SECTION 107

JOINT FILLER AND SEALANTS

107.1 GENERAL

This section specifies the joint fillers and sealants that are applicable to concrete pavements, concrete channel linings, sidewalks, driveways, and other concrete surfacing applications.

107.2 REFERENCES

107.2.1 ASTM:

C 179	D 994
D 881	D 1751
D 217	D 1752
D 297	D 2007
D 412	D 2240
D 794	

107.2.2 AASHTO:

M 153	T 72
T 59	T 132

107.2.3 Federal Specifications:

LP-590
TT-S-0022 7E

107.3 JOINT FILLERS

107.3.1 PREMOLDED JOINT FILLER:

107.3.1.1 Expansion joint filler material shall consist of premolded strips of a durable resilient compound.

107.3.1.2 Where stiffness is lacking in premolded expansion joint filler, the strips shall be encased in saturated felt, asphalt impregnated cotton webbing, or other satisfactory material. Any material or fabric used for encasement shall be firmly sealed to the body of the joint filler and shall not be detached therefrom after immersion in water for a period of forty-eight hours.

107.3.1.3 Unless otherwise specified, premolded joint filler may be either Pre-molded Expansion Joint Filler (nonextruding and Resilient Bituminous types) conforming to the requirements of ASTM C 1751 or Preformed Expansion Joint Filler (Bituminous Type) conforming to the requirements of ASTM D 994.

107.3.1.4 Expansion joint filler material shall be manufactured in a workmanlike manner; and when ten percent or more of any lot or shipment is of nonuniform or improper construction, the entire lot or shipment may be rejected.

107.3.2 ASPHALT-LATEX JOINT FILLER:

107.3.2.1 Asphalt-latex joint filler shall consist of asphalt-latex emulsion and sodium fluosilicate furnished in separate containers and mixed on the site. The emulsion shall consist by volume of 60 parts 200-300 asphalt conforming to the requirements of Section 112, 40 parts of synthetic latex (GRS Type 4 and 5) to 10 parts of sodium fluosilicate, half strength. The emulsion and sodium fluosilicate shall not be mixed until the joint is ready to be filled. The amount of sodium fluosilicate to be mixed with the emulsion shall be approximately 3 percent to 5 percent by weight of the emulsion. The joint to be filled shall be thoroughly cleaned and surface dry.

107.3.2.2 The sealing compound shall consist of paving asphalt, Grade 200-300, conforming to the provisions of Section 112 of these specifications, emulsified with rubber latex in the presence of a suitable emulsifying agent; rubber latex designated as GRS Type 4; or any other approved type containing approximately 40 percent solids.

107.3.2.3 The resulting emulsion shall consist of a minimum of 55 percent of paving asphalt and a minimum of 36 percent of rubber latex and shall conform to the requirements set forth in the Table 107.3.2.3.

TABLE 107.3.2.3
ASPHALT-LATEX EMULSION JOINT SEALING COMPOUND

Specification Designation	Test Method	Limits	
Furol Viscosity at 77°F	AASHTO T 72	50-250 Seconds	Before adding gelling agent.
Sieve Test	AASHTO T 59	1% Max.	Before adding gelling agent.
Penetration at 77°F	ASTM D 217	50-250	The penetration test is made on a specimen prepared by stirring 5 percent of sodium fluosilicate into the asphalt-latex emulsion in a 6-ounce deep ointment can. The specimen is then allowed to stand in the air at a temperature of 77 degrees F ±2 degrees F for a period of 30 minutes and is then penetrated with a grease cone under a total load of 150 grams in accordance with ASTM D 217.
Elasticity		70% Min.	After addition of 5 percent of sodium fluosilicate and curing for 24 hours at 100 degrees F ±2 degrees F the specimen shall have an elastic recovery of not less than 70 percent.
Dehydration Loss		30 Max.	Twenty-five grams of emulsion, prior to adding the gelling agent, is placed in an 8-ounce flat ointment can and dehydrated in a suitable oven maintained at a temperature of 200 degrees F ±2 degrees F for a period of 24 hours. Weight loss from dehydration shall not exceed 30 percent of sample tested.
Time of "Set"		15 to 60	After mixing the emulsion with 1 percent to 4 percent by weight powdered sodium fluosilicate, the emulsion shall harden or develop a "set" in from 15 to 60 minutes, under field conditions.

