

Gas pipe decommissioned with Terefil™

INDUSTRY

Infrastructure

STRUCTURE

Gas main

PROBLEM

Gas pipe decommission

LOCATION

St Kilda, VIC, Australia

DURATION / YEAR

1 day / June 2016

TECHNOLOGY

Terefil™

BUSINESS UNIT

Mainmark Australia



Summary

As part of the works to upgrade the tram service in Acland Street, St Kilda, a 95-year-old, low-pressure gas pipe running beneath the street needed to be safely decommissioned.

The 450mm, 390m long gas main needed to be relocated to facilitate improved tram stops along this busy road. The works were part of a broader program to revitalise the streetscape, led by the transport authorities and local council.

The terminus sits on one of Melbourne's busiest tram routes and near the entrance to the iconic Luna Park. The project site occupied the southbound traffic lane on Acland Street and the tram track.

A time-efficient and cost-effective solution was required to minimise disruption. Mainmark was appointed by Comdain Infrastructure to fill the pipe with Terefil™, and ultimately reduced the project time from an estimated five days to just a single 12-hour shift.

Objectives

The pipe needed to be decommissioned with minimum impact on the busy streetscape, completing the work as fast as possible to minimise traffic control costs, interruption to the tram network, and inconvenience to local residents and businesses.

The steel gas pipe had lead joints, which were unlikely to withstand pumping pressures greater than 150kPa. The project team was required to work within these parameters. This eliminated the use of traditional sand filled grouts as they would be too slow to place and could only be pumped approximately 100m into the pipe, requiring multiple access points and much greater disruption to this busy shopping strip.

Solution

Mainmark recommended its unique Terefil™ solution. The advanced, lightweight structural fill material is ideal for when granular fills or aggregate materials are too heavy. It is highly-flowable and easily placed, making it well-suited to the project's tight schedule and access limitations.

It also does not require pre-loading or compaction for settlement mitigation, and its specialised material performance properties, including zero bleed and typically less than 0.1%-0.3% shrinkage, support safe and sustainable construction practices.

Mainmark placed Terefil™ at 20m³ per hour from the low end of the pipe. Our team successfully placed 69m³ of Terefil™ in just 4 hours to completely fill the 450mm, 390m long gas main.

By using Terefil™, Mainmark reduced the planned 10-day street closure to three days, which delivered significant cost savings in traffic control. The trams were able to resume full services a week earlier than originally anticipated.