UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
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USACE / NAVFAC / AFCEC / NASA **UFGS-09 97 23.16 November 2010)**

Preparing Activity: NAVFAC **Superseding**
UFGS-09 97 23.16 (April 2006)

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SECTION 09 97 23.16

LINSEED OIL PROTECTION OF CONCRETE SURFACES
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NOTE: This guide specification covers the requirements for sealing, waterproofing and anti-spall protection of concrete where freezing temperatures may cause damage.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(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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NOTE: The coating treatment can be linseed oil-mineral spirits compound for old concrete or linseed oil emulsion used as a curing compound on new concrete. It is used on roads, bridge decks, sidewalks, curbs, parking ramps, floors, walkways and other such concrete construction. Check with local air pollution control districts to see if these treatments are allowed.
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NOTE: The extent and location of the work should be indicated on the project drawings, or included in the project specifications.
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PART 1 GENERAL

1.1 REFERENCES

****
NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.
****

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.

ASTM INTERNATIONAL (ASTM)

ASTM C309	(2019) Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM D235	(2002; R 2012) Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)

1.2 DELIVERY, STORAGE AND HANDLING

Deliver the [linseed oil-mineral spirit compound] [linseed oil emulsion] in original sealed containers that show the designated name, specification number, batch number, date of manufacture, manufacturer's directions, and name of manufacturer. [Linseed oil-mineral spirits compound has a flash point of about 38 degrees C 100 degrees F and is readily flammable. Carefully guard against fire. Store wiping rags containing this material in metal cans with tight lids.]

1.3 ENVIRONMENTAL CONDITIONS

Apply coating when air and concrete temperature are between 2 degrees C 35 degrees F and 38 degrees C 100 degrees F.

1.4 TRAFFIC CONTROL

Allow no traffic, except sealing equipment, on the treated surface until dry.

1.5 EQUIPMENT

1.5.1 [Spray Equipment

****
NOTE: Choose this paragraph for medium and large jobs or the paragraph below entitled "Brushes and Rollers," for small jobs.
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Portable, truck mounted, or self-contained, mechanized spray equipment with nozzles designed to produce a flat, overlapping fan-shaped spray pattern. Clean tank interior and spray system prior to use.

]1.5.2 [Brushes and Rollers

Use brush with sufficient body and length of bristle to spread the compound in a uniform film. Use rollers of a type which do not leave a stippled texture.

]PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Linseed Oil-Mineral Spirits Compound

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NOTE: The linseed oil-mineral spirits sealer compound is usually applied to old concrete. Do not use it as a curing compound on new concrete. Check local state highway specifications for guidance.
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A blend of 60 percent boiled linseed oil and 40 percent mineral spirits conforming to ASTM D235, Type I, by volume.

2.1.2 Linseed Oil Emulsion

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NOTE: Linseed oil emulsion is usually applied to new concrete as a curing compound. It may be hard to find so check local availability before specifying.
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ASTM C309, Type 1.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

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NOTE: For surfaces with moderate amounts of dirt, rubber, or paint use the first bracketed sentence. For surfaces contaminated with oil, grease, or membrane forming compounds, use the second bracketed sentence.
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Prepare hardened concrete surfaces to permit sealer penetration. [Use airblasting, sandblasting, waterblasting or other approved methods.] [Sandblast first then waterblast.] Immediately before sealer application, remove dust by airblasting.

3.2 APPLICATION

3.2.1 Rate of Application

3.2.1.1 Hardened Concrete

Two coat application of linseed oil-mineral spirits compound:

a. First Coat: One liter per 8.75 square meters one gallon per 360 square feet.

b. Second Coat: One liter per 15 square meters one gallon per 600 square feet. Apply the second coat as soon as the first coat is dry to the touch.

3.2.1.2 Fresh Concrete

Apply one coat linseed oil emulsion before permanent set at the rate of one liter per 5 square meters one gallon per 200 square feet.

3.2.2 Method of Application

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NOTE: Choose the first bracketed option for medium and large jobs. Choose the second bracketed option for small jobs.

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Apply using [spray] [brush and roller] technique.

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