107.3.2.4 Test Report and Shipment Certification for Asphalt-Latex Joint Fillers: Each shipment shall be accompanied by a certificate from the vendor that the material will comply with the above specifications and such certificate shall be delivered to the ENGINEER. The certificate shall show the shipment number for the entire lot of material contained in the shipment and shall also show a list which will enable the ENGINEER to identify each individual container by the vendor's batch number, with which each container shall be plainly marked.

107.3.2.5 Application for Asphalt-Latex Joint Filler:

107.3.2.5.1 At no time shall the emulsion be subjected to a temperature below 4 degrees F. Prior to application, the material may be warmed, if necessary, to permit proper pouring of the joints. The method of heating shall be carefully controlled to avoid overheating of any part of the container or mixture and under no circumstances shall the emulsion be heated to a temperature greater than 130 degrees F.

107.3.2.5.2 Joints and cracks shall be thoroughly cleaned by hand or mechanical means immediately in advance of pouring the filler material. When new pavement has been cured by the Pigmented Sealing Compound Method, the joints and cracks shall be thoroughly scrubbed by means of a wire brush or a cloth mop saturated with gasoline or by other approved means.

107.3.2.5.3 All joints and cracks shall be surface dry before application of the joint sealer. No sealer shall be placed during unsuitable weather or when the atmospheric temperature is below 50 degrees F or when weather conditions indicate that the temperature may fall to 32 degrees F within 24 hours. Immediately before pouring joints and cracks, the emulsion shall be mixed with from 1 percent to 4 percent by weight of powdered sodium fluosilicate.

107.3.2.5.4 The joints and cracks shall be filled in a neat and workmanlike manner by means of cornucopia pot or other approved method.

107.3.3 POLYETHYLENE FOAM JOINT FILLER:

107.3.3.1 Material: Polyethylene foam filler material shall conform to specification ASTM D 1751 and ASTM D 1752 and shall have a density of 2.5 to 3.0 pounds per cubic ft. It shall be constructed of closed cell, cross linked, polyethylene foam.

107.3.3.2 Installation: The closed cell polyethylene filler shall be cut to size and shape of the joint to be filled as shown on the plans and the Standard Details. The filler shall be held in place against previously poured concrete with metal or wood stakes or forms which shall be removed as newly placed concrete holds the filler in place. Nails or other fasteners are not to be driven into concrete mortar or nosing material for the purpose of holding filler material in place.

107.4 JOINT SEALANT

107.4.1 ETHYLENE VINYL ACETATE FOAM SEALANT (EVA FOAM):

107.4.1.1 Material:

107.4.1.1.1 EVA foam to be used to seal joints shall be preformed foam sealant per AASHTO M 153, Type II or III, ultra-violet resistant. It shall be a nonextruding expansion/contraction, waterproof material, closed cell, cross linked, with a density range of 2.5 to 3.5 pounds per cubic foot. EVA foam shall be used to seal joints where the width of joint to be sealed is 1 inch or greater. EVA foam sealants shall be 25 percent wider than the joint width and compressed into the joint per the manufacturer's recommendations.

107.4.1.1.2 The bonding agent to be used to bond EVA foam to concrete or mortar shall be a 100 percent solid 2 part epoxy which meets ASTM C 881, Type II, Grade 2, Class B and C as approved by the ENGINEER. The bonding agent shall be used according to the manufacturer's recommendations. Care shall be taken to assure that the bonding agent does not adhere to the exposed surface of the EVA foam sealant.

