

Appendix 3 Comparison of AS/NZS 1596 2002 with the HSNO Requirements

• AS/NZ 1596:2002	HSNO
• Section 1 Scope and General	
• Scope and Application (1.1)	
• Objective (1.2)	
• Referenced Documents (1.3, Appendix B)	Referenced in regulations and gazette notice
• Definitions (1.4)	Referenced in regulations and gazette notice
• Restrictions on Ignition Sources (1.5)	Regs 58, 59, 60 – 70 HS (Classes 1 – 5 Controls) Regulations 2001
•	
• Section 2 Minor Storage and Usage	
• Precautions (2.2)	No equivalent
• Restaurants (2.3)	No equivalent
• LPG Cylinders on Trolleys (2.4)	No equivalent
• Non-Refillable Containers (2.5)	No equivalent
• Cylinder Use (2.6)	No equivalent
• Table 2.1 Minor Storage	No equivalent
•	
• Section 3 Components For Tank Systems	
• Tank Design and Construction (3.2)	Part 2, Schedule 8, Gazette Notice
• Control of LPG Outflow (3.3)	Equivalent requirements in Clause 14, Part 4, Schedule 8 Gazette Notice
• Safety valves (3.4)	Equivalent requirements in Clause 17, Part 4, Schedule 8 Gazette Notice
• Valves and Accessories (3.5)	Equivalent requirements in Clause 14, Part 4, Schedule 8 Gazette Notice
• Piping (3.6)	Equivalent requirements in Part 15, Schedule 8 Gazette Notice
• Vaporizers (3.7)	Equivalent requirements in Part 12, Schedule 8 Gazette Notice
• Table 3.2 Control of LP Gas Outflow	No equivalent
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<ul style="list-style-type: none"> • Section 4 Tank System Installation 																																																																						
<ul style="list-style-type: none"> • Tank Spacing and Separation Distances (4.2) 																																																																						
<ul style="list-style-type: none"> • Intertank distance – diameter of largest tank (Table 4.1) 	Greater of diameter of largest tank or 1 m up to 10,000 litres 2 m over 10,000 litres Clause 18(2), Part 5, Schedule 8 Gazette Notice																																																																					
<ul style="list-style-type: none"> • Isolation Distances – Table 4.1 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Litres</th> <th style="text-align: center;">Public Places</th> <th style="text-align: center;">Protected Places</th> </tr> </thead> <tbody> <tr> <td>• Under 500</td> <td style="text-align: center;">Nil</td> <td style="text-align: center;">Nil</td> </tr> <tr> <td>• 500</td> <td style="text-align: center;">1.5</td> <td style="text-align: center;">1.5</td> </tr> <tr> <td>• 1,000</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> </tr> <tr> <td>• 2,000</td> <td style="text-align: center;">4</td> <td style="text-align: center;">6</td> </tr> <tr> <td>• 5,000</td> <td style="text-align: center;">5</td> <td style="text-align: center;">8</td> </tr> <tr> <td>• 8,000</td> <td style="text-align: center;">6</td> <td style="text-align: center;">10</td> </tr> <tr> <td>• 10,000</td> <td style="text-align: center;">7</td> <td style="text-align: center;">11</td> </tr> <tr> <td>• 15,000</td> <td style="text-align: center;">8</td> <td style="text-align: center;">14</td> </tr> <tr> <td>• 20,000</td> <td style="text-align: center;">9</td> <td style="text-align: center;">15</td> </tr> <tr> <td>• 50,000</td> <td style="text-align: center;">10</td> <td style="text-align: center;">17</td> </tr> <tr> <td>• 100,000</td> <td style="text-align: center;">11</td> <td style="text-align: center;">20</td> </tr> <tr> <td>• 200,000</td> <td style="text-align: center;">12</td> <td style="text-align: center;">25</td> </tr> <tr> <td>• 500,000</td> <td style="text-align: center;">22</td> <td style="text-align: center;">45</td> </tr> </tbody> </table>	Litres	Public Places	Protected Places	• Under 500	Nil	Nil	• 500	1.5	1.5	• 1,000	2	3	• 2,000	4	6	• 5,000	5	8	• 8,000	6	10	• 10,000	7	11	• 15,000	8	14	• 20,000	9	15	• 50,000	10	17	• 100,000	11	20	• 200,000	12	25	• 500,000	22	45	Isolation Distances – Clause 30, Part 4, Schedule 10 Gazette Notice <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Litres</th> <th style="text-align: center;">LILU</th> <th style="text-align: center;">HILU</th> </tr> </thead> <tbody> <tr> <td>Up to 500</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>1,000</td> <td style="text-align: center;">3</td> <td style="text-align: center;">3</td> </tr> <tr> <td>5,000</td> <td style="text-align: center;">5</td> <td style="text-align: center;">8</td> </tr> <tr> <td>10,000</td> <td style="text-align: center;">7</td> <td style="text-align: center;">11</td> </tr> <tr> <td>20,000</td> <td style="text-align: center;">9</td> <td style="text-align: center;">15</td> </tr> <tr> <td>50,000</td> <td style="text-align: center;">10</td> <td style="text-align: center;">17</td> </tr> <tr> <td>100,000</td> <td style="text-align: center;">12</td> <td style="text-align: center;">21</td> </tr> <tr> <td>200,000</td> <td style="text-align: center;">14</td> <td style="text-align: center;">28</td> </tr> </tbody> </table>	Litres	LILU	HILU	Up to 500	2	2	1,000	3	3	5,000	5	8	10,000	7	11	20,000	9	15	50,000	10	17	100,000	12	21	200,000	14	28
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<ul style="list-style-type: none"> • Distances to other gas storages (4.2.5) • Cryogenic liquids – refer to AS 1894 • Non-combustible compressed gases in cylinders – 6m • Flammable gases other than LPG in cylinders – as for LPG • Gases other than LPG or cryogenic – 6m • LNG – as flammable liquid 	Clause 21 (2), Part 5, Schedule 8 Gazette Notice Class 2.1.1 permanent gas tank, class 5,6,8 or 9 substances 6 m if LPG less than 100,000 litre 15 m if LPG over 100,000 litres																																																																					

