

SECTION 08 51 13
HOLLOW METAL WINDOW FRAMES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Hollow metal window frames of type and size shown, complete with related components and accessories.
- B. Types:
 - 1. Fixed (interior only).

1.2 DEFINITIONS

- A. Accessories: Mullions, staff beads, casings, closures, trim, clips, anchors, fasteners, and other necessary components required for fabrication and installation of window units.

1.3 RELATED WORK

- A. Glazing: Section 08 80 00, GLAZING.
- B. Color of finish: Section 09 06 00, SCHEDULE FOR FINISHES.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect windows from damage during handling and construction operations before, during and after installation.
- B. Store windows under cover, setting upright.
- C. Do not stack windows flat.
- D. Do not lay building materials or equipment on windows.

1.5 QUALITY ASSURANCE

- A. Approval by contracting officer is required of products or service of proposed manufacturers and installers.
- B. Approval will be based on submission of certification by Contractor that:
 - 1. Manufacturer regularly and presently manufactures the specified windows as one of its principal products.
 - 2. Installer has technical qualifications, experience, trained personnel and facilities to install specified items.
- C. Provide each type of window produced from one source of manufacture.
- D. Quality Certified Labels or certificate:
 - 1. Certificates in lieu of label with copy of recent test report (not more than 4 years old) from an independent testing laboratory and certificate signed by window manufacturer stating that windows provided comply with specified requirements and AAMA 101/I.S.2 for type of window specified.

1.6 SUBMITTAL

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
 - 1. Minimum of 1/2 full scale types of windows on project.
 - 2. Identifying parts of window units by name and kind of metal or material, show construction, installation and anchorages.
 - 3. Include glazing details and standards for factory glazed units.
- C. Certificates:
 - 1. Certificates as specified in paragraph QUALITY ASSURANCE.
 - 2. Indicating manufacturers and installers qualifications.
 - 3. Manufacturer's Certification that windows delivered to project are identical to windows tested.
- D. Test Reports:

Copies of test reports as specified in paragraph QUALITY ASSURANCE.
- E. Samples: Provide 150 mm (six-inch) length samples showing finishes, specified.

1.7 WARRANTY

Warrant windows against malfunctions due to defects in thermal breaks, hardware, materials and workmanship, subject to the terms of Article "WARRANTY OF CONSTRUCTION", FAR clause 52.246-21, except provide 10 year warranty period.

1.8 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)
 - 90.1-07.....Energy Standard of Buildings
- C. American Architectural Manufacturers Association (AAMA):
 - 101/I.S.2/A440-08.....Windows, Doors, and Unit Skylights
 - 505-09.....Dry Shrinkage and Composite Performance Thermal Cycling Test Procedures
 - 2605-05.....Superior Performing Organic Coatings on Architectural Aluminum Extrusions and Panels
 - TIR-A8-08.....Structural Performance of Poured and Debridged Framing Systems

D. American Society for Testing and Materials (ASTM):

A653/A653M-09.....Steel Sheet, Zinc Coated (Galvanized), Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-dip Process

E 90-09.....Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions

E. National Fenestration Rating Council (NFRC):

NFRC 100-10.....Determining Fenestration Product U-Factors

NFRC 200-10.....Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

F. National Association of Architectural Metal Manufacturers (NAAMM):

AMP 500-06.....Metal Finishes Manual

PART 2- PRODUCTS

2.1 MATERIALS

A. Cold Rolled 16 gauge Steel.

C. Fasteners: AAMA 101/I.S.2. Screws, bolts, nuts, rivets and other fastening devices to be non-magnetic stainless steel.

1. Fasteners to be concealed when window is closed. Where wall thickness is less than 3 mm (0.125 inch) thick, provide backup plates or similar reinforcements for fasteners.
2. Stainless steel self tapping screws may be used to secure Venetian blind hanger clips, vent guide blocks, friction adjuster, and limit opening device.
3. Attach locking and hold-open devices to windows with concealed fasteners. Provide reinforcing plates where wall thickness is less than 3 mm (0.125 inch) thick.

2.3 FABRICATION

A. Fabrication to exceed or meet requirements of Physical Load Tests and Air Infiltration Test of AAMA 101/I.S.2.

B. Glazing:

1. Factory or field glazing optional.
2. Glaze in accordance with Section 08 80 00, GLAZING.
3. Windows reglazable without dismantling sash framing.
4. Design rabbet to suit glass thickness and glazing method specified.
5. Glaze from interior except where not accessible.

6. In Security Bedrooms and Security Psychiatric Nursing Units, glaze from outside, except where detention screens occur, or cavity side of dual glazed windows.

7. Provide removable fin type glazing beads.

C. Trim:

1. Extruded or formed sections, straight, true, and smooth on exposed surfaces.
2. Exposed external corners mitered and internal corners coped; fitted
3. Except for strap anchors, provide reinforcing for fastening near ends and at intervals not more than 305 mm (12 inches) between ends.
4. Design to allow unrestricted expansion and contraction of members and window frames.
5. Secure to framing members with machine screws or expansion rivets.
6. Exposed screws, fasteners or pop rivets are not acceptable on exterior of the casing or trim cover system.

2.9 FIXED WINDOWS

A. AMMA 101/I.S.2; Type HC25.

B. AAMA certified product to the AAMA 101/I.S.2. - 97 standard.

2.10 FINISH

A. In accordance with NAAMM AMP 500 series.

1. Steel: AMP 504.

PART 3 - EXECUTION

3.1 PROTECTION (DISSIMILAR MATERIALS): AAMA 101/I.S.2.

3.2 INSTALLATION, GENERAL

A. Install window units in accordance with manufacturer's specifications and recommendations for installation of window units and other components of work.

B. Where type, size or spacing of fastenings for securing window accessories or equipment to building construction is not shown or specified, use expansion or toggle bolts or screws, as best suited to construction material.

1. Provide bolts or screws minimum 6 mm (1/4-inch) in diameter.

2. Sized and spaced to resist the tensile and shear loads imposed.

3. Provide non-magnetic stainless steel Phillips flat-head machine screws for exposed fasteners, where required, or special tamper-proof fasteners.
 - C. Set windows plumb, level, true, and in alignment; without warp or rack of frames or sash.
 - D. Anchor windows on four sides with anchor clips or fin trim.
 1. Do not allow building load to bear on windows.
 2. Use manufacturer's standard clips at corners and not over 600 mm (24 inches) on center.
 3. Where fin trim anchorage is shown build into adjacent construction, anchoring at corners and not over 600 mm (24 inches) on center.
- 3.4 ADJUST AND CLEAN**
- A. Remove excess glazing and sealant compounds, dirt, and other substances.
 - B. Clean glass promptly after installation of windows. Remove glazing and sealant compound, dirt and other substances.

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