



REQUEST for BID

Pavement Joint Repair for Runways and Taxiways

Bid Number: 1029

DUE DATE: May 30, 2019

DUE TIME: 2:00 pm (local)

INTRODUCTION

The Gerald R Ford International Airport Authority (GFIAA) is requesting bids for the purpose of contracting for crack and joint cleaning, sealing and repairs on designated areas of the runways and taxiways on the Air Operations Area (AOA). It is anticipated that GFIAA will invest approximately \$150,000 toward airfield joint repair annually. The duration of the agreement shall be for a period of three (3) years, commencing on June 30, 2019 and expiring on April 30, 2022. Two (2) optional one (1) year renewals will be available upon mutual written agreement of both parties.

This solicitation will be publicly opened at the Gerald R Ford International Airport Authority, located on the second floor of the Gerald R Ford International Airport Terminal Building at 5500 44th St SE, Grand Rapids, MI, 49512. All submissions will be sealed until the date and time specified, at which time they will be opened and read aloud.

The Gerald R. Ford International Airport (GFIA) is the second busiest airport in Michigan. The airport served over 3 million passengers in 2018 and over 8,000 travelers pass through GFIA each day. The Gerald R. Ford International Airport offers nonstop service to 27 major market destinations with more than 120 daily nonstop flights. The GFIA is managed and operated by the Gerald R. Ford International Airport Authority. GFIA generates over \$3.1 billion in annual economic output throughout West Michigan and employs over 1,500 people.

SOLICITATION AND PROJECT SCHEDULE

ACTIVITY	DATE
RFQ Issue Date	May 9, 2019
Question Deadline	May 28, 2019 at 2 pm
Submission Due Date	May 30, 2019 at 2 pm
Contract Start Date	June 30, 2019

GFIAA reserves the right to modify the deadline set forth in the above table in its sole discretion. Any such modifications will be stated in an addendum.

WORK SCOPE

GENERAL INFORMATION: To be in compliance with Federal Aviation Administration (FAA) Part 139, the Airport Authority is required to maintain pavement areas on the AOA. One aspect of this maintenance requirement includes joint cleaning and sealing. There are currently three (3) runways and approximately 30 taxiways that will be covered under this agreement. The transverse and longitudinal joints vary from ½” to 1½”. The work areas will vary in size. Some work areas may encompass an entire runway, while others may only consist of a portion of a taxiway or aircraft ramp parking areas. Spalls in need of repair can range in size from .5 square feet to 70 square feet.

SCOPE OF SERVICES:

- a) The Contractor shall provide all labor, materials and related equipment to provide pavement joint repair and pavement spall repair on runways and taxiways as designated by the Airport Authority. **This includes low profile barricades and runway closure Xs.**
- b) It will be the Airport Authority’s sole discretion to determine which of the proposed sealants/products and spall repair products will be used and where.
- c) The Airport Authority shall coordinate needed runway closures with the FAA and the Contractor.
- d) Contractor shall be ready to commence work within two (2) weeks of award.
- e) Contractor shall provide, in addition to the primary material kettle/pump and sweeper used for the job, a backup sweeper and kettle/pump which must be provided on-site for the duration of scheduled on-going work.
- f) Most work will be performed during normal business hours (8:00 A.M. – 5:00 P.M.), however, Contractor must be available to conduct midnight work on an as needed basis.
- g) The Contractor must designate at least one (1) individual to act as the main contact person for the Airport Authority to handle all issues pertaining to this contract. All contact information for this individual must be supplied to the Airport Authority within five (5) business days from the commencement of this contract. This individual, in conjunction with an Airport Authority appointed personnel shall measure each project prior to commencement to ensure proper invoice quantities.
- h) The Contractor must supply the Airport Authority’s Maintenance Division with a list of qualified personnel performing services under this contract. As changes occur, the Contractor must supply an updated list of qualified personnel throughout the duration of the contract.
- i) **COST REDUCTIONS:** Opportunities for cost savings and reductions must be presented to the Airport Authority’s Maintenance Division as soon as they may benefit the Airport Authority.
- j) If, during the term of this agreement, the Contractor is required to install a preformed expansion joint, then the Contractor will be responsible for having the manufacturer representative onsite during the installation to insure that the preformed expansion joint is being installed per the manufacturer’s specification.
- k) All other related services as required.

