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A UNIQUE EXAMPLE OF CLOSE FIT LINING TECHNOLOGY FOR THE RENEWAL OF WATER PIPES ALONG THE BRIDGE “PONTE PUNTA PENNA” IN TARANTO

ABSTRACT

The Italian Project concerning the rehabilitation of four pressure pipes located inside the so called bridge “Ponte Punta Penna-Pizzone” in Taranto represents one of the most significant international examples in the field of close fit lining technology in terms of the rehabilitated lengths, the particularities of the building area and the construction difficulties.

The bridge rests on 14 spans rising to 47m and holds four steel pipes of 1200m in length with a diameter of 500mm hanging inside the deck. Through these pipelines passes a maximum water flow of about 500 l/s ensuring the water needs of a population of about 200,000 inhabitants.

The rehabilitation through close-fit lining technology consists in inserting into each of the four pipelines a new tube in high-strength polyethylene which is temporarily deformed and subsequently restored into the required shape and size to adhere perfectly (close-fit) to the inner wall of the existing pipe. The advantage consists in avoiding a significant reduction of the hydraulic section and in obtaining a new pipeline that guarantees its own structural resistance independent of the contribution of the existing pipeline.

Another important advantage is the stability even in the presence of severe corrosion of the hosting pipe with an extension of the working life cycle of the pipelines by 80 years. It was immediately clear that a qualified team had to be identified with a strong innovative capacity and capable of ensuring a coordinated management of the project throughout all its development. The cost of rehabilitation was 2.5 million euro. The project was successfully completed in about 9 months.