

SECTION 5: COMMERCIAL PIPING

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Note: The contents of this section include the application and finishes of pipe insulation under TIAC specification code numbers 1501 and CPF. These code numbers are cross referenced in the following specification sections:

Mechanical Insulation

- Section 15250 (MasterFormat 1995)
- Section 21 07 00 – Fire-Suppression Insulation (MasterFormat 2004)
- Section 22 07 00 – Plumbing Insulation (MasterFormat 2004)
- Section 23 07 00 – HVAC Insulation (MasterFormat 2004)

Piping Insulation

- Section 15260 (MasterFormat 1995)

Section 21 07 19 – Fire-Suppression Piping Insulation (MasterFormat 2004)

Section 22 07 19 – Plumbing Piping Insulation (MasterFormat 2004)

Section 23 07 19 – HVAC Piping Insulation (MasterFormat 2004)

SECTION 5

COMMERCIAL PIPING

5.1 APPLICATION

A. HOT PIPING

Specification
Code No

1501-H Hot Application - Intermediate Temperature (15°C - 315°C)

- Piping: Pipe covering without integral jacket shall be held in place with insulation fastening at not less than 300 mm centres. Pipe insulation with integral jacket shall be held in place by stapling the flap on 75 mm centres. Pipe insulation with integral self-sealing jacket will not require additional fastening.

- Fittings: Insulate fittings with sections of the pipe insulation mitred to fit tightly, or insulating cement, or with tightly placed flexible insulation covered with reinforcing membrane stapled in place. Alternately insulate fittings with tightly placed flexible insulation and apply PVC fitting covers.

- Valves, Strainers: Insulate valve bodies and strainers with insulating cement, or fitted pipe insulation segments, or mitred blocks all to thickness of the adjacent pipe insulation or insulate with tightly placed flexible insulation covered with reinforcing membrane stapled in place. Drains, blowoff plugs and caps shall be left uncovered. Alternately insulate with tightly placed flexible insulation and apply PVC fitting covers. (**See Note 1**).

- Flanges: Insulate flanges with oversized pipe covering or mitred blocks to and applied in accordance with the manufacturer's directions. (**See Note 2**) the thickness of the adjacent pipe covering. Alternately insulate with tightly placed flexible insulation and apply PVC fitting covers. (**See Note 1**)

- Insulation Termination Points: Terminate insulation 75mm from fittings to provide working clearance and bevel insulation at 45° angle.

1501-HA Alternative Application

- For certain areas where insulation application as described above is impractical, flexible foamed elastomeric or closed cell insulation may be used and applied in accordance with the manufacturer's directions (**See Note 2**).

Note 1: The use of this code number does not include insulation application on valve bodies, strainers or flanges. The specifying authority must specify in the project specifications if valve bodies, strainers or flanges are to be insulated. Refer to specification format, Page SF-4, under "Application".

Note 2: The National Building Code 1995 requires that in buildings of non-combustible construction, foamed plastic insulation on piping located in vertical service spaces or in rooms or spaces other than service spaces must be suitably protected from fire exposure. The specifying authority is responsible for ensuring such protection is provided, if applicable to a project, and specify

accordingly in the project specifications. The use of foamed plastic insulation is also limited by NBC 1995 requirements for Smoke Developed Classification. The specifier must determine such limitations for each project and specify accordingly. Also note the temperature limitation of these products.

B. COLD PIPING

Specification

Code No.

1501-C Cold Application - (5°C to 15°C)

- Piping: Apply pipe insulation with integral vapour retarder jacket to piping and hold in place by securing the jacket flap. Seal all flaps and butt strips with vapour retarder adhesive or alternately secure with staples on 75 mm centres and cover with a heavy brush coat of retarder coating. Pipe insulation with integral self-sealing vapour retarder jacket will not require additional fastening.

- Fittings: Insulate fittings with section of the pipe insulation mitred to fit tightly, or with tightly placed flexible insulation, then apply reinforcing membrane embedded in vapour retarder coating. Alternately insulate fittings with tightly placed flexible insulation then apply reinforcing membrane embedded in vapour retarder coating and apply PVC fitting covers.

