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## **Compensation for Linear Expansion and Frost Action For Rigid PVC Conduit (Non-Metallic Raceway)**

1. Like all construction material PVC will expand or contract with variations in temperature. Studies show that PVC conduit will expand or contract approximately 4 to 5 times as much as steel and approximately 3 times as much as aluminum.
2. N.S. Power Inspection Department has observed a growing number of installations where PVC conduit has broken free from its associated fittings, adaptors, couplings, etc. resulting in exposed conductors or live parts thus creating a safety hazard.
3. This is due in part to two factors -
  - i. Expansion and contraction, and
  - ii. Frost action, where PVC is utilized in a direct buried underground application
4. Nova Scotia Power Inspection Department requires that :
  - 4.1 Except where embedded in concrete, rigid PVC conduit shall not be clamped tightly but shall be supported in such a manner as to permit adequate lineal movement.
  - 4.2 Expansion joints shall be installed as required by C.E. Code Rule 12-1118 and Appendix B. For outdoor applications this will normally require two expansion joints per 35 m (115 ft.) of exposed conduit.
  - 4.3 Where rigid PVC conduit is installed below grade, either direct buried or incased in concrete, and where the PVC conduit is extended outdoors and above grade, terminating in a meter base, switch, junction box, L.B. fitting or similar fixed devices, then a minimum of one (1) expansion joint shall be provided.

Note:

Expansion joints must be installed and located so as to allow both expansion and contraction of the conduit run.

Expansion joints shall not be installed below grade for underground installations.