Investigation research on the rehabilitation method of sewer		
Period	2001.3 to 2000.3	87P～92P

(Purpose)

With the popularization of the sewerage, the stock of the sewerage utilities rapidly increases, and the total extension of installed sewers has exceeded 300,000km by the end of fiscal year 1999. However, the sewers which are required reconstruction or repair due to exceeding the service life is increasing in the cities, where had been carried out sewage works since early years.

Recently, Many rehabilitation of trenchless technologies for reconstruction or repairs of sewer are developed by processing and hardening the series of plastic material, and beyond 20 rehabilitation technologies has been examined and proven by foundation by the end of 2000.

However, that design and construction management was carried out by determined standard such as the secondary product of factory was in the difficult situation on the technology, since employed materials and construction techniques are all respectively different.

So, for the purpose of execution of the proper tube rebirth, that guide book (draft) of the rehabilitation of sewer which showed design technique and approach on construction management was made in this study.

(Result)

Composition of guide book (draft) of the sewer rehabilitation was shown in following.

Chapter 1 General remarks

This guide book showed standard approaches of design and construction management for rehabilitation of sewer by making reconstruction as an object of reconstruction and repair, for the sake of showing load resistant capacity and the durability over new pipes by reversal method, formation method and pipe manufacturing method in respect of the established pipes.

Chapter 2 Outline of independence pipes and multiunit pipes in sewer rehabilitation

Here, it was divided into independence pipes and multiunit pipes from the difference between the tubular structure after the rehabilitation, and the standard approach was shown as following.

Chapter 3 Design of the rehabilitation sewer (the independence pipes)

Approach of the load acting to the independence pipes and technique of the structural design should follow the "hardened polyvinyl chloride pipe (JSWASK-1) for the sewerage". However, as a principle, the physical property (bending capacity, bending elastic modulus) should be the long term testing value (result of estimating the physical property after 50 years)which reflect dispersion of the quality by the site hardening.

Chapter 4 Design of the rehabilitation sewer (multiunit pipes)

The approach of the load acting to the multiunit pipe should follow the "reinforced concrete pipe (JSWASA-1) for the sewerage", and it was made to be a total of perpendicular earth pressure by live load and soil load. The structural design was carried out with limit state design method as principle.

Chapter 5 Construction management of the rehabilitation sewer

The construction management was shown as the peculiar management technique of rehabilitation sewer, though followed existing standard books such as "sewerage construction management guideline and explanation".

Chapter 6 Future problem

The problems left by this guide book, such as when residual strength of the established pipe is remained, the approach of rehabilitation with the purposes of corrosion prevention and water tight was given.

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