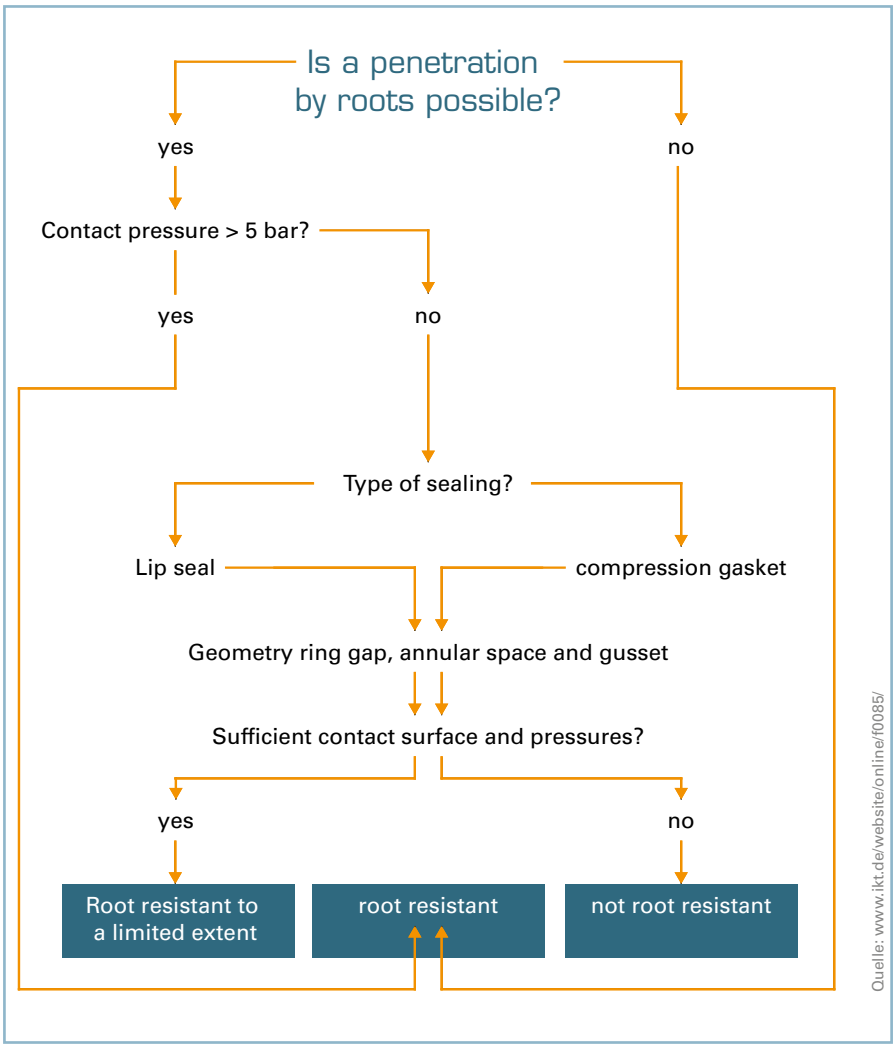
REINOGRIP and root penetration

Penetration by roots

Root penetration is a biological process which can occur at supply and disposal lines where and when roots have sufficient space to grow within pipe connections and pipelines. During its growth the root in the soil is deflected into the direction with the lowest pressure. On its search for humidity and nutrients it grows in an environment with the most flexible surrounding material.
Investigations have shown that by the growth of roots mechanical compressive stresses occur in radial direction, which can be up to 5.9 bar within a few hours. A maximum pressure of approx. 5 bar was observed over longer periods of time. The direction of root growth and the formation of the whole root network are influenced by different factors, like e.g. soil type, compaction differences and level of oxygen. These factors can vary temporarily and spatially in the environment of pipes and their connections.
As a consequence root penetration can be counteracted at pipe connections by already preventing root penetration in the connection area, the contact pressure of the sealing exceeds the expected root pressure and/or the geometry of the sealing aggravates root penetration. (Please see illustration below)
Construction site investigations and laboratory tests underline in particular the influence of the pipe environment, e.g. the properties of the surrounding bedding material as well as the geometry of the pipe connection and the associated or denied growth paths on root resistance. In addition, adhesion-repellent surfaces reduce the risk of ingrowth.

Source:
www.ikt.de/website/online/f0085



REINOGRIP

The surfaces of the REINOGRIP connections as well as the pipes consist mainly of plastic material which can be regarded as adhesion-repellent. When the pipe ends are plugged in, the annular gaps at the coupling opening are very narrow and in addition strongly or even completely reduced by the dirt repellent profile ring. A lip seal serves as sealing gasket, the sealing effect of which is impaired by the internal pressure. If the internal pressure of the system is permanently beyond 5 bar, a root penetration into the pipe connection is unlikely.
Soils with few pores cannot be penetrated by roots and thus root penetration is prevented. The use of backfill material as e.g. liquid soils in the area of the pipe connections effectively and initially prevents root formation.

REINERT-RITZ
Ernst-Heinkel-Str. 2 · 48531 Nordhorn · Germany · T +49 (0) 5921 8347 0
F +49 (0) 5921 8347 25 · contact@reinert-ritz.com · www.reinert-ritz.de