# Expansion and Vibration

On occasion it is necessary to provide for expansion of a cable operating under abnormal temperature conditions, or to prevent mechanical damage which may result from the relative movement of different items of equipment traversed by a cable.

Conditions encountered in commercial applications can be satisfied by providing, between securing clips or other fixation methods, a right angle bend (Fig. 1), two right angle bends (Fig. 2), or one semicircular bend and two 45° angle bends (Fig. 3) in the cable, whichever is most appropriate for a particular installation.

For Pyrotenax MI cable the bending radius should not be less than five times the cable diameter for cables up to 0.75 inch (19mm) diameter and 10 times the cable diameter for cables greater than 0.75 (19mm) diameter per US NEC. For Canadian CEC these minimum bending radius are 6 times and 12 times respectively where the termination is subject to vibration, an expansion loop as shown in Fig. 4 is recommended.

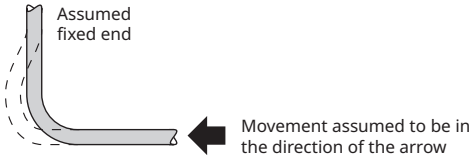


**Fig. 1 Single right angle bend**

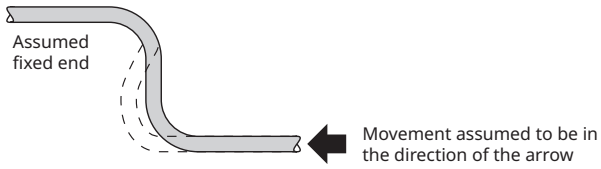


**Fig. 2 Two right angle bends**

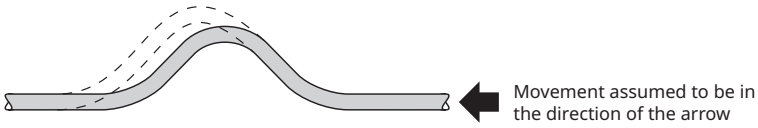


**Fig. 3 One semicircular bend**

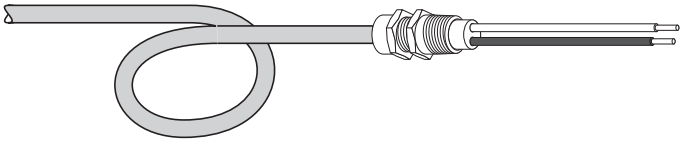

**Fig. 4 Expansion loop on termination end**

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