SPECIFICATIONS: Sealant Product to be used for the job shall be Jet Fuel Resistant (JFR).

- a) Contractor shall ensure that all work areas are thoroughly cleaned, swept and inspected by the on-duty operations agent at that time to eradicate any Foreign Objects and Debris (FOD) issues on the AOA.
- b) For concrete surfaces, all joints are required to be sandblasted. All joints in asphalt surfaces are required to be air blasted. **Wire brushing/wheeling is not an acceptable alternative.**
- c) All hot pour joint sealant material used under this contract must have a cure rate of approximately 30 minutes. (Note: Cure rate requirement is due to the limited time that project areas may be closed.)
- d) Pavement spalls will need to be repaired prior to joints being sealed. The spalls shall be identified and quantified at the beginning of each project.

See Attachment A for specifications on materials, construction methods, equipment, etc.

Contractor Responsibilities for barricading

- i) The Contractor shall supply their own low profile barricades complete with sand bags or water filled for weight and flashing red lights, one per barricade.

- (1) Approximately 30 barricades on average, will be needed per project.
 - (2) Low profile barricades must meet Federal Aviation Administration (FAA) standards.
 - (3) The Airport Authority reserves the right to require the contractor to provide additional barricades depending upon the type of airfield and/or road closure.
- ii) The Contractor shall supply their own lighted runway closure Xs, 2 Xs per runway.
- (1) The lighted runway closure Xs shall be fueled and maintained by the contractor.
 - (2) Lighted runway closure Xs must meet FAA standards.
 - (3) If the Contractor cannot supply their own lighted runway closure Xs they may be rented from the Airport at a cost of \$200 per day to be deducted from the project invoice.

Specifications for Lighted Runway Closure X can be found at the following website:

http://www.faa.gov/documentLibrary/media/advisory_circular/150-5345-55A/150_5345_55a.pdf

Specifications for low profile barricades can be found at the following website:

http://www.faa.gov/documentLibrary/media/Advisory_Circular/150_5370_2f.pdf

REQUESTS FOR INFORMATION

Questions regarding this solicitation are to be submitted in writing to purchasing@grr.org prior to 2 pm on May 28, 2019.

GFIAA reserves the right to publish and respond to an inquiry, respond directly to the inquirer without publishing, or not respond to the inquiry at its sole discretion.

It is the Respondent's responsibility to become familiar with and fully informed regarding the terms, conditions, and specifications of this solicitation. Lack of understanding or misinterpretation of any portions of this solicitation shall not be cause for withdrawal after opening or for subsequent protest of award.

Addendums will only be published by the GFIAA Purchasing Department and available for review at www.flyford.org.

AIRPORT SECURITY

It is essential that during the performance of this contract that airport security be maintained and that construction operations conform to Airport security requirements.

Airport-Issued Identification Badges -

Identification badges are issued by the Airport Police Department to provide unescorted access to authorized employees performing job duties within the airport. Contractor personnel requiring badges include the project manager, security person, job site foreman, superintendents and all regular job site workers. Personnel at the construction site shall be badged at all times. The Contractor assumes responsibility for the conduct of all personnel working at the construction site and on airport property. All personnel within the Secured Area must display an airport-issued identification badge or be escorted by personnel with a badge who has been granted escort privileges. Identification badges must be worn on an individual's outermost garment and above the waist at all times.

The Airport encourages all Contractor personnel to be badged. **An unbadged person is to be under escort at all times.** This will be strictly enforced.

Badges are the property of the Airport and must be returned promptly upon completion of a subcontractors work, individual termination, or project completion. Failure to return badges may result in the Contractor being declared nonresponsive and ineligible for future Airport contracts.

Pre-Badging Requirements for General Contractor -

Contractor should coordinate badge requirements with the Airport Project Manager. DO NOT WAIT UNTIL THE LAST MINUTE. The following documents are required before the Contractor begin the badging process for themselves, their subcontractors or their employees:

1. Project Letter from Contractor – Letter must include the Project Name with Start Date and estimated End Date, PLUS a list of all Subcontractors (if any).
2. Authorized Signer Letter(s) – Contractors/subcontractors will designate one or more individuals to be Authorized Signers for badge enrollments. The Authorized Signer letter must be on company letterhead. An Authorized Signer must obtain an airport badge prior to attending signatory training which is administered by the Airport Security Coordinator. The badging process is outlined below.

