Korean Construction Standard

KCS 11 20 30 : 2019

Waste Soil and Surplus Soil Treatment

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국토교통부

Foreword

• To address needs caused by changes in the construction standard code system, the overlaps and conflicts between existing construction standards (design standard, standard specification) were compared and reviewed and then integrated into the newly enacted Construction Standard Code.

• This code was revised and enacted as a standard by integrating the parts of the Road Work Standard Specification and Civil Engineering Standard General Specification related to waste soil and surplus soil treatment in the Sewer Pipeline Construction Standard Specification, Construction Work, the Construction Work Slope Surface Standard Specification, the River Construction Standard Specification, the Architectural Construction Work Standard Specification, and the Architectural Electric Facility Construction Works Standard Specification. Major matters related to the enactment and revision of this code are as follows:

Construction Standard	Major Contents	Enactment · Revision (Month, Year)
Road Work Standard Specification	• Enacted by the Ministry of Construction by entrusting it to the Korean Society of Civil Engineering	Enactment (1967.12)
Road Work Standard Specification	• All specifications and guidelines used were reviewed for correlations, and revised and improved to prepare a specification for general road works.	Revision (1985.12)
Road Work Standard Specification	• Compensated and revised to prepare a more detailed specification by introducing new theories to all specifications and guidelines being used.	Revision (1990.5)
Road Work Standard Specification	• Revised to improve road work quality and increase international competitiveness by modifying the systems in response to the opening of the construction market that followed the initiation of the WTO system.	Revision (1996.7)
Road Work Standard Specification	• Reconstructed and compensated according to construction standard maintenance guidelines to reflect the revision of other standards including Korean Industrial Standards (KS) and Concrete Standard Specification, and to establish the system as a national standard.	Revision (2003.11)

Construction Standard	Major Contents	Enactment · Revision (Month, Year)
Road Work Standard Specification	• Revised to address problems found in road work procedures, to harmonize with other standards, including Korean Industrial Standards (KS), Concrete Standard Specification, and Tunnel Standard Specification, to prevent faulty construction works, and to induce solid construction works through thorough quality control.	Revision (2009.3)
Road Work Standard Specification	• Revised to change the sequence of standard specification, specialized specification, and design drawings, and to reflect the opinions of the Central Committee.	Revision (2015.9)
Road Work Standard Specification	• Partially revised in the area of general matters, tree protection materials, general construction works, etc.	Revision (2016.5)
Civil Engineering Construction Standard General Specification	• Enacted as a Civil Engineering Construction Standard General Specification	Enactment (1962)
Civil Engineering Construction Standard General Specification	• Revised as a Civil Engineering Construction Standard General Specification	Revision (1967)
Civil Engineering Construction Standard General Specification	• Revised on the basis of the drafts submitted by individual subcommittees of Korean Society of Civil Engineers in accordance with the continuous progress in construction technologies, including the scaling-up and diversification of construction works and the development of new engineering methods and materials.	Revision (1977)
Civil Engineering Construction Standard General Specification	• Revised to prepare a general specification for the entire scope of civil engineering by reviewing the correlations between all the specifications and guidelines under application.	Revision (1985.12)
Civil Engineering Construction Standard General Specification	• Revised to arrange the individual specifications for each engineering process; to add the specifications on grouting, spraying, and waterproofing as well as those for advanced engineering methods, equipment, and materials; and to harmonize with various other standards and regulations, including various specifications that have already been revised.	Revision (1992.12)
Civil Engineering Construction Standard General Specification	• Revised to be partially modified and compensated by arranging for each of the subdivided engineering processes, and to modify the name to the Civil Engineering Construction Standard General Specification.	Revision (1996.3)
Civil Engineering Construction Standard General Specification	• Revised to be partially modified and compensated by arranging for each of the subdivided engineering processes for each handling to respond to the changes in the construction work operation management and the construction work standards.	Revision (2004)
Civil Engineering Construction Standard General Specification	• Revised by adding, compensating and modifying the information in accordance with the updated construction engineering works. Revised particularly by reflecting the details of new technologies, new engineering methods, and new materials, and by modifying the units to those of the SI system.	Revision (2005.2)

Construction Standard	Major Contents	Enactment · Revision (Month, Year)
Civil Engineering Construction Standard General Specification	• Revised by specifying that low-flowability cementation agents and soil-cement are used for back filling to prevent road sinking, ground loss, and sink holes in cases where the surrounding ground is sand or dredged soil.	Partial Revision (2015.8)
KCS 11 20 30 : 2016	• Integrated and maintained as code according to changes in the construction standard code system.	Enactment (2016.6)
KCS 11 20 20 : 2016	• Revised to accord with Korean Standard and Construction Specification.	Revision (2018.7)
KCS 11 20 20 : 2019	• Revised by modifying the submitted data and adding the use of disposal area in the vicinity.	Revision (2019.12)

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1. General

1.1 Scope of Application

(1) This standard is applied to the spoiling of the materials produced from the cutting works in a construction site, if the materials remain even after being applied to banking and other works or if the properties of the materials are inappropriate for banking and other works.

