

1. GENERAL REQUIREMENTS

1.1. GENERAL

- 1.1.1. THIS SPECIFICATION PROVIDES ADDITIONAL INFORMATION FOR THE INSTALLATION AND COMPLETE START-UP OF THE SPRINKLER SYSTEMS SHOWN ON THE PLANS, INCLUDING ALL ACCESSORIES AND EVERYTHING REQUIRED FOR THEIR START-UP AND PROPER OPERATION, UNLESS OTHERWISE INDICATED ELSEWHERE.
- 1.1.2. ALL GENERAL AND SPECIFIC ARCHITECTURAL CONDITIONS AND THOSE OF THE OWNER APPLY TO FIRE PROTECTION WORK.
- 1.1.3. IN THE EVENT OF CONFLICTS BETWEEN CERTAIN ARTICLES OF THE ARCHITECTURAL OR OWNER'S SPECIFICATIONS AND CERTAIN ARTICLES OF THE FIRE PROTECTION SPECIFICATIONS, THE INTERPRETATION OF THE ARTICLES OF THE ARCHITECTURAL OR OWNER'S SPECIFICATIONS MUST BE CLARIFIED BY THE PROFESSIONALS.
- 1.1.4. THE PLANS AND QUOTES FORM AN INTEGRAL PART OF THE CONTRACT AND COMPLEMENT EACH OTHER. ANY WORK OR MATERIALS NOT INDICATED OR SPECIFIED IMPLICITLY BUT NECESSARY FOR THE INSTALLATION AND PROPER FUNCTIONING OF A COMPLETE SYSTEM, AS PROPOSED IN THE PLANS AND/OR SPECIFICATIONS, MUST BE PROVIDED FOR IN THE QUOTE AND INSTALLED.
- 1.1.5. ALL NOTES TO THE PLANS FORM PART OF THIS CONTRACT.
- 1.1.6. ANY CHANGES TO PLANS AND SPECIFICATIONS, DURING SUBMISSIONS, WILL BE GIVEN IN WRITING; NEITHER THE OWNER NOR THE ENGINEER WILL BE HELD RESPONSIBLE FOR INFORMATION GIVEN ORALLY.
- 1.1.7. NO ADDITIONAL COSTS TO THE CONTRACT WILL BE JUSTIFIED FOR DIFFERENCES BETWEEN THE QUANTITIES TENDERED AND INSTALLED.

1.2. CODES AND REGULATIONS

1.2.1. ABBREVIATIONS

- 1.2.1.1. NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
- 1.2.1.2. CNB: NATIONAL BUILDING CODE
- 1.2.1.3. ULC: UNDERWRITER LABORATORIES OF CANADA
- 1.2.1.4. CNP: NATIONAL PLUMBING CODE
- 1.2.1.5. CQ: QUEBEC CONSTRUCTION CODE
- 1.2.1.6. CSA: CSA GROUP (CANADIAN STANDARDS ASSOCIATION)
- 1.2.1.7. ANSI: AMERICAN NATIONAL STANDARDS INSTITUTE
- 1.2.1.8. AWWA: AMERICAN WATER WORKS ASSOCIATION