Badging Process –

The badging process requires two visits to the Airport Police office for each applicant.

1. Badge Application and Background Checks

The process is initiated with the Authorized Signatory. They will be enrolling the applicant in the airport's SAFE Signatory Portal. Once enrolled and submitted, each applicant must make an initial appointment with the airport badging office. (www.grrbadging.as.me)

As outlined in the appointment information, each individual is required to provide 2 pieces of acceptable ID, as well as provide a completed GRR Fingerprint Application. Information about acceptable IDs and the GRR Fingerprint Application can be found on the badging services page: <http://www.grr.org/badging-services.php>

The airport will perform two background checks on the applicant:

- a. A security threat assessment (STA) is a name verification background check conducted by the Transportation Security Administration (TSA).
- b. A criminal history records check (CHRC) is a fingerprint-based background check to determine if personnel have been convicted of a felony within the last ten (10) years. Background check results can take anywhere from two days to two weeks to be completed.
The Contractor's Authorized Signatory will be notified once the background checks have been completed and approved. The Authorized Signatory will notify the individual and have them schedule their assigned appointment for Badge Training and Issuance.

2. Training and Badge Issuance

The applicant will make an appointment at www.grrbadging.as.me for their assigned training and badge issuance.

Training may include the following depending on which privileges the Authorized Signatory assigned during enrollment:

- a. SIDA training
- b. Non-movement driver's training

Each training takes approximately 45 minutes to complete. Once completed and passed, the individual will receive their ID.

3. Authorized Signatory Training (IF APPLICABLE)

If an individual will be designated as an Authorized Signatory for their company, they will need to schedule an appointment for Authorized Signatory Training with the Airport Security Coordinator. This is typically handled through communication with the original Authorized Signatory and can only be completed after they have received their badge.

All initial badging fees will be at no cost to the Contractor. If an ID badge is lost, stolen, or otherwise unaccounted for immediate notify Airport Communications at 616.233.6055. The ID badge replacement fee is \$50.00. The badge holder is responsible for the ID badge replacement fee.

TERMS AND CONDITIONS

GFIAA reserves the right to require that its standard terms and conditions apply to any actual order placed in response to a Respondent's submission. No attempt to modify GFIAA's Standard Terms and Conditions shall be binding, absent agreement on such modification in writing and signed by GFIAA.

No payment shall be made to the Respondent for any extra material or services, or of any greater amount of money than stipulated to be paid in the contract, unless changes in or additions to the contract requiring additional outlay by the Respondent shall first have been expressly authorized and ordered in writing by contract amendment or otherwise furnished by the GFIAA.

The intent of these specifications is to promote a properly designed and all-inclusive response. Any requirements not in the specifications, but which are needed for such a response, are to be included in the submission.

The Respondent shall not discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or disability that is unrelated to the individual's ability to perform the duties of a particular job or position.

The Respondent shall observe and comply with all applicable federal, state, and local laws, ordinances, rules and regulations at all times during the completion of any contract with the GFIAA.

The terms of this request shall be interpreted, construed and enforced pursuant to the laws of the State of Michigan, and the Parties irrevocably consent to the jurisdiction of the federal and state courts presiding in Michigan.

The GFIAA is tax exempt and a regional airport authority organized under 2015 P.A. 95, being MCL 259.137 et. seq.

Vendor Representation and Warranty Regarding Federal Excluded Parties List: The Respondent acknowledges that the GFIAA may be receiving funds from or through the Federal Government; such funds may not be used to pay any Respondent on the Federal Excluded Parties List (EPLS). The Respondent represents and warrants to the GFIAA that it is not on the Federal EPLS. If the Respondent is in non-compliance at any time during execution or term of this agreement (including any extensions thereof), the Respondent shall be in breach and the GFIAA shall be entitled to all remedies available to it at law or equity, specifically including but not limited to recovery of all moneys paid to the Respondent, all consequential damages (including the loss of grant funding or the requirement that grant funding be returned), and attorney fees (including the costs of in-house counsel) sustained as a result of the Respondent's non-compliance with this warranty and representation.

