

## SECTION 15815 - METAL DUCTS

### PART 1 - GENERAL

#### SUMMARY

This Section includes rectangular and round metal ducts and plenums for restroom ventilating systems.

See Division 15 Section "Duct Accessories" for dampers, sound-control devices, duct-mounted access doors and panels, turning vanes, and flexible ducts.

#### QUALITY ASSURANCE

Comply with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems," unless otherwise indicated.

### PART 2 - PRODUCTS

#### METAL DUCT MATERIALS

Galvanized, Sheet Steel: Lock-forming quality; ASTM A 653/A 653M, G90 (Z275) coating designation; mill-phosphatized finish for surfaces of ducts exposed to view.

Reinforcement Shapes and Plates: Galvanized steel reinforcement where installed on galvanized, sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.

Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for 36-inch (900-mm) length or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

#### SEALING MATERIALS

Joint and Seam Tape: 2 inches (50 mm) wide; glass-fiber fabric reinforced.

Joint and Seam Sealant: One-part, nonsag, solvent-release-curing, polymerized butyl sealant, formulated with a minimum of 75 percent solids.

#### HANGERS AND SUPPORTS

Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for building materials.

Hanger Materials: Galvanized, sheet steel or round, threaded steel rod.

Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.

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Trapeze and Riser Supports: Steel shapes complying with ASTM A 36/A 36M.

DUCT FABRICATION

Fabricate ducts, elbows, transitions, offsets, branch connections, and other construction with galvanized, sheet steel, according to SMACNA's "HVAC Duct Construction Standards--Metal and Flexible." Comply with requirements for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.

PART 3 - EXECUTION

INSTALLATION

Install ducts with fewest possible joints.

Install fabricated fittings for changes in directions, changes in size and shape, and connections.

Install couplings tight to duct wall surface with a minimum of projections into duct.

Install ducts, unless otherwise indicated, vertically and horizontally, parallel and perpendicular to building lines; avoid diagonal runs.

Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.

Install ducts with a clearance of **1 inch (25 mm)**, plus allowance for insulation thickness.

Electrical Equipment Spaces: Route ductwork to avoid passing through transformer vaults and electrical equipment spaces and enclosures.

Non-Fire-Rated Partition Penetrations: Where ducts pass through interior partitions and exterior walls, and are exposed to view, conceal space between construction opening and duct or duct insulation with sheet metal flanges of same metal thickness as duct. Overlap opening on four sides by at least **1-1/2 inches (38 mm)**.

JOINT AND SEAM SEALING

Seam And Joint Sealing: Seal duct seams and joints according to the duct pressure class indicated and as described in SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."

Pressure Classification Less Than **2-Inch wg (500 Pa)**: Transverse joints.  
Seal externally insulated ducts before insulation installation.

HANGERS AND SUPPORTS

Install rigid round and rectangular metal ducts with support systems indicated in SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."

Support horizontal ducts within **24 inches (600 mm)** of each elbow and within **48 inches (1200 mm)** of each branch intersection.

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Support vertical ducts at a maximum interval of 16 feet (5 m) and at each floor.

Install concrete inserts before placing concrete.

CONNECTIONS

Connect equipment with flexible connectors.

For branch, outlet and inlet, and terminal unit connections, comply with SMACNA's "HVAC Duct Construction Standards--Metal and Flexible."

END OF SECTION 15815