



Sewer Equipment Company Australia

PRODUCT APPRAISAL REPORT 1408 Issue 3

Uhrig QUICKLOCK Sewerage Pipeline Rehabilitation System

Issue 1 Published: 28 May 2015

Issue 2 Published: 6 April 2017

Issue 3 Published: 8 July 2020

Document History

The following information indicates the changes made to this document.

Date	Version
23 June 2015	Peer Review
15 July 2015	Issue 1 Publication
6 April 2017	Issue 2 Publication
7 July 2020	Client Review
8 July 2020	Issue 3 Publication

Peer Reviewers

Name/Title	Organisation	Date
Product Appraisal Technical Advisory Group	WSAA	23 June 2015
WSAA Expert Panel	WSAA	23 June 2015
Peter Pittard, WSAA Consultant	WSAA	19 May 2015
Carl Radford, Product Appraisal Manager	WSAA	15 July 2015
Peter Pittard, WSAA Consultant	WSAA	30 March 2017
Carl Radford, Product Appraisal Manager	WSAA	6 April 2017
Peter Pittard, WSAA Consultant	WSAA	30 June 2020
Carl Radford, Product Appraisal Manager	WSAA	8 July 2020

Overview of WSAA

The Water Services Association of Australia (WSAA) is the peak industry body representing the urban water industry. Our members provide water and sewerage services to over 20 million customers in Australia and New Zealand and many of Australia's largest industrial and commercial enterprises.

Based around our vision of 'customer driven, enriching life', WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry. We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues.

WSAA can demonstrate success in the standardisation of industry performance monitoring and benchmarking, as well as many research outcomes of national significance. The WSAA Executive retains strong links with policy makers and legislative bodies and their influencers, to monitor emerging issues of importance to the urban water industry.

WSAA was formed in 1995 as a non-profit organisation to foster the exchange of information between industry, government and the community, and to promote sustainable water resource management.

The urban water industry is committed to anchoring its services to customers' values, and to enrich communities where water services have broad economic, environmental and social values. In line with this our main activities focus on four areas:

1. influencing national and state policies on the provision of urban water services and sustainable water resource management
2. promoting debate on environmentally sustainable development and management of water resources and the community health requirements of public water supplies
3. improving industry performance and establishing benchmarks and industry leading practices for water service processes; and
4. fostering the exchange of information on education, training, research, water and wastewater management and treatment and other matters of common interest.

Copyright

This document is copyrighted. Apart from any use as permitted under the Copyright Act 1968, no part of this document may be reproduced or transmitted in any form or by any means, electronically or mechanical, for any purpose, without the express written permission of Water Services Association of Australia Limited.

© Copyright 2020 by WATER SERVICES ASSOCIATION of Australia Limited **All rights reserved.**

CONTENTS

1 EXECUTIVE SUMMARY5
 1.1 Recommendations5
2 THE APPLICANT5
 2.1 The Supplier5
 2.2 The Manufacturer6
3 THE PRODUCT6
4 SCOPE OF THE APPRAISAL6
5 APPRAISAL CRITERIA6
 5.1 Quality Assurance Requirements6
 5.2 Performance Requirements.....7
6 COMPLIANCE WITH APPRAISAL CRITERIA.....7
 6.1 Compliance with Quality Assurance Requirements7
 6.2 Compliance with Performance Requirements7
 6.2.1 General7
 6.2.2 Material requirements7
 6.2.2.1 Stainless steel sleeve7
 6.2.2.2 Elastomeric seals7
 6.3 WSAA Agency Network Requests.....7
7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION8
8 PRODUCT WARRANTY8
9 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT8
10 DISCUSSION.....8
11 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW.....8
12 FUTURE WORKS10
13 DISCLAIMER10
 13.1 Issue of Report10
 13.2 Limits on Reliance on Information and Recommendations.....11
 13.2.1 Disclaimer of liability11
 13.2.2 Intellectual Property and other rights11
 13.2.3 Need for independent assessment11
 13.3 No Updating12
 13.4 No Warranty12
APPENDIX A – PRODUCT LITERATURE13
APPENDIX B – APPROVAL DOCUMENTATION.....17
APPENDIX C – FREQUENTLY ASKED QUESTIONS22
APPENDIX D – SUPPLIER CONTACTS25

1 EXECUTIVE SUMMARY

Sewer Equipment Company Australia (SECA) is an Australian based company established in 1967 in Sydney NSW. The company specialises in supply of equipment for the cleaning, testing, inspection and rehabilitation of sewers and drains.

SECA is the Australia and New Zealand sales, distribution and training provider for the Uhrig QUICKLOCK pipeline rehabilitation system, developed and manufactured by Uhrig Kanaltechnik GmbH, based in Geisingen, Germany.

This Issue 3 is to transfer the Appraisal holder from Quicklock Australia Pty Ltd to Sewer Equipment Company Australia.

The QUICKLOCK system is a local patch repair method for repairing domestic sewerage pipes. The system consists of a rolled stainless steel Grade 316L sleeve, covered with an EPDM rubber gasket incorporating an integral circumferential seal at each end. The sleeve is placed onto a wheel mounted installation trolley and guided into position using a CCTV camera. Each sleeve has a ratchet mechanism that allows it to be rolled tight to fit inside the pipe and then expanded pneumatically to facilitate a permanent pressure contact of the seal onto the host pipe. The ratchet mechanism ensures the sleeve is locked permanently into place.