Pursuant to the Michigan Iran Economic Sanctions Act, 2012 P.A. 517, by submitting a bid, proposal or response, Respondent certifies, under civil penalty for false certification, that it is fully eligible to do so under law and that it is not an "Iran linked business," as that term is defined in the Act.

Insurance requirements are posted on the Documents and Forms page of the GFIAA website within the Purchasing Terms and Conditions document

Termination For Cause: Should the respondent fail to perform the Work as required by and in accordance with the schedule or time requirements, or otherwise violate any of the terms set forth in the Solicitation Request, it shall constitute breach of the Contract. Other than in force majeure situations, Respondent shall have five (5) calendar days to cure a breach of the Contract (the "Cure Period") following issuance of GFIAA written notice. Failure to cure a breach of the Contract within said Cure Period shall allow the GFIAA to, without further notice to the Respondent, declare the Contract terminated and proceed with the replacement of the Respondent and the GFIAA shall be entitled to all remedies available to it at law or in equity including a claim against any required payment/performance bonds.

Termination Without Cause: Notwithstanding any other provision, at any time and without cause, GFIAA shall have the right, in its sole discretion, to terminate the contract by giving sixty (60) days written notice.

Although it is the intent to contract with one provider, the GFIAA reserves the right to contract with alternate sources if the Respondent is unable or unwilling to service its obligation, or it is deemed by GFIAA to be in its best interest to use alternate sources.

Assignment: Neither party shall assign or delegate any of its rights or obligations under this Agreement without the prior written consent of the other party.

Respondent warrants that they are an authorized provider of products or services of his/her submission.

MICHIGAN FREEDOM OF INFORMATION ACT

Information submitted in this solicitation is subject to the Michigan Freedom of Information Act and may not be held in confidence after the Respondent's submission is opened. A submission will be available for review after the project has been awarded.

GFIAA cannot assure that all of the information submitted as part of or peripheral to the Respondent's submission will be kept confidential. Any Respondent submission language designated as confidential is considered automatically invalid and void. GFIAA is subject to the Michigan Freedom of Information Act, which prohibits it from concealing information on or associated with responses, successful or unsuccessful, once they are opened.

REFERENCES

Provide three (3) references of current/past customers who are able to verify the quality of products and/or services your company provides for work of similar size and scope. References should not include any current/past GFIAA employees.

WARRANTY

All equipment/materials shall consist of the original equipment manufacturer warranty, and at minimum one (1) year, unless otherwise specified within this request, including warranty against defects in design, materials, and workmanship. The warranty period will start upon acceptance of installed system, but not later than sixty (60) days from receipt of equipment, or if the installation date cannot be established, with the date of shipment. Labor costs for the replacement of defective material will be borne by the Respondent. The defective part(s) will be exchanged by the Respondent and returned at no charge for the duration of the warranty period on-waiver of Implied.

The Respondent agrees that, regardless of statements to the contrary, he/she has not disclaimed either the warranty of merchantability or the warranty of fitness for a particular purpose.

Specific warranty information for both parts and labor must be included with submission. Information relating to parts availability and service facilities may receive consideration.

BID SUBMISSION

To be considered, complete submissions must be received in the Gerald R Ford International Airport Authority office located on the second floor of the terminal building at 5500 44th St SE, Grand Rapids, MI 49512 no later than the due date and time specified (local time).

- Hard copy responses can be mailed or otherwise delivered to the address above.
- Responses may also be uploaded to <https://www.dropbox.com/request/9ytUblTufzDJhwFoOLJB>

Sales and Marketing material beyond the scope of this request will not be used to determine award and is not

desired. Each submission should be simply and economically prepared providing a concise description of the Respondent's ability to perform the product or services requested. Emphasis should be on completeness and clarity of content.

