DIVISION 21 – FIRE SUPPRESSION

21 0500 – COMMON WORK RESULTS FOR FIRE SUPPRESSION

1. Comply with NEMA MG 1
2. Comply with IEEE 841 for severe-duty motors.

21 0513 – COMMON MOTOR REQUIREMENTS FOR FIRES SUPPRESSION EQUIPMENT

21 0533 – HEAT TRACING FOR FIRE SUPPRESSION PIPING


21 0548 – VIBRATION AND SEISMIC CONTROLS FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

21 0553 – IDENTIFICATION FOR FIRE SUPPRESSION PIPING AND EQUIPMENT

21 0719 – FIRE SUPPRESSION PIPING INSULATION

1. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, and cement material containers, with appropriate markings of applicable testing agency.
   a. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
   b. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.
2. Products shall not contain asbestos, lead, mercury, or mercury compounds.
3. Products that come in contact with stainless steel shall have a leachable chloride content of less than 50 ppm when tested according to ASTM C 871.
4. Insulation materials for use on austenitic stainless steel shall be qualified as acceptable according to ASTM C 795.
5. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.

21 1200 – FIRE SUPPRESSION STAND PIPES
A. SYSTEM DESCRIPTIONS

1. Automatic Wet-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Has open water-supply valve with pressure maintained and is capable of supplying water demand.

2. Automatic Wet-Type, Class II Standpipe System: Includes NPS 1-1/2 hose stations. Has open water-supply valve with pressure maintained and is capable of supplying water demand.

3. Automatic Wet-Type, Class III Standpipe System: Includes NPS 1-1/2 hose stations and NPS 2-1/2 hose connections. Has open water-supply valve with pressure maintained and is capable of supplying water demand.

4. Automatic Dry-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Has open water-supply valve and dry-pipe valve with standpipes containing compressed air or nitrogen. Opening fire-hose valve releases compressed air and permits water pressure to open dry-pipe valve. Water then flows into standpipes.

5. Automatic Dry-Type, Class II Standpipe System: Includes NPS 1-1/2 hose stations. Has open water-supply valve and dry-pipe valve with standpipes containing compressed air or nitrogen. Opening fire-hose valve releases compressed air and permits water pressure to open dry-pipe valve. Water then flows into standpipes.

6. Automatic Dry-Type, Class III Standpipe System: Includes NPS 1-1/2 hose stations and NPS 2-1/2 hose connections. Has open water-supply valve and dry-pipe valve with standpipes containing compressed air or nitrogen. Opening fire-hose valve releases compressed air and permits water pressure to open dry-pipe valve. Water then flows into standpipes.

7. Semiautomatic Dry-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Has open water-supply valve and deluge valve with standpipes containing air. Actuation of detection device permits water pressure to open deluge valve. Water then flows into standpipes.

8. Semiautomatic Dry-Type, Class II Standpipe System: Includes NPS 1-1/2 hose stations. Has open water-supply valve and deluge valve with standpipes containing air. Actuation of detection device permits water pressure to open deluge valve. Water then flows into standpipes.

9. Semiautomatic Dry-Type, Class III Standpipe System: Includes NPS 1-1/2 hose stations and NPS 2-1/2 hose connections. Has open water-supply valve and deluge valve with standpipes containing air. Actuation of detection device permits water pressure to open deluge valve. Water then flows into standpipes.

10. Manual Wet-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Has small water supply to maintain water in standpipes. Piping is wet, but water must be pumped into standpipes to satisfy demand.

11. Manual Dry-Type, Class I Standpipe System: Includes NPS 2-1/2 hose connections. Does not have permanent water supply. Piping is dry. Water must be pumped into standpipes to satisfy demand.

21 1300 – FIRE SUPPRESSION SPRINKLERS

21 1339 – FOAM WATER SPRINKLER AND SPRAY SYSTEMS
A. FOAM CONCENTRATE

1. Description: AR or AFFF liquid concentrate, complying with NFPA 11 and UL 162, for making foam-water fire-extinguishing foam solution.

21 2200 – CLEAN-AGENT FIRE EXTINGUISHING SYSTEMS

1. Description: Clean-agent fire-extinguishing system shall be an engineered system for total flooding of the hazard area including the room cavity above the ceiling, below the ceiling, and below the raised floor. System includes separate zones above and below the ceiling and beneath the raised floor. If smoke is detected below the raised floor, extinguishing agent shall be discharged in the underfloor zone only. If smoke is detected below the ceiling, extinguishing agent shall be discharged in zones above and below the ceiling and below the floor. If smoke is detected above the ceiling, extinguishing agent shall be discharged in the zone above the ceiling only.

2. Delegated Design: Design clean-agent fire-extinguishing system and obtain approval from authorities having jurisdiction. Design system for Class A, B, and C fires as appropriate for areas being protected, and include safety factor. Use clean agent indicated and in concentration suitable for normally occupied areas.

21 2300 – WET CHEMICAL FIRE-EXTINGUISHING SYSTEM

1. Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with NFPA 13

21 2400 – DRY CHEMICAL FIRE EXTINGUISHING SYSTEM

1. Sprinkler system equipment, specialties, accessories, installation, and testing shall comply with the following:

   b. NFPA 13R.

21 3000 – FIRE PUMPS

A. END-SUCTION FIRE PUMPS

1. Manufacturers:

   a. A-C Fire Pump; a Xylem brand.
   b. Corcoran Piping System Co.
   c. Patterson Pump Company; a Gorman-Rupp company.
   d. Peerless Pump Company.
   e. Reddy-Buffaloes Pump Company.
A. IN-LINE FIRE PUMPS

1. Manufacturers:
   a. A-C Fire Pump; a Xylem brand.
   b. Corcoran Piping System Co.
   c. Patterson Pump Company; a Gorman-Rupp company.
   d. Peerless Pump Company.
   e. Pentair Pump Group.
   f. Plad Equipment, Ltd.
   g. Reddy-Buffaloes Pump Company.

B. HORIZONTALLY MOUNTED, SINGLE-STAGE, SPLIT-CASE FIRE PUMPS

1. Manufacturers:
   a. A-C Fire Pump; a Xylem brand.
   b. Corcoran Piping System Co.
   c. PACO Pumps; Grundfos Pumps Corporation, USA.
   d. Patterson Pump Company; a Gorman-Rupp company.
   e. Peerless Pump Company.
   f. Ruhrpumpen, Inc.

C. HORIZONTALLY MOUNTED, MULTISTAGE, SPLIT-CASE FIRE PUMPS

1. Manufacturers:
   a. A-C Fire Pump; a Xylem brand.
   b. Patterson Pump Company; a Gorman-Rupp company.
   c. Peerless Pump Company.

D. VERTICALLY MOUNTED, SINGLE-STAGE, SPLIT-CASE FIRE PUMPS

1. Manufacturers:
   a. A-C Fire Pump; a Xylem brand.
   b. Patterson Pump Company; a Gorman-Rupp company.
   c. Peerless Pump Company.
   d. Pentair Pump Group.

END OF DIVISION 21