

Pipe connection made simple – with integral electrofusion joints



Repair of a defective reinforced concrete pipeline with SIMONA® PE 100 pipe modules SIMOFUSE®. Top: Welding the pipe modules by means of electrofusion welding. Bottom: Introduction of the pipe modules into the excavation pit and the old pipe.

In the course of a road renewal, Idar-Oberstein town council repaired a worn-out reinforced concrete waste-water line by applying a partially open-trench method. Using SIMONA® PE 100 pipe modules SIMOFUSE® with integral electrofusion joints and SIMONA® PE 80 external saddles SIMOFUSE® for service pipe connection, a pipe system was installed that will remain functional well into the future.

The project at a glance

Project

Repair of a 140 m reinforced concrete pipeline DN 600 and DN 800 with SIMONA® PE 100 pipe modules SIMOFUSE® and renewal of 20 service pipe connection branches with SIMONA® PE 80 external saddles SIMOFUSE®

Requirements

- Pipe connection by means of firmly bonded electrofusion joints, without cumbersome socket assembly
- Simple restoration of a waste-water line, despite confined site conditions
- Simple and leak-free connection of PVC-KG service pipe connection branches to PE 100 main collectors

Client

Stadtwerke Idar-Oberstein
(Idar-Oberstein Municipal Services)

General contractor/Plastics engineering

Stadtwerke Idar-Oberstein

Project planning

Ingenieurbüro Hartmann & Ruess GmbH, Veitsrodt

Technical support

Application technology, PM Relining
SIMONA AG, Kirn

Products used

- SIMONA® PE 100 pipe modules SIMOFUSE®, 3 m long in d 710 and d 560 mm
- SIMONA® PE 80 external saddle SIMOFUSE® (for d = 560), 710 mm connection: service pipe connection DN 150 mm

Project duration

2005



Fig. from left to right: Breaking open the concrete pipeline in the area for the construction of the future service pipe connection branches, connection of the pipe modules by means of electrofusion welding, SIMONA® PE 80 external saddles SIMOFUSE® welded with PE 100 pipe module SIMOFUSE® and PVC-KG pipe by means of push-on socket connection

SIMONA® PE 100 pipe modules SIMOFUSE® – the perfect connection

Initial situation

A reinforced concrete waste-water line made defective by material cracks and breaks was repaired in partially open construction. As there was a 16 bar main water supply line in the immediate vicinity of the waste water line, the waste-water line could not be repaired through simple dismantling and reinstallation. SIMONA was asked to put forward recommendations for a solution tailored to these special requirements.

Task

For this repair project, Idar-Oberstein town council was seeking a pipe system offering the following advantages:

- A pipe connection without troublesome socket assembly
- Permanently leak-free and firmly bonded connection through electrofusion welding
- Simple repair despite confined site conditions
- Uncomplicated connection of service pipe connections to PE sewer pipes and standardised transition to PVC-KG pipes
- Installation of a system with long-term structural stability

Solution

PE 100 pipe modules SIMOFUSE® were used for the repair. The old concrete pipe was broken open locally in the connection area and three-metre-long PE 100 pipe modules SIMOFUSE® were pushed into the old pipe. The pipe module spigot end and socket were conically joined together and firmly bonded by means of electrofusion welding. The advantage: The pipes can be pushed into the old pipe without the electrofusion sockets forming the outer diameter. The SIMONA® PE 80 external saddles SIMOFUSE® were then mounted on the fed-in PE 100 pipeline with clamping tools and welded in accordance with the DVS guideline with the aid of embedded electrofusion joints. After milling precise connection holes in the PE 100 pipeline, the existing service pipe connection branches made of PVC and vitrified clay were connected through the extended connection piece by means of a push-on socket connection. Long-term imperviousness and functionality are guaranteed by this firmly bonded pipe system.

SIMONA® PE pipe modules SIMOFUSE®

Properties

- Firmly bonded, leak-free welding without modification of the outer circumference
- Capable of withstanding internal pressure up to 0.5 bar, depending on the residual wall thickness
- Weldable with universal electrofusion welding devices

Range of products

- Pipe modules d 180–800 mm SDR: 33, 26, 17.6, 17, 11

SIMONA® PE 80 External saddles SIMOFUSE®

Properties

- Leak-free and firmly bonded electrofusion welding
- Variable design for connection to standard pipes, large-format pipes and ovoid pipes
- Simple connection to main collectors and service pipe connection in open construction

Range of products

- d 225–560 mm,
d 630 1000 mm on request

Further information:

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