

C-08 Module Description

Replacement of water, wastewater and gas pipelines

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Replacement refers to the installation of new pipelines in place of existing pipelines, where the new pipeline takes over the functions of the old one. The replacement process is subdivided into three methods: „open cut method“, „semi open cut method“ and „trenchless method“.

The focus of this module is the trenchless replacement method of pipelines by the means of pipe bursting, gallery techniques, and pipe extraction. In addition to the replacement method and process description, this module discusses the areas of application and limits, the advantages and disadvantages as well as possible rehabilitation errors and options for quality assurance.

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- Pipe bursting basics
- Pipe bursting
- The welding of plastic pipes
- Pullback of pipelines
- Gallery techniques
- Pipe extraction

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Learning objectives

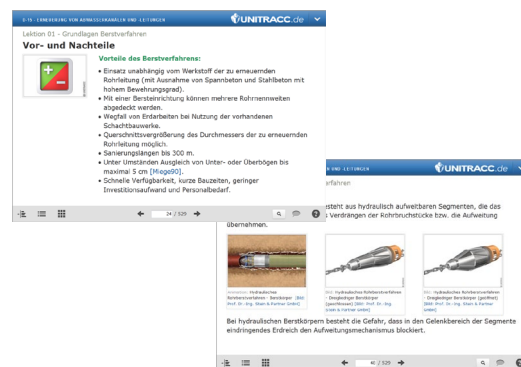
Upon the successful completion of this module you will be able to, ...

- identify and implement the most important rules and specifications
- identify the replacement methods' areas of application, limitations as well as advantages and disadvantages
- identify possible causes of errors and describe quality assurance measures
- identify influences affecting the extension or reduction of the useful service life of the new pipeline
- identify possible quality checks and measures for the protection of the new pipeline
- identify methods of tensile force control and restriction

Module content

Lesson 1: Pipe bursting basics

- Pipe bursting standards and regulations
- Process Description
- Pipe bursting variations
- Application limits
- Pneumatic pipe bursting
- Static pipe bursting
- Static/pneumatic pipe bursting
- Hydraulic pipe bursting
- Documentation and quality assurance



Lesson 2: Pipe bursting

- Workflow
- Material types of protection and product pipelines
- Damage to the product pipe
- Statics
- Modifications of pipe bursting
- Impact of pipe bursting on the surroundings

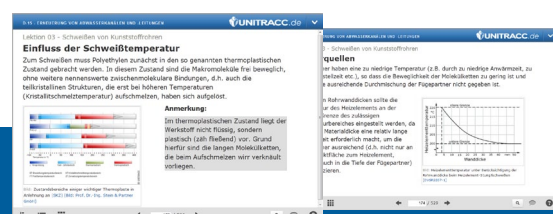
- Monitoring of the tensile forces



Lesson 3: Welding of plastic pipes

- Fundamentals concerning plastics
- Polyethylene
- Welding of polyethylene
- Welding force
- Welding times
- Factors of influence on the welding quality

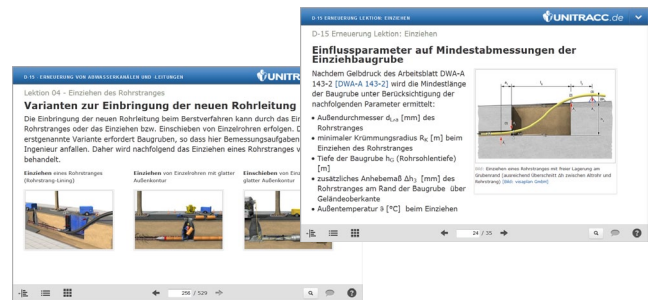
- Welding methods for HD-PE component
- Heating element butt welding
- Heated coil socket welding



Lesson 4: Pipe Pullback

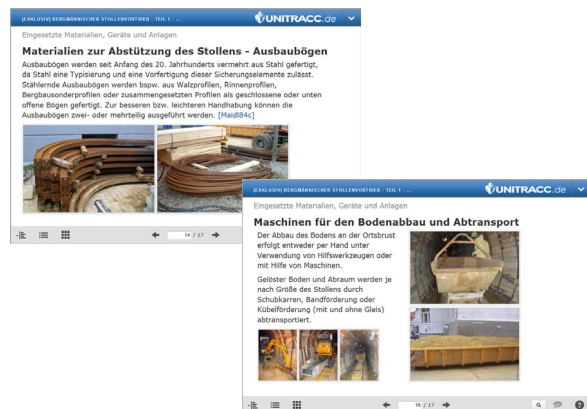
- Glossary terms
- Options for the insertion of the new pipeline
- Description
- Delivery of the pipeline
- Pulling head
- Changes in length due to temperature variations
- Length of the insertion pit
- Determination of the applicable forces

- Determination of the maximum bending radius
- Interruption of the insertion process



Lesson 5: Gallery techniques

- Fundamentals
- Process specification
- Terms
- Standards and regulations
- Applied material and equipment
- Preparatory work
- Construction
- Finishing work
- Application areas and limits
- Documentation and quality assurance
- Advantages and disadvantages



Lesson 6: Pipe extraction

- Definitions
- Standards and regulations
- Process specification
- Application areas and limits
- Documentation and quality assurance
- Advantages and disadvantages



bursting body



Your benefits

- Increase your competitiveness!
- Improve your decision making skills!
- Design your career opportunities!
- Learn when and where you want!
- Determine your own learning pace!

UNITRACC - The experts' portal

The independent information, learning and collaboration platform UNITRACC is now for many years now a tool in the field of online knowledge transfer. As an absolute specialist in the field of pipeline construction, management and maintenance, the UNITRACC-portal has always served as a focal point for underground utility experts from around the world.

Open-mindedness and objectivity ensure the success of the innovative online portal, which has set an important goal for itself:

Transfer of knowledge for everybody always and everywhere!

Course details

Module	C-08 (US) Replacement of sewers and drains
Learning concept	Self-study (e-learning) with tutorial support
Target group	Students, engineers (civil engineering)
Duration	30 hours within 3 months
Price	800.00 \$ (plus VAT)
Successful completion	Participation: Participation Certificate Examination: Certificate of Achievement

Course materials

Course materials are available online under www.unitracc.com. Questions may be directed per e-mail to the course tutor, who will promptly answer them.

Technical precondition

Internet access / minimum system requirements Windows XP with Internet Explorer (latest version) or Firefox (latest version).

Contact



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