



**CSA/ANSI B149.6:20**  
National Standard of Canada  
American National Standard



**Code for digester gas, landfill gas, and biogas generation and utilization**



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## ***CSA/ANSI B149.6:20 January 2020***

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*CSA/ANSI B149.6:20*

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and biogas generation and  
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*Approved on October 15, 2019 by ANSI  
Approved on December 2, 2019 by IGAC  
Published in January 2020 by CSA Group  
A not-for-profit private sector organization  
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*ICS 13.030.40  
ISBN 978-1-4883-2238-9*

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# Contents

Interprovincial Gas Advisory Council (IGAC)	7
Technical Committee on Biogas Generation and Utilization	9
Preface	13
<b>1 Scope</b>	<b>15</b>
1.1 General	15
1.2 Summary	16
1.3 Terminology	16
1.4 Dual dimensions	16
<b>2 Reference publications</b>	<b>16</b>
<b>3 Definitions and abbreviations</b>	<b>20</b>
3.1 Definitions	20
3.2 Abbreviations	26
<b>4 General requirements for digester gas systems</b>	<b>27</b>
4.1 Approval of appliances, accessories, components, and equipment	27
4.2 Quality of work	27
4.3 Personnel qualifications	27
4.4 Control of sources of ignition	28
4.5 Isolation of safety devices	28
4.6 Existing equipment and materials	28
4.7 Compliance with other Codes	28
4.8 Prohibited practices for digester gas systems	29
<b>5 Installation requirements for appliances and equipment on digester gas systems</b>	<b>30</b>
5.1 Check for suitability of use	30
5.2 Appliance connections	30
5.3 Accessibility	30
5.4 Responsibilities of the installer	31
5.5 Damaged and used appliances	31
<b>6 Installation requirements for specific types of appliances and equipment on digester gas systems</b>	<b>31</b>
6.1 General	31
6.2 Compressors	32
6.2.1 General	32
6.2.2 Compressor controls	32
6.3 Boilers	33
6.3.1 General	33
6.3.2 Boiler stack vent	33
6.4 Waste gas burner	33
6.5 Stationary gas engines	34
6.6 Incinerators	34

<b>7</b>	<b>Air for combustion, venting, and ventilation in digester gas systems</b>	<b>35</b>
<b>8</b>	<b>Piping and tubing systems and fittings in digester gas systems</b>	<b>35</b>
8.1	General	35
8.2	Material	36
8.3	Requirements for specific types of piping and fittings	36
8.3.1	Stainless steel pipe, tubing, and fittings	36
8.3.2	Plastic pipe and fittings	37
8.3.3	Copper tubing and fittings	38
8.4	Purging	38
8.5	Digester gas piping passing through walls and partitions	39
8.6	Buried piping	39
8.7	Gas piping identification	40
8.8	Manual shut-off valves upstream from the appliance valve train	41
8.9	Drip traps upstream from the appliance valve train	42
8.10	Digester gas instrumentation	43
8.11	Check valves upstream from the appliance valve train	43
8.12	Sediment traps upstream from the appliance valve train	43
8.13	Bleed vents	43
8.14	Gas pressure regulators upstream from the appliance valve train	44
8.15	Gas filters upstream from the appliance valve train	44
<b>9</b>	<b>Digesters and gas storage tanks</b>	<b>45</b>
9.1	Water seal skirt depth	45
9.2	Coatings or linings	45
9.3	Access holes	45
9.4	Gas draw-off	45
9.5	Gas mixing supply piping	46
9.6	Liquid overflow	46
9.7	Pressure/vacuum relieving on digesters	46
9.8	Digester gas storage containers	47
9.8.1	Tanks, cylinders, and spheres	47
9.8.2	Storage container installation	47
9.8.3	Pressure relieving on digester gas storage containers	47
9.9	Sludge holding tanks	47
9.10	Membrane gas hold-up	49
<b>10</b>	<b>Building and building services for digester gas systems</b>	<b>52</b>
10.1	Compressor rooms	52
10.2	Boiler rooms	52
10.3	Hazardous areas	52
10.4	Combustible gas detection equipment	54
<b>11</b>	<b>Testing hazardous areas and digester gas systems</b>	<b>54</b>
11.1	Tests for newly constructed digesters	54
11.2	Pressure testing for digesters	55
11.3	Vacuum tests	56
11.4	Testing after cleanout or digester modifications	56
11.5	Pressure testing for piping	57