1.2.2. COMPLIANCE

- 1.2.2.1. ARRANGE WITH THE OWNER FOR THE PERIODS AVAILABLE FOR CARRYING OUT THE WORK AND RESPECT THE SCHEDULE ESTABLISHED AT THE START OF THE WORK.
- 1.2.2.2. THE FIRE PROTECTION CONTRACTOR MUST COMPLY WITH THE MOST RECENT AND CURRENT EDITIONS OF ALL REGULATIONS AND CODES IN FORCE IN THE PROVINCE OF QUEBEC FOR THIS TYPE OF BUILDING, SUCH AS THE CNP (2010), THE CQ: CHAPTER I-BUILDING, THE NBC: CANADA (2010), THE NFPA (2013) AND ALL LAWS, CODES AND REGULATIONS IN FORCE.
- 1.2.2.3. ALL EQUIPMENT, INSULATION AND OTHER MATERIALS MUST BE INSTALLED ACCORDING TO THE MANUFACTURERS' RECOMMENDATIONS, IN ADDITION TO THE INSTALLATION DETAILS WHICH MAY BE INCLUDED IN THESE PLANS AND SPECIFICATIONS.
- 1.2.2.4. ALL SYSTEM ACCESSORIES AND COMPONENTS MUST BE NEW AND INSTALLED IN ACCORDANCE WITH NFPA, ULC AND FM, UNLESS OTHERWISE NOTED.
- 1.2.2.5. DUCTILE IRON PIPE AND ITS FITTINGS INSTALLED UPSTREAM OF THE BACKFLOW PREVENTER OF A POTABLE WATER CONNECTION SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/AWWA C153/A21.53.
- 1.2.2.6. BACKFLOW PREVENTION DEVICES MUST COMPLY WITH CSA B64.10 "GUIDE FOR THE SELECTION AND INSTALLATION OF BACKFLOW PREVENTION DEVICES".
- 1.2.2.7. THE LOCATION OF THE FIRE PROTECTION PIPING, FITTINGS AND ACCESSORIES, AS WELL AS ALL OTHER FITTINGS, ARE INDICATED ON THE PLANS FOR INFORMATION PURPOSES ONLY AND IN NO WAY EXEMPT THE CONTRACTOR FROM COMPLYING WITH THE STANDARDS IN FORCE.

1.3. COORDINATION

- 1.3.1. BEFORE BIDDING, THE CONTRACTOR MUST VISIT THE SITE. HE MUST ANTICIPATE AND INCLUDE IN HIS BID ALL ADDITIONAL WORK NOT SHOWN ON THE FIRE PROTECTION PLANS THAT WOULD BE REQUIRED FOLLOWING FINAL COORDINATION WITH THE LAYOUT OF THE EQUIPMENT AND OTHER EXISTING MECHANICAL AND ELECTRICAL DEVICES. NO ADDITIONAL AMOUNTS WILL BE PAID AFTER ACCEPTANCE OF BIDS FOR FAILURE TO COMPLY WITH THE ABOVE, AS THIS IS WORK IN AN EXISTING BUILDING, THE CONTRACTOR WILL HAVE TO ADJUST TO EXISTING SITE CONDITIONS.

- 1.3.2. THE CONTRACTOR MUST COORDINATE THE LOCATION OF ALL ITS EQUIPMENT AND THE PASSAGE OF ITS PIPING BY MINIMIZING THE SPACE USED WHILE MAINTAINING THE CLEARANCE REQUIRED TO ALLOW ACCESS FOR REPAIR AND MAINTENANCE PURPOSES. COORDINATE THE WORK WITH EXISTING CONSTRAINTS, GIVING PRIORITY TO LIGHTING FIXTURES, VENTILATION DUCTS AND ANY OTHER EXISTING EQUIPMENT.

- 1.3.3. GENERALLY SPEAKING, THE DISTRIBUTION OF THE AUTOMATIC FIRE SPRINKLER SYSTEM MUST RESPECT THE CONSTRAINTS OF EXISTING INSTALLATIONS AND VENTILATION SYSTEMS. THE CONTRACTOR MUST INCLUDE IN HIS BID THAT ADJUSTMENTS TO THE SPRINKLER SYSTEM TO ACTUAL SITE CONDITIONS ARE AN INTEGRAL PART OF THE BASIC CONTRACT.

- 1.3.4. BEFORE PURCHASING, MANUFACTURING AND INSTALLING CONDUITS, PIPES AND EQUIPMENT, CHECK THE LOCATION AND DIMENSIONS OF CEILINGS, LIGHTING FIXTURES, STRUCTURE, EXISTING MECHANICS, ETC. AT THIS TIME, COORDINATE INSTALLATION WORK WITH OTHER CONTRACTORS. IF MODIFICATIONS ARE NECESSARY DUE TO LACK OF COORDINATION, THE CONTRACTOR MUST MAKE THEM AT HIS OWN EXPENSE. THE CONTRACTOR MUST PROVIDE ADDITIONAL CONNECTIONS FOR POSSIBLE CHANGES OF DIRECTION FOLLOWING COORDINATION WITH OTHER CONTRACTORS.

