

Part 1 General

1.1 SUMMARY

- .1 Section Includes:
 - .1 Thermal insulation for piping and piping accessories. The following piping systems are to be insulated and jacketed.
 - .1 All heating water piping.
 - .2 Domestic water piping (DHW, DCW & DHWR).

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C335, Standard Test Method for Steady State Heat Transfer Properties of Horizontal Pipe Insulation.
 - .2 ASTM C547, Mineral Fiber Pipe Insulation.
 - .3 ASTM C921, Standard Practice for Determining the Properties of Jacketing Materials for Thermal Insulation.
- .2 Manufacturer's Trade Associations
 - .1 Thermal Insulation Association of Canada (TIAC): National Insulation Standards.
- .3 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.

Part 2 Products

2.1 FIRE AND SMOKE RATING

- .1 In accordance with CAN/ULC-S102.
 - .1 Maximum flame spread rating: 25.
 - .2 Maximum smoke developed rating: 50.

2.2 INSULATION

- .1 Mineral fibre specified includes glass fibre, rock wool, slag wool.
- .2 Type 1: Hot Water Heating Piping and Domestic Hot, Cold and Recirc Piping

- .1 Rigid moulded mineral fibre with factory applied vapour retarder jacket. Mineral fibre: to ASTM C547.
- .2 Jacket: All Service Jacket c/w self-sealing lap.
- .3 PVC fitting covers
- .4 Maximum "k" factor: to ASTM C547.
- .5 Acceptable Material: "Schuller", "Micro-lok", or "Knauf" or approved equivalent in accordance with B6.

2.3 INSULATION SECUREMENT

- .1 Tape: self-adhesive, 50 mm wide minimum.
- .2 Contact adhesive: quick setting.

2.4 VAPOUR RETARDER LAP ADHESIVE

- .1 Water based, fire retardant type, compatible with insulation.
- .2 Quick-setting for joints and lap sealing of vapour barriers.

2.5 JACKETS

- .1 Canvas (in mechanical rooms):
 - .1 220 gm/m² cotton, plain weave, treated with dilute fire retardant lagging adhesive to ASTM C921.
 - .2 Lagging adhesive: compatible with insulation.
- .2 Canvas jacket not required on concealed piping (in suspended ceilings, non-accessible chases and furred-in spaces).

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheet.

3.2 PRE-INSTALLATION REQUIREMENT

- .1 Pressure testing of piping systems and adjacent equipment to be complete, witnessed and certified.
- .2 Surfaces clean, dry, free from foreign material.

3.3 INSTALLATION

- .1 Install in accordance with TIAC National Standards.
- .2 Apply materials in accordance with manufacturer's instructions and this specification.

- .3 Use two layers with staggered joints when required nominal wall thickness exceeds 75 mm.
- .4 Maintain uninterrupted continuity and integrity of vapour retarder jacket and finishes.
 - .1 Install hangers, supports outside vapour retarder jacket.

3.4 REMOVABLE, PRE-FABRICATED, INSULATION AND ENCLOSURES

- .1 Application: at valves, strainers and flanges. Do not insulate unions at equipment on hot piping. Cold piping systems shall have no un-insulated sections.
- .2 Design: to permit periodic removal and replacement without damage to adjacent insulation.
- .3 Insulation:
 - .1 Insulation, fastenings and finishes: same as system.
 - .2 Jacket: PVC.

3.5 PIPING INSULATION SCHEDULES

- .1 Includes valves, valve bonnets, strainers, flanges and fittings unless otherwise specified.
- .2 Thickness of insulation as listed in following table.
 - .1 Do not insulate exposed runouts to plumbing fixtures, chrome plated piping, valves, fittings.

Application	Pipe sizes (NPS) and insulation thickness (mm)					
	Run out	to 1	1 1/4 to 2	2 1/2 to 4	5 to 6	8 & over
DCW & DHW Piping	13	13	25	25	25	25
Heating Hot Water Supply and Return Piping	13	13	25	25	25	25

- .3 Finishes:
 - .1 Exposed in mechanical rooms: canvas jacket.
 - .2 Concealed, indoors: PVC on valves, fittings. No further finish.

END OF SECTION