SLM® DCT

Detection and Integrity Check







Detection and Checking Technology



The egeplast SLM® DCT pipe offers the possibility of permanent detection of the installed pipe system. In addition, it can be tested for integrity directly after installation. This option gives both customer and contractor the highest guarantee of safety, even under the most adverse soil conditions.

The SLM® DCT pipe satisfies the following functions:

Evidence of integrity (integrity check)



Fig. 1-1: Protective layer pipes egeplast SLM® DCT with integrated damage indicator (arrows) in an intermediate inspection pit

The SLM[®] DCT pipe has an **integrated damage indicator** so that the pipe can be monitored for integrity (scratch depth = 0% of the standard wall thickness) after the insertion process:

If notching as far as the base of the protective layer should occur as the pipe is pulled in, then the helically wound electrical conductors are cut through.



Fig. 1-2: Proof of integrity with a continuity tester

The electrical continuity can be checked with a simple continuity tester after the pipe has been pulled in and the integrity of the new pressure pipe thus proved.

Detection of pipes



Due to the integrated electrical conductor, the position of egeplast SLM[®] DCT pipes can be detected in the ground. This means it can be precisely located during subsequent civil engineering measures.

Fig. 1-3: Detecting an installed pipeline

Usage in trenchless pipe installation

With trenchless installation it is not possible to prepare the pipeline area; consequently the pipe is exposed to greater stress.

The core pipe of the SLM[®] DCT pipe is reliably protected against damage such as scratches and notches by a protective layer. Materials that are particularly crack-resistant (PE 100-RC) are used for the core pipe as protection against the stress peaks resulting from point loads.



Fig 1-4: Insertion of an egeplast SLM[®] DCT gas pipeline under adverse soil conditions

Abrasion Resistance / Damage Resistance

A protective layer made from modified polyethylene PE**plus** reliably protects the core pipe against scratches and notches from outside. After installation the core pipe has a damage-free pipe surface and assures a processing by means of electrofusion on a groove-free pipe surface.

Protection against Point Loads

• The protective layer acts as a "hard" shell, keeping the direct loads away from the core pipe. Point loads, such as those that may be created by stones or broken fragments of old piping, are distributed over a larger surface so that the concentrations of stress are reduced. Calculations using the finite element method show what advantages a pipe with a protective layer has with regard to its resilience to point loading. No stress concentration acts on the core pipe in the immediate area of contact.

 The PE 100-RC material used for the core pipe does not provide any opportunity for cracks to develop.



Fig 1-5: Stress concentration: Finite element method (FEM) computational model, Muenster University of Applied Sciences



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