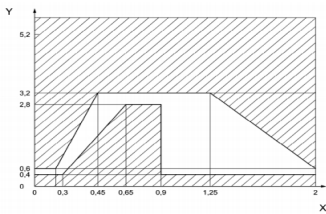


Product reliability test plan

No.	Test items	Test standard	Test requirements	Test equipment	Test results																		
1	Leaking test	AS/NZS3499-2022	<p>1. Straighten the hose, apply 70KPa water pressure, measure and record the length and outer diameter of the initial hose;</p> <p>2. into the measured hose water temperature $20\pm 5^{\circ}\text{C}$, pressure 3.0 (0,+0.1) MPa water pressure, for 15 (0,+5) minutes, observe no leakage; And quickly measure and record the length and outer diameter of porcelain hose;</p> <p>3. Compare the rate of change of the outer diameter and length of the hose, and the rate of change of the length and diameter of the hose shall not exceed 8%.</p>	Leaking test machine	No leakage																		
2	Aging test	AS/NZS3499-2022	<p>Fill the sample with water, apply $1.4\pm 0.1\text{MPa}$ pressure and maintain this pressure throughout the aging process. The samples were stored at $90\pm 3^{\circ}\text{C}$ for 168 hours. Pipes and joints have no cracks, no leakage, etc</p>	Aging test machine	No leakage																		
3	Tensile test	AS/NZS3499-2022	<p>B.5.1 Test sample Three samples of each tube diameter were aged according to B.4.</p> <p>B.5.2 Programs</p> <p>a) The test shall be carried out at the ambient temperature of $(20\pm 5)^{\circ}\text{C}$.</p> <p>b) Fix the sample to a dynamometer with a tension speed of 3.3mm/s.</p> <p>c) Make the hose withstand the tension according to Table 9, and keep the tension for a certain time (60 ± 1) minutes to check whether the sample is invalid or damaged, and whether the core is loose.</p> <p>d) Remove the sample and fill with water.</p> <p>e) Apply a pressure of $(1.6\pm 0.1)\text{Mpa}$ at a rate of 0.1Mpa/SEC, maintain this pressure for one minute and check the sample for failure, breakage and leakage, and whether the core is loose.</p> <div style="text-align: center; margin-top: 10px;"> <p><small>Table 9 — Tensile stress values</small></p> <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Nominal size</th> <th style="text-align: center;">Tensile stress N</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">DN 6</td><td style="text-align: center;">600</td></tr> <tr><td style="text-align: center;">DN 8</td><td style="text-align: center;">600</td></tr> <tr><td style="text-align: center;">DN 10</td><td style="text-align: center;">800</td></tr> <tr><td style="text-align: center;">DN 13</td><td style="text-align: center;">1 100</td></tr> <tr><td style="text-align: center;">DN 15</td><td style="text-align: center;">1 500</td></tr> <tr><td style="text-align: center;">DN 18</td><td style="text-align: center;">2 100</td></tr> <tr><td style="text-align: center;">DN 20</td><td style="text-align: center;">2 500</td></tr> <tr><td style="text-align: center;">DN 25</td><td style="text-align: center;">3 400</td></tr> </tbody> </table> </div>	Nominal size	Tensile stress N	DN 6	600	DN 8	600	DN 10	800	DN 13	1 100	DN 15	1 500	DN 18	2 100	DN 20	2 500	DN 25	3 400	Tensile strength tester	No leakage
Nominal size	Tensile stress N																						
DN 6	600																						
DN 8	600																						
DN 10	800																						
DN 13	1 100																						
DN 15	1 500																						
DN 18	2 100																						
DN 20	2 500																						
DN 25	3 400																						

