

**FIRE PROTECTION SPECIFICATIONS**

SECTION 15310  
BASIC FIRE SUPPRESSION MATERIALS AND METHODS

PART 1 GENERAL

1.01 SUMMARY

A. SECTION INCLUDES PIPE, FITTINGS, VALVES, AND CONNECTIONS FOR WET PIPE SPRINKLER SYSTEMS.

1.02 REFERENCES

A. AMERICAN SOCIETY OF MECHANICAL ENGINEERS:

- ASME B16.11 - FORGED STEEL FITTINGS - SOCKET-WELDING AND THREADED.
- ASME B16.25 - BUTTWELDING ENDS.
- ASME B16.3 - MALLEABLE IRON THREADED FITTINGS.
- ASME B16.5 - PIPE FLANGES AND FLANGED FITTINGS.
- ASME B16.9 - FACTORY-MADE WROUGHT STEEL BUTTWELDING FITTINGS.
- ASME B36.10M - WELDED AND SEAMLESS WROUGHT STEEL PIPE.

B. ASTM INTERNATIONAL:

- ASTM A53/A53M - STANDARD SPECIFICATION FOR PIPE, STEEL, BLACK AND HOT-DIPPED, ZINC-COATED, WELDED AND SEAMLESS.
- ASTM A234/A234M - STANDARD SPECIFICATION FOR PIPING FITTINGS OF WROUGHT CARBON STEEL AND ALLOY STEEL FOR MODERATE AND HIGH TEMPERATURE SERVICE.
- ASTM A795 - STANDARD SPECIFICATION FOR BLACK AND HOT-DIPPED ZINC-COATED (GALVANIZED) WELDED AND SEAMLESS STEEL PIPE FOR FIRE PROTECTION USE.

C. AMERICAN WATER WORKS ASSOCIATION:

- AWWA C111 - AMERICAN NATIONAL STANDARD FOR RUBBER-GASKET JOINTS FOR DUCTILE-IRON PRESSURE PIPE AND FITTINGS.

D. NATIONAL FIRE PROTECTION ASSOCIATION:

- NFPA 13 - INSTALLATION OF SPRINKLER SYSTEMS.
- NFPA 24 - INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES.

1.03 SUBMITTALS

A. SHOP DRAWINGS: INDICATE PIPE MATERIALS USED, JOINTING METHODS, SUPPORTS, FLOOR AND WALL PENETRATION SEALS. INDICATE INSTALLATION, LAYOUT, WEIGHTS, MOUNTING AND SUPPORT DETAILS, AND PIPING CONNECTIONS.

B. PRODUCT DATA: SUBMIT MANUFACTURER'S CATALOGUE INFORMATION, INDICATE VALVE DATA AND RATINGS.

1.04 CLOSEOUT SUBMITTALS

A. PROJECT RECORD DOCUMENTS: RECORD ACTUAL LOCATIONS OF COMPONENTS AND TAG NUMBERING.

1.05 QUALITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE WITH NFPA 13 STANDARD.

1.06 QUALIFICATIONS

A. MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING PRODUCTS SPECIFIED IN THIS SECTION WITH MINIMUM THREE YEARS EXPERIENCE.