The QUICKLOCK system is used to repair defects including cracks (longitudinal, radial and transverse), missing sections of pipe wall, leaking joints, joint displacements and infiltration/exfiltration (ground water or roots).

The system is designed to repair pipes in sizes from DN 150 to DN 750 and is available in lengths of 400 mm (DN 150 to DN 400) and 500 mm (DN 450-DN 750). QUICKLOCK sleeves can also be overlapped to cover longer sections of damaged pipe. For pipe sizes of DN 800 to DN 1600 a specially modified QUICKLOCKBIG system is offered where a two-part stainless steel ring is inserted through existing manholes.

Pipes of all material types can be accommodated.

The QUICKLOCK system was WRc approved in June 2009 and reapproved in June 2014. The system also has a General Approval by the Building Authorities in Germany, issued by the German Institute for Structural Engineering.

A comprehensive Assessment Report by WRc is available at:
<http://rauschusa.com/download/WRc-Assessment.pdf>.

Installation training for water agency staff or approved maintenance contractors is conducted by SECA under written approval from Uhrig.

Further information is also available in Appendix C Frequently Asked Questions.

1.1 Recommendations

It is recommended that WSAA members consider acceptance/authorisation of the Uhrig QUICKLOCK pipeline rehabilitation system for repairs to localised defects in sewerage pipes.

2 THE APPLICANT

The Applicant is Sewer Equipment Company Australia (SECA).

2.1 The Supplier

Sewer Equipment Company Australia (SECA) is an Australian based company established in 1967 in Sydney NSW. The company specialises in supply of equipment for the cleaning, testing, inspection and rehabilitation of sewers and drains.

2.2 The Manufacturer

Uhrig Kanaltechnik GmbH, located in Geisingen, Germany, was founded by Helmut Uhrig in 1962 and now claims to be one of the leading innovative construction companies in Germany, specialising in canal engineering, pipe technology and municipal sewage network management. It consists of Uhrig Street Construction and Underground Engineering GmbH, specializing in plant construction and network management, and Uhrig Canal Engineering GmbH containing the product divisions Quicklock and Therm-Liner.

Uhrig has more than 120 partners within Germany, more than 50 other partners located around Europe and SECA in Australia.

3 THE PRODUCT

The QUICKLOCK pipeline rehabilitation system is a German engineered local patch repair method for defective sewerage pipes.

The system consists of a rolled stainless steel Grade 316L sleeve, covered with an EPDM rubber gasket incorporating an integral circumferential seal at each end. The sleeve is placed onto a wheel mounted installation trolley and guided into position using a CCTV camera. Each sleeve has a ratchet mechanism that allows it to be rolled tight to fit inside the pipe and then expanded pneumatically to facilitate a permanent pressure contact of the seal onto the host pipe. The ratchet mechanism ensures the sleeve is locked permanently into place.

The rehabilitation system can be used to repair defects including cracks (longitudinal, radial and transverse), missing sections of pipe wall, leaking joints, offset joints and infiltration from ground water or roots.

The QUICKLOCK system is suitable for rehabilitation of pipes in sizes from DN 150 to DN 750 in lengths of 400 mm (DN 150 to DN 400) and 500 mm (DN 450-DN 750). QUICKLOCK sleeves can also be overlapped to cover longer sections of damaged pipe. For pipe sizes of DN 800 to DN 1600 a specially modified QUICKLOCKBIG system is offered where a two-part stainless steel ring is inserted through existing manholes.

Pipes of all materials can be accommodated.

Uhrig advises that since development of this product in 1999 there have been more than 50,000 successful installations undertaken.

See also Appendix C Frequently Asked Questions

4 SCOPE OF THE APPRAISAL

The Scope of this Appraisal is to review relevant documentation associated with the Uhrig QUICKLOCK pipeline rehabilitation system in order to assess potential application for repair of defective sewerage pipelines. The applicable size range is DN 150 to DN 750. The system is suitable for sewer pipes of any material.

5 APPRAISAL CRITERIA

5.1 Quality Assurance Requirements

The Product Appraisal Technical Advisory Group accepts products certified by means of an ISO Type 5 product certification scheme undertaken by a JAS-ANZ accredited Conformity Assessment Body (CAB) or by an international accreditation system recognised by JAS-ANZ.

The manufacturer is generally expected to have a production management and control system that has been duly accredited in accordance with AS/NZS ISO 9001 as a prerequisite to undergoing a product certification audit.

The ISO Type 5 Product Certification Scheme shall meet the criteria described in WSA TN-08.

5.2 Performance Requirements

Performance requirements are generally obtained from the relevant product Standard and/or WSAA Specification. In this case, there is no relevant Standard or WSAA Specification. This Appraisal has substantially relied upon the comprehensive assessment undertaken by WRc in granting Approval for the QUICKLOCK system.

6 COMPLIANCE WITH APPRAISAL CRITERIA

6.1 Compliance with Quality Assurance Requirements

The QUICKLOCK rehabilitation system is considered as an “innovative product” and as such there is no relevant product Standard.

Uhrig operates their own in-house Integrated Management Systems but are not currently licenced to ISO 9001.