107.4.1.2 Preparation and Application:

107.4.1.2.1 Immediately prior to application joints shall be sand-blast-cleaned to remove laitance, curing compound, and other bond inhibitors. At the time of application, concrete must be cured at least 7 days and attain at least 80 percent of design strength. The vertical sides of the joint area to be sealed shall be clean, dry, smooth, sound, and free of any foreign material. The bottom of the area to be sealed, if concrete, shall be covered with a polyethylene bond breaker, minimum 1/16 inch thick, before applying the bonding agent to this vertical sides. The bonding agents shall be applied to completely cover both the nosing and the sealant surfaces which are to be bonded and to no other surface.

107.4.1.2.2 Sealant shall be extruded to the bottom of the joint groove and tooled to work the sealant into close contact with the joint surfaces to eliminate

air bubbles. Any sealant that does not cure properly, fails to establish a satisfactory bond, protrudes more than one half inch above the finished concrete surface adjacent to the joint, does not completely adhere to the sides of the joint, is damaged by the CONTRACTOR'S operations, or is not satisfactory in the opinion of the ENGINEER must be removed and the joint recleaned and resealed.

107.4.1.2.3 After the bonding agent has set, sealant that protrudes 1/8 to 1/2 inches shall be cut with a power sander to the concrete surface. The sealant will then be coated with two coats of ultra-violet proofing, opaque, vinyl coating, which will produce approximately 6 mils thickness, as approved by the ENGINEER.

107.4.2 TWO COMPONENT URETHANE SEALANT:

107.4.2.1 Materials:

107.4.2.1.1 Two Component Urethane Sealant to be used to seal joints shall meet Federal Specifications No. TT-S-0022 7E, Type I Class A (Pour Grade) or No. TT-S-0022 7E, Type II, Class A (Non-Sag). Two Component Urethane Sealant shall be used to seal expansion joints less than 1 inch in width.

107.4.2.1.2 The bonding agent to be used to bond the Two Compound Urethane Sealant to the concrete or mortar nosing shall be a one-component solvent based system, as furnished by the sealant manufacturer.

107.4.2.1.3 Urethane sealants shall not be placed when the temperature of the concrete or air is below 40 degrees F. The non-sag sealant shall be used in joints other than horizontal. Dimensions or urethane sealants shall be as shown on the drawings.

107.4.2.2 Preparation and Application: Two Component Urethane Sealants and Bonding Agents shall be installed in accordance with the manufacturer's recommendations and Subsection 107.4.1.2 of this specification.

107.4.3 ASPHALT RUBBER SEALANT:

107.4.3.1 Materials and Mixing (Method A)

107.4.3.1.1 Bituminous Material. The bituminous material shall be asphalt cement, having a maximum penetration of 120-150, complying with the requirements of Section 112.

107.4.3.1.2 The granulated crumb rubber (100 percent Vulcanized) shall meet the following requirements:

PASSING SIEVE	PERCENT
#8	100
#10	98 - 100
#30	0 - 10
#40	0 - 4

NOTE: The granulated crumb rubber shall be accepted if accompanied by the certificate of compliance from the supplier that the material has been tested during the grinding process and meets the gradation specified.

107.4.3.1.2.1 The specific gravity of the granulated rubber shall be 1.15 ± 0.02. The rubber material shall be free of fabric, wire, or other contaminating materials except that up to 4 percent of calcium carbonate may be included to prevent the particles from sticking together.

107.4.3.1.3 Diluent for diluting the asphalt cement and granulated crumb rubber mixture shall have a boiling point of not less than 350 F, and the temperature of the hot asphalt-rubber shall not exceed 350 F, at the time the diluent is added.

107.4.3.1.4 Mixing. The percentage of the granulated crumb rubber shall be 33 1/3 percent ± 2 percent of the asphalt weight.

107.4.3.1.4.1 The materials shall be combined as rapidly as possible for such a time and at such a temperature that the consistency of the mix approaches that of a semi-fluid material. The temperature of the asphalt cement shall be between 350 and 395 degrees F.

