CASE STUDY

SUSTAINABLE
WATER SOLUTIONS

Amiblu®
Sustainable Water Solutions

Bournemouth CIS Tunnel relined with Amiblu GRP pipes

Located to the east of Bournemouth and only 300 m from the south coast of England, the Coastal Interceptor Sewer (CIS) of Bournemouth is a tunnel with an internal diameter of 1.8 meters. It was constructed in compressed air from 1964 -1971 with a primary bolted lining and a secondary cast in situ lining for hydraulic conductivity. A recent survey of the tunnel identified a noticeable change in the structural capabilities of the lining at the extremes of the eastern leg.

The tunnel serves a large local population. One of the two rising mains suffered sewage resting for long periods, resulting in the anaerobic conditions allowing the formation of hydrogen sulphide (H_2S). H_2S forms sulphuric acid (H_2SO_4) via conversion associated with bacteria feeding upon the nutrients readily available which, in turn, corrodes the concrete, a ubiquitous process observed across the world. The conclusion was clear: The tunnel had to be structurally repaired and parts of it refurbished.

GRP lining of the tunnel

200 m of circular Amiblu GRP relining pipes with an internal diameter of 1600 mm were designed to the German standard DWA A143-2 (ATV M127) and installed over a two-week period by Matt Durbin Associates Ltd of Taunton. The pipes were manufactured by Amiblu Poland and supplied in 1.2 m long sections with in-wall joints.

The design of the relining pipeline was undertaken by Dr Dec Downey of Trench-

PROJECT PARAMETERS

Year of construction	2018
Length of pipeline	200 m
DN	1600
PN	1
SN	10000
Installation	Trenchless
Application	Tunnel relining
Client	Wessex Water
Contractor	Matt Durbin Associates
Consultant	Trenchless Opportunities Ltd

Amiblu®
Sustainable Water Solutions

less Opportunities Ltd with assistance from Dr Bernard Falter. In the German design code, three host pipe states are differentiated, and the CIS fell within the most severe 'State III', for cracked pipes with larger deformations. The 42 mm thick segments were connected by means of a winch, and the annulus between the original secondary lining and the GRP segments filled with grout.

With a design life of 150 years, Amiblu GRP relining pipes are especially suitable for the rehabilitation of existing structures as they offer optimum hydraulic performance, their perfectly smooth inner surface minimises friction preventing the build-up of deposits, and the pipes are inherently resistant to corrosion or abrasion.

Read the full technical paper written by Julian Britton, Wessex Water published in Water Industry Journal: Bournemouth CIS Tunnel

HOBAS®

FLOWTITE®

Amiblu is a 50:50 joint venture whose goal is to develop and deliver fully sustainable water solutions. Amiblu combines Amiantit Europe and its Flowtite Technology, and Hobas Europe, part of WIG Wietersdorfer Holding, and is the specialist in drinking water, irrigation, waste water, hydropower and industry.