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<ul style="list-style-type: none"> • Tank site conditions (4.3) 	Tanks in depression and compounding covered in Clause 15, Part 4, Schedule 8 Gazette Notice
<ul style="list-style-type: none"> • Firewall, vapour barrier and thermal screen construction (4.4) 	Construction of fire wall and vapour barrier covered in Clause 33, Part 4, Schedule 10 Gazette Notice
<ul style="list-style-type: none"> • Tank foundations and supports (4.5) 	General statement in Clause 16, Part 4 Schedule 8 Gazette Notice
<ul style="list-style-type: none"> • Tank installation and design (4.6) 	
<ul style="list-style-type: none"> • Connections for tank filling and tanker loading (4.7) • Direct connection permitted for tanks up to 16,000 litres • Remote connections :- • Tanks up to 25,000 litres 3 m • 25,000 to 125,000 litres 6 m • Over 125,000 litres 9 m 	<p>Less than 7,500 litres 0 m 7,500 to 50,000 litres 3 m 50,000 to 100,000 litres 6 m 100,000 and over 9 m</p> <p>Not covered</p>
<ul style="list-style-type: none"> • To underground tank – sufficient for access and operations 	As per aboveground tank isolation distances
<ul style="list-style-type: none"> • Public and protected places – 12 m, if loss from coupling is less than 1 litre – 3 m to public places, 6 m to protected places 	Ignition source – as per AS/NZS 2430
<ul style="list-style-type: none"> • Ignition source – as per AS/NZS 2430 	Not covered
<ul style="list-style-type: none"> • Entrance to drain or pit – 12 m, if loss from coupling is less than 1 litre – 3 m to public places, 6 m to protected places 	
<ul style="list-style-type: none"> • Tanker loading – 4.7.4 	Clauses 27 & 28, Part 5, Schedule 8 Gazette Notice

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<ul style="list-style-type: none"> • remote connection required 	8 m from cylinder filling point 15 m from tank that it is being filled from 15 m from any other class 2.1.1 or 3.1 tank
<ul style="list-style-type: none"> • Emergency Shutdown (4.8) 	
<ul style="list-style-type: none"> • Piping (4.9) 	Part 15, Schedule 8 Gazette Notice
<ul style="list-style-type: none"> • Vaporizer Installation (4.10) • Up to 70 litres/hour 3 m • 70 to 500 litres/hour 8 m • Over 500 litres/hour 15 m 	Part 12, Schedule 8 Gazette Notice Up to 610 litres/hour 8 m Over 610 litres/hour 15 m
<ul style="list-style-type: none"> • Regulators (4.11) 	Not under HSNO, see NZS 5261
<ul style="list-style-type: none"> • Pumps and compressors (4.12) 	No equivalent
<ul style="list-style-type: none"> • Security and damage avoidance (4.13) 	Reg 81 HS (Classes 1-5 Controls) Regs 2001
<ul style="list-style-type: none"> • Lightning and bonding protection (4.14) 	No equivalent
<ul style="list-style-type: none"> • Ladders, steps and Platforms (4.15) 	No equivalent
<ul style="list-style-type: none"> • Leak Detection (4.16) 	No equivalent
<ul style="list-style-type: none"> • Marking and notices (4.17) 	Part 17, Schedule 8 Gazette notice
<ul style="list-style-type: none"> • Lighting (4.18) 	No equivalent
<ul style="list-style-type: none"> • Unodourised Gas Installations (4.19) 	No equivalent
<ul style="list-style-type: none"> • 	
<ul style="list-style-type: none"> • Section 5 Underground Tank Installations 	
<ul style="list-style-type: none"> • Corrosion Control (5.2) 	No equivalent
<ul style="list-style-type: none"> • Location and Installation (5.3) 	Referenced in Clause 37, Part 7, Schedule 8 Gazette Notice
<ul style="list-style-type: none"> • Access, Protection, Fittings and Accessories (5.4) 	No equivalent
<ul style="list-style-type: none"> • Discharge from Safety Relief Device (5.5) 	Could be covered by Clauses 38 & 39, Part 7, Schedule 8 Gazette Notice
<ul style="list-style-type: none"> • Table 5.1 Separation Requirements 	No equivalent

