



DENHOLM PIPECARE

A division of DENHOLM MACNAMEE LTD

Case Study: Swagelining of a Cast Iron Water Main

Project: Swage Line a 12" Cast iron water main with 315mm SDR 17.6 Blue PE

Location: Weymouth, Dorset

Main Contractor: Wessex Water

Pipeline Owner: Wessex Water

Equipment Utilised:

- ◆ Pipe Cruiser Inspection System with FTR 80CX camera
- ◆ 40 Tonne Grundotug Twin Capstan Cable Winch
- ◆ 315mm Swage Rig
- ◆ Scraper, Pull Thro' & Gauge Pigs
- ◆ 315 Auto Butt Fusion Machine



Purpose of Project:

The existing main had burst on two previous occasions causing local flooding and inconvenience to the public and Wessex Water customers.



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The Process:

Swagelining is a pipeline rehabilitation technique. The process uses PE pipe which has an outside diameter slightly larger than the inside diameter of the pipe to be lined. The PE pipe is pulled through a die to temporarily reduce its outside diameter. The reduction allows the PE to be easily pulled through the host pipe by a winch. When the pulling force has been disconnected the PE pipe begins to return to its original diameter. However, just before the PE pipe relaxes completely it presses tightly against the inside of the host pipe, eliminating the annular space to form a tight fit liner.



Results:

The cast iron host main was lined using a structural liner. The new PE pipe provides a main that can withstand full line pressure irrespective of the host pipe condition.



Client Comments:

"Swagelining the 12" CI water main was a great success.....we worked closely with the Denholm Pipecare team and managed to quickly eliminate the risk of further costly bursts on this main. The technique allowed us to excavate three reception pits which minimised disruption and let traffic on a very busy road flow in both directions."

"The project took just five weeks to complete.....but for this technique....the road would have been open cut, greatly causing traffic congestion and would have taken at least six or seven weeks.....and additionally we had very minimal amounts of muck away to landfill."



Iain Dickie, Contracts Manager - Wessex Water