B. INSTALLER: COMPANY SPECIALIZING IN PERFORMING WORK OF THIS SECTION WITH MINIMUM THREE YEARS EXPERIENCE.

1.07 DELIVERY, STORAGE, AND HANDLING

A. DELIVER AND STORE VALVES IN SHIPPING CONTAINERS, WITH LABELING IN PLACE.

B. FURNISH CAST IRON AND STEEL VALVES WITH TEMPORARY PROTECTIVE COATING.

C. FURNISH TEMPORARY END CAPS AND CLOSURES ON PIPING AND FITTINGS. MAINTAIN IN PLACE UNTIL INSTALLATION.

1.08 WARRANTY

A. FURNISH ONE YEAR MANUFACTURER WARRANTY FOR BASIC FIRE SUPPRESSION MATERIALS AND METHODS.

1.10 PRODUCTS

1.09 VALVES

A. GLOBE OR ANGLE VALVES:

- UP TO AND INCLUDING 2 INCHES: BRONZE BODY, BRONZE TRIM, RISING STEM AND HAND WHEEL, INSIDE SCREW, RENEWABLE RUBBER DISC, THREADED ENDS, WITH BACK SEATING CAPACITY.
- OVER 2 INCHES: IRON BODY, BRONZE TRIM, RISING STEM, HAND WHEEL, OS&Y, PLUG-TYPE DISC, FLANGED ENDS, RENEWABLE SEAT AND DISC.

B. BALL VALVES:

- UP TO AND INCLUDING 2 INCHES: BRONZE TWO PIECE BODY, BRASS, CHROME PLATED BRONZE, OR STAINLESS STEEL BALL, TEFLON SEATS AND STUFFING BOX RING, LEVER HANDLE, THREADED ENDS WITH UNION.

C. BUTTERFLY VALVES:

- CAST OR DUCTILE IRON BODY: CAST OR DUCTILE IRON, CHROME OR NICKEL PLATED DUCTILE IRON OR ALUMINUM BRONZE DISC, RESILIENT REPLACEABLE EPDM SEAT, WAFER, LUG, OR GROOVED ENDS, WITH EXTENDED NECK, HAND WHEEL AND GEAR DRIVE AND INTEGRAL INDICATING DEVICE, AND EXTERNAL TAMPER SWITCH RATED AT 115 VOLT AC.

D. CHECK VALVES:

- UP TO AND INCLUDING 2 INCHES: BRONZE BODY AND SWING DISC, RUBBER SEAT, THREADED ENDS.
- OVER 2 INCHES: IRON BODY, BRONZE TRIM, SWING CHECK WITH RUBBER DISC, RENEWABLE DISC AND SEAT, FLANGED ENDS WITH AUTOMATIC BALL CHECK.
- 4 INCHES AND OVER: IRON BODY, BRONZE DISC WITH STAINLESS STEEL SPRING, RESILIENT SEAL, THREADED, WAFER, OR FLANGED ENDS.

E. DRAIN VALVES:

- COMPRESSION STOP: BRONZE WITH HOSE THREAD NIPPLE AND CAP.

2. BALL VALVE: BRASS WITH CAP AND CHAIN, 3/4 INCH HOSE THREAD.

1.010 BURIED PIPING

A. SERIES IBR IN-BUILDING RISER, STAINLESS STEEL TYPE 305 WITH TIE ROD BRACKET & CIPS COUPLING END FOR DUCTILE IRON PIPE.

1.011 ABOVE GROUND PIPING

A. STEEL PIPE: ASTM A53/A53M, GRADE B, SCHEDULE 10 (PIPE SIZES 2" AND LARGER):

- MECHANICAL GROOVED COUPLINGS: MALLEABLE IRON HOUSING CLAMPS TO ENGAGE AND LOCK, "C" SHAPED ELASTOMERIC SEALING GASKET, STEEL BOLTS, NUTS, AND WASHERS; GALVANIZED FOR GALVANIZED PIPE.
- MECHANICAL FORMED FITTINGS: CARBON-STEEL HOUSING WITH INTEGRAL PIPE STOP AND O-RING POCKET AND O-RING UNIFORMLY COMPRESSED INTO PERMANENT MECHANICAL ENGAGEMENT ONTO PIPE.

B. STEEL PIPE: ASTM A53/A53M, GRADE B, SCHEDULE 40 (PIPE SIZES 1-1/2" AND SMALLER):

- MALLEABLE IRON FITTINGS: ASME B16.3, THREADED FITTINGS.