WRc conducted a review of the Uhrig quality systems as part of its Assessment for WRc Approval.

6.2 Compliance with Performance Requirements

6.2.1 General

The Uhrig QUICKLOCK system was originally WRc Approved in 2009 and renewal was renewed in 2019. During the Approval process WRc prepare an Assessment Schedule followed by a comprehensive assessment of the system which includes:

- a materials quality audit,
- leak tightness tests,
- structural design review,
- quality systems review,
- review of installation instructions and
- a technical audit of two on-site installations.

A copy of the current WRc Assessment Schedule and Approval Certificate is included in Appendix B and the WRc Assessment Report is available at:

<http://rauschusa.com/download/WRc-Assessment.pdf> or may be obtained from WSAA.

A copy of an Approval issued by the German Institute for Structural Engineering entitled “General Approval by the Building Authorities” has also been submitted. A translated copy of the cover page is included in Appendix B.

6.2.2 Material requirements

6.2.2.1 *Stainless steel sleeve*

The sleeve is nominated as Grade 1.4404 (Grade 316L). A typical material test certificate has been submitted to demonstrate compliance.

6.2.2.2 *Elastomeric seals*

The elastomeric seals are manufactured from EPDM. A typical material test certificate has been provided to demonstrate compliance.

6.3 WSAA Agency Network Requests

The WSAA Appraisal Network conducted a survey of members prior to undertaking this Appraisal. 100% of respondents indicated that they would like to see an Appraisal for the system proceed. A number of questions were received and have been addressed in a FAQ document attached in Appendix A.

7 FITTING INSTRUCTIONS, TRAINING AND INSTALLATION

A copy of the QUICKLOCK User Manual is included in Appendix A.

Installation training for water agency staff or approved maintenance contractors is conducted by SECA under written approval from the manufacture Uhrig. This training service is delivered by SECA in three parts with a prerequisite of each student providing evidence of a construction safety card and a current confined space entry qualification.

Part One: The full installation of a Quick-Lock sleeve to a pre-determined position in a pipe with the use of CCTV and the approved installation packer.

Part Two: Successful completion of the written student assessment booklet demonstrating a clear understanding of the current Quick-Lock installation manual. This document is reviewed with each student and signed off by the approved instructor.

Part Three: The observation and satisfactory review of a successful and fully independent on-site Quick-Lock installation to be performed by the trained operators. This concludes the training with the individual issue of a Quick-Lock training accreditation.

8 PRODUCT WARRANTY

The products are covered by the normal commercial and legal requirements of the *Competition and Consumer Act 2010 (Cth)*, which covers manufacture to the relevant standard, and details of Sewer Equipment Company Australia's warranty is included in their terms and conditions of sale.

9 WATER AGENCY EXPERIENCE WITH THE PRODUCT OR FIELD-TESTING REPORT

Uhrig advises that since development of this product in 1999 there have been more than 50,000 successful installations undertaken.

The system has been approved by the MRWA members in Victoria and successfully utilised by City West Water and Yarra Valley Water.

10 DISCUSSION

The appraisal concludes that the Uhrig QUICKLOCK pipeline rehabilitation system is an established and fit for purpose system to enable in-situ repairs to localised defects in sewerage pipelines. The system has a satisfactory history of use in Europe and South East Asia and has been successfully utilised in Australia and New Zealand.

WRc and the German Building Authorities have approved the system. The Assessment Report undertaken by WRc is comprehensive and provides confidence that the system is suitable for repairs to defects in sewerage pipelines.

11 OUTCOMES OF EXPERT PANEL PRODUCT REVIEW

Q. Is the QUICK-LOCK system cost-effective?

A. A single QUICK-LOCK seal installation works out at around AUD\$2000, around 50% of the cost of a traditional open trench repair method. The cost effectiveness continues to improve if multiple seals are required at one access point, and the preparation for installation is the same as the a routine CCTV inspection, negotiating on-the-spot repair parameters and carrying spare seals to inspections can save a crew returning days later, reducing the inconvenience to property owners and stopping the impact of the defect.

Q. What is the life expectancy of a QUICK-LOCK repair seal?

A. The QUICK-LOCK system has a life expectancy of 50 years, and has been widely used throughout the European and US industries since its development in 1999.

Q. Who can install QUICK-LOCK?

A. QUICK-LOCK can only be installed by qualified, trained crews of technicians in order to meet the manufacturer's stringent quality control requirements. SECA has ensured their local training course meets AQTF standards.

Q. What defects can the QUICK-LOCK system repair?

A. The QUICK-LOCK system - comprising of QUICK-LOCK standard crimped and non-crimped seals, the QUICK-LOCK BIG two-part rings & QUICK-LOCK Liner End Sleeve - is capable of repairing common pipe defects such as: water infiltration/exfiltration; water infiltration as displaced joint; root intrusion/infiltration; closing dormant or unused inflows; overcoming joint displacement > 15mm; cracked, fragmented or deformed pipes (longitude, cross-sectional and radial cracks).

QUICK-LOCK can be used in horizontal or vertical sections of pipe; well piping (possible even under water); pressure piping rehabilitation.

