

## Research of Quality Control of Sewer Pipe Rehabilitation

Whole term

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### ( Purpose )

Various material and systems are employed in pipe rehabilitation systems. Technical development and installation records are remarkable. 27 pipe rehabilitation technologies had been approved by JIWET by the end of March, 2002. In addition to it, standards of design and installation management for pipe rehabilitation are shown in "A Guide to Pipeline Rehabilitation" published by Japan Sewage Works Association on June, in 2001.

However, any pipe rehabilitation systems are different from open cut method and pipe jacking method where secondary products produced in factories are installed and have installation procedures such as curing, formation, backfill grouting at site. Therefore, enough consideration of installation management and quality control is necessary to control work progress and quality stably. Requests for putting in place a unified manual of installation management and quality control covering various systems by each municipality are also increased.

In this research, installation summaries of pipe rehabilitation systems, required function and effects for rehabilitated pipes are classified and organized and technical documents stating fundamental issues concerning installation management, quality and work progress control, safety control and environmental measures against pipe rehabilitation systems are prepared.

### ( Contents )

#### ( 1 ) Scope

This technical document applies to installation management and quality control of rehabilitation systems of existing sewer pipes except the sheath pipe system. Types of rehabilitation systems are roughly classified into a single pipe type manufactured by such as thermosetting, light curing and formation and a compound pipe type manufactured by such as winding method and thermosetting.

#### ( 2 ) Required function and effects for rehabilitated pipes

Rehabilitated pipes requires the function of "structural strength", "durability such as abrasion resistance, chemical resistance", "capacity of flow" and "water-proof as a pipe" etc. Effects of adopting rehabilitation systems are improvement of load-carrying capacity of pipes, "durability such as abrasion resistance, chemical resistance", "capacity of flow" and "water-proof", superiority against open cut method etc.

#### ( 3 ) Quality control of materials for pipe rehabilitation

Quality vilification of material before rehabilitation is confirmed by receiving inspection and submission of certificates of manufacture. Material of components, quality of material and items at receiving inspection are written clearly and items of certificates of manufacture are clarified. Storage, carrying out and carrying in of the material are cited as control items.

#### ( 4 ) Installation management of pipe rehabilitation systems

Installation management of rehabilitation systems regarding a series of processes during cleaning of existing pipes, installation and finishing at a pipe orifice such as drilling at main pipes and laterals is organized.

#### ( 5 ) Quality and control of completed form of rehabilitated pipes

Inspection contents and standards of method of visual inspection in rehabilitated pipes or manholes and completed form inspection and tests contents of quality control are organized as control items after installation of the rehabilitation.

( 6 ) Safety control and environmental measures

Safety control that should be considered in the installation at pipe rehabilitation and environmental measures in the installation are organized.

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key words

Pipe rehabilitation , Quality control , Installation management , Work progress control, Safety control , Environmental measures