Cold Flex Temperature Tester
Model 46-12

Designed and built by Ray-Ran, the Cold Flex Tester determines how low temperatures affect the torsional stiffness properties of flexible materials, including polyvinyl chloride extrusion compounds, by measuring the temperature at which a test specimen is twisted through a known angular displacement using a pulley system by a specified torque. The apparatus complies with BS2782: Part 1: Method 104B, ISO458/1, 458/2 and ASTM D1043 International Test Standards.

The apparatus consists of a low temperature bath with electronic PID temperature controller, heater and a PT100 platinum resistance thermometer accurate to 0.1°C which accurately controls the heating cycle of the test. To ensure temperature stability within the bath during the cooling and heating cycle, a stirrer motor system is also fitted to the apparatus. Suitable means should be used to ensure the liquid medium can be lowered to the test temperatures required such as adding solid carbon dioxide (dry ice).

The specimen clamping mechanism is manufactured from stainless steel and has one fixed side with the other side mounted in low friction bearings which is allowed to rotate. The torque is applied to the test sample by placing known weights to the pulley system which causes the clamped test specimen to rotate or twist about its vertical axis. Angular deflection measurements (in degrees) are then taken from the integrated radial dial indicator.

The actual test is very simple to conduct. The temperature of the bath is lowered to a temperature that will cause the sample to approximately twist a known angle of deflection. Heat or increased torque is then applied to the sample to increase its twist to a given angle of deflection subject to the international Test Standard you are working to. From the temperature and the angle of deflection readings taken, the apparent torsional modulus of elasticity can be determined.

**SPECIFICATIONS**

- Measures apparent torsional modulus of elasticity
- Integrated low temperature bath
- PID electronic temperature control
- Resolution 0.1°C
- PT100 PRT sensor accurate to 0.1°C
- Integrated stirrer motor
- Stainless steel clamping mechanism
- Low friction bearing assembly
- Integrated radial dial indicator (degrees)
- Torque load weights supplied
- 1 year return to base warranty
- 110v 60Hz – 240v 50Hz, 10 amp
- Complies with BS2782: Part 1: Method 104B, ISO458/1 & 458/2 ASTM D1043
- Net weight 15kg, width 30cm, depth 45cm, height 40cm

**OPTIONAL ACCESSORIES**

- Heat transfer medium (silicone oil) 10 ltrs