1. GENERAL

1.01 SECTION INCLUDES

.1 This Section specifies firestopping and smoke seal requirements that are common to mechanical work Sections of the Specification and it is a supplement to each Section and is to be read accordingly.

1.02 SUBMITTALS

.1 At least 4 weeks prior to work commencing, submit a sample of each type of firestop and smoke seal system in applied form, for approval. Identify each system with manufacturer's name and type, ULC designation, and proposed use. After samples are reviewed, work is to conform to reviewed samples.

.2 Submit a product data sheet and a WHIMIS sheet for each firestopping and smoke seal product.

.3 Submit for review, full company name and experience of proposed firestopping and smoke seal system applicator.

.4 Sleeve and Formed Opening Location Drawings

.1 Prepare and submit for review, drawings indicating size and location of required sleeves, recesses and formed openings in poured or precast concrete work.

.2 Such drawings are to be completely and accurately dimensioned and relate sleeve, recesses, and formed openings to suitable grid lines and elevation datum, and are to take into account structural items such as grade beams, column caps, and column drop slabs.

.3 Begin to prepare such drawings immediately upon notification of acceptance of bid and award of Contract.

1.03 CLOSEOUT SUBMITTALS

.1 Submit a letter of proper firestopping and smoke seal certification as specified in Part 3 of this Section.

1.04 QUALITY ASSURANCE

.1 Applicator is to have a minimum of 3 years of successful experience on projects of similar size and complexity, and applicator's qualifications are to be reviewed by the Consultant.

.2 Comply with firestopping and smoke seal product manufacturer's recommendations regarding suitable environment conditions for product installation.

2. PRODUCTS

2.01 PIPE SLEEVES

.1 Galvanized Sheet Steel – Minimum 16 gauge galvanized steel with an integral flange at one end to secure sleeve to formwork construction.

.2 Polyethylene – Factory fabricated, flanged, high density polyethylene sleeves with reinforced nail bosses.

.3 Waterproof Galvanized Steel Pipe – Schedule 40 mild galvanized steel pipe with a welded-on square steel anchor and water stop plate at sleeve midpoint.

.4 Galvanized Steel or Cast Iron Pipe – Schedule 40 mild galvanized steel, or Class 4000 cast iron.

2.02 FIRESTOPPING AND SMOKE SEAL MATERIALS

.1 Ensure all sealant and fire stopping is low VOC type in accordance with LEED.

.2 Asbestos-free elastomeric materials tested, listed and labelled by ULC in accordance with CAN/ULC-S115 and CAN/ULC-S101 for installation in ULC designated firestopping and smoke seal systems to provide a positive fire, water and smoke seal, and a fire-resistance rating (flame, hose stream and temperature) not less than fire resistance rating of surrounding fire rated construction.

.3 Materials are to be compatible with abutting dissimilar materials and finishes and complete with primers, damming and back-up materials, supports, and anchoring devices in accordance with firestopping manufacturer's recommendations and ULC tested assembly.

.4 Pipe insulation forming part of a fire and smoke seal assembly is specified in Section entitled Mechanical Insulation.

.5 Manufacturers:

.1 A/D Fire Protection Systems "FIREBARRIER";

.2 Tremco Inc. Fire Protection Systems Group "TREMSTOP";

.3 3M Canada;

.4 Hilti (Canada) Ltd. Firestop Systems;

.5 Specified Technologies Inc.

2.03 WATERPROOFING SEAL MATERIALS

.1 Modular, mechanical seal assemblies consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and pipe sleeve or wall opening, assembled with stainless steel bolts and pressure plates and designed so when bolts are tightened the links expand to seal the opening watertight. Select seal assemblies to suit pipe size and sleeve size or wall opening size.

.2 Manufacturers:

.1 Thunderline Corp. (Power Plant Supply Co.) "LINK SEAL" Model S-316;

.2 The Metraflex Co. "MetraSeal" type ES.

2.04 PIPE ESCUTCHEON PLATES

.1 One-piece chrome plated brass or #4 finish type 302 stainless steel plates with matching screws for attachment to building surface, each plate sized to completely cover pipe sleeve or building surface opening, and to fit tightly around pipe or pipe insulation.

3. EXECUTION

3.01 INSTALLATION OF PIPE SLEEVES

.1 Where pipes pass through concrete and/or masonry surfaces provide pipe sleeves as follows:

.1 in poured concrete slabs – unless otherwise specified, minimum 16 gauge flanged galvanized steel or, where permitted by governing authorities, factory fabricated plastic sleeves;

.2 in concrete or masonry walls – Schedule 40 galvanized steel pipe or Class 4000 cast iron pipe.

.2 Sleeves in waterproofed slabs or walls are to be lengths of Schedule 40 mild galvanized steel pipe with a waterstop plate in accordance with drawing detail. Provide waterproof sleeves in following locations:

.1 in mechanical room floor slabs, except where on grade;

.2 in slabs over mechanical, fan, electrical and telephone equipment rooms or closets;

.3 in floors equipped with waterproof membranes;

.4 in roof slab;

.5 in waterproof walls.

.3 Size sleeves, unless otherwise specified, to leave 12 mm (½") clearance around pipes, or where pipe is insulated, a 12 mm (½") clearance around pipe insulation.

.4 Pack and seal void between pipe sleeves and pipe or pipe insulation in non-fire rated construction for the length of sleeves as follows:

.1 pack sleeves in interior construction with mineral wool and seal both ends of sleeves with non-hardening silicone base caulking compound;

.2 pack sleeves in exterior walls above grade with mineral wool and seal both ends of sleeves water-tight with approved non-hardening silicone base caulking compound unless mechanical type seals have been specified;

.3 seal sleeves in exterior walls below grade (and any other wall where water leakage may be a problem) with link type mechanical seals as specified.

.5 Where sleeves are required in masonry work, accurately locate and mark sleeve location, and hand sleeves to mason for installation.

.6 Terminate piping for sleeves that will be exposed so sleeve is flush at both ends with building surface so sleeve may be completely covered by an escutcheon plate, except for sleeves in waterproof floors which are to terminate 100 mm (4") above finished floor.

.7 "Gang" type sleeving will not be permitted.

.8 Where sleeves are provided in non-fire rated construction for future piping, or where piping has been removed from existing sleeves, cap and seal both ends of sleeved opening.

3.02 INSTALLATION OF WATERPROOF MECHANICAL SEALS

.1 Provide watertight link type mechanical seals in exterior wall openings.

.2 Assemble and install each mechanical seal in accordance with manufacturer's instructions.

.3 After installation, periodically check each mechanical seal installation for leakage and, if necessary, tighten link seal bolts until seal is completely watertight.

End of Section