107.4.3.1.4.2 After the full reaction between the asphalt cement and the granulated rubber has occurred and before application, the mix may be cut back with diluents. The maximum amount of diluents used shall not exceed 7 1/2 percent by volume of the hot asphalt cement-granulated crumb rubber composition required for adjusting the viscosity for spraying.

107.4.3.1.4.3 In the event that a delay occurs after the full reaction has taken place, the material may be slowly reheated to an acceptable spraying temperature with no detrimental effect but, because

of the polymer reversion that can occur when the granulated crumb rubber is held at high temperature(s) for a prolonged time, the material shall not be reheated to temperatures above 350 degrees F.

107.4.3.2 Materials and Mixing (Method B):

107.4.3.2.1 Bituminous Material. The bituminous material shall be asphalt cement, having a maximum penetration of 120, complying with the requirements of Section 112 and shall be fully compatible with the ground rubber.

107.4.3.2.2 Rubber Extender Oil. The extender oil shall be a resinous, high flash point aromatic hydrocarbon meeting the following test requirements:

Viscosity, SSU @ 100 degrees F. (ASTM D 88)	2500 Min.
Flash Point, C.O.C., degrees F.	392 Min.
Molecular Analysis (ASTM D-2007)	
Asphaltenes, percent by weight	0.1 Max.
Aromatics, percent by weight	55 Min.

107.4.3.2.3 Rubber Components. The rubber shall be U.S. Rubber Reclaiming Company designation G 274, or approved equal meeting the following physical requirements:

107.4.3.2.3.1 Composition: The rubber shall be a dry, free flowing blend of 40 percent powdered reclaimed (that is, Devulcanized), rubber and 60 percent ground vulcanized rubber scrap with a high natural rubber content and shall be free from fabric, wire or other contaminants except that up to 4 percent of a dusting agent such as calcium carbonate may be included to prevent cracking of the particles.

107.4.3.2.3.2 Sieve Analysis:

Sieve No.	Percent Passing
8	100
30	60-80
50	15-40
100	0-15

107.4.3.2.3.3 Mill Test: When 40 to 50 grams of rubber retained on the No. 30 sieve are added to a tight set 6-inch rubber mill, the material shall band on the mill roll in one pass. This will indicate the presence of a suitable quantity of reclaimed, devulcanized rubber.

107.4.3.2.3.4 Natural Rubber Content. Minimum 30 percent by weight. (ASTM D-297).

107.4.3.2.4 Mixing. The Asphalt Rubber Blend shall be a combination of the asphalt cement, extender oil, and ground rubber mixed together at an elevated temperature in accordance with the following procedure and proportions:

107.4.3.2.4.1 Preparation of asphalt-extender oil mix. Blend the preheated asphalt cement (250-400 degrees F) and sufficient rubber extender oil, (usually from 2 to 6 percent), to reduce the viscosity of the asphalt cement to within the range of 600 to 1800 Poises at 140 degrees F, when tested in accordance with the requirements of AASHTO M 266. Mix thoroughly by recirculation, stirring, air agitation or other appropriate means.

107.4.3.2.4.2 Addition of Rubber. Increase the temperature of the asphalt cement-extender oil blend with appropriate heat exchanges to within the range of 350-425 degrees F, and then add an amount of specified ground rubber equal to 20 percent, ± 2 percent by weight of the total asphalt-rubber blend. Add the rubber as rapidly as possible and continue recirculating for a period of not less then 30 minutes after the incorporation of all the rubber.

107.4.3.2.4.3 Sufficient recirculation and/or stirring of the total combined material shall be maintained to provide good mixing and dispersion. Temperature of the total blend shall be kept between 350-425 degrees F.

107.4.3.3 Construction Requirements:

107.4.3.3.1 The equipment used for application shall be capable of maintaining a continuous uniform, homogeneous mixture throughout the sealing operation. The method and equipment for heating and preparing the asphalt-rubber mixture for application shall be so designed as to provide a continuous supply of the prepared mixture that will assure sealing operations without delays due to the mixing-heating operation. The equipment shall incorporate a mechanical mixing device within the heating unit such that a continuous mixing of the sealant compound is maintained.

