with the bituminous film. Fibers stripped of bituminous material shall not be included as part of the determination of bituminous material stripping from aggregate surfaces.

The initial approval of a mixture or the initial acceptance of material shall in no way preclude further examination and testing if unsatisfactory results are achieved. The acceptance at any time shall not bar its future rejection.