1.4. PLANS AND CALCULATIONS

- 1.4.1. THE CONTRACTOR MUST PREPARE WORKING DRAWINGS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13 2013 AND SITE CONDITIONS. THIS MUST INCLUDE ALL NECESSARY CLEARANCES TO THE STRUCTURE AND COORDINATION WITH DUCTS, DIFFUSERS, LIGHTING FIXTURES, SHELVES, CONVEYORS, PLUMBING, PARTITIONS, ETC. HE MUST ALSO SUBMIT DESCRIPTIONS AND CATALOG EXTRACTS OF THE PRODUCTS HE PROPOSES TO USE. ALL EXECUTION PLANS MUST BE SIGNED BY THE OTHER TRADES FOR COORDINATION PURPOSES AND MUST BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WORK BEGINS.

- 1.4.2. CARRY OUT A NEW COMPLIANT FLOW TEST AT YOUR OWN EXPENSE, IF THE WORK IS STARTED MORE THAN 12 MONTHS AFTER THE DATE OF THE RESULTS OF THE TEST USED FOR THE DESIGN OF THE PLANS FOR SUBMISSION.

- 1.4.3. THESE NEW FLOW TESTS MUST BE PROVIDED TO THE ENGINEER AND COMPLY WITH NFPA 291.

- 1.4.4. THE CONTRACTOR MUST IN NO CASE MODIFY THE DIAMETERS OR GENERAL ARRANGEMENT OF THE PIPES SHOWN ON THE PLANS WITHOUT THE PRIOR CONSENT OF THE ENGINEER.

1.5. EXECUTION

1.5.1. FACILITY

- 1.5.1.1. COMPLY WITH THE NFPA 13 STANDARD FOR THE LOCATION OF SHUT-OFF VALVES, DRAIN VALVES, SAFETY VALVES, SUPPORTS, ETC.

- 1.5.1.2. THE CONTRACTOR MUST INSTALL THE DEVICES, ERECT AND APPLY ALL MATERIALS IN A MANNER THAT COMPLIES WITH ESTABLISHED STANDARDS. HE MUST CARRY OUT THE ENTIRE INSTALLATION FOLLOWING THE REQUIREMENTS OF PROVINCIAL, MUNICIPAL OR OTHER LAWS, REGULATIONS, STANDARDS AND CODES.

- 1.5.1.3. THE EQUIPMENT MUST BE INSTALLED CAREFULLY AND ACCORDING TO THE REQUIREMENTS OF THE TRADE. SYMMETRY MUST BE RESPECTED WITH REGARD TO THE CHOICE OF MATERIALS, THE LOCATION OF AUTOMATIC FIRE EXTINGUISHERS, ETC. THE LOCATION AND ELEVATION OF DEVICES AND PIPES MUST NOT INTERFERE WITH OPERATIONS IN ANY WAY. IN THE EVENT THAT THE CONTRACTOR MUST MOVE A SPRINKLER, A VALVE OR ANY OTHER DEVICE THAT COMES INTO CONFLICT WITH THE EQUIPMENT, HE MUST DO SO AT NO ADDITIONAL COST.

- 1.5.1.4. THE PROPER OPERATION AND COORDINATION OF THE INSTALLATION OF THE AUTOMATIC SPRINKLER SYSTEM AS WELL AS THE START-UP ARE ALL UNDER THE ENTIRE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR.

1.5.2. WORKFORCE

- 1.5.2.1. THE WORKFORCE USED TO CARRY OUT THE WORK MUST HAVE THE EXPERIENCE REQUIRED FOR THIS TYPE OF WORK.

- 1.5.2.2. IF IT TURNS OUT THAT THE WORK WAS POORLY EXECUTED, IT MUST BE REDONE AT THE EXPENSE OF THE CONTRACTOR WITHOUT THE LATTER BEING ABLE TO CLAIM THAT ADDITIONAL INSTRUCTIONS SHOULD HAVE BEEN SPECIFICALLY GIVEN TO HIM BY THE ENGINEER BEFORE THE EXECUTION OF THE WORK.

1.5.3. PIPE THREADING

- 1.5.3.1. ONCE THREADED, THE PIPES WILL NEED TO BE CLEANED WELL SO THAT THERE IS NO MORE OIL INSIDE THE PIPES OR ON THE THREADS.