Q. Is there an internal diameter range applicable for each nominal size QUICK-LOCK Sleeve?

A. Yes, these applicable size ranges for each nominal sleeve size (DN150-1900) are outlined in the Technical Datasheet (see: Suitable for pipes from/to)

Q. Why are there crimped and non-crimped versions of each QUICK-LOCK seal?

A. When installed individually, a crimped sleeve is always used. When installed in a series, only the first sleeve in the direction of flow needs to be crimped, the rest can be non-crimped sleeves.

Q. What does the preparation for the QUICK-LOCK installation involve?

A. The pipeline to be rehabilitated must be cleaned and a CCTV inspection performed to determine the requirement for and exact location of seals. For this reason, it is particularly useful to carry spare seals during routine CCTV inspections as repair is possible on the spot, eliminating the need to schedule future repairs & reducing the duration and effect of the pipe defect.

Q. How far from the access point of smaller pipes (DN 150-450) can QUICK-LOCK be installed?

A. There are no limitations on distance from access to installation point. How quickly can seals be installed?

Q. How quickly can seals be installed?

A. The QUICK-LOCK system has been designed to minimise preparation, and as the set-up is the same for installing one or multiple seals, there is potential for up to 10-20 seals to be installed in a day.

Q. How does the system ensure rod & ratchet torque limits are not exceeded by the pneumatic packer during installation?

A. Maximum pressures are specified in the User's Manual (see: Control of the Maximum Set Pressure) and have been set through comprehensive training, As a secondary measure, a regulator can be set on the regulator.

Q. Are all metal components (including the lock) manufactured from Grade 316L Stainless Steel?

A. Yes. All coupling components, ratchet & sleeve are manufactured from Grade 316L Stainless Steel.

Q. What factors affect the longevity of use for the Grade 316L stainless steel in a sewer gas environment?

A. The stainless steel has its limits in the salt content of the waste water. The resistance to various acids you can find in the appendix of the User's Manual (Corrosion of 316L at 80% Sulfuric acid = 0.1 grams per QM an Q. How does the QUICK-LOCK system perform in smaller pipes during high pressure jetting?

A. QUICK-LOCK has passed rigorous testing for high pressure jetting resistance, the test results are outlined in the appendix.

Q. Does the QUICK-LOCK system have any effect on ongoing pipe maintenance?

A. No. The QUICK-LOCK sleeves incur a minimal cross-sectional area loss and the leading edge is crimped (flared) to ensure it won't catch on the cleaning equipment.

Q. What happens when complete rehabilitation of the pipeline becomes necessary in the future?

A. The QUICK-LOCK system is compatible with all lining systems, in this instance, the lines can be installed right over the QUICK-LOCK Sleeves. The QUICK-LOCK Liner End Sleeve can then be used to cap off sections of lining to protect the ends from the pressure of jetting and other maintenance.

12 FUTURE WORKS

There are no future works items outstanding.

13 DISCLAIMER

This Product Appraisal Report (Report) is issued by the Water Services Association of Australia Limited on the understanding that:

This Report applies to the product(s) as submitted. Any changes to the product(s) either minor or major shall void this Report.

To maintain the recommendations of this Report any such changes shall be detailed and notified to the Product Appraisal Manager for consideration and review of the Report and appropriate action. Appraisals and their recommendations will be the subject of continuous review dependent upon the satisfactory performance of products.

WSAA reserves the right to undertake random audits of product manufacture and installation. Where products fail to maintain appraised performance requirements the appraisal and its recommendations may be modified and reissued. Appraisal reports will be reviewed and reissued at regular intervals not exceeding five (5) years.

The following information explains a number of very important limits on your ability to rely on the information in this Report. Please read it carefully and take it into account when considering the contents of this Report.

Any enquiries regarding this report should be directed to the Program Manager, Carl Radford, Phone: 03 8605 7601 email carl.radford@wsaa.asn.au.

13.1 Issue of Report

This Report has been published and/or prepared by the Water Services Association of Australia Limited and nominated Project Manager and peer group of technical specialists (the Publishers).

The Report has been prepared for use within Australia only by technical specialists that have expertise in the function of products such as those appraised in the Report (the Recipients).

By accepting this Report, the Recipient acknowledges and represents to the Publisher(s) and each person involved in the preparation of the Report that the Recipient has understood and accepted the terms of this Disclaimer.

13.2 Limits on Reliance on Information and Recommendations

13.2.1 Disclaimer of liability

Neither the Publisher(s) nor any person involved in the preparation of the Report accept(s) any liability for any loss or damage suffered by any person however caused (including negligence or the omission by any person to do anything) relating in any way to the Report or the product appraisal criteria underlying it. This includes (without limitation) any liability for any recommendation or information in the Report or any errors or omissions.

13.2.2 Intellectual Property and other rights

The Water Services Association of Australia Limited does not undertake any assessment of whether the importation, manufacture, sale or use of the Product the subject of this Report infringes the intellectual property rights or proprietary rights of any person. Recipients of the report should undertake their own assessment of whether (as relevant) the importation, manufacture, sale or use of the relevant Products infringe the intellectual property rights or other proprietary rights of any person. If the Product infringes intellectual property rights or other proprietary rights there is potential for the supply of the Products to be interrupted.

