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DIVISION 32 - EXTERIOR IMPROVEMENTS

SECTION 32 01 26.71

GROOVING FOR AIRFIELD PAVEMENTS

08/08

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USACE / NAVFAC / AFCESA / NASA | **UFGS-32 01 26.71 (August 2008)**

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UNIFIED FACILITIES GUIDE SPECIFICATIONS

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SECTION 32 01 26.71

GROOVING FOR AIRFIELD PAVEMENTS
08/08

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NOTE: This guide specification covers the requirements for providing grooves in airfield pavements to increase the safe performance of aircraft.

Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

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PART 1 GENERAL

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NOTE: If an active runway is to be grooved, allowances such as Contractor reaction time, minimum distance equipment must be removed from the runway, and an estimated cost to the Contractor for each interruption must be addressed.

If unit prices are used, the following are designer options:

The unit of measurement for grooving the [runway] [taxiway] surface will be the lump sum. The unit of measurement for aircraft traffic interruptions will be each.

A lump sum price will be paid for grooving and cleaning the pavement. The minimum payment for each interruption will be one hour.

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1.1 SYSTEM DESCRIPTION

1.1.1 Grooving Machine

Provide a grooving machine that is power driven, self-propelled, specifically designed and manufactured for pavement grooving, and has a self contained and integrated continuous slurry vacuum system as the primary method for removing waste slurry. The grooving machine shall be equipped with diamond-saw cutting blades, and capable of making at least 457 mm 18 inches in width of multiple parallel grooves in one pass of the machine. Thickness of the cutting blades shall be capable of making the required width and depth of grooves in one pass of the machine. The cutting head shall not contain a mixture of new and worn blades or blades of unequal wear or diameter. Match the blade type and configuration with the hardness of the existing airfield pavement. The wheels on the grooving machine shall be of a design that will not scar or spall the pavement. Provide the machine with devices to control depth of groove and alignment within the specified tolerances.

1.1.2 Water Supply

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NOTE: If transportation of the water by surface laid pipe is permitted, routing of the pipe should be shown. Identify the available source location on the drawings.
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Water for the grooving operation shall be provided by the [Contractor] [Government].

1.2 SUBMITTALS

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NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes

following the "G" typically are not used for Navy, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

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Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment[; G] [; G, [___]]

List of proposed equipment to be used in performance of construction work, including descriptive data and safety precautions required for the equipment operation.

Procedures[; G] [; G, [___]]

Grooving sequence and method of placing guide lines to control grooving operation.

1.3 ENVIRONMENTAL REQUIREMENTS

Grooving operations will not be permitted when freezing conditions prevent the immediate removal of debris and/or drainage of water from the grooved area. Discharge and disposal of waste slurry shall be the Contractor's responsibility. Waste slurry discharge pits may be constructed along side the pavement to be grooved, as directed by the Contracting Officer. Provide and maintain temporary storm drainage, pollution control, and erosion control features at each discharge pit in accordance with base environmental regulations. After the waste slurry has been dewatered, the hardened slurry shall be excavated and disposed [off base] [in accordance with the base waste disposal requirements]. All disposal pit areas shall be regraded and restored to original condition.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PREPARATION

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NOTE: Limits of the grooved area should be as described in UFC 3-260-02. For Army airfields, grooving should not be allowed within the first 457 m (1,500 feet) from the thresholds or the first 152 m (500 feet) either side of an arrest barrier cable which requires hook engagement for operation. For Air Force airfields, grooving will be allowed in the first 457 m (1,500 feet) from thresholds and within 91.4 m (300 feet) of arrest barrier cables.

Normally, pavements of Army airfields are not grooved within the first 457 m (1,500 feet) of the thresholds; permission from the Corps of Engineers Division office must be obtained to groove this area of joint occupied airfields.

Figures 2-10 and 2-11 of -FAAAC 150/5320-12A- show examples of saw-cut step patterns at the intersection of secondary runways and exit taxiways to primary runways, respectively.

Characteristics of the existing pavement will be described in sufficient detail to allow the Contractor to select the most economical and effective cutting blades for grooving the pavement.

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3.1.1 Existing Pavements

Bumps, depressed areas, bad or faulted joints, and badly cracked and/or spalled areas in the pavement shall not be grooved until such areas are adequately repaired or replaced. If the existing pavement is not suitable because of its strength, an overlay, flexible or rigid, will be required using the procedures specified in Section [_____].

3.1.2 New Pavements

Allow new asphalt concrete pavements to cure for a minimum of 30 days before grooving, to allow the material to become stable enough to prevent closing of the grooves under normal use. Permit new portland cement concrete pavements to cure for a minimum of 28 days before grooving.

3.2 GROOVING

3.2.1 Procedures

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NOTE: Grooving should be terminated within 1.5 m (5 feet) of the pavement edge to allow adequate space for operation of the grooving equipment.

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Cut grooves in the [asphalt] [portland cement] areas as indicated on the drawings. Begin the grooving at one side of the usable [runway] [taxiway] and continue for the full width of the area. Take all reasonable precautions to prevent damage to or roughening of the pavement between grooves. Spalling along or tearing or raveling of the groove edges shall not be allowed. The grooves shall be 6 mm, plus 2 mm, minus 0 mm 1/4 inch, plus 1/16 inch, minus 0 inch wide by 6 mm, plus or minus 2 mm 1/4 inch, plus or minus 1/16 inch deep and 38 mm, plus 0 mm, minus 3 mm 1-1/2 inches, plus 0 inches, minus 1/8 inch center to center spacing. The groove length shall be [_____] meters feet plus or minus 75 mm 3 inches long and normal to the longitudinal axis of the centerline of the [runway] [taxiway]. The transverse alignment of the grooves shall not vary more than 75 mm 3 inches plus or minus on a 23 m 75 foot length of grooving. Do not groove within 150 mm plus or minus 75 mm 6 inches plus or minus 3 inches of the runway centerline. Do not groove within 150 mm 6 inches of transverse joints or working cracks, through compression seals, in-runway lighting fixtures or similar items, the first 3 m 10 feet either side of an arresting barrier

cable or the first and last 3 m 10 feet of the runway.

3.2.2 Clean-Up

Clean-up shall be continuous. Flush debris produced by the equipment to the edge of the grooved area or pick it up before it dries and hardens. The dust coating remaining shall be flushed to the edge of the area if the resultant accumulation is not detrimental to the vegetation or storm drainage system. Accomplish all flushing operations in a manner to prevent erosion on the shoulders, damage to vegetation, or plugging of storm drainage.

3.2.3 Repair of Damaged Pavement

Repair at the Contractor's expense, as specified in Section [_____], any damage, which in the opinion of the Contracting Officer will be detrimental to aircraft operations and/or pavement performance, occurring to the pavement as a result of the grooving operations.

3.3 CONTRACTOR QUALITY CONTROL

3.3.1 Test Section

Groove a test section in an area of the pavement outside of the trafficked area, as approved by the Contracting Officer. The area shall be [_____] m feet long by two lanes wide. Demonstrate the setup and alignment process, the grooving operation, and the waste slurry disposal.

3.3.2 Inspections

At the beginning of each work shift, furnish a full complement of grooving blades with each saw that are capable of cutting grooves of the specified width, depth, and spacing. If during the work, a single grooving blade on a machine becomes incapable of cutting a groove, continue work for the remainder of the work shift. The Contractor is not required to cut the groove omitted because of the failed blade. Should two or more grooving blades on a machine become incapable of cutting grooves, cease operating the machine until it is repaired.

-- End of Section --