- 1.5.3.2. TO SEAL THE JOINTS, THE CONTRACTOR WILL NEED TO USE TEFLON TAPE ON THE MESH, IF A PASTE CONDUIT THREAD SEALANT IS USED, IT SHOULD BE TEFLON BASED AND SHOULD BE OIL RESISTANT EVEN AT VERY HIGH TEMPERATURES.

1.5.4. OPENINGS AND BREAKTHROUGHS

- 1.5.4.1. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL THE OPENINGS NECESSARY FOR CARRYING OUT THE WORK, WHETHER THEY ARE HOLES TO DRILL, OR SLEEVES TO INSTALL.

- 1.5.4.2. DRILLING MUST BE DONE USING A ROTARY DRILL. THE USE OF IMPACT HAMMERS WILL BE PROHIBITED.

- 1.5.4.3. THE CONTRACTOR MUST UNDER NO CIRCUMSTANCES CARRY OUT ANY DRILLING IN THE STRUCTURAL ELEMENTS WITHOUT HAVING FIRST OBTAINED THE APPROVAL OF THE STRUCTURAL ENGINEER OR ARCHITECT.

- 1.5.4.4. THE OPENINGS AROUND THE PIPING PASSING THROUGH THE FLOOR, CEILING OR WALLS FOR WHICH A DEGREE OF FIRE RESISTANCE IS REQUIRED, THE FREE SPACE LEFT BETWEEN THE SCHEDULE 40 STEEL SLEEVE AND THE PIPES AND CONDUITS, LIKEWISE THAT BETWEEN THE DUCTS AND THE FIRE SEPARATION MUST BE CLOSED WITH FIRE BARRIER MATERIALS WHICH MUST REMAIN IN PLACE AND PREVENT THE PASSAGE OF FLAMES AND SMOKE WHEN SUBJECTED TO EXPOSURE TO FIRE, AS DESCRIBED IN THE CNB STANDARD.

- 1.5.4.5. FIRE BARRIER MATERIALS MUST BE INSTALLED USING ULC APPROVED INSTALLATIONS.

- 1.5.4.6. PROVIDE ALL NECESSARY ACCESS HATCHES IN WALLS AND CEILINGS TO ALLOW ACCESS TO TAPS, CONTROLS, ETC. IN WALLS AND CEILINGS. ACCESS DOORS MUST HAVE THE SAME FIRE RESISTANCE RATING AS THE WALLS AND CEILINGS WHERE THEY ARE INSTALLED. THE ACCESS DOOR MUST BE 1.9MM THICK (4 GAUGE) AND THE FRAME 1.52MM THICK (16 GAUGE). THESE DOORS WILL BE INSTALLED BY THE CONTRACTOR RESPONSIBLE FOR CONSTRUCTING THE WALLS AND CEILINGS. THE DIMENSIONS OF THE HATCHES WILL BE SELECTED ACCORDING TO THE EQUIPMENT TO BE REACHED.

1.5.5. EXISTING EQUIPMENT

- 1.5.5.1. ALL EXISTING EQUIPMENT SHOWN TO BE RETAINED AND/OR RELOCATED WILL BE RETAINED IN ITS CURRENT CONDITION UNLESS OTHERWISE INDICATED.

- 1.5.5.2. NO OTHER EQUIPMENT OR ACCESSORIES MUST BE RECOVERED FOR THE NEW INSTALLATION.

- 1.5.5.3. THE CONTRACTOR MUST NOTIFY THE OWNER AND THE ENGINEER OF ANY BREAKAGES OR DEFECTS IN EXISTING EQUIPMENT BEFORE RELOCATING IT. FAILING TO NOTIFY BEFORE CARRYING OUT THIS WORK, THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING THE DEFECTIVE EQUIPMENT.

1.5.6. IDENTIFICATION

- 1.5.6.1. ALL EQUIPMENT (VALVES, DRAINS, SWITCHES, PIPES, FIRE EXTINGUISHERS, ETC) MUST BE CLEARLY IDENTIFIED USING LAMICOID PLATES OR APPROVED EQUIVALENT.