From time to time the Water Services Association of Australia Limited and the other Publishers may receive notice of allegations that the importation, manufacture, sale or use of the Product infringes intellectual property rights or other proprietary rights. The Water Services Association of Australia Limited's policy is to not refer to such allegations in its reports or take any other steps to put Recipients on notice of such allegations, unless and until it is aware that the allegations have been admitted or proved in Court. As such, Recipients acknowledge, agree and accept that the Water Services Association of Australia Limited may have information in its possession about intellectual property rights infringement allegations or other infringement allegations in relation to the Product which are not referred to or disclosed in this Report and which are not otherwise communicated to Recipients.

13.2.3 Need for independent assessment

The information and any recommendation contained (expressly or by implication) in this Report are provided in good faith (and subject to the limitations noted in this Report). However, you should treat the information as indicative only. You should not rely on that information or any such recommendation except to the extent that you reach an agreement to the contrary with the Publisher(s).

This Report does not contain all information that a person might require for the purposes of assessing any product discussed or appraised within it (Product). The product appraisal criteria used in preparing this Report may not address all relevant aspects of the Product.

Recipients should seek independent evidence of any matter which is material to their decisions in connection with an assessment of the Product and consult their own advisers for any technical information required. Any decision to use the Product should take into account the reliability of that independent evidence obtained by the Recipient regarding the Product.

Recipients should also independently verify and assess the appropriateness of any recommendation in the Report, especially given that any recommendation will not take into account a Recipient's particular needs or circumstances.

WSAA has not evaluated the extent of the product liability and professional indemnity insurance that the provider of the product maintains. Recipients should ensure that they evaluate the allocation of liability for product defects and any professional advice obtained in relation to the product or its specification including the requirements for product liability and professional indemnity insurance.

13.3 No Updating

Neither the Publisher(s) nor any person involved in the preparation of this Report [has] [have] any obligation to notify you of any change in the information contained in this Report or of any new information concerning the Publisher(s) or the Product or any other matter.

13.4 No Warranty

The Publisher(s) do[es] not, in any way, warrant that steps have been taken to verify or audit the accuracy or completeness of the information in this Report, or the accuracy, completeness or reasonableness of any recommendation in this Report.

APPENDIX A – PRODUCT LITERATURE

Product literature including a Brochure and a comprehensive User Manual is available at the following link: <https://www.seca.com.au/quick-lock>, directly from SECA or from WSAA. The front pages of the publications are shown below.



TALK TO THE EXPERTS
1800 028 584

Partial rehabilitations/liner connections
We set the standard!

QUICK LOCK



UHRIG
Canal technology

©2018 SECA. All Rights Reserved. This information is based on data believed to be reliable but SECA makes no warranties, express or implied, as to its accuracy and assumes no liability arising out of its use. The data listed falls within the normal range of product properties but should not be used to establish specification limits or used alone as the basis of design. SECA's liability to purchasers is expressly limited to the terms and conditions of sale. SECA is a trademark of Nortkapp Investments Pty Ltd trading as Sewer Equipment Company (Australia). ABN 71 000 695 854

VISIT US ONLINE [seca.com.au](https://www.seca.com.au)
or email sales@seca.com.au



QUICK LOCK

DIBt certification

No. Z-42.3-374



Quick-Lock User Manual

6th revision, version 03/2015

Engineered in Germany by:

UHRIG



Street & Underground Construction GmbH

Talk to the experts **1800 028 584** or visit us online **seca.com.au**

Contents

1. Description of the Quick-Lock system.....	4
1.1 Intended use.....	4
1.2 Regulations	4
1.3 Certifications.....	4
1.4 Components and functions.....	5
1.5 Description of the system and installation procedure.....	6
1.6 Suitability and materials used.....	7
1.6.1 Properties of the pipe to be repaired.....	7
1.6.2 Stainless steel	7
1.6.3 EPDM rubber.....	7
1.6.4 Industrial use.....	7
1.6.5 Types of damage.....	8
1.6.6 Durability	8
2. How to use Quick-Lock	9
2.1 Preparation.....	9
2.1.1 Inspecting the pipe	9
2.1.2 Preparing the pipe	9
2.1.3 Space required by the packer.....	10
2.2 Equipment and material for using Quick-Lock.....	11
2.2.1 Equipment:.....	11
2.2.2 Material	11
2.3 Selecting the Quick-Lock sleeve.....	12
2.4 Preparing the Quick-Lock sleeve.....	13
2.5 Installing Quick-Lock	16
2.5.1 Packer.....	16
2.5.2 Positioning the Quick-Lock sleeve on the packer.....	17
2.5.3 Single installation procedure.....	19
2.5.4 Serial installation (standard procedure)	23
2.5.5 Installation against the direction of flow (standard procedure).....	25
2.5.6 Passing through the projecting rubber end	27
2.5.7 The correct metal overlap.....	28
2.5.8 Alternative serial installation in the direction of flow (special procedure).....	29
2.5.9 Using a laser marker	31


2.6	Special cases	33
2.6.1	Quick-Lock for joint misalignments	33
2.6.2	Groundwater infiltration.....	34
2.6.3	Root penetration.....	35
2.6.4	Corroded steel in reinforced concrete pipes.....	36
2.6.5	Repairing plastic pipes.....	37
2.6.6	Quick-Lock in non-permeable pipe systems	38
2.6.7	Using Quick-Lock to repair holes longer than the length of one sleeve	39
2.6.8	Removing Quick-Lock sleeves that have been installed	40
2.6.9	Deflating the packer more quickly using a vent valve.....	41
3.	Appendix	42
3.1	Appendix 1 Technical data	43
3.2	Appendix 2 Application pressures.....	45
3.3	Appendix 3 Auxiliary equipment.....	46
3.1	Appendix 4 Offset packer with adjustable chassis	47
3.1.1	Intended use.....	47
3.1.2	Conversion.....	47

APPENDIX B – APPROVAL DOCUMENTATION

The WRc Assessment Schedule, latest WRc Approval Certificate and DIBt Approval is included below. A copy of the complete WRc Assessment Report is available at <http://rauschusa.com/download/WRc-Assessment.pdf> or may be obtained from WSAA.

