Korean Construction Standard

KCS 11 20 05 : 2019

Clearing and Gruffing, Obstructions Removal

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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 Road Work Standard Specification and Civil Engineering Standard General Specification related to the clearing and gruffing and the obstructions removal. Major matters related to the enactment and revision of this code are as follows:

Construction Standard	Main Contents	**Enactment · Revision (Month, Year)**
Road Work Standard Specification	• Enacted by the Ministry of Construction by entrusting to the Korean Society of Civil Engineering	Enactment (1967.12)
Road Work Standard Specification	• All specifications and guidelines being 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)
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 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)

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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 the 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 subdivided engineering process and to change 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 subdivided engineering process 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 International System of Units (SI).	Revision (2005.2)
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 the cases where the surrounding ground is sand or dredged soil.	Partial Revision (2015.8)
KCS 11 20 05 : 2016	• Integrated and maintained as code according to changes in the construction standard code system.	Enactment (2016.6)
KCS 11 20 05 : 2016	• Revised to accord with Korean Standard and Construction Specification.	Revision (2018.7)
KCS 11 20 05 : 2019	• Revised to improve the uncertainty on the range of application and to reduce the double reading and the title of the specification.	Revision (2019.12)

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1.General

1.1ScopeofApplication

(1) This standard is applicable to construction works carried out to remove any natural or man-made materials, structures and obstructions which may have negative effects for construction: plants, trees, stumps, bushes, roots, organic matters, topsoils, toxics, wastes, etc.

1.2ReferenceStandard

1.2.1 Relevant Laws and Regulations

- Soil Environment Conservation Act

1.2.2 Relevant Standards

- KCS 10 10 10 Public Administrative Requirements
- KCS 11 20 20 Banking (Mounding)
- KCS 44 50 05 Antifreezing Layer, Sub-Base, and Basic Layer Works

1.3DefinitionsofTerms

Not applicable.

1.4 Deliverables

The contractor should prepare a construction work plan according to the construction plan with reference to KCS 10 10 10, and submit it to the construction supervisor.

2.Materials

None.

3.Construction

3.1VerificationofConstructionConditions

None.

3.2 Work Preparation

None.

3.3 Construction Standard

3.3.1 Clearing and Gruffing, Obstructions Removal

(1) The range of clearing and gruffing is the area specified in the design drawings or specially designated by the construction supervisor. Generally, the range corresponds to a 1 m width from the shoulders of cutting work slope surface in mountainous areas or from the foot of the banking slope surface, and the length of the construction works in mountainous areas.

(2) The trees and stumps in areas where the banking height is over 1.5 m should be cut down to the ground surface so that the remaining height may be less than 150 mm from the surface.

(3) The trees, stumps, roots, and bushes in areas where the banking height is below 1.5 m should be completely removed from the ground surface to the depth of 200 mm.

(4) The topsoil of the banking areas, including a large amount of hazardous materials, pollutant sources or organic materials, should be removed and treated according to the instructions given by the construction supervisor and the Soil Environment Conservation Act, and the result should be confirmed.

(5) The contractor may perform earth cutting and banking works after completing the clearing and gruffing and the obstructions removal works and obtaining the approval from the construction supervisor. However, the stumps in the earth cutting areas may be removed during the earth works.

(6) Except where required by the public or private owners, all the materials removed in the clearing and gruffing works should be carried out of the construction site to be processed by entrusting to a processing company or recycled in an environment-friendly manner by reclaiming or pulverizing in consideration of the site conditions, applying them to grass removal on the protective road shoulders, using to prevent the erosion of mounded slope surfaces, or applying to flower beds.

(7) Among the materials removed by the clearing and gruffing works, the materials that are easily corrupted should be processed at a designated place. If they are

processed by reclaiming, the materials should be uniformly spread as a layer and covered with soil or mixed with soil to fill the pores. The topmost layer of the reclaimed materials should be covered with soil or other approved materials to a thickness of at least 300 mm, and then the soil is leveled and compacted.

(8) The trees or plants that are designated to be preserved or transplanted should be protected during the works to avoid damage.

(9) Topsoil removal is performed according to the design drawings for the paddy field areas and the non-paddy field areas, excluding the mountainous areas. In addition, the removed topsoil may be applied to a slope surface by excluding harmful materials such as tree roots and stones. Before the application, the removed topsoil should be temporarily banked at a designated place below the height of 2.5 m and kept safely so as not to be lost. A temporary drain or a plastic covering may be used to prevent the erosion or loss by rainwater and the increase of water content.

(10) In case of road construction, on soft ground where the first banking of the soil may not be performed, the banking should be performed after reviewing the quality standards and settlement of roadbed materials in consultation with the construction supervisor.

3.3.2 Removal of Structures and Obstacles

(1) The contractor should carry out the removal of structures and obstacles according to the design drawings. Structures and obstacles that are designated for preservation should be carefully transported to the location indicated in the design drawings or selected by the construction supervisor, avoiding any harm. In addition, among the removed materials, those that may be used as the materials for banking should be recycled as much as possible. Inappropriate materials should be treated according to the Waste Control Act.

(2) Bridges, culverts and other drainage facilities that are currently used should be removed after taking actions to remove the inconveniences in passage and utilization by installing alternative facilities suitable for the construction site.

(3) The flowing parts of a substructure should be removed to the river bed surface. On the ground surface, they should be removed to a depth of at least 300 mm.

(4) If blasting is required for the removal work, the blasting should be completed

before a new structure is installed within the range affected by the blasting.

(5) Puddles, holes, and ditches formed by the removal works should be back filled to the height of the surrounding ground as per KCS 11 20 20, and then compacted.

(6) In a road construction work, all the structures to the depth of at least 1 m from the completed road surface should be removed. If the pavement layer thickness is over 1 m, all the structures in the pavement layer should be removed. However, for the existing asphalt concrete pavement, the structures may not be removed by considering the site conditions following the confirmation by the construction supervisor.

(7) In road construction work, waste concrete, if useful as a banking material, may be pulverized into particles having a maximum diameter of 100 mm, and then used as the material for an auxiliary base layer, firstly for access roads. If a back filling material is designed to be the material for an auxiliary base layer, waste concrete should be used as a back filling material. However, if used as a material for an auxiliary base layer, the waste concrete should satisfy the auxiliary base layer material quality codes of KCS 44 50 05, and the content of organic impurities should be less than 1 vol.%.

(8) In a road construction work, waste ascon should be entrusted to and recycled by an ascon recycling company for utilization. However, in cases where the ascon is too little or an ascon recycling facility is not available, waste ascon may be pulverized into particles smaller than a specific diameter to be used as a material for an auxiliary base layer. In such a case, the waste ascon particles should satisfy the auxiliary base layer material quality codes of KCS 44 50 05, and the content of organic impurities should be less than 1 vol.%.