107.4.3.3.2 The ENGINEER shall be satisfied that the material and the mixing process the CONTRACTOR proposes to use has been successfully used in similar circumstances on comparable projects.

107.4.3.3.3 Nozzles shall be of adequate design to provide for uniform application of the asphalt-rubber material without clogging, or other irregularities in distribution.

107.4.3.3.4 Should clogging or irregularities in distribution occur, operations shall cease until corrective action is effected.

107.4.3.3.5 Defective equipment shall be removed from the project.

107.4.3.3.6 Weather Limitations. Asphalt rubber joint sealant shall not be placed during wet or adverse weather, on a wet surface, or unless the atmospheric temperature is at least 40 degrees and rising, or when the wind conditions are such that a satisfactory seal cannot be achieved.

107.4.3.3.7 The ENGINEER will be the sole judge of when the mixed material has reached a consistency for application. Application shall proceed immediately after the proper consistency is attained.

107.4.3.3.8 Immediately prior to placing the sealant, the joints shall be cleaned of all loose particles, dust, and other deleterious substances by means of high velocity compressed air, or any other methods approved by the ENGINEER.

107.4.3.3.9 Only asphalt-rubber sealant shall be used to fill the joints.

107.4.3.3.10 No vehicular traffic will be permitted on the asphalt-rubber sealed joints until sufficient time has elapsed for the asphalt-rubber sealant to become non-tacky.

107.4.3.3.11 The ENGINEER shall be the sole judge as to when the joints are properly cleaned and sealed.

107.4.4 SILICONE RUBBER SEALANT: This work shall consist of cleaning the joint, and installation of low modulus silicone sealant in the roadway joints specified on the plans. The plans will designate the type of joint (transverse or longitudinal) and location of joint.

107.4.4.1 Materials: All materials shall meet the requirements of the following:

107.4.4.1.1 Silicone Sealant: Silicone sealant shall be furnished in a one-part silicone formulation. The compound shall be compatible with the surface to which it is applied. Acid cure sealants are not acceptable for use on concrete. Movement capability shall be +100 percent and -50 percent of the joint width. The physical requirements are:

107.4.4.1.1.1 Accessory Items: The backup material shall be compatible with the sealant or any component of the joint sealant system. No bond or adverse reaction shall occur between the backup material, sealant, or primer if primer is specified.

107.4.4.1.1.2 Test Requirements:

Tensile Stress: 150 percent Elogation 7 days cure @ 77 F ±3°F and 45-55 percent R.H.	45 psi maximum
Specific Gravity	1.01- 1.515
Durometer Hardness, Shore A: cured 7 days @ 77°F ±3°F and 45-55 percent R.H.	10-25 (0°F)
Shelf Life	6 mo. minimum from date of manufacture
Ozone and U.V. Resistance	No chalking, cracking, or bond loss after 5000 hours

Bond to concrete mortar 50 psi minimum mortar concrete air cured briquets days @ 77°F ±3°F

Tank Free Time 6 Hrs. minimum

Movement Capability and Adhesion – No adhesive or cohesive failure after 10 cycles at 0°F

107.4.4.1.1.3 Test Methods:

Tensile Stress	ASTM D-412 (DIE C)
Specific Gravity	ASTM D-794, Method A
Durometer Hardness	ASTM D-2240
Ozone and UV Resistance	ASTM D-793

107.4.4.1.1.4 Bond to Concrete Mortar:

Three briquets molded in accordance with AASHTO T-132 and moisture cured for at least 28 days shall be sawed in half, cleaned, and oven dried to a constant weight in an oven at 100 degrees C ± 5 degrees. After cooling, they shall be bonded with approximately 10 mils of silicone sealant and tested using clips meeting AASHTO T 132. They shall be tested in tension at a loading rate of .3 inch/minute.

