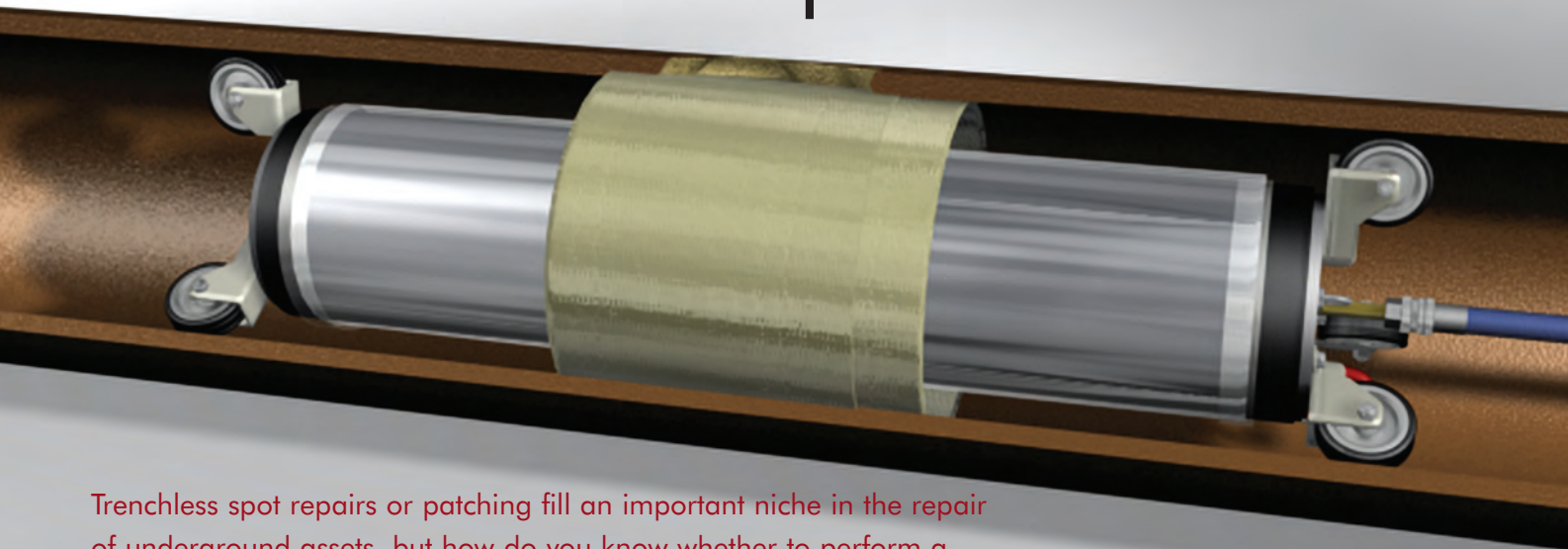


Spot the difference: Interflow's Interpatch



Trenchless spot repairs or patching fill an important niche in the repair of underground assets, but how do you know whether to perform a spot repair or completely renew the entire pipeline?

Pipelines which are otherwise in acceptable service condition can be damaged by a nearby excavation, vibration from machinery, or simply have a leaking joint. Often this damage is localised, however if not repaired, the damage can spread and in extreme cases can lead to possible pipeline collapse and environmental degradation.

Deciding whether to spot repair or renew a pipeline will depend on the age and overall condition of the entire pipe. The adjacent table can be used as a guide to decide when spot repair is likely to be more effective than complete pipeline renewal.

The services of a specialist pipeline renewal contractor who can inspect and assess the entire pipeline condition and offer a complete range of renewal products should be sought. The contractor should be able to provide the most appropriate recommendation and offer the client the best value. Interflow has the expertise and product range to offer this service.

Traditionally the method for spot repair usually requires digging and replacing the defective section of pipe. This can often be costly, disruptive, unsafe, time consuming, or simply not practical.

The Interpatch

Interflow's Interpatch is a product specifically developed for trenchless sectional pipe repair. Interpatch is constructed of high strength fibre-glass matting which is saturated with high performance, fast curing

silicate resin. The patch is applied directly at the location of the defect, bonding to the host pipe and providing an effective spot repair.