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<ul style="list-style-type: none"> • Figure 5.2 Piping Connections 	No equivalent																																																						
<ul style="list-style-type: none"> • 																																																							
<ul style="list-style-type: none"> • Section 6 Cylinders and Cylinder Systems 																																																							
<ul style="list-style-type: none"> • Cylinders (6.2) 	Covered in Parts 2 and 5 HS (Compressed Gases) Regs 2004																																																						
<ul style="list-style-type: none"> • Regulators and Piping (6.3) 	Covered by NZS 5261 Gas Installations																																																						
<ul style="list-style-type: none"> • Cylinders in Use (6.4) 	Clause 20, Part 3, Schedule 10 Gazette Notice																																																						
<ul style="list-style-type: none"> • Cylinders in Use Within Buildings (6.5) 	No equivalent																																																						
<ul style="list-style-type: none"> • Cylinder Storage (6.6) 	Clause 20, Part 3, Schedule 10 Gazette Notice																																																						
<ul style="list-style-type: none"> • Table 6.1 Cylinder Locations 	Clause 30 (2) Part 4 Schedule 10 Gazette Notice																																																						
<table border="0" style="width: 100%;"> <tr> <td style="width: 15%;">Capacity</td> <td style="width: 15%;">Public Places</td> <td style="width: 15%;">Protected Places</td> <td style="width: 15%;"></td> <td style="width: 15%;">LILU</td> <td style="width: 15%;">HILU</td> </tr> <tr> <td>0 – 500 kg</td> <td>0</td> <td>0</td> <td>Up to 100 kg</td> <td>0</td> <td>0</td> </tr> <tr> <td>500 – 1250 kg</td> <td>1.5</td> <td>3</td> <td>300 kg</td> <td>0</td> <td>2</td> </tr> <tr> <td>1250 – 3000 kg</td> <td>3</td> <td>4.5</td> <td>500 kg</td> <td>2</td> <td>2</td> </tr> <tr> <td>3000 – 6000 kg</td> <td>3</td> <td>6</td> <td>2000 kg</td> <td>2</td> <td>3</td> </tr> <tr> <td>6000 – 60000 kg</td> <td>4.5</td> <td>8</td> <td>5000 kg</td> <td>3</td> <td>5</td> </tr> <tr> <td>Over 60000 kg</td> <td>8</td> <td>15</td> <td>10000 kg</td> <td>4</td> <td>7</td> </tr> <tr> <td></td> <td></td> <td></td> <td>50000 kg</td> <td>5</td> <td>8</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Over 50000 kg</td> <td>8</td> <td>15</td> </tr> </table>	Capacity	Public Places	Protected Places		LILU	HILU	0 – 500 kg	0	0	Up to 100 kg	0	0	500 – 1250 kg	1.5	3	300 kg	0	2	1250 – 3000 kg	3	4.5	500 kg	2	2	3000 – 6000 kg	3	6	2000 kg	2	3	6000 – 60000 kg	4.5	8	5000 kg	3	5	Over 60000 kg	8	15	10000 kg	4	7				50000 kg	5	8				Over 50000 kg	8	15	
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<ul style="list-style-type: none"> • 																																																							
<ul style="list-style-type: none"> • Section 8 Cylinder Filling – New Zealand 																																																							
<ul style="list-style-type: none"> • General (8.2) 	Equivalent in Regs 56 to 66 HS (Compressed Gases) Regs																																																						
<ul style="list-style-type: none"> • Cylinder-Filling Area (8.3) 	Clause 21A, Part 3, Schedule 10 Gazette Notice																																																						
<ul style="list-style-type: none"> • Filling point treated as a dispensing point 	Up to 100 kg, 6m from HILU, 3m from LILU																																																						
<ul style="list-style-type: none"> • 1 metre gap between filling point and cylinder storage 	100 – 1000 kg 8m from HILU and LILU																																																						
<ul style="list-style-type: none"> • No more than 6 cylinders at filling point 	Over 1000 kg 15m from HILU and LILU																																																						
<ul style="list-style-type: none"> • Decanting (8.4) 	Not specifically covered																																																						
<ul style="list-style-type: none"> • 	Approved Fillers required Reg 60 HS (Compressed Gases) Regs																																																						

