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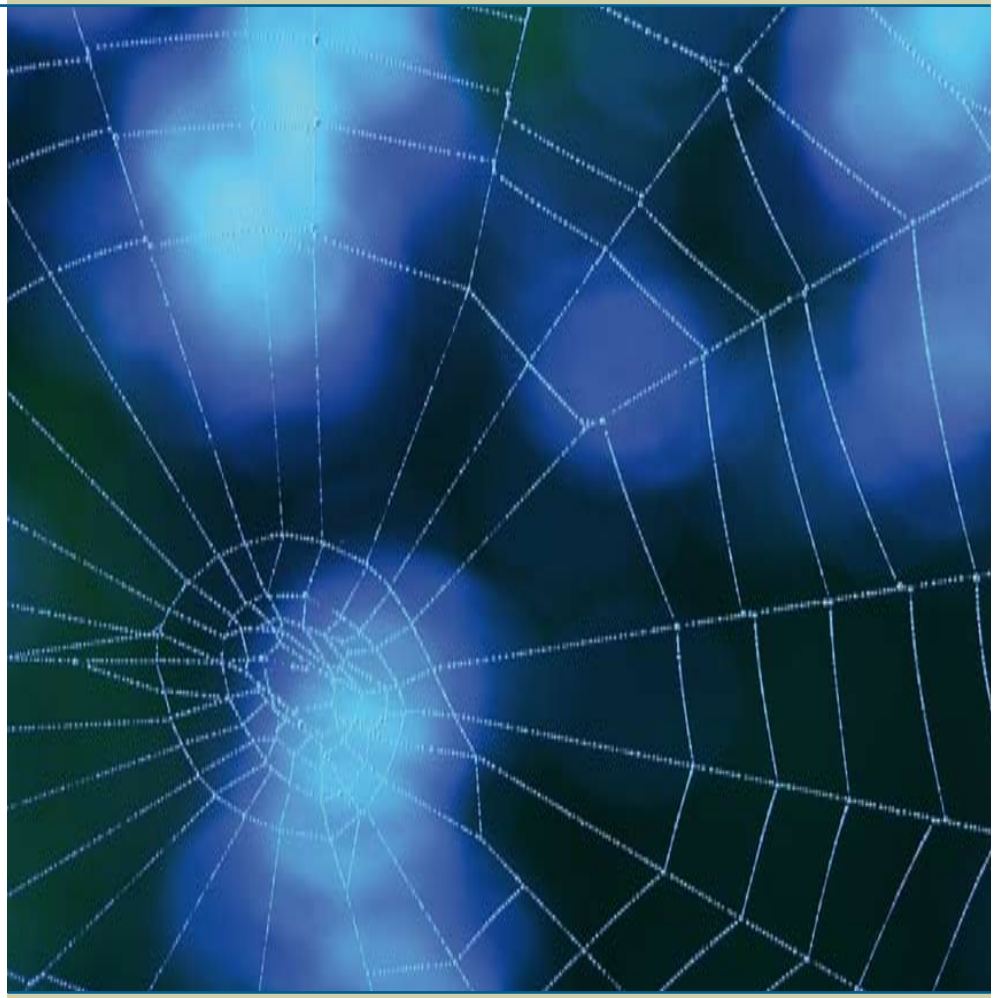

Technology

integrated electro fusion joint

Integrated electro fusion

A complete pipe system is always just as secure as its weakest component. The weakest component is the joint. Therefore it is important to choose the most suitable and permanent one. The welding of small diameter plastic pipes and fittings with the help of electro fusion has been a common method in the market for years. Above all because this jointing technique is very favourable, simple and secure, which has caused Krah to develop this technique for big pipes according to DVS 2207-1.

A fusion wire is included into the socket of the pipe. After putting the socket and spigot of the two pipes, that shall be connected, together, the wire is heated with the help of a special fusion device whereby the two pipe ends (the socket and the spigot) are welded together.

This jointing technique allows pipes to be installed in such a short period of time never achieved before. With only one welding device it is possible to install a pipeline of 72 m with a diameter of 1200 mm inbetween 8 hours. The installation speed is now depending on the trench works.

DN / ID [mm]	voltage [V]	time [sec.]	nos. welding devices
300	15	780	1
400	18	840	1
500	20	900	1
600	24	1020	1
700	25	1080	1
800	33	1020	1
900	39	720	1
1000	40	1080	1
1100	41	1200	1

DN / ID [mm]	voltage [V]	time [sec.]	nos. welding devices
1200	43	1260	1
1300	46	1320	1
1400	28	1020	2
1500	32	1020	2
1600	33	1080	2
1700	34	1200	2
1800	40	1900	2
1900	38	1100	2
2000	39	1200	2
2300	44	1380	2

Average welding parameters for larger diameters on request

Welding procedure

Generally the electro fusion socket and the spigot are already prepared for the welding and the welding wire is included into the socket before delivery. After the basic justification of the pipes the plastic foil, which serves as protection, is removed. Now the welding area is cleaned. The connection of the welding wire should be at the top of the pipes as this facilitates the later connecting. The spigot can now be shifted into the sokket. The pipe is justified, the inside support ring necessary for pipes which are larger than 800 mm, is put into the right position and the outer tensile band is tightened. Now the wire ends can be connected to the welding device. The pipe contains a barcode, which includes all necessary information for the welding. With the help of a barcode reader this information is processed and the welding can be started.

After having finished the welding a certain cooling time which depends on several factors, has to be respected. The result is

a permanently and longitudinally strong superior joint of two pipes. The connection is homogenous and all jointed components build an inseparable unit. The waterway is protected against entering or leaking out and root penetration is prevented.

Software

The welding device has the capacity to record any individual welding. These welding records are saved in the device and can be read out by the computer. The software which is needed for this is called „Krahcode“. With this software two things can be done: On one hand the data of the welding device can be read and administrated and on the other hand the barcodes for the welding of the pipes can be made.

Traceability

Information uploaded on to the electro fusion device can be used to trace back specific product batches. The barcode is added to the fittings as well as to the pipes and contains information about pipe history, product type, pipeline components etc. Via barcode reader and the special software Krahcode all datas are decoded and attached to the welding report.

Integrated

The Krah electro fusion system is not based on couplings, but the electro fusion joint is an integrated part in the pipe and also in all fittings and manholes.

Electro fusion socket incl. welding device and barcode

Electro fusion welding procedure

Connection of a pipe incl. manhole by the electro fusion method

Welding of a large diameter pipe in a narrow trench

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