

**PT/528/0124 (January 2024)**

**Assessment Schedule for the TUBOGEL®  
rehabilitation system for underground  
sewer and drain pipes as supplied by  
Tubogel (UK) Ltd**



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## **1. SCOPE**

This schedule specifies characteristics for the TUBOGEL® system as manufactured by Geochemie Sanierungssysteme GmbH. TUBOGEL® is a flood grouting system for the renovation of underground domestic and industrial gravity drains, sewers and tunnels of internal diameters up to DN 800 and associated manholes and inspection chambers.

The system may only be used in underground wastewater pipes that are above the highest expected groundwater level, hence TUBOGEL® shall not be used in saturated ground conditions. Where such considerations are relevant, refurbishment is usually undertaken in summer and autumn months when the surrounding ground or soil is not waterlogged.

## **2. PRODUCT DESCRIPTION**

### **2.1 Introduction**

TUBOGEL® is a no-dig flood grouting system which seals leaks in underground gravity sewers and drains, manholes and pipe connections by filling in any cracks, holes or open joints and the area surrounding such fissure with two silicate-based liquid components, T1 and T2, in sequence. When they come into contact with each other they react to form a solid silicate composite structure with the surrounding soil on the pipe exterior.

TUBOGEL® can be used with many pipeline materials, such as concrete, stoneware, asbestos-free fibre cement, and cast iron to repair infiltration/exfiltration, leaking pipe connections, socket joints in PVC-U wastewater pipes and masonry manholes.

### **2.2 Applicable standards**

No applicable British, European or International Standards have been identified that are applicable to this product.

### **2.3 Approval History**

This is the first WRC Approved certification for the TUBOGEL® system.

## **3. REQUIREMENTS AND TESTING**

### **3.1 General**

From a comparison of standards and current UK Water Industry requirements, the following properties are deemed important.

- Environmental Impact Assessment using the protocol developed for sewer sealing systems (WRC report UC 3987, May 2002)<sup>(1)</sup>.
- Long-term external hydrostatic pressure testing of the TUBOGEL® repair performance using the procedure developed for the CP167 “Long Term Testing of Sewer Repair and Sealing Techniques” project (WRC report UC 6532, November 2004)<sup>(2)</sup>.

### **3.2 Materials and components**

Injection solutions T1 and T2 are produced according to the formulations kept in the production facilities owned by Geochemie Sanierungssysteme GmbH.

The ingredients for T1 and T2 are stated as being natural compounds, generally silicate based and non-toxic. Geochemie Sanierungssysteme GmbH has confirmed list of ingredients, but not the precise formulae due to confidentiality.

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### 3.3 Type Testing

A German Institute for Building Technology (DIBt) approval details the scope and special provisions for the production and use of TUBOGEL®:

- DIBt - General building approval/general design approval No. Z-42.3-280, 18 October 2023, valid until 18 October 2028<sup>(3)</sup>.

Information from long-term hydrostatic testing has been provided by Geochemie Sanierungssysteme GmbH.

Details of an Environmental Impact Assessment (EIA) undertaken for the Tubogel® system is presented within:

- Test report by Hygiene Institute of Girsenkirchen, Germany (Dir. Tgb. No.:C1971/96/st)<sup>(4)</sup>.

### 3.4 Manufacture

To ensure the quality and performance of the TUBOGEL® system, the manufacturing process shall include appropriate systems for the:

- Specification of component materials;
- Verification component materials received are to specification;
- Handling and storage of all component materials and finished solutions;
- Detailed schedule for manufacture;
- Manufacture of TUBOGEL® solutions;
- Quality control of workmanship.

The production of the TUBOGEL® system and related quality control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

### 3.5 Installation

When installed in accordance with the installation documentation found within the Procedures Manual for TUBOGEL Sewer Restoration<sup>(5)</sup> the TUBOGEL® system shall be reasonably expected to perform as described. Any equipment or process changes different from the Procedures Manual should be approved and verified by Geochemie Sanierungssysteme GmbH in advance of installation.

## 4. APPROVAL

The TUBOGEL® system has been audited and has successfully met all the requirements stated within this assessment schedule.

Signed:

A handwritten signature in black ink, appearing to be 'G.L.' with a horizontal line extending to the right.

Valid until 25<sup>th</sup> January 2029

## 5. REFERENCES

1. WRc report UC 3987, Design and Specification of Sewer Sealing Systems, May 2002.
2. WRc report UC 6532, Long Term Testing of Sewer Repair and Sealing Techniques, November 2004.
3. DIBt General building approval/general design approval No. Z-42.3-280 Special Provisions, 18 October 2023, valid until 18 October 2028.

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4. Hygiene Institute of Girsenkirchen,  
Germany (Dir. Tgb.  
No.:C1971/96/st).
5. TUBOGEL® Operating Summary;  
Geochemie Sanierungssysteme  
GmbH – Procedures Manual for  
TUBOGEL Sewer Restoration.