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• Section 9 Automotive Filling Installation	
• Common Requirements (9.2)	Dispenser to be 3 m from tank Clause 26 2 (b) Part 5 Gazette Notice
• Dispensing Systems (9.3)	Must be approved by Authority Part 11 Schedule 8 Gazette Notice
• Notices, Signs and Instructions (9.4)	
• Special requirements for Service Stations (9.5)	Self service covered by Reg 56 HS (Classes 1 to 5 Controls) Regs
• Site Suitability (9.6)	No equivalent
• Land Use Controls (9.7)	No equivalent
• Safety Management System (9.8)	No equivalent
• Table 9.1 Separation and Population Limit Areas	No equivalent or distances
•	
• Section 10 Operations	
• General Precautions (10.2)	No equivalent
• Establishment of Procedures (10.3)	No equivalent
• Compliance, Supervision and Records (10.4)	Location test certificate required
• Construction, Inspection, Testing and Maintenance (10.5)	Clause 4 Part 1 Schedule 8 Gazette Notice
• Specific Operating Procedures (10.6)	No equivalent
• Preparation for Transport, Removal of Storage Tanks (10.7)	Disused tanks covered by Clause 40, Part8 Schedule 8 Gazette Notice
• Tanker Operations (10.8)	Reg 40 HS (Tank Wagon) Regs
• General Precautions for Tanker Transfer (10.9)	Reg 41 HS (Tank Wagon) Regs
• Supervision of Delivery (10.10)	Reg 41, 43 HS (Tank Wagon) Regs
• Procedures for Filling and Emptying Tanks (10.11)	Reg 39 HS (Tank Wagon) Regs
• Cylinder Filling (10.12)	Regs 56 and 60 HS (Compressed Gases) Regs

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<ul style="list-style-type: none"> • Filling from Tankers to Cylinders other than In-situ (10.13) 	No equivalent
<ul style="list-style-type: none"> • Cylinder Storage and Handling (10.14) 	No equivalent
<ul style="list-style-type: none"> • 	
<ul style="list-style-type: none"> • Section 11 Fire Safety 	
<ul style="list-style-type: none"> • General requirements (11.1) 	
<ul style="list-style-type: none"> • Cylinders (11.2) 	
<ul style="list-style-type: none"> • Tank Installations (11.3) • Specific site analysis required 	Tanks over 12,000 litres water capacity must have permanent water spray system Clause 41, Part 9 Schedule 8 Gazette notice
<ul style="list-style-type: none"> • Automotive Filling Installations (11.4) 	No specific requirements
<ul style="list-style-type: none"> • Detail Requirements (11.5) 	
<ul style="list-style-type: none"> • 	
<ul style="list-style-type: none"> • Appendix A Scope of AS/NZS 1596 	
<ul style="list-style-type: none"> • Appendix B Referenced Documents 	
<ul style="list-style-type: none"> • Appendix C Tank or Cylinder Filling Level 	
<ul style="list-style-type: none"> • C2 Determination of Standard Filling Level 	
<ul style="list-style-type: none"> • C3 Procedure – Filling by Mass 	
<ul style="list-style-type: none"> • C4 Procedure – Filling by Volume – Standard Liquid Level 	
<ul style="list-style-type: none"> • C5 Procedure – Filling by Volume – Temperature Correction 	
<ul style="list-style-type: none"> • Appendix D Markings, Signs and Notices 	
<ul style="list-style-type: none"> • D1 Tank System 	
<ul style="list-style-type: none"> • D2 Tank Installations 	
<ul style="list-style-type: none"> • D3 Cylinder Installation – Australia only 	

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• D4 Cylinder Filling	
• D5 Automotive Filling Station – Vehicle Filling Area	
• Figure D1 LPG Emergency Procedure Notice	
• Appendix E Discharge Capacity of Safety Valves	
• Appendix F Tank and Cylinder Location	
• Appendix G Identification of Liquid and Vapour Lines	
• Appendix H Leakage Testing of Pipework	
• Appendix I Industrial Mobile Space Heaters	
• Appendix J Hazardous Areas	
• Appendix K Portable Cylinder Exchange Facilities	
• Appendix L Decanting Procedure	
• Appendix M Emergency Plans	
• Appendix N Motor Vehicle Refuelling	
• Appendix O Fire Exposure Protection	
• Appendix P Driver Instruction Signs	
• Figure P1 Warning Sign	
• Figure P2 Filling Instructions	
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