Slip lining

When is it used and what are the benefits?

Slip lining offers a quick trenchless solution to a problem with an existing buried pipe. Such a problem may be either surface deterioration or structural failure of concrete, ferrous, or fibrous materials. Slip lining involves a reduction in available diameter but this does not necessarily involve a reduction in flow capacity. The flow characteristics of the old pipe have probably deteriorated and the replacement PE pipe offers low friction coefficient over the long term.

What are the concerns?

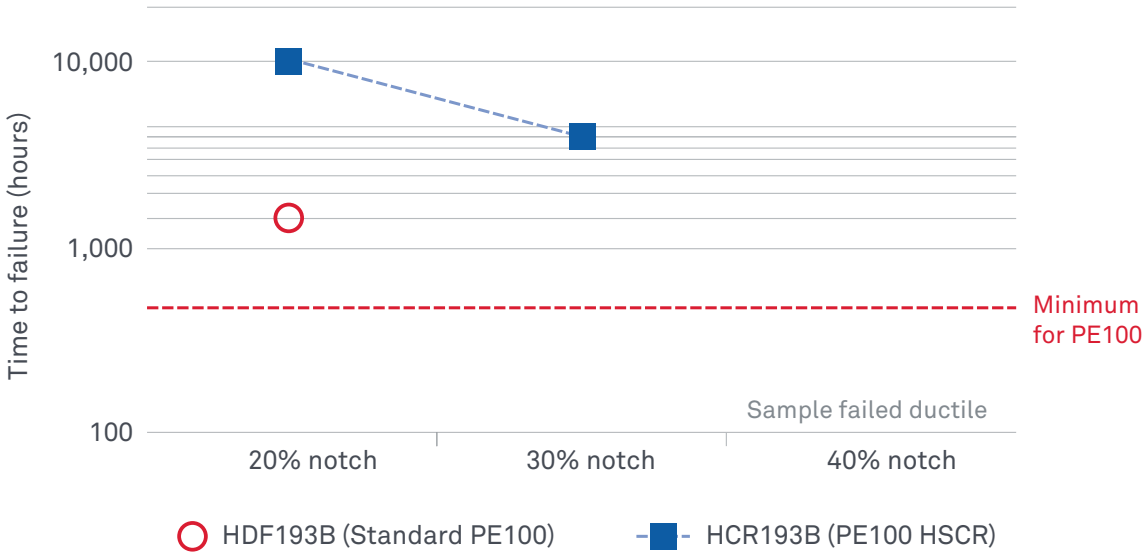
The main concerns are gouging that may occur arising from contact with the degraded old pipe, or localised damage at the joints of rigid pipes.

How can the use of Alkadyne® HCR193B address these concerns?

Alkadyne® HCR193B is a PE100 HSCR resin that has been specifically developed to achieve stress crack resistance that is greatly superior to standard PE100 resins. Alkadyne® HCR193B complies with AS/NZS 4131 and meets the requirements of POP016 for High Stress Crack Resistant PE100. The use of Alkadyne® HCR193B reduces the risk of brittle failure caused by cracks initiated by surface damage.

Surface damage is a significant risk when installing pipe using the slip lining method. The depth of any surface damage on the installed pipe cannot usually be accurately determined in the field, and may possibly be greater than the 10% of the wall thickness that is allowed by the installation standard. Testing has shown that Alkadyne® HCR193B meets slow crack growth resistance specifications even with notches deeper than 10% of the wall thickness as shown in the chart below.

Notched Pipe Test (ISO 13479)



NOTE: Test covered 110mm pipes with varied notch depth tested in hydrostatic pressure test at 920kPa/80°C

Figure11: Notched Pipe Test ISO 13479 with varying notch depth