The Respondent certifies that the response submitted has not been made or prepared in collusion with any other Respondent and the prices, terms or conditions thereof have not been communicated by or on behalf of the Respondent to any other Respondent prior to the official opening of this request. This certification may be treated for all purposes as if it were a sworn statement made under oath, subject to the penalties for perjury. Moreover, it is made subject to the provisions of 18 U.S.C. Section 1001, relating to the making of false statements.

Submissions may be withdrawn by written request only if the request is received on or before the opening date and time.

Submissions not meeting this criterion may be deemed non-responsive.

The Authority is not liable for any costs incurred by any prospective Respondent prior to the awarding of a contract, including any costs incurred in addressing this solicitation.

A submission shall constitute an irrevocable offer for a period of ninety (90) days from the opening date. In the event an award is not made by the Authority within ninety (90) days from the opening date, the Respondent may withdraw his/her submission or provide a written extension of his/her response.

Each submission must be signed by a person authorized to sign contracts on the behalf of the Respondent. The name of the person signing must be followed by title.

EVALUATION, STATUS UPDATES/AWARD NOTIFICATION

The Authority reserves the right to request additional information it may deem necessary after the submissions are received.

As part of the evaluation process, Respondents may be requested to make an oral presentation, at the Respondent's expense, to an evaluation committee. Key staff to be assigned to this project must participate in this presentation unless otherwise waived by the Authority. The presentation may be followed by a question and answer session.

The Authority reserves the right at its discretion to waive irregularities of this solicitation process.

In the event of extension errors, the unit price shall prevail and the Respondent's total offer will be corrected accordingly. In the event of addition errors, the extended totals will prevail and the Respondent's total will be corrected accordingly. Respondent must check their submission where applicable. Failure to do so will be at the Respondent's risk. Submissions having erasures or corrections must be initialed in ink by the Respondent. Respondents are cautioned to recheck their submissions for possible errors.

The Respondent shall not be allowed to take advantage of error, omissions or discrepancies in the specifications.

The Authority, at its sole discretion, reserves the right to award to the Respondent whose response is deemed most advantageous to the Authority. The Authority, at its sole discretion, shall select the most responsive and responsible Respondent and evaluate all responses based on the requirements and criterion set forth in this solicitation while reserving the right to weigh specifications and other factors in the award. The Authority reserves the right to reject any and all submissions as a result of this solicitation.

The Authority reserves the right to award by line item when applicable and to accept or reject any or all parts of a submission.

Accelerated discounts should be so stated at the time of submission. If quick-pay discounts are offered, The Authority reserves the right to include that discount as part of the award criterion. Prices must, however, be based upon payment in thirty (30) days after receipt, inspection, and acceptance. In all cases, quick-pay discounts will be calculated from the date of the invoice or the date of acceptance, whichever is later.

Award notifications are posted on the Authority website. It is the Respondent's responsibility to monitor the website for status updates.

BID 1029 RESPONSE FORM

Company Name: _____

Contact Name and Title: _____

Address: _____ State: _____ Zip: _____

Phone: _____

Email: _____

Acknowledged Addendum (if any): _____

The below prices are all inclusive, including barricades, runway closure Xs, backer rod, etc.

ITEM 1: Concrete with Hot Pour Crack Repair As Described Within:	
1 st Year Lineal Foot Price	\$
2 nd Year Lineal Foot Price	\$
3 rd Year Lineal Foot Price	\$

ITEM 2: Asphalt with Hot Pour Crack Repair As Described Within:	
1 st Year Lineal Foot Price	\$
2 nd Year Lineal Foot Price	\$
3 rd Year Lineal Foot Price	\$

ITEM 3: Concrete with Silicone Crack Repair As Described Within:	
1 st Year Lineal Foot Price	\$
2 nd Year Lineal Foot Price	\$
3 rd Year Lineal Foot Price	\$

ITEM 4: Concrete with Preformed Crack Repair As Described Within:	
1 st Year Lineal Foot Price	\$
2 nd Year Lineal Foot Price	\$
3 rd Year Lineal Foot Price	\$

ITEM 5: Concrete Spall Repair As Described Within:	
1 st Year Square Foot Price	\$
2 nd Year Square Foot Price	\$
3 rd Year Square Foot Price	\$

ATTACH REFERENCES AS A SEPARATE SHEET

Signature: _____ Date: _____

ATTACHMENT A

General: The contractor shall furnish all materials, equipment, labor and supervision, and shall provide all other means that may be necessary to complete all the work in conformity with the requirements of these specifications.

