

(14)

CIDEC DOMESTIC ENQUIRY DE 402

CDA(UK) Technical Enquiry No.T103

Burying Copper Tube in Concrete or Mortar
and Thermal Expansion Allowance

ACCESSION NO. 3976
Temp. 156c

start
There should be no corrosion risk in burying copper tube in all the normal concretes and cement/lime mortars. Tubes intended to carry hot (i.e. above 120°F) water should, however, not be buried without making an allowance for thermal expansion and contraction.

Where the maximum temperature of the water would not be expected to exceed 120°F e.g. where the tubes form part of a radiant panel heating system, differential thermal movement between the tube and the concrete up to and including this temperature would not exceed the elastic limit of the copper and therefore no harm would result. At higher water temperatures, for example in normal central heating and hot water supply systems, due allowance should be made for the thermal movement of the tube. This may be accomplished either by placing the tube in a purpose-made duct or by wrapping with a suitable insulating material such as expanded polyurethane or expanded polystyrene before burying the tube. There are of course, other suitable insulating materials, but the two mentioned are unaffected by water which would be present in the concrete prior to drying out. *end*

Where a hot water pipe is placed in a duct it is also advisable to provide adequate thermal insulation. This is to prevent unnecessary loss of useful heat to the building and also to avoid the effect of heat upon surface finishes, particularly those of a thermo-plastic type.

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