- 1.5.6.2. IDENTIFICATIONS MUST FOLLOW THE RECOMMENDATIONS OF THE NFPA STANDARD, ANSI A13.1 STANDARD AND MUNICIPAL REGULATIONS.

- 1.5.6.3. THE LOCATION OF ALL AUXILIARY DRAINS MUST BE CLEARLY IDENTIFIED ON SITE AS WELL AS ON THE PLANS.

- 1.5.6.4. THE CONTRACTOR MUST INSTALL A COLOR REPRODUCTION IN A FRAME SCHEMATICALLY ILLUSTRATING THE BUILDING AND THE LOCATION OF EACH SPRINKLER ZONE.

- 1.5.6.5. THE CONTRACTOR MUST INSTALL A NAMEPLATE SHOWING THE HYDRAULIC CALCULATION CRITERIA AND WATER DEMANDS REQUIRED FOR EACH SYSTEM.

1.6. SHOP DRAWINGS

1.6.1. PURPOSE OF THE REVIEW

- 1.6.1.1. THE PROCEDURE FOR SUBMITTING AND REVIEWING SHOP DRAWINGS IS INTENDED TO GIVE THE ENGINEER THE OPPORTUNITY TO DETECT NON-COMPLIANCE AND/OR A GROSS DEVIATION RESULTING, FOR EXAMPLE, FROM A MISUNDERSTANDING OR A MISUNDERSTANDING OF THE PROJECT REQUIREMENTS, IN NO CASE DOES IT CONSTITUTE AN EXHAUSTIVE VERIFICATION OF THE INFORMATION APPEARING THEREIN.

- 1.6.1.2. THE CONTRACTOR IS IN NO WAY RELIEVED OF LIABILITY FOR ANY ERRORS, OMISSIONS OR DISCREPANCIES CONTAINED IN THE SUBMITTED DOCUMENTATION, EVEN IF THE ENGINEER HAS REVIEWED SUCH DOCUMENTATION AND RETURNED IT WITHOUT COMMENT.

- 1.6.1.3. DISTRIBUTE THE COPIES ONLY AFTER RECEIVING THE DRAWINGS DULY COMMENTED BY THE ENGINEER.

1.6.2. PROCEDURE

- 1.6.2.1. SUBMIT SHOP DRAWINGS, PRODUCT DESCRIPTIONS AND PRESCRIBED SAMPLES TO THE ENGINEER FOR REVIEW AND COMMENTS. PREPARE AND PROVIDE TO THE ENGINEER ONE (1) ELECTRONIC COPY OF THE SAME FORMAT FOR THE ENTIRE DOCUMENT.

- 1.6.2.2. THE DOCUMENT MUST CLEARLY AND SPECIFICALLY SHOW THE MODEL, TYPE OR OTHER SPECIFICS REFLECTING THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

- 1.6.2.3. SHOP DRAWINGS MUST BE SENT BY EMAIL TO THE DESIGN ENGINEER.

- 1.6.2.4. SUBMITTED SHOP DRAWINGS WILL BE RETURNED WITHIN TEN (10) WORKING DAYS ON ELECTRONIC MEDIA. THE DEADLINES FOR PRODUCING SHOP DRAWINGS BY THE CONTRACTOR AND THEIR REVIEW BY THE ENGINEER MUST BE TAKEN INTO ACCOUNT IN THE CONTRACTOR'S SCHEDULE AND CANNOT BE INVOKED AS A CAUSE OF DELAY.

- 1.6.2.5. THE UNITS OF MEASUREMENT (FLOW, TEMPERATURE, PRESSURE, ETC.) ON THE SHOP DRAWINGS MUST BE THE SAME AS THOSE USED ON THE PLANS AND SPECIFICATIONS.

- 1.6.2.6. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PRINT AND COPY REVIEWED DOCUMENTS, FOR THE PURPOSE OF PREPARING MAINTENANCE AND OPERATION INSTRUCTION MANUALS RELATING TO THESE PRODUCTS (2 COPIES) AND DISTRIBUTION TO PERSONS CONCERNED.

1.7. PRODUCTS AND EQUIVALENCE

1.7.1. APPROVALS

- 1.7.1.1. ALL PRODUCTS SUPPLIED AND INSTALLED MUST BE APPROVED FOR USE IN CANADA.