Preparation: All cracks in bituminous pavements shall be routed prior to sealing. Immediately before sealing, the surface of the pavement at the location of the joint or crack shall be cleaned and broomed, if necessary, to remove all dirt and debris. The joint opening shall be thoroughly blown clear of dust or chips with compressor air through a nozzle from a power-driven air compressor immediately before applying the filling compound to the joints. The preparation and application of the sealing compound shall be in accordance with the manufacturer's specifications.

Materials and Equipment

Materials for ITEMS 1 & 2: Hot-poured joint sealing compound shall conform to the following requirements:

Current ASTM standards for airport pavements Joint Sealants, Hot-poured, for Asphalt Pavements.

Current ASTM standards for airport -Joint Sealants, Hot-Poured, Elastomeric-Type, for Portland Cement concrete Pavements.

Each lot or batch of sealing compound shall be delivered to the job site in the manufacturer's original sealed container. Each container shall be marked with the manufacturer's name, batch or lot number, the safe heating temperature and shall be accompanied by the Manufacturer's certification stating that the compound meets the requirements of this specification.

Materials for ITEM 3: Silicone, cold applied sealing compound shall conform to the following requirements:

A low modulus silicone sealant, cold applied, in conformance with Current ASTM standards for airport -Joint Sealants.

A self-leveling silicone sealant, cold applied, in conformance with Current ASTM standards for airport -Joint Sealants.

Materials for ITEM 4: Preformed polychloroprene compression joint seal installed with lubricant/adhesive with on site training from manufacturer to ensure proper installation.

Preformed joint seal materials shall be vulcanized elastomeric compound using polychloroprene as the only base polymer to conform to Current ASTM standards for airport.

Lubricant/adhesive used for the preformed elastomeric joint seal shall be one component compound conforming to Current ASTM standards for airport.

Materials for ITEM 5: Spall repair products shall be Delpatch M elastomeric patching material, Flexpatch polymer patching mortar or approved equal.

Spall repair method: The entire perimeter of each spall shall be sawn, excavated or cold milled as to remove the entire cavity or 'dead' pavement until sound pavement is reached or at a minimum depth of 2". The surface of the spalls shall be sandblasted as to remove any and all dust, debris, oil, dirt, grease, etc. Any exposed reinforcing steel shall be sandblasted to a 'bright' finish removing any present rust or corrosion. If any moisture is present in the surface of the spall it shall be evaporated by means of a heat lance or other approved method. The spall shall be filled the approved material, (see spall material specs above) to meet the surrounding pavement, matching grade and slope. Once cured but no more than 24 hours after the spall is

filled, the control joint shall be re-established through the entire depth of the patch and must match the width of the existing joint.

Equipment:

Joint-Cleaning Equipment: The equipment used for cleaning and preparing the joints and cracks for sealing in existing pavement may include the following:

Tractors-Mounted Plow: A tractor-mounted plow, equipped with a hydraulically operated depth control and replaceable bits, may be used to remove bulk of old material from the joints. This equipment shall be so designed and operated as to preclude spalling or otherwise damaging the concrete.

Routing-Resurfacing Machine: This shall consist of a self-powered machine operating a rotary cutter or revolving cutting tool designed to completely remove the old joint sealer and all foreign matter and reface each sidewall of the joint without spalling or otherwise damaging the edges.

Saw with diamond blade: Saw shall be self-powered machine operating a rotary cutting diamond saw blade. Saw must be capable to wet cut as to not create dust.

Air Compressor: Air compressors shall be portable and capable of furnishing not less than 100 cubic feet of air per minute at a pressure of not less than 90 psi. Suitable traps shall be employed to maintain the compressed air free of oil and moisture.

Equipment for Filling and Sealing Joints: The heating kettle for hot-poured rubber-asphalt sealer shall be of the indirect heating or double-boiler type, using oil as the heat transfer medium. It shall have a thermostatically controlled heat source, a built-in automatic agitator and thermometers installed to indicate both the temperature of the melted sealing material and that of the oil bath. The Contractor may be required to demonstrate that the equipment proposed for use will consistently produce a joint sealer of proper pouring consistency.

