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USACE / NAVFAC / AFCEA UFGS-09100 (August 2004)  
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Preparing Activity: NAVFAC Superseding  
UFGS-09100N (September 1999)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 23 June 2005

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### SECTION 09100

#### METAL SUPPORT ASSEMBLIES

08/04

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NOTE: This guide specification covers the requirements for nonload-bearing cold-formed metal framing, furring, and ceiling suspension systems for the attachment of lath, plaster, stucco, and wallboard.

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: Load-bearing cold-formed steel framing is included in Section 05400 COLD-FORMED METAL FRAMING. Metal suspension systems for acoustical ceilings are included in Section 09510 ACOUSTICAL CEILINGS.

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NOTE: On the drawings, show:

1. Locations of each type of metal framing, furring, or suspension system.
2. Spacing and gage of members if other than those required by referenced publication.
3. Seismic restraint for projects located in seismic zone 2, 3, or 4, in accordance with NAVFAC P-355, "Seismic Design for Buildings."

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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.

#### ASTM INTERNATIONAL (ASTM)

ASTM A 463/A 463M	(2002a) Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
ASTM A 653/A 653M	(2004a) Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM C 645	(2004a) Nonstructural Steel Framing Members
ASTM C 754	(2004) Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
ASTM C 841	(2003) Installation of Interior Lathing and Furring

#### NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM ML/SFA MLF	(1991) Metal Lathing and Furring
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#### UNDERWRITERS LABORATORIES (UL)

UL Fire Resist Dir	(2004) Fire Resistance Directory
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### 1.2 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-02 Shop Drawings

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NOTE: Require drawings only for projects where complexity or quantity make it feasible.

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Metal support systems; G, [\_\_\_\_\_]

Submit for the erection of metal [framing,] [furring,] [and] [ceiling suspension systems]. Indicate materials, sizes, thicknesses, and fastenings.

### 1.3 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the job site and store in ventilated dry locations. Storage area shall permit easy access for inspection and handling. If materials are stored outdoors, stack materials off the ground, supported on a level platform, and fully protected from the weather. Handle materials carefully to prevent damage. Remove damaged items and provide new items.

## PART 2 PRODUCTS

### 2.1 MATERIALS

Provide steel materials for metal support systems with galvanized coating ASTM A 653/A 653M, Z180 G-60; aluminum coating ASTM A 463/A 463M, T1-75 T1-25; or a 55-percent aluminum-zinc coating.

### 2.1.1 Materials for Attachment of Lath

#### 2.1.1.1 Suspended and Furred Ceiling Systems and Wall Furring

ASTM C 841.

#### 2.1.1.2 Nonload-Bearing Wall Framing

NAAMM ML/SFA MLF.

### 2.1.2 Materials for Attachment of Gypsum Wallboard

#### 2.1.2.1 Suspended and Furred Ceiling Systems

ASTM C 645.

#### 2.1.2.2 Nonload-Bearing Wall Framing and Furring

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**NOTE: Minimum thickness of 0.45 mm 0.0179 inch (25 gage) is standard for interior nonload-bearing studs without supporting attached loads. Choose the second option of 0.85 mm 0.0329 inch (20 gage) thickness for medical, dental or other building types requiring large quantities of wall supported cabinet work and equipment throughout the facility.**  
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ASTM C 645, but not thinner than[ 0.45 mm 0.0179 inch thickness, with 0.85 mm 0.0329 inch minimum thickness supporting wall hung items such as cabinetwork, equipment and fixtures] [ 0.85 mm 0.0329 inch thickness].

#### 2.1.2.3 Furring Structural Steel Columns

ASTM C 645. Steel (furring) clips and support angles listed in UL Fire Resist Dir may be provided in lieu of steel studs for erection of gypsum wallboard around structural steel columns.

#### 2.1.2.4 Z-Furring Channels with Wall Insulation

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**NOTE: The depth specified for Z-furring channels should be coordinated with the R-value specified for wall insulation thickness.**  
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Not lighter than 0.5 mm thick 26 gage galvanized steel, Z-shaped, with 32 mm and 19 mm 1 1/4 inch and 3/4 inch flanges and [[25] [38] [50] [75] mm[1] [1 1/2] [2] [3] inch furring depth] [depth as required by the insulation thickness provided].

## PART 3 EXECUTION

### 3.1 INSTALLATION

#### 3.1.1 Systems for Attachment of Lath

##### 3.1.1.1 Suspended and Furred Ceiling Systems and Wall Furring

ASTM C 841, except as indicated otherwise.

##### 3.1.1.2 Nonload-Bearing Wall Framing

NAAMM ML/SFA MLF, except that framing members shall be 400 mm 16 inches o.c. unless indicated otherwise.

#### 3.1.2 Systems for Attachment of Gypsum Wallboard

##### 3.1.2.1 Suspended and Furred Ceiling Systems

ASTM C 754, except that framing members shall be 400 mm 16 inches o.c. unless indicated otherwise.

##### 3.1.2.2 Nonload-Bearing Wall Framing and Furring

ASTM C 754, except as indicated otherwise.

##### 3.1.2.3 Furring Structural Steel Columns

Install studs or galvanized steel clips and support angles for erection of gypsum wallboard around structural steel columns in accordance with the UL Fire Resist Dir, design number(s) [indicated] [of the fire resistance rating indicated].

##### 3.1.2.4 Z-Furring Channels with Wall Insulation

Install Z-furring channels vertically spaced not more than 600 mm 24 inches o.c. Locate Z-furring channels at interior and exterior corners in accordance with manufacturer's printed erection instructions. Fasten furring channels to [masonry] [and] [concrete] walls with powder-driven fasteners or hardened concrete steel nails through narrow flange of channel. Space fasteners not more than 600 mm 24 inches o.c.

### 3.2 ERECTION TOLERANCES

Framing members which will be covered by finish materials such as wallboard, plaster, or ceramic tile set in a mortar setting bed, shall be within the following limits:

- a. Layout of walls and partitions: 6 mm 1/4 inch from intended position;
- b. Plates and runners: 5 mm in 1.9 meters 1/4 inch in 8 feet from a straight line;
- c. Studs: 5 mm in 1.9 meters 1/4 inch in 8 feet out of plumb, not cumulative; and
- d. Face of framing members: 5 mm in 1.9 meters 1/4 inch in 8 feet from a true plane.

Framing members which will be covered by ceramic tile set in dry-set mortar, latex-portland cement mortar, or organic adhesive shall be within the following limits:

- a. Layout of walls and partitions: 6 mm 1/4 inch from intended position;
  - b. Plates and runners: 5 mm in 3.8 meters 1/8 inch in 8 feet from a straight line;
  - c. Studs: 5 mm in 3.8 meters 1/8 inch in 8 feet out of plumb, not cumulative; and
  - d. Face of framing members: 5 mm in 3.8 meters 1/8 inch in 8 feet from a true plane.
- End of Section --