



Code for Facilities, Technology and Inspection for Manufacturing of LNG Storage Tanks

Deliberation/Resolution by Gas Technical Standards Committee : July 19, 2019
Approval by the Ministry of Trade, Industry & Energy : August 14, 2019

Personnel

Gas Technical Standards Committee

Chairman	Kwang-Won Lee, Professor of Hoseo University
Vice-Chairman	Seung-Hoon Nam, Principal Researcher of KRISS
Ex Officio Member	Hui-Won Lee, Manager of Energy Safety Department, Ministry of Trade, Industry & Energy
	Hae-Myeong Yang, Director of Technology and Safety, Korea Gas Safety Corporation
High-Pressure Gas	Seung-Hoon Nam, Principal Researcher of KRISS
	Beom-Seok Lee, Principal Professor of Kyung Hee University
	Dong-Myeong Ha, Professor of Semyung University
	Chang-Gi Kim, Principal Researcher of Korea Institute of Machinery and Materials
	Hyuk-Myun Kwon, Director General of Occupational Safety & Health Research Institute
	Su-Dong Byun, CEO of Q-Best
Liquefied Petroleum Gas	Doo-Seon Park, Managing Director of Daesung Industrial Gas Co., Ltd
	Hyeong-Hwan Ann, Professor of Korea National University of Transportation
	Byeong-Hak Choei, Professor of Gangneung-Wonju National University
	Seong-Min Lee, Director of KOGAS Research Institute
	Yong-Gwon Lee, Vice-President of EG CNE Co.,Ltd
	Gi-hyeon Jang, Director of Kiturmi
	Jeong-Sik Chon, Direto of E1 CO., Ltd.

History of Establishment and Revision of KGS Code

Code Number	KGS AC115 ²⁰¹⁹
Code Title	Code for Facilities, Technology and Inspection for Manufacturing of LNG Storage Tanks

Date of Establishment/Revision	Description
December 30, 2008	Established (Notification of the Ministry of Knowledge Economy No. 2008-379)
May 15, 2009	Revised (Notification of the Ministry of Knowledge Economy No. 2009-193)
January 3, 2011	Revised (Notification of the Ministry of Knowledge Economy No. 2010-489)
November 17, 2014	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2014-589)
December 10, 2015	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2015-641)
July 17, 2016	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2016-354)
June 2, 2017	Revised (Notification of the Ministry of Trade, Industry & Energy Economy No. 2017-298)
September 29, 2017	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2017-475)
March 9, 2018	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2018-129)
December 13, 2018	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2018-607)
January 16, 2019	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2019-026)
August 14, 2019	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2019-489)

Table of Contents

1. General.....	1
1.1 Scope.....	1
1.2 Validity of Code.....	1
1.3 Reference Codes and Standards	1
1.3.1 Inspection standard for new technology products	1
1.4 Definitions.....	2
1.5 Application of Codes and Standards(currently not used)	4
1.6 Interim Measures.....	4
2. Manufacturing Facility Standard.....	4
2.1 Manufacturing Facilities.....	4
2.2 Inspection Facilities.....	5
3. Manufacturing Technology Standard.....	5
3.1 Design.....	5
3.2 Materials	6
3.3 Thickness (currently not used)	6
3.4 Construction and Dimensions	6
3.4.1 Construction.....	6
3.4.2 Dimensions (currently not used)	6
3.5 Fabrication (currently not used)	7
3.6 Welding <Newly established on January 3, 2011>	7
3.7 Heat Treatment <Newly established on January 3, 2011>	7
3.7.1 Heat treatment after forming.....	7
3.8 Performance (currently not used).....	7
3.9 Painting (currently not used)	7
3.10 Attachment of Safety Devices(currently not used).....	8
3.11 Attachment of Accessories(currently not used).....	8
3.12 Coloring and Marking	8
3.12.1 Painting on external surface of tanks(currently not used)	8
3.12.2 Marking of kind of gas (currently not used).....	8
3.12.3 Marking of product.....	8
3.12.4 Marking of acceptance	8
3.13 Manufacturing and Construction	9
3.13.1 Geological survey	9
3.13.2 Seismic design	12

3.13.3 Foundation works.....	13
3.13.4 Construction of base plate and outer wall.....	14
3.13.5 Insulationworks	15
3.13.6Membrane installation	16
3.13.7 Roof construction.....	16
4. Inspection Standard	17
4.1 Kinds of Inspection.....	17
4.1.1 Manufacturing facility inspection.....	17
4.1.2 Product inspection	17
4.2 Audit of Process Inspection Object(currently not used).....	17
4.3 Inspection Items.....	17
4.3.1 Manufacturing facility inspection.....	17
4.3.2 Product inspection	18
4.4 Inspection Methods.....	18
4.4.1 Manufacturing facility inspection.....	18
4.4.2 Product inspection	18
5. Re-inspection Standard (Not Applicable)	22
6. Other Manufacturing and Inspection Standards.....	22

Code for Facilities, Technology and Inspection for Manufacturing of LNG Storage Tanks

1. General

1.1 Scope

This Code applies to the facilities, technology and inspection for manufacturing of liquefied natural gas storage tanks (to the welded or flanged connection upstream of the first shutoff valve from the tank body; hereinafter referred to as "storage tanks") among specified facilities in conformity to the High-Pressure Gas Safety Control Act (hereinafter referred to as "the Act"), Article 3, Clause 5.

1.2 Validity of Code

1.2.1 This Code has passed the deliberation and resolution by Gas Technical Standards Committee (Bill No. 2019-6, July 19, 2019) in accordance with the Act, Article 22-2 Clause 2, has been approved by the Minister of Trade, Industry & Energy (Notification No. 2019-489 of the Ministry of Trade, Industry & Energy, August 14, 2019), and is valid and effective as the detailed standards in conformity to the Act, Article 22-2, Clause 1.

1.2.2 Conformity to this Code is deemed to conform to Table 12 of the Enforcement Regulation of the High-Pressure Gas Safety Control Act (hereinafter referred to as "Enforcement Regulation") in accordance with the Act, Article 22-2, Clause 4.

1.3 Reference Codes and Standards

1.3.1 Inspection standard for new technology products

1.3.1.1 In case the Minister of Trade, Industry & Energy acknowledges that the storage tank does not meet the inspection standard in conformity to this Code in accordance with the Enforcement Regulation,