PT/446/0619 - AS (June 2019)

Assessment Schedule for the Quick-Lock™ repair systems for the rehabilitation of gravity sewers and drains as manufactured by UHRIG Kanaltechnik GmbH



Independent certification of your products & services

1. SCOPE

This schedule specifies characteristics for the UHRIG Quick-Lock™ repair system as manufactured by UHRIG Kanaltechnik GmbH. It is applicable to the rehabilitation of gravity drain and sewers of diameter between 150mm and 800mm at depth up to 5m. The 2019 approval has an increase in scope the diameter range from 150mm to 600mm.

It is applicable to the renovation of drains and sewers where the host pipe is still stable and has a deformation less than 3%.

2. PRODUCT DESCRIPTION

2.1 Introduction

The UHRIG Quick-Lock™ repair is a local mechanical repair system consisting of a rolled grade 1.4571 stainless steel mechanical sleeve, with an EPDM rubber gasket which has integral circumferential seals at either end.

The mechanical sleeve is positioned over a defect and then expanded by with an inflatable packer until the locking mechanism has engaged, thereby compressing the rubber seal between the sleeve and host pipe to form a leak tight structural repair.

2.2 Relevant Standards

Performance: the following relevant standards were identified for:

- Drain Repair Book 4th edition 2017⁽⁴⁾
- BS EN 476:2011⁽⁵⁾
- BS EN 1610:1998⁽⁶⁾
- Sewers for Adoption 7th edition⁽⁷⁾

- WIS-35-01 2002 Appendix C⁽⁸⁾
- WIS 4-34-06 November 2008⁽⁹⁾

Materials: Materials used shall comply with:

- EN 10088-1:Part 1:2014⁽¹⁾ (steel sleeve)
- EN 10088-4:2009⁽²⁾ (technical delivery conditions for steel)
- BS EN 681-1:1996⁽³⁾ (rubber gasket)

2.3 Approval History

The Quick-Lock™ repair system has been WRc Approved since 2009.

- PT/283/0609
- PT/364/0614

3. TESTING AND REQUIREMENTS

3.1 Type Testing

The UHRIG Quick-Lock™ mechanical local repair system shall comply with the following test requirements:

Materials: The materials shall meet the requirements of:

Steel sleeve and locking mechanism: Stainless steel grade 1.4571 to BS EN 10088-1:2014 and BS EN 10088-4:2009.

Rubber gasket: BS EN 681-1:1996⁽¹⁾ Elastomeric seals. Material requirements for pipe seals used in water and drainage applications. Vulcanised rubber.

Appearance: The internal surface of the Quick-Lock™ repair shall be smooth, clean and free from scoring, and other surface defects that would prevent the Quick-

© WRc 2019

Water Research Centre Limited (WRc), Frankland Rd, Blagrove, Swindon SN5 8YF

Tel: 01793 865000 Web: www.wrcapproved.com, E-Mail: wrcapproved@wrcplc.co.uk

Contact: 17123-0

PT/446/0619 - AS (June 2019)**Assessment Schedule for the Quick-Lock™ repair systems for the rehabilitation of gravity sewers and drains as manufactured by UHRIG Kanaltechnik GmbH**

Independent certification of your products & services

Lock™ repair from meeting the general fitness for purpose requirement.

Serviceability:

- When the Quick-Lock™ repair system is installed in a pipe, the invert of the repaired and adjacent unrepaired sections shall be continuous in accordance with BS EN 476:2011 Clause 6.4.
- The locking mechanism shall be wholly contained in the upper quarter of the circumference of the pipe.
- The repair shall remain in the installed position when subjected to maintenance operations WIS 4-35-01 2002: Appendix C.

Mechanical resistance: The structural design shall demonstrate that the Quick-Lock™ repair system can resist the imposed loads without structural failure.

Leak-tightness: When tested in accordance with Appendix D of WIS 4-34-06: 2008 or Appendix D of The Drain Repair Book at a test pressure of 50 kPa, the infiltration rate shall meet the requirements of BS EN 1610:1998.

3.2 Manufacture

To ensure the quality and performance of UHRIG Quick-Lock™ repair system, the manufacturing process shall include appropriate systems for:

- Verification of component materials received are to specification
- Handling and storage of all component materials and finished units
- Records of manufacture
- Detailed drawings for product range

The production of UHRIG Quick-Lock™ repair system and related Quality Control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.3 Installation

When installed in accordance with the installation documentation, the installation shall be practicable and suitable for conditions that could reasonably be expected on site.

4. APPROVAL

UHRIG Quick-Lock™ repair system has been audited and has successfully met all the requirements stated within this assessment schedule.

