
USACE / NAVFAC / AFCEA UFGS-02981 (August 2004)

Preparing Activity: NAVFAC Superseding
UFGS-02981N (September 1999)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 23 June 2005

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SECTION 02981

RUBBER AND PAINT REMOVAL FROM AIRFIELD PAVEMENTS 08/04

NOTE: This guide specification covers the requirements for removal of rubber deposits and paint from asphalt concrete or portland cement concrete airfield pavements by means of high-pressure water contact on the affected areas delivered from vehicular-mounted hydraulic systems.

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.

NOTE: It is recommended that friction and texture testing be provided in affected pavement areas after rubber and paint removal work. This is if there is any deterioration in the effective friction level, which may be caused by polishing of the pavement surface. The Mu-Meter is currently used by the Navy to measure relative friction levels on Navy airfield pavements and the "NASA Grease-Smear Technique" may be used to obtain an average texture depth.

NOTE: On the project drawings, show:

1. Locations and dimensions of areas applicable to removal work.

2. Type of pavement for each removal area.
3. Indication of whether rubber or paint is to be removed in each removal area.
4. Locations of Government hydrants to be provided for Contractor use.

PART 1 GENERAL

1.1 REFERENCES

NOTE: Issue (date) of references included in project specifications need not be more current than provided by the latest guide specification. Use of SpecsIntact automated reference checking is recommended for projects based on older guide specifications.

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910

Occupational Safety and Health Standards

1.2 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-04 Samples

[Rubber] [and] [paint] removal samples

SD-07 Certificates

NOTE: Delete the requirement for a schedule of work, Section 01310, "Administrative Requirements."

Schedule of work

High-pressure rubber and paint removal equipment

1.3 RADIO COMMUNICATION

NOTE: Delete these paragraphs, if included in Section 01310, "Administrative Requirements."

No personnel or equipment will be allowed on the runway until radio contact has been made with the Control Tower and permission is granted by the Control Tower. A radio for this purpose will be [made available by the Contracting Officer] [required of the Contractor and approved by the Contracting Officer]. The Contractor shall be in contact with the Control Tower at all times during the removal work.

1.4 EMERGENCY LANDINGS AND TAKEOFF

NOTE: Delete these paragraphs, if included in Section 01310, "Administrative Requirements."

Emergencies shall take precedence over all Contractor operations. Upon notification from the Control Tower of emergency landing or imminent takeoff, all operations shall be stopped immediately and all personnel and equipment evacuated to an area not utilized for aircraft traffic which is at least 60 m 200 feet measured perpendicular to and away from the near edge of the runway. Equipment shall be able to clear the work area within 3 minutes.

1.5 ENVIRONMENTAL CONDITIONS

Do not perform work when the temperature is below 5 degrees C 40 degrees F, during lightning storms, or when the pavement is covered with snow or ice.

1.6 SAFETY

Comply with OSHA 29 CFR 1910.

1.7 SCHEDULE

1.7.1 Schedule of Work

Submit a schedule of work to the Contracting Officer for transmittal to the Operations Officer. Describe the work to be accomplished; noting the location of work, distances from the ends of runways, taxiways, buildings, and other structures; and indicating dates and hours during which the work will be accomplished. Schedule the work to conform to aircraft operating schedules. The Government will try to schedule aircraft operations so as to permit the maximum amount of time for the Contractor's work. However, in the event of any emergency, intense operational demands, adverse wind conditions, and other unforeseen difficulties, discontinue all work at locations in the aircraft operational area. Keep the approved schedule of work current and notify the Contracting Officer of any changes prior to beginning each day's work.

1.8 EQUIPMENT

1.8.1 Equipment Data

Submit descriptive data of high-pressure rubber and paint removal equipment including area of coverage per pass, range of water pressures, and water tank capacity.

1.9 QUALITY ASSURANCE

1.9.1 Required Samples

Prior to the start of work, remove [rubber] [and] [paint] on designated test areas not less than 15 m 50 feet in length. Use procedures, water pressures, nozzle height, nozzle spacings, nozzle angle, and equipment movement rate to achieve the required degree of [rubber] [and] [paint] removal in accordance with the paragraph entitled "Execution." Submit the test results before any further removal work will be allowed.

PART 2 PRODUCTS

2.1 MATERIALS

NOTE: The Contracting Officer will notify the Fire Department of fire hydrants to be used and designated times of use so that the hydrants may be flushed.

NOTE: Coordinate this paragraph with the paragraph "Availability of Utility Services" in the Additional

General Paragraphs.

Water to be used for high-pressure water equipment will be made available from Government hydrant[s] [as shown on the drawings,] [within [_____] m feet of all points of the work area,] [at no cost to the Contractor] [at the prevailing rates]. Furnish all equipment and labor for delivery of water from the hydrant to the job site. Notify the Contracting Officer on location of fire hydrant[s] to be used and the respective times of use. Connections to a fire hydrant will be subject to the Contracting Officer's inspection and approval.

2.2 EQUIPMENT

Vehicular-mounted hydraulic system capable of delivering high-pressure water impact upon the pavement surface less or greater than 55 MPa 8,000 pounds per square inch. If high-pressure water is delivered from a spray bar, the nozzles shall be spaced to provide total coverage of the area being treated. The nozzle line shall have adjustable pressure regulators or relief valves and gauges measuring actual line pressure. Equipment shall be supported on pneumatic tires. Provide equipment, tools, and machinery which are safe and in satisfactory condition at all times.

PART 3 EXECUTION

3.1 DEGREE OF REMOVAL

NOTE: The following provides recommended rubber and paint removal percentages based on visual estimation of pavement area required to be exposed by the removal process. The degree of removal possible without damaging the pavement surface will depend on pavement condition. Portland cement concrete pavements can withstand more water pressure impact than asphaltic concrete pavements before aggregates are exposed. Do not specify 100 percent, as this will result in excessive exposure of pavement aggregates.

1. Rubber removal from Portland cement concrete pavements: 90 percent.

2. Rubber removal from asphaltic concrete pavements: 85 percent.

3. Paint removal from Portland cement concrete pavements and asphaltic concrete pavements: 80 percent of loose, flaking paint.

[Remove [_____] percent of all visible rubber.] [Remove percent of [_____] loose, flaking paint. Hard, firm paint that has the surface chalk removed may remain.]

3.2 RATE OF REMOVAL

[Remove rubber at a minimum rate of 0.26 square meter per second 10,000 square feet per hour.] [Remove paint at a minimum rate of 0.026 square

meter per second 1,000 square feet per hour.] Do not permit high-pressure water application to remove the existing pavement surface.

3.3 WATER PRESSURE

NOTE: The optimum water pressure to be used for
rubber and paint removal will be determined by the
test specified in paragraph entitled "Degree of
Removal."

Provide water pressure impact upon the indicated pavement areas sufficient to remove the designated [rubber] [and] [paint] to the required degree of removal without damaging the existing pavement joint sealant, and other airfield appurtenances. Contractor shall be responsible for repairing any damage caused by the removal work.

3.4 REMOVAL OF RESIDUE

NOTE: The Contractor is normally responsible for
total contract performance. However, at
geographically isolated airfields, it may be
necessary to furnish Government equipment and
personnel for cleanup operations.

[Residue will be removed from the pavement by Government-furnished sweepers and personnel. Notify the Contracting Officer for coordination.] [Remove all residue from the pavement. Obtain the approval of residue removal and disposal method from the Contracting Officer prior to beginning work.]
-- End of Section --