



# Pipe Characteristics

## Acceptable Temperature Range for Gravity Pipes

| PIPE TYPE                             | Acceptable Temperature Range   | Jointing                       | Issues  | Source of information  |
|---------------------------------------|--|--------------------------------|---|--|
| <b>Spun Reinforced Concrete Pipes</b> | Pipes and jointing system can withstand cyclic temperature changes of 0°C to +55°C       | Rubber Ring                    | <ul style="list-style-type: none"> <li>Thermal shock, a rapid change of temperature producing a thermal gradient in the pipe wall, may damage the pipe.</li> <li>Hydura concrete pipe is necessary for sulphate or acid soil resistance</li> </ul>  | Hynds Pipe Systems Limited   |
| <b>Vitrified Clay pipes</b>           | Pipes and jointing system can withstand cyclic temperature changes of -10°C to +70°C     | Rubber Ring                    | <ul style="list-style-type: none"> <li>Thermal shock, a rapid change of temperature producing a thermal gradient in the pipe wall, may damage the pipe.</li> <li>Pipes are resistant to chemical attacks from normal sewage and other harmful effluents in concentrations from pH 0 (sulphuric acid) to pH 14 (caustic soda)</li> </ul>   | Keramo Steinzeug<br>"Glazed Vitrified Clay Pipes A Natural Solution" |
| <b>uPVC Pipes</b>                     | Class SN 4 to SN 16 uPVC pipes can withstand cyclic temperature change of +10°C to +55°C | Rubber Ring<br>Socketed joints | <ul style="list-style-type: none"> <li>SN 16 pipe is recommended for ground temperatures exceeding 30°C</li> <li>Can withstand the Thermal Shock. Rubber ring seals accommodate thermal expansion and contraction, when installed to witness mark, and to manufacturer's instructions.</li> <li>Pipes and seal rings are unaffected by Hydrogen Sulphide</li> </ul>   | Iplex Pipelines Ltd  |
| <b>PE Pipes</b>                       | Can withstand cyclic temperature change of -10°C to +55°C                                | Welded Joints                  | <ul style="list-style-type: none"> <li>Can withstand the Thermal Shock. Special design to accommodate expansion and contraction is required for application where frequent or cyclic temperature variation occurs.</li> <li>Unaffected by Hydrogen Sulphide.</li> </ul>   | Iplex Pipelines Ltd  |
| <b>Polypropylene (PP) Pipes</b>       | Can withstand cyclic temperature change of -10°C to +60°C, short-term - up to 90°C       | Rubber ring socketed joints    | <ul style="list-style-type: none"> <li>SN 16 pipe is in general recommended for ground temperatures exceeding 35°C.</li> <li>Pipes are resistant to chemical attack from normal sewage (as well as EPDM rings) and to hydrogen sulphide.</li> <li>Can withstand the Thermal Shock. Rubber ring seal accommodate thermal movement of pipes installed to witness mark and to manufacturer's recommendations.</li> </ul> | Waters & Farr  |