1.012 PIPE HANGERS AND SUPPORTS

A. CONFORM TO NFPA 13.

B. HANGERS FOR PIPE SIZES 1/2 TO 1-1/2 INCH: MALLEABLE IRON CARBON STEEL, ADJUSTABLE SWIVEL.

C. HANGERS FOR PIPE SIZES 2 INCH AND OVER: CARBON STEEL, ADJUSTABLE, CLEVIS.

D. VERTICAL SUPPORT: STEEL RISER CLAMP.

1.013 IDENTIFICATION

A. PAINTING: PAINT ALL EXPOSED PIPING IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.  
PIPE SERVICE COLOR #FIRE PROTECTION RED

PART 2 EXECUTION

2.01 PREPARATION

A. REAM PIPE AND TUBE ENDS. REMOVE BURRS.

B. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.

C. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS.

2.02 INSTALLATION

A. INSTALL PIPING IN ACCORDANCE WITH NFPA 13 FOR SPRINKLER SYSTEMS, AND NFPA 24 FOR SERVICE MAINS.

B. ROUTE PIPING IN ORDERLY MANNER, PLUMB AND PARALLEL TO EXISTING STRUCTURE. MAINTAIN GRADIENT.

C. INSTALL PIPING TO CONSERVE BUILDING SPACE, TO NOT INTERFERE WITH USE OF SPACE AND OTHER WORK.

D. GROUP PIPING WHENEVER PRACTICAL AT COMMON ELEVATIONS.

E. INSTALL PIPE SLEEVE AT PIPING PENETRATIONS THROUGH PARTITIONS, WALLS, AND FLOORS. SEAL PIPE AND SLEEVE PENETRATIONS TO MAINTAIN FIRE RESISTANCE EQUIVALENT TO FIRE SEPARATION.

F. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS, OR CONNECTED EQUIPMENT.

G. PIPE HANGERS AND SUPPORTS:

- INSTALL IN ACCORDANCE WITH NFPA 13.
- INSTALL HANGERS TO WITH MINIMUM 1/2 INCH SPACE BETWEEN FINISHED COVERING AND ADJACENT WORK.
- PLACE HANGERS WITHIN 12 INCHES OF EACH HORIZONTAL LEG.
- USE HANGERS WITH 1-1/2 INCH MINIMUM VERTICAL ADJUSTMENT. DESIGN HANGERS FOR PIPE MOVEMENT WITHOUT DISENGAGEMENT OF SUPPORTS.
- SUPPORT VERTICAL PIPING AT EVERY FLOOR. SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

H. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN AT LOW POINTS. INSTALL ECCENTRIC REDUCERS TO MAINTAIN TOP OF PIPE LEVEL.

I. PREPARE PIPE, FITTINGS, SUPPORTS, AND ACCESSORIES FOR FINISH PAINTING. WHERE PIPE SUPPORT MEMBERS ARE WELDED TO STRUCTURAL BUILDING FRAMING, SCRAPE, BRUSH CLEAN, AND APPLY ONE COAT OF ZINC RICH PRIMER TO WELDING. REFER TO SECTION 09900.

J. DO NOT PENETRATE BUILDING STRUCTURAL MEMBERS UNLESS INDICATED.

WHERE MORE THAN ONE PIPING SYSTEM MATERIAL IS SPECIFIED, INSTALL COMPATIBLE SYSTEM COMPONENTS AND JOINTS. INSTALL FLANGES, UNION, AND COUPLINGS AT LOCATIONS REQUIRING SERVICING.

L. CUT THREADED JOINTS WITH FULL CUT STANDARD TAPER PIPE THREADS WITH RED LEAD AND LEADED OIL OR OTHER NON-TOXIC JOINT COMPOUND APPLIED TO MALE THREADS ONLY.

M. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED. REMOVE PROTECTIVE COATINGS PRIOR TO INSTALLATION.

N. INSTALL BALL OR BUTTERFLY VALVES FOR SHUT-OFF OR ISOLATING SERVICE.

O. INSTALL DRAIN VALVES AT MAIN SHUT-OFF VALVES, LOW POINTS OF PIPING AND APPARATUS.

END OF SECTION



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SEAL

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SCALE: N.T.S.

FIRE PROTECTION  
SPECIFICATIONS

SHEET NUMBER

FP-5.0

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