One of the most impressive features of Interpatch is its fast cure time. In common pipe diameter's between 100 mm to 300 mm the resin cures in as little as 45 minutes in ambient conditions and even underwater. The faster cure time means installation is quicker, safer, lower risk, and less disruptive to nearby residents and traffic. All this translates into lower cost for the client.

In larger pipe sizes, where installation is usually more difficult and therefore higher risk, the resin is selected to provide a balance between fast cure and long pot-life to ensure a low-risk successful installation.

Key features: safe, strong and flexible

The Interpatch resin has been selected with sensitivity to the environment in mind. The silicate resin is non-toxic, styrene free and is supplied to site pre-packaged in sealed recyclable cartridges. There is no mixing required and resin dispensing is performed using a cartridge gun making the operation safe, reducing the risk of resin spills and ensuring a clean work site.

Another key feature of the product is that Interpatch has been designed as a structural fitting as well as a seal. The glass fibres give Interpatch superior strength and stiffness such that it can be designed as a stand-alone pipe to AS-NZ2566. Interpatch has a high flexural modulus of 8 GPa. This means

the patch can be installed in a thinner wall thickness and so only a very small amount of cross-sectional area is lost. For example in a 450 mm diameter pipe, the standard Interpatch wall thickness is only 7 mm and the resulting loss in cross-sectional area is just over 6 per cent.

Whilst a standard patch thickness is offered for each pipe size, the thickness and therefore strength of the Interpatch can be increased to meet specific load requirements offering greater flexibility when it comes to range of applications.

Pipe diameter reductions in the case of spot repairs can cause restrictions or blockage points. To counter this Interpatch features smooth gradual transitions between the patch ends and the host pipe to minimise flow friction losses and eliminate catch points which cause blockages.

Installation

Interpatch can be installed in a wide range of pipe sizes from 100 mm to 750 mm and bonds to most common pipe materials such as concrete, PVC, vitrified clay, brick asbestos cement, and cast iron. A standard repair length is 1.2 m however longer sections can be repaired by overlaying successive Interpatch's.

Installation of the Interpatch is achieved by using an inflatable packer to move the Interpatch to the repair location from the nearest manhole. The packers are available in a range of sizes and are fitted with large 2 or 3 inch diameter hollow voids to enable

Pipe Dia (mm)	Maximum Patch Installations per 50 m length of pipeline
150	3
225	3
300	1
400	1
450	1
525	1
600	1
750	1

Table 1: When should you perform a spot repair? The values above show the maximum recommended patch installations per 50 m of pipe

installation during live flow so there is minimal disruption to residents and the local neighbourhood. This reduces the need for expensive bypassing and eliminates the risk of sewerage backing up and overflowing.

Interpatch passes the test

Spot repairs which rely on a bond to the host pipe are susceptible to failure should the bond fail. In practice this can occur from chemical attack or by mechanical damage such as from cleaning tools. It is therefore important to install spot repairs which are resilient to both forms of dam-

age. Interpatch is inert, meaning it will not react with chemicals and it is highly resistant to the chemicals commonly found in sewer systems. The suitability of Interpatch in harsh sewer environments has been proven both in the lab and in the field. The most recent test involved subjecting an Interpatch installed in a live DN 225 mm earthenware pipe to the severe effects of common high pressure cleaning tools. The Interpatch was subjected to multiple passes of a cleaning nozzle followed by passes of a root-cutter blade both operating at 1500 psi. The condition of the Interpatch was CCTV inspected before and after the trial and the Interpatch showed no signs of damage after the test.

Another requirement of spot repair is longevity. Spot repairs must be durable to last many years of service life. The durability of Interpatch has been tested against the industry recognised Hamburg Model Jetter Test in which the patch was subjected to multiple passes of a cleaning nozzle. The test simulates 30 years of service life. The Interpatch survived this test with no visual damage.

Benefiting your company and your community

Trenchless spot-repair of damaged sections of pipeline is a cost effective way of repairing pipes without the need for disruptive digging. In today's market the pressure for contractors to offer trenchless



products which are not only cost-effective but are sensitive towards environmental, community, and safety factors has placed ever increasing pressures for improvements in the technology. Interpatch is an example of how today's spot repair technology is benefiting not only the client, but the local community and the environment.

For more information on Interpatch visit www.interflow.com.au