11.6	Testing hazardous areas	57
<b>12</b>	<b>Electrical requirements for digester gas systems</b>	<b>57</b>
<b>13</b>	<b>Operation and maintenance of digester gas systems</b>	<b>57</b>
13.1	General	57
13.2	Corrosion of the piping system	58
13.3	Plans and records	58
13.4	Digester gas system maintenance	58
13.5	Maintenance of compressors and relief devices	59
13.6	Valve maintenance	59
13.7	Pressure/vacuum-relief valve protective housing maintenance	59
13.8	Drip trap maintenance (continuous-flow type)	59
13.9	Gas detection system maintenance	60
13.10	Ventilation systems for hazardous areas	60
13.11	Monitoring and testing for flexible membrane gas holders	60
<b>14</b>	<b>General requirements for landfill gas systems</b>	<b>61</b>
14.1	Approval of appliances, accessories, components, and equipment	61
14.2	Quality of work	61
14.3	Personnel qualifications	61
14.4	Control of sources of ignition	62
14.5	Isolation of safety devices	62
14.6	Existing equipment and materials	62
14.7	Compliance with other Codes	62
14.8	Prohibited practices for landfill gas systems	63
<b>15</b>	<b>Installation requirements for appliances and equipment on landfill gas systems</b>	<b>63</b>
15.1	Check for suitability of use	63
15.2	Appliance connections	64
15.3	Accessibility	64
15.4	Responsibilities of the installer	64
15.5	Damaged and used appliances	65
<b>16</b>	<b>Installation requirements for specific types of appliances and equipment on landfill gas systems</b>	<b>65</b>
16.1	General	65
16.2	Blowers	65
16.2.1	General	65
16.2.2	Blower controls	66
16.3	Boilers	66
16.3.1	General	66
16.3.2	Boiler stack	66
16.4	Waste gas burner	67
16.5	Stationary gas engines	67
16.6	Incinerators	68
<b>17</b>	<b>Air for combustion, venting, and ventilation in landfill gas systems</b>	<b>68</b>
<b>18</b>	<b>Piping and tubing systems and fittings in landfill gas systems</b>	<b>69</b>

18.1	General	69
18.2	Material	69
18.3	Requirements for specific types of piping and fittings	70
18.3.1	Stainless steel pipe, tubing, and fittings	70
18.3.2	Plastic pipe and fittings	70
18.4	Purging	71
18.5	Landfill gas piping passing through walls and partitions	72
18.6	Buried piping	73
18.7	Gas piping identification	73
18.8	Manual shut-off valves upstream from the appliance valve train	74
18.9	Drip traps upstream from the appliance valve train	74
18.10	Landfill gas instrumentation	75
18.11	Check valves upstream from the appliance valve train	76
18.12	Sediment traps upstream from the appliance valve train	76
18.13	Bleed vents	76
18.14	Gas pressure regulators upstream from the appliance valve train	77
18.15	Gas filters upstream from the appliance valve train	77
<b>19</b>	<b>Building and building services for landfill gas systems</b>	<b>77</b>
19.1	Blower rooms	77
19.2	Boiler rooms	78
19.3	Hazardous areas	78
19.4	Combustible gas detection equipment	79
<b>20</b>	<b>Testing hazardous areas and landfill gas systems</b>	<b>80</b>
20.1	Pressure testing for piping	80
20.2	Testing hazardous areas	80
<b>21</b>	<b>Electrical requirements for landfill gas systems</b>	<b>80</b>
<b>22</b>	<b>Operation and maintenance of landfill gas systems</b>	<b>80</b>
22.1	General	80
22.2	Corrosion of the piping system	81
22.3	Plans and records	81
22.4	Landfill gas system maintenance	81
22.5	Maintenance of blowers and relief devices	82
22.6	Valve maintenance	82
22.7	Drip trap maintenance (continuous-flow type)	82
22.8	Gas detection system maintenance	83
22.9	Ventilation systems for hazardous areas	83
<b>23</b>	<b>General requirements for biogas systems</b>	<b>84</b>
23.1	Approval of appliances, accessories, components, and equipment	84
23.2	Quality of work	84
23.3	Personnel qualifications	84
23.4	Control of sources of ignition	85
23.5	Isolation of safety devices	85
23.6	Existing equipment and materials	85
23.7	Compliance with other Codes	85

