If the pumping medium contains aggressive compounds, the stainless steel used for motor, pump, riser main, valves, etc. must be of a quality resistant to the aggressive substances in the water.

Grundfos pumps are available in three different corrosion classes. The standard products for drinking water are made of AISI 304 stainless steel.

Components made of the N-type of stainless steel are stamped with an “N,” e.g. impellers and chambers. They are more resistant to water with a moderate content of salt, called brackish water. This stainless steel quality is AISI 316.

Components made of the R-type of stainless steel are stamped with an “R.” They are resistant even to equatorial sea water. This stainless steel quality is AISI 904L.

The products look exactly the same apart from the stamped letters and the nameplate of pump and motor.

Example of How to Use the Diagram
With a ground water temperature of 10°C, standard stainless steel, AISI 304, can be used if the chloride content is less than 1,000 ppm.

N steel, AISI 316, can be used at a chloride content of up to 5,000 ppm.

With a sea water temperature of 40°C, R steel, AISI 904L can be used when the chloride content is greater than 20,000 ppm.

For ground water temperatures higher than 10°C and a chloride content of 1,000 ppm, a complete water analysis must be made. Grundfos should also be contacted as the existence of other salts or substances could make it possible to use the steel quality anyway. The diagrams are only valid for pumps which are activated at least a few hours a day.

Corrosion is a universal problem which often requires expert knowledge to solve. The pH value in the two previous diagrams is assumed to be close to neutral, i.e. pH = 7-8. The water temperature must be measured on location, the chloride content in ppm is found by analysis. The diagrams are only intended as a guide, indicating when detailed analyses should be performed.