4	Impulsing test	AS/NZS3499-2022	<p>B.6.1 Test sample The test samples are the three samples after B.5 test.</p> <p>B.6.2 Test Conditions The test water temperature of the braided tube assembly should be maintained at 90 (+1, -3) °C.</p> <p>B.6.3 Procedures a) Connect the sample to a test device capable of producing pulses as shown in Figure B.2, with pressure values kept in the white area. b) It can generate 25,000 pulses.</p> 	Impulsing machine	No leakage																																															
5	Keep pressure test	AS/NZS3499-2022	<p>B.7.1 Test sample The test samples are the three samples after B.6 test.</p> <p>B.7.2 Programs a) Fill the sample with water at the following temperature: 1) The braided tube becomes 90 (+1, -3) °C. 2) Non-braided tubes total 70 (+1, -3) °C. ---- Maintain this temperature during the test. b) Increase at a rate of 0.1Mpa/ SEC until (5±0.1) Mpa and maintain this pressure for (60±1) minutes. c) Check the sample failure, damage and water leakage, whether the core falls off, and make a record.</p>	Burst pressure machine	No leakage, no shedding																																															
6	Temperature cycling test	AS/NZS3499-2022	<p>B.8.1 Test sample The test samples are the three samples after B.7 test.</p> <p>B.8.2 Programs a) Connect the sample to a system that provides: 1) Constant pressure (1 ± 0,05) Mpa 2) Supply water at (20±5) ° C for 5 minutes, then supply water at (90±3) ° C for 5 minutes, so it is a cycle b) Stop testing after 5000 cycles c) Apply a pressure of (1.6±0.1) Mpa at the rate of 0.1Mpa/ SEC, maintain this pressure for one minute, and check the sample for failure, damage and water leakage, whether the core is falling off, and record the results.</p>	Temperature cycling test machine	No leakage																																															
7	Bending test	AS/NZS3499-2022	<p>The variation of three samples per pipe diameter (see Table 10) shall not exceed 15%</p> <table border="1" data-bbox="518 1915 933 2094"> <caption>Table 10 — Bending radius, length of specimen and tensile force</caption> <thead> <tr> <th rowspan="2">Nominal size</th> <th rowspan="2">Internal radius R mm</th> <th rowspan="2">Length of test specimen L mm</th> <th colspan="2">Tensile force for hose assemblies N</th> </tr> <tr> <th>General</th> <th>For plastics hoses without braiding</th> </tr> </thead> <tbody> <tr> <td>DN 6</td> <td>25</td> <td>400 to 450</td> <td>15</td> <td>45</td> </tr> <tr> <td>DN 8</td> <td>30</td> <td>400 to 450</td> <td>15</td> <td>55</td> </tr> <tr> <td>DN 10</td> <td>35</td> <td>500 to 550</td> <td>20</td> <td>200</td> </tr> <tr> <td>DN 13</td> <td>45</td> <td>600 to 660</td> <td>30</td> <td>300</td> </tr> <tr> <td>DN 15</td> <td>60</td> <td>700 to 770</td> <td>35</td> <td>500</td> </tr> <tr> <td>DN 18</td> <td>70</td> <td>800 to 880</td> <td>45</td> <td>...</td> </tr> <tr> <td>DN 20</td> <td>80</td> <td>900 to 1 000</td> <td>50</td> <td>...</td> </tr> <tr> <td>DN 25</td> <td>100</td> <td>1 100 to 1 200</td> <td>65</td> <td>...</td> </tr> </tbody> </table>	Nominal size	Internal radius R mm	Length of test specimen L mm	Tensile force for hose assemblies N		General	For plastics hoses without braiding	DN 6	25	400 to 450	15	45	DN 8	30	400 to 450	15	55	DN 10	35	500 to 550	20	200	DN 13	45	600 to 660	30	300	DN 15	60	700 to 770	35	500	DN 18	70	800 to 880	45	...	DN 20	80	900 to 1 000	50	...	DN 25	100	1 100 to 1 200	65	...	Bending test	No leakage and No broken on surface
Nominal size	Internal radius R mm	Length of test specimen L mm	Tensile force for hose assemblies N																																																	
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