

# FIRE SPRINKLER SPECIFICATIONS

## PART 1 - GENERAL

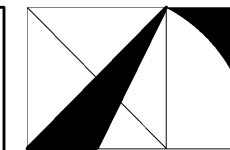
1. SYSTEM DESCRIPTION
  - A. MODIFY THE EXISTING AUTOMATIC FIRE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.
  - B. THE EXISTING SYSTEM IS THE WET-PIPE TYPE.
- 1.2 CODES AND STANDARDS
  - A. ALL WORK SHALL COMPLY WITH THE SPECIFICATIONS AND NOTED CODES AND STANDARDS. WHERE THE REQUIREMENTS OF THESE SPECIFICATIONS EXCEED SPECIFIED CODES AND ORDINANCES, CONFORM TO THESE SPECIFICATIONS.
  - B. ALL PRODUCTS AND COMPONENTS INSTALLED IN THE SYSTEM SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY FACTORY MUTUAL ENGINEERING (FM).
- 1.3 GUARANTEE
  - A. IN ADDITION TO OTHER WARRANTIES OR GUARANTEES REQUIRED BY THE CONTRACT DOCUMENTS, GUARANTEE ALL PIPING, DEVICES AND RELATED MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF THE OWNER'S FINAL ACCEPTANCE OF THE PROJECT. ALL DEFECTS SHALL BE PROMPTLY CORRECTED AT NO COST TO THE OWNER.
  - B. BE RESPONSIBLE FOR PROVIDING A SPRINKLER SYSTEM THAT HAS BEEN COORDINATED WITH THE CONTRACT DOCUMENTS AND APPROVED BY ALL AGENCIES LISTED IN THIS SECTION.
  - C. CORRECT ALL DEFICIENCIES POINTED OUT BY FIELD INSPECTORS REPRESENTING THESE AGENCIES, AT NO COST TO THE OWNER.
- 1.4 CONTRACTOR QUALIFICATIONS
  - A. THE CONTRACTOR SHALL POSSESS A CERTIFICATE OF COMPETENCY AND HAVE AT LEAST 4 YEARS OF CURRENT EXPERIENCE IN THE INSTALLATION OF FIRE PROTECTION AND DETECTION SYSTEMS SIMILAR IN SIZE AND DESIGN FOR THIS PARTICULAR PROJECT. A WRITTEN RECORD OF THIS QUALIFICATION SHALL BE SUBMITTED TO THE OWNER.
- 1.5 GENERAL REQUIREMENTS
  - A. BECOME FAMILIAR WITH ALL DETAILS OF THE WORK, VERIFY ALL DIMENSIONS IN THE FIELD, AND ADVISE THE OWNER OF ANY DISCREPANCY BEFORE PERFORMING THE WORK.
  - B. ALL PIPING, FITTINGS AND SPRINKLER SYSTEM COMPONENTS SHALL BE RATED FOR SYSTEM PRESSURE.

