MARLEY CONDUIT INSTALLATION

AVOID THE UNSIGHTLY EFFECTS, DAMAGE AND COSTLY REPAIR WORK RESULTING FROM CONDUIT EXPANSION AND THE EFFECTS OF TEMPERATURE CHANGE

When subjected to large changes in ambient temperature, installed conduit can expand and contract, leading to buckling, joints breaking and junction boxes distorting. This can result in difficult and costly rework once wiring has been installed.

Depending on the type of material, the rate of expansion and contraction can differ significantly.

The thermal expansion properties of uPVC is high relative to common materials:

- uPVC can expand and contract 6 times more than Steel
- uPVC can expand and contract 3 times more than Aluminium.

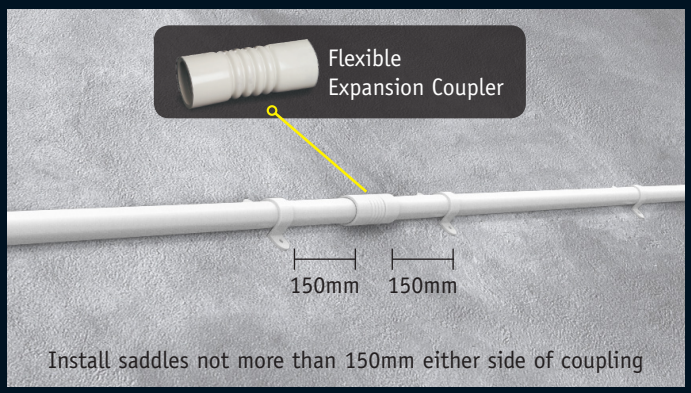
In practical terms, a 25°C change in temperature will result in 21mm of movement when installing 12 metres of uPVC conduit.

RECOMMENDATIONS FOR INSTALLATION

Marley Conduit is rated for continuous service conditions between -15°C to +60°C.

The degree of expansion and contraction is dependant on the length of conduit installed relative to the change in temperature.

For long runs, (typically 12 metres or greater):
Install flexible expansion couplings to avoid unsightly buckling or joint failure. The most common mistake is not using enough expansion joints. If in doubt always use more given the difficulty and costly rework once wiring has been installed



Install saddles not more than 150mm either side of coupling

QUICK REFERENCE & CALCULATIONS

A handy rule to use when determining the amount of expansion/contraction in a 10m length of conduit is: for every 10°C change in temperature, allow 7mm change in length for every 10m of installed conduit.

MOVEMENT OF 4M CONDUIT WITH CHANGING TEMPERATURE

Change In Temperature °C	Change In Length Of 4 Metre Length (mm)
15	4.2
20	5.6
25	7.0
30	8.4
35	9.8
40	11.2

To calculate the degree of movement
Movement (mm) = 0.7mm x L x ((T1 – T2)/10)

L = length of installed conduit (m)
T1 = Maximum Ambient Temperature (°C)
T2 = Minimum Ambient Temperature (°C)

Example Calculation
L = 12m length of installed conduit (m)
T1 = typical ambient summer temperature 27°C
T2 = typical ambient winter temperature 2°C

Movement (mm) = 0.7mm x L x ((T1 – T2)/10)
= 0.7mm x 12 x ((27-2)/10)
= 21mm