The hot-poured sealing material shall be poured at the required temperature for application by the use of a separate pouring pot or from the heating kettle. The pouring equipment shall force the sealing material to the bottom of the joint and completely fill it to the surface of the pavement. The pouring equipment shall be able to make a second application of the sealing material after the first application has cooled and settled below the surface of the pavement. The rate of application shall be controlled so as to completely fill the joint and not spill the material on the surface of the pavement.

When a separate pouring pot is used, it shall be of the indirect heating or double-boiler type, using oil as the heat transfer medium. It shall have a thermostatically controlled heat source, a built-in automatic agitator and thermometers installed to indicate both the temperature of the melted sealing material and that of the oil bath. The pouring pot shall be mounted on rubber-tired wheels. On project where the material requirements for continuous operation do not exceed the capacity of the pouring pot, the mechanical pouring pot may be used for both melting and applying the sealing material.

When the hot-poured sealing material is applied directly from the heating kettle, the kettle shall be equipped with a pressure pump, hose and nozzle suitable for forcing the sealing material to the bottom of the joint and completely filling the joint. The hose and nozzle shall maintain the temperature of the sealing material so that the loss in temperature is not over 10° F between the nozzle and the heating tank. Heat from a direct flame on the nozzle shall not be used to maintain the proper temperature of the sealing material. The heating equipment shall be mounted on rubber-tired wheels, and only rubber-tired equipment shall be used to move the heating equipment on the pavement.

Construction Methods

The following procedure shall be used in resealing joints and cracks in Pavements:

Removing Old Sealer: Old joint compound and other foreign matter shall be plowed out and routed with a joint cleaning machine to the following depths: expansion joints to a minimum depth of 2-inches, contraction joints to a minimum depth of 1 ½-inches and random cracks (previously sealed or unsealed) to a minimum depth of three-quarter ¾ inches. The removal of the old joint material from transverse joints shall be done by the use of a plow blade of the proper size and shape attached to a garden tractor as described herein.

Joint Excavating Equipment: This equipment shall make at least one pass each way, starting as near the edge line as possible and proceeding to the centerline and then back to the edge line. The vertical faces of transverse joints shall then be cleaned to the depth to which the joint material has been removed with a joint cleaning machine as described herein.

Routing-Resurfacing Machine: In addition, a least one pass shall be made on each side of the transverse joints with a joint cleaning machine equipped with a scarifying head to clean the pavement surface completely to at least one inch each side of the joint groove. The vertical faces of the joint shall then be further cleaned with a wire brush, making one pass against each joint wall. When necessary, hand tools shall be used to remove any material that was not removed from the mechanical cleaning. All old joint material and other debris removed from the joints or cracks shall be removed from the pavement immediately and disposed of by the contractor in a manner satisfactory to the engineer.

Sandblasting: Prior to the application of the sealer material, all joints and cracks shall be thoroughly cleaned by sandblasting. This operation shall be performed in such a manner as to result in the complete removal of all existing joint material and other foreign matter from the side-walls and upper edges of the joint. The sandblasting shall continue until the entire joint space is free of dust, oil, water, old joint material and/or any other objectionable foreign matter which may prevent bonding of the sealing compound to the concrete. The sand used shall be of proper size and quality necessary for the operation. Water blasting will not be allowed.

Air: Following sandblasting operations, the joints and cracks shall be thoroughly cleaned by means of an air jet under a pressure of not less than 90 psi. Compressed air may be used at any time during the joint cleaning operations; however, to insure removal of all loose material, a jet of compressed air will be required immediately ahead of sealing operations.

Debris Removal: All debris and objectionable material resulting from cleaning operations will be removed from the pavement surface prior to sealing operations.

Sealing: As soon as the joints are cleaned with the compressed air jet, they shall be sealed with hot-poured rubber-asphalt type compound or silicone, whichever sealant type is identified by WCAA personnel for the particular project. The surface of the concrete shall be dry at the time of sealing. No joints shall be sealed until the cleaning and preparation of the joints have been inspected and approved by the Engineer.