## PART 2 - PRODUCTS

- 2.1 MATERIALS
  - A. MATERIALS AND EQUIPMENT SHALL CONFORM TO NFPA 13 AND OTHER REQUIREMENTS SPECIFIED HEREIN.
  - B. UNLESS NOTED OTHERWISE, ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS.
  - C. MATERIALS AND EQUIPMENT USED FOR SIMILAR APPLICATION SHALL BE THE PRODUCT OF ONE MANUFACTURER UNLESS NOTED OTHERWISE.
  - D. ALL PIPE SHALL BE STAMPED ON EACH LENGTH WITH ITS ASTM, ANSI, OR AWWA NUMBER. BUNDLES OF STEEL PIPES SHALL HAVE A METAL TAG ATTACHED SHOWING THE ASTM NUMBER AND PIPE SCHEDULE.
- 2.2 SPRINKLERS
  - A. SPRINKLERS BELOW FINISHED CEILINGS SHALL BE PENDANT 1/2-INCH ORIFICE, UL LISTED TYPES HAVING A CHROME FINISH. TEMPERATURE RATING SHALL BE 165 DEG F. K VALUE SHALL BE APPROXIMATELY 5.6. PROVIDE CHROME PLATED RECESSED ESCUTCHEONS WHERE RECESSED LIGHT FIXTURES ARE FURNISHED. PROVIDE STANDARD ESCUTCHEONS WHERE SURFACE MOUNTED LIGHT FIXTURES ARE PROVIDED. STAR, VIKING, CENTRAL, OR APPROVED EQUAL.
  - B. ALL SPRINKLERS SHALL BE FIRE MARSHAL APPROVED.
- 2.3 PIPE
  - A. SPRINKLER PIPE AND FITTINGS SHALL BE PER NFPA 13, EXCEPT AS MODIFIED HEREIN.
  - B. PIPE SHALL BE ASTM A 195 STEEL PIPE AND SHALL BE SCHEDULE 40 FOR SIZES LESS THAN 2 INCHES.
  - C. RUBBER GASKETS, GROOVED-END PIPE AND FITTINGS WITH MECHANICAL COUPLINGS SHALL ONLY BE PERMITTED IN PIPE SIZES 2 INCHES OR LARGER.
- 2.4 PIPE FITTINGS
  - A. FITTINGS INTO WHICH SPRINKLER HEADS, SPRINKLER HEAD RISER NIPPLES OR DROP NIPPLES ARE THREADED, SHALL BE THREADED OR GROOVED-END TYPE. BLACK MALLEABLE IRON THREADED FITTINGS SHALL BE CLASS 150. FITTINGS SHALL BE MANUFACTURED PER ANSI B16.3 STANDARDS.
  - B. USE OF PLAIN-END FITTINGS WITH MECHANICAL COUPLINGS WHICH UTILIZE STEEL GRIPPING DEVICES TO BITE INTO THE PIPE WHEN PRESSURE IS APPLIED, WILL NOT BE PERMITTED.
  - C. FITTINGS SHALL BE UL LISTED AND/OR FM APPROVED FOR USE IN WET-PIPE SPRINKLER SYSTEMS. FITTINGS, MECHANICAL COUPLINGS AND RUBBER GASKETS SHALL BE SUPPLIED BY THE SAME MANUFACTURER.
  - D. GROOVED COUPLINGS WITH MINIMUM PRESSURE RATING FOR EXPECTED WORKING PRESSURE.
- 2.5 RETURN BENDS
  - A. RETURN BENDS SHALL BE PROVIDED ON ALL DROPS TO PENDANT SPRINKLER HEADS. SPRINKLER BRANCH LINES SUPPLYING PENDANT SPRINKLER HEADS SHALL BE CONNECTED TO THE TOP OF THE SUPPLY MAIN.

