



Code for Facilities, Technology and Inspection for Manufacturing of Welded Cylinders for Acetylene

Deliberation/Resolution by Gas Technical Standards Committee : December 14, 2018

Approval by the Ministry of Trade, Industry & Energy : January 16, 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 AC214 ²⁰¹⁹
Code Title	Code for Facilities, Technology and Inspection for Manufacturing of Welded Cylinders for Acetylene

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)
June 29, 2009	Revised (Notification of the Ministry of Knowledge Economy No. 2009-250)
January 6, 2010	Revised (Notification of the Ministry of Knowledge Economy No. 2009-480)
January 3, 2011	Revised (Notification of the Ministry of Knowledge Economy No. 2010-489)
May 25, 2011	Revised (Notification of the Ministry of Knowledge Economy No. 2011-261)
June 26, 2012	Revised (Notification of the Ministry of Knowledge Economy No. 2012-313)
December 28, 2012	Revised (Notification of the Ministry of Knowledge Economy No. 2012-549)
May 20, 2013	Revised (Notification of the Ministry of Knowledge Economy No. 2013-087)
December 31, 2013	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2013-353)
June 10, 2015	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2015-331)
December 10, 2015	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2015-641)

January 8, 2016	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2016-6)
July 11, 2016	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2016-354)
January 16, 2019	Revised (Notification of the Ministry of Trade, Industry & Energy No. 2019-026)

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
1.3.2 Manufacturing registration standard for foreign cylinders	2
1.4 Definitions.....	2
1.5 Application of Codes and Standards	4
2. Manufacturing Installation Standard.....	4
2.1 Manufacturing Facilities	4
2.2 Inspection Facilities.....	5
3. Manufacturing Technology Standard.....	5
3.1 Design (currently not used)	5
3.2 Materials.....	5
3.3 Thickness.....	6
3.4 Construction and Dimensions	9
3.4.1 Construction (currently not used).....	9
3.4.2 Dimensions	9
3.5 Fabrication (currently not used)	9
3.6 Welding.....	9
3.7 Heat Treatment.....	10
3.8 Performance (currently not used).....	10
3.9 Painting.....	10
3.9.1 Pretreatment.....	10
3.9.2 Painting method	10
3.10 Attachment of Safety Devices (currently not used).....	13
3.11 Attachment of Accessories.....	13
3.12 Coloring and Marking.....	15
3.12.1 Coloring on external surfaces of cylinders.....	15
3.12.2 Marking of kinds of gases.....	15

3.12.3 Marking of products.....	16
3.12.4 Marking of acceptance.....	17
4. Inspection Standard.....	17
4.1 Kinds of Inspections	18
4.1.1 Manufacturing installation inspection	18
4.1.2 Product inspection	18
4.2 Object Audit of Process Inspection.....	20
4.2.1 Application for audit	20
4.2.2 Audit method.....	20
4.2.3 Adjudication committee	21
4.3 Inspection Items	21
4.3.1 Manufacturing installation inspection	21
4.3.2 Product inspection	21
4.4 Inspection Methods.....	25
4.4.1 Manufacturing installation inspection	25
4.4.2 Product inspection	25
4.5 Other Inspection Standards	49
4.5.1 Inspection of imported goods (currently not used)	49
4.5.2 Partial omission of inspection.....	49
4.5.3 Disposal of rejected products.....	50
5. Retest Standard (Not Applicable).....	50
6. Other Manufacturing and Inspection Standards.....	51
6.1 Exception of Manufacturing Registration of Foreign Cylinders	51
Appendix A Curves for calculation of shell thickness for cylindrical or spherical shells under external pressure	52
Appendix B General Standard for Operation of Quality Control System for Gas Cylinder Manufacturing Plant	70

Code for Facilities, Technology and Inspection for Manufacturing of Welded Cylinders for Acetylene

1. General

1.1 Scope

This code applies to facilities, technology and inspection for manufacturing of welded cylinders for acetylene among cylinders in conformity to the High-Pressure Gas Safety Control Act (hereinafter referred to the "Act"), Article 3, Clause 2.

1.2 Validity of Code

1.2.1 This Code has passed the deliberation and resolution by Gas Technical Standards Committee (Bill No. 2018-10, December 14, 2018) in accordance with the Act, Article 22-2, Clause 2, has been approved by the Minister of Trade, Industry & Energy (Notification No. 2019-026 of the Ministry of Trade, Industry & Energy, January 16, 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 10 of the Enforcement Rule of the High-Pressure Gas Safety Control Act (hereinafter referred to as "Enforcement Rule") 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 cylinders do not meet the inspection standard in conformity to this Code in accordance with the Enforcement Rule, Table 10, No. 4-c but do not hinder safety control as new cylinders developed through new technology development, such manufacturing and inspection methods of those cylinders may apply only restrictively to them.