23.8	Prohibited practices for biogas systems	86
<b>24</b>	<b>Installation requirements for appliances and equipment on biogas systems</b>	<b>87</b>
24.1	Check for suitability of use	87
24.2	Appliance connections	87
24.3	Accessibility	87
24.4	Responsibilities of the installer	87
24.5	Damaged and used appliances	88
<b>25</b>	<b>Installation requirements for specific types of appliances and equipment on biogas systems</b>	<b>88</b>
25.1	General	88
25.2	Compressors	88
25.2.1	General	88
25.2.2	Compressor controls	89
25.3	Boilers	90
25.3.1	General	90
25.3.2	Boiler stack vent	90
25.4	Waste gas burner	90
25.5	Stationary gas engines	91
25.6	Incinerators	91
<b>26</b>	<b>Air for combustion, venting, and ventilation in biogas systems</b>	<b>91</b>
<b>27</b>	<b>Piping and tubing systems and fittings in biogas systems</b>	<b>92</b>
27.1	General	92
27.2	Material	92
27.3	Requirements for specific types of piping and fittings	93
27.3.1	Stainless steel pipe, tubing, and fittings	93
27.3.2	Plastic pipe and fittings	94
27.3.3	Copper tubing and fittings	95
27.4	Purging	95
27.5	Biogas piping passing through walls and partitions	96
27.6	Buried piping	96
27.7	Gas piping identification	97
27.8	Manual shut-off valves upstream from the appliance valve train	98
27.9	Drip traps upstream from the appliance valve train	99
27.10	Biogas instrumentation	100
27.11	Check valves	100
27.12	Sediment traps upstream from the appliance valve train	100
27.13	Bleed vents	101
27.14	Gas pressure regulators	101
27.15	Gas filters	101
<b>28</b>	<b>Digesters and gas storage tanks</b>	<b>102</b>
28.1	Water seal skirt depth	102
28.2	Coatings or linings	102
28.3	Access holes	102
28.4	Gas draw-off	103
28.5	Gas mixing supply piping	103

28.6	Liquid overflow	103
28.7	Pressure/vacuum relieving on digesters	103
28.8	Biogas storage containers	104
28.8.1	Tanks, cylinders, and spheres	104
28.8.2	Storage container installation	104
28.8.3	Pressure relieving on biogas storage containers	104
28.9	Digestate holding tanks	105
28.10	Membrane gasholder	106
<b>29</b>	<b>Building and building services for biogas systems</b>	<b>109</b>
29.1	Compressor rooms	109
29.2	Boiler rooms	109
29.3	Hazardous areas	110
29.4	Combustible gas detection equipment	111
<b>30</b>	<b>Testing hazardous areas and biogas systems</b>	<b>111</b>
30.1	Tests for newly constructed digesters	111
30.2	Pressure testing for digesters	112
30.3	Vacuum tests	113
30.4	Testing after cleanout or digester modifications	113
30.5	Pressure testing for piping	114
30.6	Testing hazardous areas	114
<b>31</b>	<b>Electrical requirements for biogas systems</b>	<b>114</b>
<b>32</b>	<b>Operation and maintenance of biogas systems</b>	<b>114</b>
32.1	General	114
32.2	Corrosion of the piping system	115
32.3	Plans and records	115
32.4	Biogas system maintenance	116
32.5	Maintenance of compressors and relief devices	116
32.6	Valve maintenance	116
32.7	Pressure/vacuum relief valve protective housing maintenance	117
32.8	Drip trap maintenance (continuous-flow type)	117
32.9	Gas detection system maintenance	117
32.10	Ventilation systems for hazardous areas	117
<hr/>		
Annex A (informative)	— Leakage and vacuum test methods for digesters	118
Annex B (informative)	— Schematics for recommended valving arrangements for digester gas systems	121
Annex C (informative)	— Schematics for recommended valving arrangements for landfill gas systems	127
Annex D (informative)	— Valve train requirements for specific types of appliances and equipment on digester gas, landfill gas, and biogas systems	135
Annex E (informative)	— Carbon steel limit in fuel gas piping	143
Annex F (informative)	— Recommended requirements for safety shutoff valves greater than 200 mm)	144
Annex G (informative)	— Summary	145

# Preface

This is the second edition of CSA/ANSI B149.6, *Code for digester gas, landfill gas, and biogas generation and utilization*. It supersedes the previous edition published in 2015.