1.7.2. SPECIFIED PRODUCTS

- 1.7.2.1. THE SPECIFIED PRODUCTS MUST BE ACCEPTABLE PRODUCTS AS INDICATED IN THE PLANS, SPECIFICATIONS AND/OR LISTED IN THE SPECIFIC DESCRIPTION OF THE EQUIPMENT.

- 1.7.2.2. PRODUCTS SPECIFIED INCLUDE THE TRADEMARK WITH AT LEAST ONE MODEL NUMBER AND/OR PRODUCT NUMBER AS INDICATED IN THE DESCRIPTION.

- 1.7.2.3. NO PROPOSAL TO SUBSTITUTE ANY PIECE OF EQUIPMENT OR ANY SPECIFIED MATERIAL WILL BE CONSIDERED IN THE SELECTION OF THE BIDDER.

1.7.3. EQUIVALENT PRODUCTS

- 1.7.3.1. WHEN THERE IS ONLY ONE BRAND OF PRODUCT SPECIFIED WITH THE WORDS "OR APPROVED EQUIVALENT", OTHER BRANDS MAY BE SUBMITTED FOR APPROVAL BY THE ENGINEER.

- 1.7.3.2. EQUIVALENT PRODUCTS MUST BE PRODUCTS THAT CAN BE ACCEPTED AS COMPARABLE TO THE SPECIFIED PRODUCTS IF THEY MEET THE SPECIFICATIONS, IN THE OPINION OF THE ENGINEER.

- 1.7.3.3. THE BID PRICE WILL BE ESTABLISHED ONLY USING THE SPECIFIED PRODUCTS OR OTHER EQUIVALENT PRODUCTS. PROOF OF PRODUCT EQUIVALENCE WILL BE MADE AFTER SUBMISSION. PRODUCTS OTHER THAN THOSE SPECIFIED AND THOSE INDICATED AS OTHER EQUIVALENT PRODUCTS WILL NOT BE CONSIDERED AND WILL BE REFUSED.

2. PRODUCTS

2.1. UNDERGROUND PIPELINE

- 2.1.1. DUCTILE IRON PIPING CLASS 350 SERIES 52 FOR DRINKING WATER (UNDERGROUND PIPE AND PIPING BETWEEN THE DRINKING WATER CONNECTION AND THE BACKFLOW PREVENTION DEVICES), DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C153/A21.53. THEY MUST BE COATED INTERNALLY WITH A CEMENT MORTAR COATING MEETING THE REQUIREMENTS OF ANSI/AWWA C104/A21.4. THE EXTERIOR WALL OF THE PIPES MUST BE COATED WITH A LAYER OF BITUMEN MEETING THE REQUIREMENTS OF ANSI/AWWA C104/A21.4. THE SEAL MUST BE MECHANICAL TYPE.

- 2.1.2. TEES AND ELBOWS SHALL BE DUCTILE IRON. FITTINGS AND ELBOWS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/AWWA C110/A21.10 OR ANSI/AWWA C153/A21.53. THEY MUST BE COATED ON THE INSIDE WITH A CEMENT MORTAR COATING AND THE EXTERIOR WALL MUST BE COATED WITH A LAYER OF BITUMEN CONFORMING TO THE REQUIREMENTS OF ANSI/AWWA C104/A21.4.

- 2.1.3. MECHANICAL FITTINGS AND SEALS DESIGNED TO AWWA STANDARD AND INSTALL PER NFPA 13/24 STANDARD.

- 2.1.4. MECHANICAL TRANSITION FITTING DESIGNED TO JOIN DUCTILE IRON (AWWA) PIPING TO STEEL PIPING FOR FIRE PROTECTION. ANGULAR ASSEMBLY, IN ORDER TO VALIDATE THE ALIGNMENT OF THE GROOVES OF THE DIFFERENT TYPES OF PIPES, THE SEGMENTS ARE MADE OF DUCTILE IRON CONFORMING TO ATSM A-536, GRADE 65-45-12. MOLDED GASKET FOR STYLE 307 FITTINGS, "FLUSH SEAL" GRADE M.

