

PART 1 - GENERAL

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| <u>1.1 REFERENCES</u> | .1 | ASTM International Inc.
.1 ASTM A 53/A 53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
.2 ASTM A 105/A 105M-05, Standard Specification for Carbon Steel Forgings, for Piping Applications. |
| | .2 | Canada Green Building Council (CaGBC)
.1 LEED Canada-NC-2009, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package For New Construction and Major Renovations. |
| <u>1.2 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1 | Provide submittals in accordance with Section 01 33 00 - Submittal Procedures. |
| | .2 | Product Data:
.1 Provide manufacturer's printed product literature and datasheets for fixtures, and include product characteristics, performance criteria, physical size, finish and limitations.
.1 Manufacturer, model number, line contents, pressure and temperature rating.
.2 Movement handled, axial, lateral, angular and the amounts of each.
.3 Nominal size and dimensions including details of construction and assembly. |
| | .3 | Sustainable Design Submittals:
.1 LEED Submittals: in accordance with Section 01 35 21 - LEED Requirements. |
| <u>1.3 CLOSEOUT SUBMITTALS</u> | .1 | Provide maintenance and operation data in accordance with Section 01 78 00 - Closeout Submittals.
.1 Data to include:
.1 Servicing requirements, including special requirements, stuffing box |

1.3 CLOSEOUT
SUBMITTALS
(Cont'd)

- .1 (Cont'd)
- .1 Data to include: (Cont'd)
 - .1 (Cont'd)
packing, lubrication and recommended
procedures.

1.4 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver, store and handle in accordance with
Section 01 61 00 - Common Product
Requirements.
- .2 Deliver materials to site in original factory
packaging, labelled with manufacturer's name,
address.
- .3 Packaging Waste Management: remove for reuse
or return of pallets, crates, padding,
banding, and packaging materials as specified
in Construction Waste Management Plan in
accordance with Section 01 74 21 -
Construction/Demolition Waste Management and
Disposal and Section 01 35 21 - LEED
Requirements.

PART 2 - PRODUCTS

2.1 SUSTAINABLE
REQUIREMENTS

- .1 Materials and products in accordance with
Section 01 35 21 LEED Requirements.

2.2 SLIP TYPE
EXPANSION JOINTS

- .1 Application: for axial pipe movement .
- .2 Repacking: under full line pressure.
- .3 Body and packing housings: Class 150, 1MPa
carbon steel pipe to ASTM A 53/A 53M, Grade B.
Wall thickness to match pipe with ends for
welding.
- .4 Slip or traverse sleeves: carbon steel pipe
to ASTM A 53/A 53M, Grade B, hard chrome
plated.
- .5 Anchor base: construction steel, welded to
body.

2.2 SLIP TYPE
EXPANSION JOINTS
(Cont'd)

- .6 Guides (internal and external): embody into packing housing with concentric alignment of slip or traverse sleeve with packing housing.
- .7 Extension limit stop: stainless steel, to prevent over-extension with accessible and removable pins.
- .8 Packing rings: 6 minimum, PTFE or graphite impregnated non-asbestos.
- .9 Thermal plastic packing: PTFE or graphite impregnated non-asbestos slug supplied loose.
- .10 Lubricating fittings: pet cocks with grease nipple.
- .11 Plunger body and plunger:
 - .1 Plunger body: heavy wall carbon steel welded to body.
 - .2 Plunger: carbon steel with hex head for use with socket wrench.
- .12 Lubricant: to manufacturer's recommendations.
- .13 Lubricant gun: complete with hose assembly.
- .14 Drip connection: 20 MPa forged steel to ASTM A 105/A 105M. Include half coupling with drain plug.

2.3 GROOVED END
EXPANSION JOINTS

- .1 Packless, Gasketed, Slip, Expansion Joints:
 - .1 2413 kPa maximum working pressure.
 - .2 Steel pipe fitting consisting of telescoping body and slip-pipe sections.
 - .3 PTFE modified polyphenylene sulfide coated slide section.
 - .4 Suitable for axial end movement to 75 mm.
- .2 Expansion joint consisting of series of grooved end pipe nipples joined in tandem with flexible couplings. Total joint movement dependent on number of couplings and nipples used.

2.4 FLEXIBLE
CONNECTION

- .1 Application: to suit motion.
- .2 Minimum length in accordance with manufacturer's recommendations to suit offset.
- .3 Inner hose: stainless steel corrugated.
- .4 Braided wire mesh stainless steel outer jacket.
- .5 Diameter and type of end connection: as indicated.
- .6 Operating conditions:
 - .1 Working pressure: 1034 kPa.
 - .2 To match system requirements.
- .7 Three flexible grooved couplings placed in close proximity to vibration source for vibration attenuation and stress relief.

2.5 ANCHORS AND
GUIDES

- .1 Anchors:
 - .1 Provide as indicated.
 - .2 Concrete: to Section 03 30 00 - Cast-in-Place Concrete.
 - .3 Reinforcement: to Section 03 20 00 - Concrete Reinforcing.
- .2 Alignment guides:
 - .1 By conduit manufacturer.
 - .2 To accommodate specified thickness of insulation.
 - .3 Vapour barriers, jackets to remain uninterrupted.

PART 3 - EXECUTION

- 3.1 APPLICATION .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.
- 3.2 INSTALLATION .1 Install expansion joints with cold setting. Make record of cold settings.
- .2 Install expansion joints and flexible connections in accordance with manufacturer's instructions.
- .3 Install pipe anchors and guides as indicated. Anchors to withstand 150% of axial thrust.
- 3.3 PERFORMANCE VERIFICATION .1 In accordance with Section 23 08 01 - Performance Verification: Mechanical Piping Systems.
- 3.4 CLEANING .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal and Section 01 35 21 - LEED Requirements.