The major changes to this edition include the following:

- The Scope was amended to clarify code coverage and exclusions.
- Several definitions were added, e.g., qualified personnel, relief device, safe location (for venting of gas), and valve proving system (VPS).
- Several definitions were clarified, e.g., biogas (removed the heating content reference), hazardous area (harmonized with applicable codes), sludge holding tank, stand-alone membrane gasholder, tank-mounted membrane gasholders, and test firing (firing valve).
- Compliance with the requirements of this Code for the installation at landfills upstream of the main inlet valve on the vacuum side of the blower has been removed from the scope of this Code.
- Flexible metallic hose was allowed to be used to connect piping to other than appliances.
- The requirement for a lock-up positive shut-off pressure regulator upstream of an appliance valve train was removed from Code.
- The requirement for a flame arrester upstream of the relief valve on a gas storage container that is designed to store gas at a pressure above 100 kPag (14.5 psig) has been removed.
- Examples for hazardous area were expanded to include odour control, equipment, components open-type gas compressors, or blowers.
- Requirement of having an automatic safety shut-off valve certified to ANSI Z21.21/CSA 6.5 and marked C/I to shut-off the landfill gas supply to a waste gas burner that is not equipped with safety shut-off valve(s) was added to the Code.
- Landfill pipe slope percentage was removed from the Code.
- Testing method for membrane gasholders used in biogas installation has been modified.
- Some of the revisions in Annexes include revised requirements for pressure test point (Clause [D.2.8](#)), manual shutoff valves (Clause [D.2.11.1](#)), and valve proving system (Clause [D.2.16](#)), clarified requirements when a test firing valve (Clause [D.2.11.9](#)) or a check valve (Clause [D.3.4](#)) might not be required, etc.

This Code was prepared by the Technical Committee on Biogas Generation and Utilization, under the jurisdiction of the Strategic Steering Committee on Fuel and Appliances, and has been formally approved by the Technical Committee. This Code has also been formally approved by the Interprovincial Gas Advisory Council.

This Code has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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- define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;
  - provide an explanation of circumstances surrounding the actual field condition; and
  - where possible, phrase the request in such a way that a specific "yes" or "no" answer will address the issue.

Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization and are available on the Current Standards Activities page at [standardsactivities.csa.ca](http://standardsactivities.csa.ca).

- 5) This Code is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to [inquiries@csagroup.org](mailto:inquiries@csagroup.org) and include "Proposal for change" in the subject line:
- Standard designation (number);
  - relevant clause, table, and/or figure number;
  - wording of the proposed change; and
  - rationale for the change.

# CSA/ANSI B149.6:20

## ***Code for digester gas, landfill gas, and biogas generation and utilization***

### **1 Scope**

#### **1.1 General**

##### **1.1.1**

This Code applies to the installation of systems for the production, handling, storage, and utilization of digester gas in newly constructed wastewater treatment plants, as well as additions to and upgrading of existing systems.

##### **1.1.2**

This Code applies to the installation of systems for the production, handling, and utilization of landfill gas in newly constructed landfill gas systems, as well as additions to and upgrading of existing systems and temporary systems.

##### **1.1.3**

This Code does not apply to any infrastructure of a landfill upstream of the main inlet valve on the vacuum side of the blower.

##### **1.1.4**

This Code applies to the installation of systems for the production, handling, storage, and utilization of biogas in newly constructed biogas systems, as well as additions to and upgrading of existing systems.

##### **1.1.5**

This Code applies to piping systems in which the maximum operating pressures for piping used in digester systems, landfill gas systems, or biogas systems do not exceed 860 kPag (125 psig) for piping installed outdoors or 450 kPag (65 psig) for piping installed indoors.

##### **1.1.6**

This Code applies to the safety aspects of the operation and maintenance for handling, storage, and utilization of digester gas in wastewater treatment plants or landfill gas at landfill sites or biogas in biogas systems.

**Note:** *This Code does not apply to substrate storage, long-term digestate storage, or pilot scale and research digesters in biogas systems.*

##### **1.1.7**

This Code applies to existing digester gas and landfill gas systems where, in the opinion of the authority having jurisdiction, a hazard or potential hazard exists.