2.2. INTERIOR PIPING AND FITTINGS

2.2.1. UNDERWATER SYSTEM

- 2.2.1.1. THE PIPING MUST BE FREE OF ALL TRACES OF RUST, OTHERWISE IT WILL BE DISMANTLED AND REPLACED.

- 2.2.1.2. STEEL PIPING SHALL BE MANUFACTURED TO ASTM A795 AND/OR ANSIASTM A53.

- 2.2.1.3. GASKETS AND FITTINGS MUST BE SUPPLIED BY THE SAME MANUFACTURER.

- 2.2.1.4. USE FLEXIBLE FITTINGS AND RIGID FITTINGS AS REQUIRED BY NFPA 13 2013.

- 2.2.1.5. DIAMETER FROM 1IN (25MM) TO 2IN (50MM) OR LESS, ABOVE GROUND:

- BLACK STEEL OF STANDARD THICKNESS, SCHEDULE 40, WITHOUT JOINT OR WITH COVER JOINT.

- PIPING WITH A SCREWED JOINT AND SEALED WITH A JOINT SEALANT APPROVED FOR USE IN A FIRE PROTECTION SYSTEM.

- THE FITTINGS ON THE SCHEDULE 40 BRANCH PIPES MUST BE DUCTILE IRON OR MALLEABLE IRON SCREWED.

- ROLLING GROOVED JOINT PIPING FOR UNDERWATER SYSTEM WITH MECHANICAL SEAL AND GROOVED FITTINGS SUCH AS VICTAULIC.

- OTHER ACCEPTABLE PRODUCTS: GRUVLUK, ANVIL, VGS OR APPROVED EQUIVALENT.

- 2.2.1.6. DIAMETER OF 2 1/2IN (63.5MM) AND MORE, ABOVE GROUND:

- BLACK STEEL, SCHEDULE 10.

- ROLLING GROOVED JOINT PIPING FOR UNDERWATER SYSTEM WITH MECHANICAL SEAL AND GROOVED FITTINGS SUCH AS VICTAULIC.

- OTHER ACCEPTABLE PRODUCTS: GRUVLUK, ANVIL, VGS OR APPROVED EQUIVALENT.

2.3. OTHER FITTINGS

- 2.3.1. WELDED FITTINGS - NO WELDING ACCEPTED ON GALVANIZED PIPING

- 2.3.1.1. GASKETS AND FITTINGS MUST BE SUPPLIED BY THE SAME MANUFACTURER.

- 2.3.1.2. THE ELEMENTS MUST COMPLY WITH CSA W47.1 AND CSA W47.1S1 STANDARDS (CONNECTIONS AND COLLAR FLANGES).

- 2.3.1.3. CLEAN THE INSIDE OF THE PIPES AND REMOVE ANY SOLDER RESIDUE. THE PROCEDURES OUTLINED IN PARAGRAPH 6.5.2 OF NFPA 13 MUST BE FOLLOWED.

2.4. SLEEVES

- 2.4.1. SUPPLY AND INSTALL SLEEVES AT ALL LOCATIONS WHERE PIPING PASSES THROUGH FLOORS OR FIRE SEPARATIONS (TWO LAYERS OF GYPSUM, CONCRETE OR MASONRY), THE CONTRACTOR RESPONSIBLE FOR THE PIPING AND INSTALLATION OF THE PIPES MUST SUPPLY AND INSTALL STEEL PIPE SLEEVES BEFORE POURING CONCRETE.

- 2.4.2. CLOSE AND CAULK THE FREE SPACES BETWEEN THE PIPE AND THE SLEEVE SO AS TO PRESERVE THE FIRE RESISTANCE OF THE WALL OR FLOOR.

- 2.4.3. ENSURE THAT THERE IS NO CONTACT BETWEEN THE COPPER PIPES AND THE FERROUS SLEEVES.

- 2.4.4. THE PIPE THAT PENETRATES THE CONCRETE SLAB AT THE WATER INLET MUST HAVE A MINIMUM CLEARANCE OF 2IN (50MM) AROUND THE PIPE.

- 2.4.5. ALL REPAIRS TO BE DONE TO REPAIR THE PLASTER, CONCRETE, PAINT AROUND THE OPENINGS ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR FOR ALL DIAMETERS.

