Metalock Engineering UK

Press Information

METALOCK MENDS KING-SIZE CRACK FOR THAMES WATER AND GIVES PIPE NEW LEASE OF LIFE WITHOUT DIG DOWN

Metalock Engineering UK successfully repaired a severe crack in a 48-inch diameter cast iron water main using its mechanical cold repair system. The pipe was originally laid nearly 100 years ago for the old Metropolitan Water Board. .As the crack was in a section that was buried 5 metres underground, the repair has saved. Thames Water a substantial sum and at the same time strengthened the pipe at that point.

Following evidence of a severe leak at the water treatment works at Walton-on-Thames, SubTerra of Rickmansworth was asked by Thames water to investigate the problem in the system which comprises pipes ranging from 36-inches up to 54-inches diameter. The survey revealed a large radial crack in a 48-inch pipe, laying at a 45 degree angle bend. Consideration was given to inserting a rubber sleeve but concern was expressed that this would not strengthen the pipe. It was believed that the crack had been caused by ground movement and unless the pipe was strengthened, the chances were that the crack would get worse. It already extended two-thirds around the circumference.

Metalock was contacted to survey the damage and ascertain whether an effective repair was feasible. Experience led them to propose its Metalock repair process, a widely accepted method of repairing cracked and broken castings in a wide range of industries. The repair is an entirely heat-free process and the high tensile strength of the material used restores rigidity to the casting and ensures a pressure-tight joint.

Basis of the system are the Metalock keys that are fitted and peened into a series of holes jig-drilled across the crack at regular intervals. Holes are then drilled and tapped along the line of the fracture and filled with studs. Each stud is positioned to overlap its neighbour and the combination of keys and studs produce a rigid and pressure-tight repair.

Advantages of the Metalock system is that no stresses are introduced, no distortion occurs and in many instances machining is not necessary. It is invaluable in emergency situations, such as the Thames Water application, where it offered a no dig solution. It reduces downtime and often avoids expensive castings replacement.

Before any work could be carried out, Metalock's technicians had to undergo full confined space training and medicals to allow confined space working, with their supervisor being trained to handle emergency situations. Although the operation was difficult with some overhead working, the Metalock repair was carried out in eight days and monitored throughout to ensure that it was in accordance with the company's method statements and ISO 9002 quality procedure.

Commenting on the successful repair, Mark Reed, a Thames Water's site engineer said that it was a good system and he would not hesitate to use it again in similar situations.

As the Metalock repair process is entirely heat free, it was possible to mend the 48-inch diameter pipe from the inside and produce a rigid and pressure-tight repair.

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