Contraction joints, construction joints and expansion joints that have openings for the full depth of the slab shall be caulked with jute, oakum or closed/open cell backer rod, (whichever type is identified by WCAA personnel for the particular project) to prevent the sealing compound from flowing down to the sub grade. For expansion joints, the jute or oakum caulking material shall not extend above the pre-molded joint filler. Contraction joints and construction joints shall have a space of 1-inch to 1 ½ inches above the caulking material that shall be filled with the sealing compound.

The joint sealant shall be applied uniformly solid from bottom to top and shall be filled without formation of entrapped air or voids. The heating kettle shall be an indirect heating type, constructed as a double boiler. A

positive temperature control and mechanical agitation shall be provided. The sealant shall not be heated to more than 20° F (-11° C) below the safe heating temperature. The safe heating temperature can be obtained from the manufacturer’s shipping container. A direct connection pressure-type extruding device with nozzles shaped for insertion into the joint shall be provided. Any sealant spilled on the surface of the pavement shall be removed immediately.

During the process of pouring the joints, the Engineer may, at his discretion, require that sufficient compound be taken from the melting unit to make flow tests in accordance with ASTM Designation D-3405. If the flow is greater than 2 centimeters, the Contractor will be required to modify the method of heating or of charging the heating unit with the compound so that subsequent samples will show satisfactory results.

Pouring shall be done by the use of a separate pouring pot of the double-boiler type or from the melting kettle equipped with a pressure pump, hose and nozzle as specified under “Equipment Requirement”.

Pouring the sealing compound shall be done so as to completely fill the joint and overlap the pavement surface by about 1/8 inch. Any sealing compound spilled on the surface of the pavement shall be removed immediately. After the first pour has cooled to the temperature of the pavement and settled, a second pour shall be made to fill the sag or groove and bring the sealing compound flush with the surface of the pavement.

The compound shall not be placed when the temperature in the shade is less than 40° F, except by the approval of the Engineer.

Traffic shall not be permitted over the poured joint until the compound has hardened sufficiently to resist pickup.

Preparation of the Sealing Compound: The joint sealing compound shall be heated to and poured at temperatures recommended by the manufacturer. This compound shall not be heated in excess of the temperatures specified above and direct heating will not be sufficient cause to reject the material handled. If operations, including shutdown overnight, halt the pouring for extended periods, heat input into the melting kettle shall be cut off. Re-heating will be permitted only once.

Sealing in General: No joint sealing compound shall be applied in wet joints or where frost, snow or ice is present nor when temperatures are 50° F and falling.

When joint sealing work is done during periods when the pavement is contracted, as occurs during the colder months, joints shall be filled to not more and 1/2 inch below the slab surface. Then joints are sealed during hot weather periods when the pavement is expanded, they shall be poured flush with the slab surface.

Final Cleanup: The work shall not be considered as complete nor will final payment be made until the area has been restored to a neat, orderly appearance acceptable to the Engineer and Airport Operations. Equipment, excess material, rubbish, etc., resulting from the Contractor’s operations shall be removed from the site.

Measurement and Payment

Hot Pour: This price is all inclusive, including labor, equipment, materials, barricading, runway closure Xs, etc. The completed work as measured for SEALING JOINTS AND CRACKS will be paid for at the contract unit priced or the follow contract items (pay items):

Pay Item	Pay Unit
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Misc Sealing Joints and Cracks.....	Linear Foot
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“Misc Sealing Joints and Cracks” will be measured by length in linear feet, measured along the centerline of the joints. The measurement of transverse joints and cracks will be along the centerline of the joint or crack from face-

to-face.

These contract unit prices shall be payment in full for furnishing all materials, labor and equipment required to complete the work as specified.

The old filler, sealer, and any other material removed from the joints shall be disposed of by the Contractor in a manner approved by the Engineer. The work shall be included in the work of "Misc Sealing Joints and Cracks".

Silicone and Preformed joint seal: The completed work will be paid at the contract unit price as measured in liner feet. This price is all inclusive, including labor, equipment, materials, barricading, runway closure Xs, etc.

Spall repair: The completed work will be paid at the contract unit price as measured in square feet. This price is all inclusive, including labor, equipment, materials, barricading, runway closure Xs, etc.