107.4.4.1.1.5 Tack Free Time:

Prepare specimen in a mold with an area larger than the brass weight described below and 1/4 inch thick. Place a 30 gram brass weight 1-5/8 inch by one inch by 1/8 inch on a polyethylene strip applied to the specimen after they have cured for the specified time. After removing the weight, peel the polyethylene strip by pulling it at 90 degrees to the compound at a rate of 1 inch in 5 seconds. No material should adhere to the polyethylene when it is tack free.

107.4.4.1.1.6 Movement Capability and Adhesion:

Prepare 1 inch x 1 inch x 3 inch concrete blocks in accordance with ASTM C-719. A sawed face shall be used for bond surface. Seal 2 inch of block leaving 1/2 inch on each end of specimen unsealed. The depth of sealant shall be 3/8 inch and the width 1/2 inch. Cure the specimen 7 days in air at 77 degrees F ±3 degrees F and then 7 days in water at 77 degrees F ±3 degrees F. Subject sealant to movement in accordance with ASTM C 719. The rate of extension or compression shall be 1/8 inch per hour. One cycle is defined as extension to one inch width and return to the initial 1/2 inch width.

107.4.4.1.1.7 Certification: The manufacturer of the joint sealant shall furnish certification test results of each lot of the joint sealant material furnished to the project to meet all of the above requirements except the bond to cement mortar. Certification shall show use of primers where applicable.

107.4.4.1.1.8 Acceptance: Even though a sealant meets all requirements of the specification failure to perform adequately in actual use shall be just cause for rejection.

107.4.4.1.2 Bond-breaking Adhesive Tape shall be polyethylene and backer-rod shall be closed cell polyethylene. Backer-rod shall be of circular cross section with a diameter 25 percent greater than the joint width.

107.4.4.2 Construction Requirements:

107.4.4.2.1 Cleaning the Joint: The joints shall be thoroughly cleaned of all foreign material (oil, asphalt, curing compound, sealant adhesive, paint, rust, etc.), including existing sealant, if any. The CONTRACTOR may use any one or combination of methods below in his cleaning operation, except Method 2, sawing is to be used only if Method 1 will not properly clean the joint.

107.4.4.2.1.1 Method 1 - High Pressure Water Jet: The joint shall be thoroughly cleaned with a high-pressure water jet blaster (3000 psi at the tip) and other tools as necessary. After blasting, the joint shall be blown out with compressed air. This process shall be repeated until the joint is thoroughly cleaned of all foreign material, including old sealant, and a new, clean concrete face is exposed on the faces of the joint.

107.4.4.2.1.2 Method 2 - Sawing:

If this method of cleaning is selected (and approved as noted previously), the CONTRACTOR shall exercise utmost care to minimize enlarging the existing width of the joint. Sawing shall be limited to only exposed clean, new concrete faces on the joint with a maximum allowable cut of 1/16 inch on each face of the joint. All dust, sawing residue, and other contamination will be removed from the joint faces. If dry sawing with diamond or abrasive blades is used, the sawing residue shall be thoroughly removed by blowing out the joint and immediate area with compressed air. If wet sawing with diamond or abrasive blades is used, the resulting saw latence or slurry shall be completely removed from the joint and immediate area by flushing clean with a high-pressure jet of clean water. After flushing, the joint shall be blown out with compressed air and allowed to dry 4 hours minimum.

107.4.4.2.2 Installing Backer-Rod in Joint: Prior to placing the backer-rod, the joint must be thoroughly dry and clean. Any necessary cleaning, air blasting, or air-drying will be completed before placing backer-rod (and sealant). On joints less than 1 inch wide after cleaning, a round backer-rod of resilient material, compatible with silicone sealant, and slightly oversized to prevent movement during the sealing operation will be installed in the joint at the depth specified on the appropriate joint detail in the plans or as recommended by the sealant manufacturer. (The thickness of the backer-rod will be greater after squeezing it into the joint and some "rebound" may occur--allowance must be made for this to insure placing at correct depth.) On joints larger than 1 inch after cleaning, use a backup material cut from an approved resilient material which is compatible with silicone sealant.

