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USACE / NAVFAC / AFCESA UFGS-02951 (August 2004)  
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Preparing Activity: USACE Superseding  
UFGS-02951A (December 1999)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 25 June 2004

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### SECTION 02951

#### RUNWAY RUBBER REMOVAL 08/04

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NOTE: This guide specification covers the requirements for runway rubber removal.

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.

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## PART 1 GENERAL

### 1.1 SUBMITTALS

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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.

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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.] [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

##### Rubber Removal Equipment

A list of construction equipment including item names and descriptions.

##### Rubber Removal

Statements regarding the suitability of materials, personnel, and methods proposed to accomplish the work.

## 1.2 MAINTENANCE OF TRAFFIC

### 1.2.1 Operation and Performance

The operation of equipment and the performance of work upon and in the vicinity of airfields shall be coordinated with the Contracting Officer and with the Flight Operations Officer. Neither equipment nor personnel shall use any portion of an airfield without permission of these officers unless the runway is closed. In all cases, verbal communication shall be maintained with the control tower before and during work in the vicinity of the airfield. The control tower shall be advised when work is completed. Runways will be closed during the following times:

| Day or<br>Date | Runway<br>Closing Time | Runway<br>Opening Time | Important<br>Notes |
|----------------|------------------------|------------------------|--------------------|
| [_____]        | [_____]                | [_____]                | [_____]            |

### 1.2.2 Landing and Take-Offs

Emergency landings and take-offs shall take precedence over all Contractor

operations. When notified of an emergency situation, the Contractor shall cease all rubber removal operations and immediately clear the runway of all equipment and personnel for a distance of at least 60 meters 200 feet from the edge of the runway.

### 1.3 RUBBER REMOVAL EQUIPMENT

#### 1.3.1 Mechanical Rubber Removal Equipment

Mechanical rubber removal equipment includes waterblasting, shotblasting, sandblasting, or other approved nonchemical systems. Equipment to be used on asphalt or tar concrete shall be controlled to remove rubber accumulations and minimize disturbance to asphalt or tar mixtures. Equipment to be used on portland cement concretes shall be controlled to remove rubber accumulations and prevent removal of hardened paste from the concrete. Basic hand tools and the following major types of mechanical equipment will be considered acceptable for this project.

##### 1.3.1.1 Waterblasting Equipment

Mobile waterblasting equipment shall be capable of producing a pressurized stream of water that will effectively remove rubber from the pavement surface without significantly damaging the pavement. Water pressure shall be regulated so that substantially all rubber accumulations are removed during execution of the work.

##### 1.3.1.2 Shotblasting Equipment

Mobile self propelled shotblasting equipment shall be capable of producing an adjustable depth of rubber removal. The equipment shall be capable of propelling abrasive particles at high velocities on the rubber for effective removal. Each unit shall be self cleaning and self contained. The equipment shall be able to confine the abrasive, any dust that is produced, and removed rubber; and shall be capable of recycling the abrasive for reuse.

##### 1.3.1.3 Sandblasting Equipment

Mobile sandblasting equipment shall be capable of producing a pressurized stream of sand and air that will effectively remove rubber from the pavement surface without filling voids with debris in asphalt or tar pavements or removing joint sealants in portland cement concrete pavements. The equipment shall include an air compressor, hoses, and nozzles of adequate size and capacity for removing all rubber. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water, and shall be capable of furnishing a flow rate of at least 0.071 cubic meters per second (150 cubic feet per minute) 150 cubic feet per minute of air at a pressure of at least 621 kPa (90 pounds per square inch) 90 pounds per square inch at each nozzle.

#### 1.3.2 Chemical Rubber Removal Equipment

Chemical equipment shall be capable of application and removal of chemicals from the pavement surface and shall leave only non-toxic biodegradable residue.

### 1.4 DELIVERY AND STORAGE

Materials that are required in the approved rubber removal process shall be

delivered in original manufacturer's containers and shall be labeled with appropriate EPA, OSHA, or other agency warnings, if applicable. Materials shall be protected from the environment until their use is required during execution of the work.

## 1.5 UNIT PRICES

### 1.5.1 Measurement

Rubber removal will be measured by the number of square meters feet of runway to be cleaned.

### 1.5.2 Payment

Rubber removal will be paid for at the contract unit price per square meter foot of runway rubber removed.

## 1.6 WEATHER LIMITATIONS

Pavement surface shall be free of snow, ice or slush. Surface temperature shall be at least 5 degrees C 40 degrees F and rising at the beginning of operations except those involving shotblasting or sandblasting for which a lower surface temperature may be approved. Operation shall cease during thunderstorms. Operation shall cease during rainfall except for waterblasting and removal of previously applied chemicals. Waterblasting shall cease where surface water accumulation alters the effectiveness of material removal.

## PART 2 PRODUCTS (Not Applicable)

## PART 3 EXECUTION

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**NOTE: The Contracting Officer, the airport administrator and the pavements engineer will jointly develop guidelines and requirements for rubber removal operations; and will jointly evaluate the feasibility of the Contractor's methods and project compliance with applicable regulations.**  
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### 3.1 RUBBER REMOVAL

The pavement surface may be of portland cement, tar or asphalt mixtures. Chemical methods, if used, shall be compatible with pavement materials, the environment and working personnel. Close control of water pressure and blasting time/duration shall be used to prevent disintegration damage to asphalt and tar concretes. Extremely good control shall be exercised for porous friction courses. The Contractor shall demonstrate the ability to remove rubber at a touchdown area of the runway selected by the Contracting Officer; at least one site per runway will be chosen. Rubber removal shall be as complete as possible without damage to the pavement surface. The surface texture of the cleaned demonstration area will be compared to that of nonrubber traffic areas to determine satisfactory completion of the removal operation. After approval of the Contractor's operations the cleaned area will become the standard for rubber removal and final surface texture for the remainder of work.

### 3.2 CLEANUP AND WASTE DISPOSAL

The worksite shall be kept clean of debris and waste from rubber removal operations. Cleanup operations shall be continuous. Debris and waste materials shall be accumulated and disposed at approved sites.

-- End of Section --