
USACE / NAVFAC / AFCESA UFGS-02986 (August 2004)

Preparing Activity: USACE Superseding
UFGS-02981A (November 1997)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 25 June 2004

SECTION 02986

GROOVING FOR AIRFIELD PAVEMENTS 08/04

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

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

PART 1 GENERAL

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 shall be each.

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

interruption shall be one hour.

1.1 SUBMITTALS

NOTE: Submittals must be limited to those necessary for adequate quality control. The importance of an item in the project should be one of the primary factors in determining if a submittal for the item should be required.

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 projects.

Submittal items not designated with a "G" are considered as being for information only for Army projects and for Contractor Quality Control approval for Navy projects.

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-03 Product Data

Equipment

List of proposed equipment to be used in performance of construction work, including descriptive data.

1.2 GROOVING MACHINE

The grooving machine shall be a type equipped with diamond-saw cutting blades, and capable of making at least 457 mm (18 inches) 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. The wheels on the grooving machine shall be of a design that will not scar or spall the pavement. The machine shall be provided with devices to control depth of groove and alignment within the specified tolerances.

1.3 WATER SUPPLY

NOTE: The water source must be described so the Contractor can determine what equipment will be required. If transportation of the water by surface laid pipe is permitted, routing of the pipe should be shown.

Water for the grooving operation shall be provided by the [Contractor] [Government] and shall be transported from the source shown on the drawings to the job.

1.4 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.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION

3.1 PREPARATION

NOTE: Limits of the grooved area should be as described in TM 5-825-3. 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.

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, as specified in Section [____]. 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

New asphalt concrete pavements shall be allowed 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. New portland cement concrete pavements shall be allowed to cure for a minimum of 28 days before grooving.

3.2 GROOVING

3.2.1 Procedures

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.

Grooves shall be cut in the [asphalt] [portland cement] areas as indicated on the drawings. The grooving shall begin at one side of the usable [runway] [taxiway] and continue for the full width of the area. All reasonable precautions shall be taken 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 1/4 inch plus or minus 1.2 mm 1/16 inch wide by 6 mm 1/4 inch plus or minus 1.2 mm 1/16 inch deep and 38 mm 1-1/2 inches plus or minus 3 mm 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.

3.2.2 Clean-Up

Clean-up shall be continuous. Debris produced by the machine must be flushed to the edge of the grooved area or shall be picked up as it forms. 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. All flushing operations shall be accomplished in a manner to prevent erosion on the shoulders.

3.2.3 Repair of Damaged Pavement

Any damage that occurs to the pavement as a result of the grooving operations, which in the opinion of the Contracting Officer will be detrimental to aircraft tires, shall be repaired at the Contractor's expense as specified in Section [____].

-- End of Section --