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| REVIEW OF NEW SPECIFICATION OR SPECIFICATION CHANGE  | 705-2 |
| **Specification Section No.:** 705 | **Item:** Preformed Joint Fillers |
| **Originating Office:** Materials and Geotechnical Branch | **By:** Goldbaum/Schiebel |
| **Date Sent For Review:** August 7, 2017 | **Date Comments Due: September 7, 2017** |
| Submit response to: STANDARDS AND SPECIFICATIONS UNIT, DIVISION OF PROJECT SUPPORT 4TH FLOOR, CDOT HEADQUARTERS |
| **Vote****/N** | **Concurrent Reviews – Others Commenting** | The attached Draft Specification is submitted for your review and comments. If not returned by Date Comments Due, the draft specification will be considered to be approved unless the Standards and Specifications Unit of the Project Development Branch [(303) 757-9474, (303) 757-9402] is advised otherwise.**REMARKS:** If these proposed changes are approved, our unit will issue these in a new sample project special provision for use with the 2017 Edition of the Standard Specifications. |
|  | **Spec Committee Members:** |  **✓** |
|  | Co-Chairman: Lacey |  |
|  | Region 1: Quirk |  |
|  | Region 1: Lucerna |  |
|  | Region 2: Phillips |  |
|  | Region 3: Jean |  |
|  | Region 4: Boespflug |  |
|  | Region 5: Valentinelli |  |
|  | Project Development: Vacant |  |
|  | Specifications: Brinck |  |
|  | Bridge: Hasan |  |
|  | Contracts & Market Analysis: Eddy |  |
|  | Materials: Schiebel |  |
|  | Traffic Engineering: Matthews |  | REVIEWER COMMENTS:( ) Approved ( ) Disapproved ( ) ModifiedIf disapproved or modified, give reason why and show any modifications on the attached draft copy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_ Name/Signature Date |
|  | Maintenance: Weldon |  |
|  | FHWA: Larson |  |
|  | Attorney General: Milan |  |
|  |  |  |
|  | **Others:** |  |
|  | Colorado Contractors Assoc.: Moody |  |
|  |  |  |
|  | **Technical Committees:** |  |
|  | PDAC |  |
|  | Drainage Advisory Committee (DAC) |  |
|  | Water Quality Advisory Committee (WQAC) |  |

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| **COLORADO DEPARTMENT OF TRANSPORTATION****SUBMITTAL OF NEW SPECIFICATION OR SPECIFICATION CHANGE** | Log No. (Assigned by Standards and Specifications Unit) 705-2 |
| TO: Standards & Specifications Unit Project Development Branch | FROM:Bill, Schiebel, Materials and Geotechnical Branch Manager(Region, Branch or Technical Committee) |
| SPECIFICATION SECTION NO.705 | ITEMJoint Materials | PriorityRoutine Fast |
| Reason for this new or changed specification:It was recommended to develop specifications that would allow a polypropylene foam alternate for the current bituminous preformed joint filler material.The Materials Advisory Committee approved this revision to the Standard Specification on July 12th, 2017. |
| New or Revised Specification:We are recommending the Department use the attached as a Project Special Provision on applicable PCCP projects advertised after October 1st, 2017. |
| NOTE: See Procedural Directive 513.1 for a description of appropriate specification development procedures. |

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**SECTION 705**

**JOINT, WATERPROOFING,**

**AND BEARING MATERIALS**

**705.01 Joint Fillers.**

1. *Joint Sealant with Backer Rod.* The joint sealant material shall be a silicone that is on the Department’s Approved Products List. The silicone materials shall be stored and applied in accordance with manufacturer’s recommendations, but they shall not be exposed to ambient temperatures in excess of 125 °F or stored in direct sunlight. The backer rod placed prior to joint sealant shall be constructed of closed cell polyethylene strand as approved.
2. *Preformed Joint Fillers.* Preformed fillers for joints shall conform to the requirements of AASHTO M 213 and shall be punched to admit the dowels where called for on the plans. The filler for each joint shall be furnished in a single piece for the full depth and thickness required for the joint unless otherwise authorized by the Engineer. When the use of more than one piece is authorized for a joint, the abutting ends shall be fastened securely, and held accurately to shape, by stapling or other positive fastening satisfactory to the Engineer.

As an alternative to the above, a semi-rigid, non-extruding, resilient type, closed-cell polypropylene foam, preformed joint filler may be used. This alternative joint filler shall conform to the following:

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| **Physical Property** | **Requirement** | **Test Method** |
| Water Absorption(volume %) | <1.0% | AASHTO T 42/ ASTM D545 |
| Compression Strength (to 50%) | 35-50 psi | AASHTO T 42/ ASTM D545 |
| Compression Recovery(from 50%)  | >80% | AASHTO T 42/ ASTM D545 |
| Extrusion(at 50%) | <0.1 in. | AASHTO T 42/ ASTM D545 |
| Density | >3.5 lbs./cu.ft. | AASHTO T 42/ ASTM D545 |
| Heat Resistance @ 392˚F± 5˚F (% shrinkage) | <1% | ASTM D5249 |
| UV Weathering(1000 hrs., Cycle A- 340 nm) | No observable change or cracking | ASTM D4329 |
| Freeze Thaw Resistance(300 cycles) | No visual change,<10% tensile strength change | ASTM C666 |

REVISION OF SECTION 705
PREFORMED JOINT FILLERS

Section 705 of the Standard Specifications is hereby revised for this project as follows:

Subsection 705.01 (b) shall include the following:

As an alternative to the above, a semi-rigid, non-extruding, resilient type, closed-cell polypropylene foam, preformed joint filler may be used. This alternative joint filler shall conform to the following:

|  |  |  |
| --- | --- | --- |
| **Physical Property** | **Requirement** | **Test Method** |
| Water Absorption(Volume %) | <1.0% | AASHTO T 42/ ASTM D545 |
| Compression Strength (to 50%) | 35-50 psi | AASHTO T 42/ ASTM D545 |
| Compression Recovery(from 50%)  | >80% | AASHTO T 42/ ASTM D545 |
| Extrusion(at 50%) | <0.1 in. | AASHTO T 42/ ASTM D545 |
| Density | >3.5 lbs./cu.ft. | AASHTO T 42/ ASTM D545 |
| Heat Resistance @ 392˚F± 5˚F (% shrinkage) | <1% | ASTM D5249 |
| UV Weathering(1000 hrs., Cycle A- 340 nm) | No observable change or cracking | ASTM D4329 |
| Freeze Thaw Resistance(300 cycles) | No visual change,<10% tensile strength change | ASTM C666 |