107.4.4.2.3 Installing Silicone Sealant: The installation of the silicone sealant is to be done as soon after placing the backer-rod as reasonably possible to insure that joint is still clean and dry. In the event the joint does become contaminated, damp, or wet, the backer-rod is to be removed, the joint cleaned and dried, and backer-rod reinstalled prior to placing the sealant material. The sealant material used shall be a low modulus silicone

sealant meeting the movement requirements of Section 107.4.4.1.1. The temperature at time of placement must be 35 degrees F or higher. The silicone sealant shall be applied by pumping or manual means. If pumping is used, the pump shall be a sufficient capability to deliver the necessary volume of material to completely fill the joint to the specified width and height of sealant in one pass. The nozzle shall be of sufficient size and shape to closely fit into the joint and introduce the sealant inside the joint with sufficient pressure to prevent voids occurring in the sealant and to force the sealant into contact with the joint faces. The sealant after being placed shall be tooled to provide the specified recess depth and thickness and shape of sealant as shown on the plans. Sufficient force or pressure shall be applied to the sealant in this tooling operation to force the sealant against the joint faces to insure satisfactory wetting and bonding of the sealant to the joint faces. The silicone sealant is not self-leveling and will not position itself correctly in the joint under its own weight. The sealant shall be placed to reasonably close conformity with the dimensions and shape shown on the plans. Any unreasonable deviation will be cause for rejection and necessary corrective action will be made by the CONTRACTOR. See Sketch 107.4.4.2.3 for installation detail.

107.4.4.2.4 Cleaning Pavement: After a joint has been sealed, all surplus sealant or other residue on the pavement or structure surfaces shall be promptly removed.

107.4.4.2.5 Opening to Traffic: Traffic shall not be permitted over sealed joints until the sealant is tack free and until debris from traffic does not imbed into the sealant.

107.4.4.2.6 Special Requirements: The following special requirements apply to this work:

107.4.4.2.6.1 Air compressors used for cleaning joints shall be equipped with suitable traps capable of removing all surplus water and oil in the compressed air. The compressed air will be checked daily by the ENGINEER for contamination. No contaminated air shall be used. The compressor shall be capable of delivering compressed air at a continuous pressure of at least 90 psi.

107.4.4.2.6.2 Unless otherwise specified on the plans, the joints are to be resealed after any required pavement repair.

107.4.4.2.6.3 Any failure of the sealed joint due to (1) adhesion or cohesion failure of joint material (2) unsatisfactory or improper workmanship by CONTRACTOR (3) damage by CONTRACTOR's operations or public traffic will be cause for rejection, and the joint shall be repaired to ENGINEER's satisfaction at no additional cost to the OWNER.

107.5 POLYETHYLENE SHEET BEARING PLATE AND SLEEPER

107.5.1 MATERIAL: Ultra high molecular weight, high density, or low density polyethylene sheet to be used as a bearing plate or sleeper shall conform to Federal Specification LP-590. This material is only used for concrete channel expansion joints.

107.5.2 Installation: The polyethylene sheet shall be cut to size and shape of the horizontal surfaces to be covered. The concrete surface to be covered with polyethylene sheet shall be smooth and flat to within ±1/8 inch when checked with a 10 foot straightedge. The subgrade upon which the polyethylene sheet is to be placed shall not vary more than 1/4 inch from the specified grade when checked with a 10 foot straightedge.

107.6 PRECAUTION

The manufacturer's recommendation for clearance between surface of sealant to top of concrete or joint shall be closely observed. Certain sealants will fail if the joint is over filled and sealant is allowed to spread onto the concrete surface. All joint material that does not comply with the manufacturer's installation recommendations or these specifications shall be removed, joint cleaned and material correctly installed by the CONTRACTOR at no cost to the OWNER.

107.7 MEASUREMENT AND PAYMENT

Filler materials and sealants shall be considered as incidental to concrete joint treatment and no measurement or payment will be made for these materials and installation thereof.