2.5. BRACKETS

- 2.5.1. ULC AND FM APPROVED SUPPORTS FOR USE IN A FIRE PROTECTION SYSTEM.

- 2.5.2. THE TYPE OF SUPPORTS AND THE MAXIMUM PERMITTED DISTANCE MUST COMPLY WITH THE RECOMMENDATIONS OF STANDARD NFPA 13 AND FM.

- SPECIFIED PRODUCTS: ANVIL, FIG 69, FIG.212 OR APPROVED EQUIVALENT.

- 2.5.3. THREADED RODS AND FIXING ACCESSORIES MUST BE ELECTRO-ZINC PLATED.

- 2.5.4. THE SUPPORTS MUST BE ANCHORED TO THE STRUCTURE OF THE BUILDING. IT IS PROHIBITED TO HANG ON TO OBJECTS SUCH AS VENTILATION DUCTS, CABLE TRAYS OR PLUMBING PIPES. THE CONTRACTOR MUST PLAN FOR THE USE OF TRAPEZES WHEN THE PIPE PASSES UNDER A DUCT OR ANY OTHER DEVICE.

- 2.5.5. MAIN PIPES 6" (150MM) AND LARGER INSTALLED PARALLEL TO THE JOISTS MUST BE SUSPENDED USING TRAPEZIODS UNLESS THE JOISTS IN QUESTION ARE DESIGNED TO ACCOMMODATE THE WEIGHT OF THE PIPE. ALL PIPES MUST BE SUSPENDED FROM THE TOP SUPPORT POINTS (NODES) OF THE JOISTS.

- 2.5.6. FOR PIPES SUPPLYING SPRINKLERS IN A PENDANT POSITION UNDER A SUSPENDED CEILING, A SUPPORT MUST BE INSTALLED LESS THAN 12" (300MM) FROM THE END OF THE LINE AND MUST BE INSTALLED TO PREVENT UPWARD MOVEMENT OF THE PIPE. THIS ALSO APPLIES TO ARMVERS.

2.6. SEISMIC BRACING

- 2.6.1. RETAIN THE SERVICES OF AN ENGINEER AND MANDATE HIM TO:

- 2.6.2. PROVIDE A LETTER AT THE START OF THE PROJECT, ACKNOWLEDGING THAT IT HAS BEEN MANDATED TO ASSESS THE SEISMIC RISK, DESIGN AND VERIFY THE REQUIRED SEISMIC PROTECTION SYSTEM.

- 2.6.3. CARRY OUT A SEISMIC RISK ASSESSMENT ACCORDING TO THE REQUIREMENTS OF PART 4 OF THE QUEBEC CONSTRUCTION CODE AND NFPA13.

- 2.6.4. PRODUCE A SEISMIC RISK ASSESSMENT REPORT, SIGNED, WITH YOUR OIQ MEMBER NUMBER, INCLUDING CALCULATIONS OF SEISMIC LOADS AND THE MEANS TO COUNTER THEM, ALSO PRODUCE A QUOTE DETAILING THE SEISMIC PROTECTION SYSTEM AND THE SEISMIC PROTECTION DEVICES, INCLUDING THE TYPES OF ANCHORS AND BRACING THAT MUST BE USED, AS WELL AS THE LOCATIONS WHERE THEY MUST BE INSTALLED.

2.7. CONTROLS - UNDERWATER SYSTEM

- 2.7.1. EACH SPRINKLER ZONE MUST BE PROVIDED WITH A FLOOR CONTROL.

- 2.7.2. SUPPLY AND INSTALL WHEREVER INDICATED ON THE FLOOR CONTROL PLANS, ALL AS DESCRIBED BELOW, UNLESS OTHERWISE INDICATED:

- SUPERVISED VALVE (CONTROL VALVE/MONITORING SWITCH);

- FLOW INDICATOR;

- TEST AND DRAIN HOSE, CONNECTED TO COMMON DRAIN OF FLOOR CONTROLS;

- CHECK VALVE;

- RELEASE VALVE ADJUSTED TO 160 PSI, CONNECTED TO DRAIN;

- PRESSURE GAUGES;