Signed: 

Valid until 02nd June 2024

5. REFERENCES

- 1) EN 10088-1:2014 List of stainless steels (Steel sleeve)
- 2) EN 10088-4:2009: Stainless steels. Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes
- 3) BS EN 681-1:1996 Elastomeric seals. Material requirements for pipe seals used in water and drainage applications. Vulcanised rubber (Rubber gasket)
- 4) Drain Repair Book 4th edition, 2017

© WRC 2019

Water Research Centre Limited (WRC), Frankland Rd, Blagrove, Swindon SN5 8YF

Tel: 01793 865000 Web: www.wrcapproved.com, E-Mail: wrcapproved@wrcplc.co.uk

Contact: 17123-0

PT/446/0619 - AS (June 2019)**Assessment Schedule for the Quick-Lock™
repair systems for the rehabilitation of
gravity sewers and drains as manufactured
by UHRIG Kanaltechnik GmbH***Independent certification of your products & services*

- 5) BS EN 476:2011 General requirements for components used in drains and sewers
- 6) BS EN 1610:1998 Construction and testing of drains and sewers
- 7) Sewers for Adoption 7th edition
- 8) WIS-35-01 2008 Specification For Thermoplastics Structured Wall Pipes – Supplementary Test Requirements
- 9) WIS 4-34-06 November 2008 Specification for localised sewer repairs using cured-in-place systems with or without rerounding.

© WRc 2019

Water Research Centre Limited (WRc), Frankland Rd, Blagrove, Swindon SN5 8YF

Tel: 01793 865000 Web: www.wrcapproved.com, E-Mail: wrcapproved@wrcplc.co.uk

Contact: 17123-0



The image shows a 'Product Certificate' for 'Quick-Lock' by 'Uhrig Kanaltechnik GmbH'. It includes a leaf logo, a description of the product's use for sewer rehabilitation, and the manufacturer's address in Germany. The certificate is signed by an assessor and director, with a start date of 2nd June 2019 and an expiry date of 2nd June 2024. The certificate number is PT/446/0619. The WRC approved logo is also present.

 **Product Certificate**

This is to certify that the following product has met the requirements detailed below

Quick-Lock

For use in the rehabilitation of 150mm to 800mm diameter gravity sewers and drains, as manufactured by Uhrig Kanaltechnik GmbH.

Uhrig Kanaltechnik GmbH
Am Roten Kreuz
78187 Geisingen
Germany

This product meets the requirements set out in WRc Assessment Schedule PT/446/0619-AS

Assessor 
Director 
Issue Date **Start Date: 2nd June 2019**
Expiry Date **Exp Date: 2nd June 2024**
Certificate Number **PT/446/0619**

wrc 
approved™

Deutsches
Institut
für
Bautechnik

DIBt

Allgemeine bauaufsichtliche Zulassung

General Building Approval

Zulassungsstelle für Bauprodukte und Bauarten
Approval body for Construction Products and Building Elements
Bautechnisches Prüfamt

Eine vom Bund und den Ländern
gemeinsam getragene Anstalt des öffentlichen Rechts

Mitglied der EOTA, der UEAtc und der WFTAO
A front and the countries jointly supported public institution
Member of EOTA, the UEAtc and WFTAO

Datum:

Date:
02.03.2012

Geschäftszeichen:

Business Logo
III 55-1.42.3-69/11

Approval Number:

**Zulassungsnummer:
Z-42.3-374**

Applicant:

**Antragsteller:
Uhrig Kanaltechnik GmbH
Am Roten Kreuz 2
78187 Geisingen**

Validity:

Geltungsdauer

From: vom: **2. März 2012**
2nd March 2012
To: bis: **29. April 2015**
29th April 2015

Object of Approval:

Zulassungsgegenstand:

**Verfahren mit der Bezeichnung "Quick-Lock" zum Einsatz als Innenrohr- oder
Schlauchlinerendmanschette zur Sanierung erdverlegter Abwasserleitungen der Nennweiten
DN 150 bis DN 700**

Procedure called QUICK LOCK for use as inner tube or hose end cuff for Line renovation of underground drainage pipes of nominal sizes DN 150 to DN 700



Der oben genannte Zulassungsgegenstand wird hiermit allgemein bauaufsichtlich zugelassen.
Diese allgemeine bauaufsichtliche Zulassung umfasst neun Seiten und 16 Anlagen.
Diese allgemeine bauaufsichtliche Zulassung ersetzt die allgemeine bauaufsichtliche Zulassung
Nr. Z-42.3-374 vom 10. März 2010.

The above approval is hereby approved general building. This general construction approval includes nine pages and 16 plants.
This general construction approval replaces the national technical approval no. Z-42.3-374 of 10 March of 2010.

DIBt

DIBt | Kolonnenstraße 30 B | D-10829 Berlin | Tel.: +49 30 78730-0 | Fax: +49 30 78730-320 | E-Mail: dibt@dibt.de | www.dibt.de

APPENDIX C – FREQUENTLY ASKED QUESTIONS



QUICK-LOCK FAQs:

Q. Is the QUICK-LOCK system cost-effective?

A. A single QUICK-LOCK seal installation works out at around AUD\$2000, around 50% of the cost of a traditional open trench repair method. The cost effectiveness continues to improve if multiple seals are required at one access point, and the preparation for installation is the same as the a routine CCTV inspection, negotiating on-the-spot repair parameters and carrying spare seals to inspections can save a crew returning days later, reducing the inconvenience to property owners and stopping the impact of the defect.

