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USACE / NAVFAC / AFCEA UFGS-10675 (August 2004)  
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Preparing Activity: NAVFAC Superseding  
UFGS-10675N (September 1999)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 22 December 2004

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### SECTION 10675

#### STEEL SHELVING

08/04

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NOTE: This guide specification covers the requirements for hand loaded steel shelving units.

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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NOTE: Show the following information on the project drawings.

1. Location, length, and type of shelving units.
2. Aisle layout
3. Loading and accessories
4. Mounting and anchorage requirements or details.

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## PART 1 GENERAL

### 1.1 REFERENCES

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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.**

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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.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI MH28.1 (1997) Design, Testing, Utilization, and  
Application of Industrial Grade Steel  
Shelving

ASTM INTERNATIONAL (ASTM)

ASTM D 2794 (1993; R 2004) Resistance of Organic  
Coatings to the Effects of Rapid  
Deformation (Impact)

ASTM D 3359 (2002) Measuring Adhesion by Tape Test

ASTM D 522 (1993a; R 2001) Mandrel Bend Test of  
Attached Organic Coatings

1.2 DEFINITIONS

For the purposes of this specification the shelf category, "medium weight," "heavy weight," will be as follows. Load is given per shelf in kilograms pounds for evenly distributed load. This does not limit the shelf size, only the shelving category.

Minimum Evenly Distributed Load Per Shelf in Kilograms

| Shelf Size     | Type        | Type       |
|----------------|-------------|------------|
|                | Medium Duty | Heavy Duty |
| 450 by 900 mm  | 320         | 590        |
| 450 by 1200 mm | 230         | 410        |

Minimum Evenly Distributed Load Per Shelf in Pounds

| Shelf Size   | Type        | Type       |
|--------------|-------------|------------|
|              | Medium Duty | Heavy Duty |
| 18 by 36 in. | 700         | 1300       |
| 18 by 48 in. | 500         | 900        |

1.3 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-01 Preconstruction Submittals

Shelving Units

SD-03 Product Data

Shelving Units

Accessories

Installation instructions

SD-04 Samples

Finish

SD-06 Test Reports

Shelving Units

Finish

#### 1.4 DELIVERY, STORAGE, AND HANDLING

Deliver materials in original packages, containers or bundles bearing the brand name and identification of the manufacturer. Store inside under cover. Protect surfaces from damage.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURED UNITS

ANSI MH28.1. Provide shelving units [indicated] [scheduled]. Provide shelving units designed for full dead and live load, designated [medium duty] [heavy duty]. [Provide units with base plates for floor anchorage indicated.] [Provide wall connections for units over 2500 mm 8 feet 3 inches to top shelf.] [Provide floor and wall anchorages for units in Seismic Zone 3 or 4. Provide door and drawer earthquake stops.] [Provide wall connections for drawer units if necessary.]

#### 2.2 ACCESSORIES

- a. Drawers, 180 kg 400 pound capacity, and mounting brackets
- b. Partitions and dividers
- c. Label holder [56 by 20 mm] [75 by 125 mm] [2 1/4 by 3/4 inches] [3 by 5 inches].

#### 2.3 FINISH

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**NOTE: Specify special finish only if the conditions of use are particularly harsh. Any finish other than the manufacturer's standard will be very expensive.**  
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Provide the shelving units in the manufacturer's standard colors [as indicated] [as chosen by the Contracting Officer]. Clean metal by multiple stage phosphatizing and sealing process, for rust resistance and paint adhesion. Provide electrostatically applied enamel finish coats, baked hard for a minimum of 30 minutes at 149 degrees C 300 degrees F. [Provide special finish meeting the flexibility, adhesion, and impact standards below.]

#### 2.4 SOURCE QUALITY CONTROL

- a. ANSI MH28.1, for tests of shelf capacity, lateral stability and shelf connections.
- [b. Finish flexibility, ASTM D 522, Method A, 3 mm 1/8 inch diameter, 180 degree bend, no evidence of fracturing to the naked eye.]
- [c. Finish adhesion, ASTM D 3359, Method B. There shall be no film removed by tape applied to 11 parallel cuts space 3 mm 1/8 inch apart plus 11 similar cuts at right angles.]
- [d. Impact resistant finish, ASTM D 2794, no loss of adhesion after direct and reverse impact equal to 1.5 times metal thickness in mm, expressed in N.m inch pounds.]

PART 3 EXECUTION

3.1 EXAMINATION

Before installation, examine shelving units for dents and scratches.  
Replace damaged shelving.

3.2 INSTALLATION

Install shelving according to manufacturer's installation instructions.  
[Make wall and floor connections as indicated.]

3.3 PROTECTION

Cover and protect shelving from damage during the completion of  
construction. Remove prior to acceptance of project.

[3.4 SCHEDULE

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NOTE: Put on contract drawings by preference.  
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SHELVING

| Type    | Width   | Depth   | Number<br>of Shelves | Height  | Accessories | Room    |
|---------|---------|---------|----------------------|---------|-------------|---------|
| [_____] | [_____] | [_____] | [_____]              | [_____] | [_____]     | [_____] |

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