## PART 3 - EXECUTION

- 3.1 INSTALLATION
  - A. INSTALLATION, WORKMANSHIP, FABRICATION, ASSEMBLY, ERECTION, EXAMINATION, INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH NFPA 13, EXCEPT AS MODIFIED HEREIN. INSTALL PIPING STRAIGHT AND TRUE TO BEAR EVENLY ON HANGERS AND SUPPORTS. DO NOT HANG PIPING FROM PLASTER CEILINGS. KEEP THE INTERIOR AND ENDS OF NEW PIPING AND EXISTING PIPING AFFECTED BY CONTRACTOR'S OPERATIONS THOROUGHLY CLEANED OF WATER AND FOREIGN MATTER.
  - B. KEEP PIPING SYSTEMS CLEAN DURING INSTALLATION BY MEANS OF PLUGS OR OTHER APPROVED METHODS. WHEN WORK IS NOT IN PROGRESS, SECURELY CLOSE OPEN ENDS OF PIPING TO PREVENT ENTRY OF WATER AND FOREIGN MATTER. INSPECT PIPING BEFORE PLACING INTO POSITION. PROVIDE PIPING COMPOUND OR TEFLON TAPE APPLIED TO MALE THREADS ONLY.
- 3.2 COORDINATION AND SYSTEMS LAYOUT
  - A. SPRINKLER SYSTEMS SHALL BE COMPATIBLE WITH THE BUILDING LAYOUT AND SHALL AVOID INTERFERENCE WITH STRUCTURAL, ELECTRICAL, MECHANICAL AND PLUMBING WORK IN THE BUILDING. FINAL LAYOUT IN SPECIAL FINISH AREAS SHALL BE APPROVED BY THE OWNER.
  - B. INSTALL SYSTEMS TO KEEP ALL PIPING CONCEALED IN ALL AREAS WITH CEILINGS. PIPING AND EQUIPMENT SHALL BE LOCATED AS OUT-OF-THE-WAY AS POSSIBLE, HOLDING ALL PIPING AND EQUIPMENT CLOSE IN CORNERS AND TO WALLS.
  - C. SPRINKLER HEADS SHALL BE SYMMETRICALLY LOCATED OR REQUIRED TO PROVIDE PROPER COVERAGE AND TO AVOID INTERFERENCE WITH LIGHTS, DIFFUSERS, GRILLES OR OTHER CEILING MOUNTED EQUIPMENT. WHERE SPRINKLER HEADS ARE LOCATED IN A CEILING, USE SYMMETRIC HEAD PATTERN IN PROPER RELATIONSHIP WITH THE GENERAL CEILING PATTERN, INCLUDING CEILING TILE WHERE APPLICABLE AND LIGHTS THROUGHOUT EACH AREA. CENTER SPRINKLER HEAD IN ALL CEILING TILES.
  - D. PROVIDE SPRINKLER COVERAGE FOR ALL AREAS OF THE PROJECT UNLESS SPECIALLY NOTED OTHERWISE ON DRAWINGS.
- 3.3 HANGERS AND SUPPORTS
  - A. THE INSTALLATION OF ALL HANGERS AND SUPPORTS SHALL COMPLY WITH NFPA 13.
  - B. ALL SPRINKLER PIPING SHALL BE INDEPENDENTLY SUPPORTED FROM OTHER PIPING AND DUCT SYSTEMS. ALL PIPING SHALL BE RIGIDLY SUPPORTED.
  - C. WHERE GROOVED COUPLINGS AND/OR OTHER SYSTEMS OF MECHANICAL FITTINGS AND COUPLINGS ARE UTILIZED FOR FASTENING, SUFFICIENT NUMBER OF HANGERS SHALL BE PROVIDED TO PREVENT ANY SAGGING OR MISALIGNMENT OF PIPING.
- 3.4 ADJUST AND CLEAN
  - A. PRIOR TO CONNECTING SPRINKLER PIPING FOR FLUSHING, FLUSH WATER FEED MAINS, LEAD-IN CONNECTIONS AND CONTROL PORTIONS OF SPRINKLER PIPING. AFTER FIRE SPRINKLER PIPING INSTALLATION HAS BEEN COMPLETED AND BEFORE PIPING IS PLACED IN SERVICE, FLUSH ENTIRE SPRINKLER SYSTEM AS REQUIRED TO REMOVE FOREIGN SUBSTANCES.
  - B. CONTINUE FLUSHING UNTIL WATER IS CLEAR, AND CHECK TO ENSURE THAT DEBRIS HAS NOT CLOGGED SPRINKLERS. PROVIDE TEST CONNECTIONS ON SPRINKLER MAINS, CROSSMAINS AND LARGE BRANCH PIPING TO PERMIT FLUSHING.
- 3.5 TESTS AND INSPECTIONS
  - A. FURNISH ALL LABOR AND EQUIPMENT REQUIRED TO CONDUCT ALL SPECIFIED TESTS.
  - B. ALL TESTS AND INSPECTIONS OF THE SYSTEM AND ITS COMPONENTS SHALL BE WITNESSED BY REPRESENTATIVES OF THE OWNER, THE CONTRACTOR, THE LOCAL FIRE DEPARTMENT (AT THEIR DISCRETION) AND THE INSURANCE AND REGULATORY AGENCIES AT A TIME COORDINATED BETWEEN ALL PARTIES. A MINIMUM OF 5 WORKING DAYS NOTICE SHALL BE GIVEN THAT THE SYSTEM IS READY FOR TESTS.
- 3.6 CERTIFICATE OF APPROVAL
  - A. ON COMPLETION OF INSTALLATION, OBTAIN AND DELIVER TO THE OWNER CERTIFICATES OF FINAL INSPECTION AND APPROVAL. TEST CERTIFICATES SHALL BE SIGNED BY A CERTIFICATE OF COMPETENCY HOLDER.

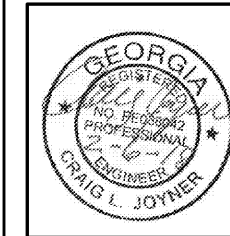


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