Q. What is the life expectancy of a QUICK LOCK repair seal?

A. The QUICK-LOCK system has a life expectancy of 50 years, and has been widely used throughout the European and US industries since its development in 1999.

Q. Who can install QUICK-LOCK?

A. QUICK-LOCK can only be installed by qualified, trained crews of technicians in order to meet the manufacturer's stringent quality control requirements. SECA has ensured their local training course meets AQTF standards.

Q. What defects can the QUICK-LOCK system repair?

A. The QUICK-LOCK system - comprising of QUICK-LOCK standard crimped and non-crimped seals, the QUICK-LOCK BIG two-part rings & QUICK-LOCK Liner End Sleeve - is capable of repairing common pipe defects such as: water infiltration/exfiltration; water infiltration as displaced joint; root intrusion/infiltration; closing dormant or unused inflows; overcoming joint displacement > 15mm; cracked, fragmented or deformed pipes (longitude, cross-sectional and radial cracks).

QUICK-LOCK can be used in horizontal or vertical sections of pipe; well piping (possible even under water); pressure piping rehabilitation.

Q. Is there an internal diameter range applicable for each nominal size QUICK-LOCK Sleeve?

A. Yes, these applicable size ranges for each nominal sleeve size (DN150-1900) are outlined in the Technical Datasheet (see: Suitable for pipes from/to)

QUICK  LOCK

Talk to the experts **1800 028 584** or visit us online **seca.com.au**



QUICK-LOCK FAQs (Continued)

Q. Why are there crimped and non-crimped versions of each QUICK-LOCK seal?

A. When installed individually, a crimped sleeve is always used. When installed in a series, only the first sleeve in the direction of flow needs to be crimped, the rest can be non-crimped sleeves.

Q. What does the preparation for the QUICK-LOCK installation involve?

A. The pipeline to be rehabilitated must be cleaned and a CCTV inspection performed to determine the requirement for and exact location of seals. For this reason it is particularly useful to carry spare seals during routine CCTV inspections as repair is possible on the spot, eliminating the need to schedule future repairs & reducing the duration and effect of the pipe defect.

Q. How far from the access point of smaller pipes (DN 150-450) can QUICK-LOCK be installed?

A. There are no limitations on distance from access to installation point. How quickly can seals be installed?

Q. How quickly can seals be installed?

A. The QUICK-LOCK system has been designed to minimise preparation, and as the set up is the same for installing one or multiple seals, there is potential for up to 10-20 seals to be installed in a day.

Q. How does the system ensure rod & ratchet torque limits are not exceeded by the pneumatic packer during installation?

A. Maximum pressures are specified in the User's Manual (see: Control of the Maximum Set Pressure) and have been set through comprehensive training. As a secondary measure, a regulator can be set on the regulator.

Q. Are all metal components (including the lock) manufactured from Grade 316L Stainless Steel?

A. Yes. All coupling components, ratchet & sleeve are manufactured from Grade 316L Stainless Steel.

Q. What factors affect the longevity of use for the Grade 316L stainless steel in a sewer gas environment?

A. The stainless steel has its limits in the salt content of the waste water. The resistance to various acids you can find in the appendix of the User's Manual (Corrosion of 316L at 80% Sulfuric acid = 0.1 grams per QM and year).

Talk to the experts **1800 028 584** or visit us online **seca.com.au**



QUICK-LOCK FAQs (Continued)

Q. How does the QUICK-LOCK system perform in smaller pipes during high pressure jetting?

A. QUICK-LOCK has passed rigorous testing for high pressure jetting resistance, the test results are outlined in the appendix.

Q. Does the QUICK-LOCK system have any effect on ongoing pipe maintenance?

A. No. The QUICK-LOCK sleeves incur a minimal cross-sectional area loss and the leading edge is crimped (flared) to ensure it won't catch on the cleaning equipment.

Q. What happens when complete rehabilitation of the pipeline becomes necessary in the future?

A. The QUICK-LOCK system is compatible with all lining systems, in this instance, the lines can be installed right over the QUICK-LOCK Sleeves. The QUICK-LOCK Liner End Sleeve can then be used to cap off sections of lining to protect the ends from the pressure of jetting and other maintenance.

Talk to the experts **1800 028 584** or visit us online **seca.com.au**

APPENDIX D – SUPPLIER CONTACTS

SECA

Head Office

5/85-115 Alfred Road

Chipping Norton

NSW 2170

T: 02 9724 0433

E: sydney@seca.com.au

Victoria

4/2 Silkwood Rise

Carrum Downs

VIC 3201

T: 03 9708 2233

E: melbourne@seca.com.au

Queensland

2/14 North Road

Wynnum West

QLD 4178

T: 07 3396 1777

E: brisbane@seca.com.au

Website: www.seca.com.au



Melbourne Office

Level 8, Suite 8.02
401 Docklands Drive
Docklands VIC 3008

Sydney Office

Level 9 420 George Street
Sydney NSW 2000
GPO Box 915
Sydney NSW 2001

P +61 (0) 3 8605 7666
email: info@wsaa.asn.au

www.wsaa.asn.au