- Valves, Strainers: Insulate valve bodies, bonnets and strainers with insulating cement; or fitted pipe insulation; or mitred blocks all to thickness of adjacent pipe insulation, then apply reinforcing membrane embedded in retarder coating. Alternately, insulate with tightly placed flexible insulation covered with reinforcing membrane covered with a retarder coating. Drains, blow-off plugs and caps shall be left uncovered. Alternately insulate with tightly placed flexible insulation, then apply reinforcing membrane embedded in vapour retarder coating and apply PVC fitting covers.

- Flanges: Insulated flanges with oversized pipe insulation or mitred blocks to the thickness of the adjacent pipe insulation, then apply reinforcing membrane embedded in vapour retarder coating. Alternately insulate with tightly placed flexible insulation, then apply reinforcing membrane embedded in vapour retarder coating and apply PVC fitting cover.

1501-CA Alternative Application

- For certain areas where insulation application as described above is impractical, flexible foamed elastomeric or closed cell insulation may be used in accordance with the manufacturer's directions. (See Note 2 on page CP-2).

C. UNDERGROUND INSULATION

Specification

Code No.

1501-U Buried Underground Application

- Buried underground insulation employs specific systems based on the particular characteristics of the insulation materials to be used.

- Install the underground insulation in accordance with the manufacturer's

recommendations and specifications.

(Type to be specified from materials listed under Products Group B, Page 2).

1. INSULATION ON CONCEALED PIPING WILL BE LEFT AS FACTORY FINISHED WITH NO FURTHER FINISH REQUIRED.
2. THE FOLLOWING FINISHES APPLY TO EXPOSED PIPING ONLY:

5.2 FINISHES

Specification Code No.

CPF/1 Indoor

- The factory applied integral all service jacket shall be neatly applied to receive the treated fabric jacket. Apply a jacket with fabric adhesive.
- Fittings, (valves and strainers if specified) not finished with PVC covers shall be covered with a hard coat cement and finished with treated fitting fabric applied with fabric adhesive.
- Finish fabric with one (1) coat of fabric coating.

CPF/2 Indoor (THIS FINISH SHOULD ONLY BE USED WHERE FINISHED APPEARANCE IS NOT A FACTOR)

- Apply pipe insulation with an integral all-service jacket. Secure jacketing using appropriate fastenings on approximately 100mm centres. Cover longitudinal and circumferential joints with jacket finishing tape neatly applied. Alternately secure jacketing using integral self-sealing lap and self-sealing circumferential joint strips.
- Fittings, (valves and strainers if specified) not finished with PVC covers shall be covered with a hard coat cement and finish with treated fitting fabric applied with fabric adhesive.

CPF/3 Indoor/Outdoor (Metal Jacket)

- Over the pipe insulation apply metal jacketing using necessary fastenings on approximately 150mm centres.
- Over insulated fittings, (valve bodies, valve bonnets, strainers and flanges if specified) apply metal jacket or preformed metal fitting covers to provide a complete jacket system. Secure with necessary fastenings.

CPF/4 Indoor/Outdoor (PVC Jacket)

- Over the pipe insulation apply PVC jacketing using necessary fastenings on approximately 100mm centres. Cover longitudinal and circumferential joints with finishing tape neatly applied.
- Over insulated fittings, valve bodies, valve bonnets, strainers and flanges if specified) apply PVC jacket or preformed PVC fitting covers to provide a complete jacket system. Secure with appropriate fastenings and jacket finishing tape. **(See**

Note 1)

CPF/5 Outdoor

- Over the insulated surfaces apply a coat (minimum 1 litre per 1.5 m) of weather coating. 2 While still wet, embed a layer of reinforcing membrane and finish with a final coat (minimum 1 liter per 1.5 m) of weather coating. 2

NOTE 1: PVC Jacket and Fittings exposed to outdoor use or fluorescent lighting shall be ultra-violet ray resistant.