1.2 Reference Standards

1.2.1 Relevant Laws and Regulations

- Framework Act on the Construction Industry
- Environmental Impact Assessment Act
- Wastes Control Act

1.2.2 Relevant Standards

- KCS 10 10 10 Public Administrative Requirements
- KCS 10 10 15 Quality Control

1.3 Definitions of Terms

Not applicable.

1.4 Deliverables

1.4.1 Data to be Submitted

(1) The contractor should prepare the following materials according to the corresponding requirements specified in KCS 10 10 10 and submit them to the construction supervisor:

① A construction work plan in accordance with the construction plan

② Written consent from borrow pit land owner and land-use plan

③ Certificates showing the fulfillment of the duties required by the management authorities with regard to the spoil areas and transport ways (restoration, repair, etc.)

④ On-site survey report about the location and size of borrow pits and spoil areas

(2) The contractor should submit to the construction supervisor the test reports for all tests performed in accordance with KCS 10 10 15. The test reports should be signed and

sealed by a quality test engineer.

2. Materials

Not applicable.

3. Construction

3.1 Verification of Construction Work Conditions

Not applicable.

3.2 Work Preparation

Not applicable.

3.3 Construction Standard

3.3.1 Surplus Soil

(1) Surplus soil should be transported to and treated at a designated place, and the treatment place should be equipped with a disaster prevention facility.

① Surplus soil treatment can be divided into designated treatment in which the site of treatment is designated in the design drawings and free treatment in which the site of treatment is not designated. Since the contractor has the ultimate responsibility for treatment even in free treatment, the contractor should verify the treatment location and prevent a disaster.

② The amount of surplus soil stacked temporarily to use for back filling works should be calculated, and the surplus soil should be placed in an area that is close to the back filling area. The remaining portion of the surplus soil should be transported to the designated treatment place.

③ The crushed asphalt fragments produced by the removal of pavement and included in the surplus soil may not be disposed of in a general spoil area. Therefore, the asphalt fragments should be treated in a landfill for industrial wastes in accordance with the regulations specified in Article 18 of the Wastes Control Act (Treatment of Industrial Wastes).

(2) In the sewer pipeline construction works, the surplus soil treatment method should be determined as either self-recycling, selling, intermediate treatment (self-recycling

or entrusted treatment) or final treatment (self-recycling or entrusted treatment) considering the amounts and properties of the wastes and the conditions of the waste treatment facility near to the construction site.

(3) Before the surplus soil treatment, the person responsible for waste treatment should try to reduce the weight of the waste. For appropriate treatment of the waste, the person responsible for waste treatment should prepare a specific treatment plan that considers the storage, collection, transportation, intermediate treatment, and final treatment of the wastes based on the construction specification provided by the ordering body, and submit it together with an industrial waste discharge report.

3.3.2Transportation

(1) The term 'transportation' herein refers to the moving of excavated soil (including surplus soil and waste soil) from the original position to a final position specified in the construction plan. The transportation should be performed in accordance with the approved civil engineering plan.

(2) The entry of the soil transportation trucks to the construction site should proceed in accordance with the directions given by the traffic controller to avoid any inconvenience to pedestrians. Soil or gravel should be loaded on a truck, which should be covered to avoid the falling of the loaded materials on the public roads during the soil transportation. In addition, a wheel washing facility (wheel washer, etc.) should be installed at the entrance to avoid contamination of the roads by the passage of work vehicles.

(3) In the transportation of surplus soil and waste soil, a safe and appropriate transportation path should be selected by considering the road structure and width depending on the vehicle size. Any change of the spoil area should be approved before the waste soil transportation.

(4) Earth work waste soil should not be treated at a location that is not the designated location or the location approved by the construction supervisor.

3.3.3WasteSoil

(1) Of the materials produced by the construction works, including sewer pipeline trenching, those that are inappropriate for back filling or banking works remained after the recycling should be treated as waste soil according to the design

drawings or should be able to be used in sites in the vicinity.

(2) Any change of the designated spoil area (including the intermediate collection place) should be approved by the construction supervisor before the initiation of waste soil transportation.

(3) The construction site should always be well arranged for smooth water draining, not only during the waste soil treatment work but also after the completion of the waste soil treatment work.

(4) Unless otherwise directed by the construction supervisor, the waste soil slope surface should have a gentle inclination, considering the angle of repose of each soil type.

(5) After the completion of the waste soil treatment works, the slope surfaces should be well trimmed, and a protective work should be appropriately installed.

(6) When there is rocky waste soil, the rock surface exposed externally should be well arranged.

(7) Any damage to the natural environment and the living environment caused by soil discharge and collapse at the spoil areas or intermediate collection places should be restored at the contractor's expense.

(8) Various construction works in the restoration plan, including drainage, tree plantation, and slope surface protection works, should be carried out according to the corresponding codes.