

Respiratory Protective Devices

AS/NZS ISO RPD Testing Standards Overview for manufacturers, test laboratories & accreditation bodies (AS/NZS 1716 to AS/NZS ISO 174201 16976 & 16900 Series)

For many years, the primary respiratory protection standard used across Australian workplaces has been **AS/NZS 1715:2009**, *Selection, use and maintenance of respiratory protective equipment*. Together with **AS/NZS 1716:2012** *Respiratory Protective Devices*, the associated performance testing standard, it has formed the foundation of Respiratory Protection Programs (RPPs) and respiratory protective devices (RPD) throughout Australia and New Zealand.

Both **AS/NZS 1715:2009** and **AS/NZS 1716:2012** are planned to be **superseded in 2030** and will be progressively replaced by the **AS/NZS ISO suite of respiratory protection standards**, which will be adopted in parallel across both jurisdictions over the coming years. As this transition unfolds, **manufacturers, accreditation bodies and test laboratories** will need to understand how the new AS/NZS ISO-aligned framework compares with the long-standing AS/NZS approach.

The AS/NZS ISO-aligned counterpart to AS/NZS 1716 is the **AS/NZS ISO 17420 RPD performance requirement series and AS/NZS ISO 16900 RPD Method of test and test equipment series** and will be replaced in Australian and New Zealand jurisdictions by these AS/NZS ISO based series of standards in a gradual process over the next several years. The AS/NZS ISO framework includes the AS/NZS 16976 Human Factors Series and also introduces new device categories and performance ratings that stakeholders will need to become familiar with as the transition progresses.

Manufacturers, accreditation bodies and test laboratories, regulators, Occupational Hygienists and others responsible for Respiratory Protection Programs and respiratory protection device selection will need to be aware of the similarities and differences in the two approaches.

The tables below list the relevant AS/NZS ISO performance and test method documents, as well as key respirator performance topics with listed AS/NZS ISO Sections for reference.

AS/NZS ISO RPD - Performance Standards -		COMMENTS
General	AS/NZS ISO 17420.1:2022	General requirements for RPD. Refers to various AS/NZS ISO 16900 test standard requirements.
Filtering RPD	AS/NZS ISO 17420.2:2021	General requirements for filtering RPD eg performance, filter testing, connectors, marking, test schedules. Refers to various AS/NZS ISO 16900 test standard requirements.
Thread Connection	AS/NZS ISO 17420.3:2021	Specs for standard thread connection as required by AS/NZS 17420.2. Refers to various AS/NZS ISO 16900 test standard requirements.
Supplied Breathable Gas RPD	AS/NZS ISO 17420.4:2022	General requirements for supplied breathable gas RPD eg performance, hose testing, cylinder tests, marking, test schedules. Refers to various AS/NZS ISO 16900 test standard requirements.
Special Application Fire Services	AS/NZS ISO 17420.5:202X* Planned for adoption in 2026 or 2027	Added requirements for supplied breathable gas RPD and filtering RPD for fire and rescue services use. Refers to various AS/NZS ISO 16900 test standard requirements.
Special Application Escape	AS/NZS ISO 17420.6:2022	Added requirements for supplied breathable gas RPD and filtering RPD for escape use. Refers to various AS/NZS ISO 16900 test standard requirements.
Special Application Marine, mining, welding and abrasive blasting	AS/NZS ISO 17420.7:2021	Added requirements for supplied breathable gas RPD and filtering RPD for specified marine, mining, welding and abrasive blasting use. Refers to various AS/NZS ISO 16900 test standard requirements.
Special Application CBRN Nuclear filtering	SA/SNZ TS ISO 17420.8:2023	Added requirements for filtering RPD for specified CBRN incidents Refers to various AS/NZS ISO 16900 test standard requirements.
Special Application CBRN Supplied Air	SA/SNZ TS ISO 17420.9:2023	Added requirements for supplied breathable gas CBRN3 RPD for specified CBRN incidents. Refers to various AS/NZS ISO 16900 test standard requirements.
AS/NZS ISO RPD - Test Standards -		
Inward Leakage	AS/NZS ISO 16900.1:2023	These documents describe the relevant test methods and details for the various product performance test required as referenced in the various AS/NZS 17420 Performance requirement standards for compliance with AS/NZS ISO standards.
Breathing resistance	AS/NZS ISO 16900.2:2023	
Particle Filter Efficiency	AS/NZS ISO 16900.3:2023	
Gas Filter capacity	AS/NZS ISO 16900.4:2023	

Test Machinery and Tools	AS/NZS ISO 16900.5:2023	
Mechanical Resistance	AS/NZS ISO 16900.6:2023	
Practical Performance	AS/NZS ISO 16900.7:2023	
Air Flow Rate	AS/NZS ISO 16900.8:2023	
Carbon Dioxide	AS/NZS ISO 16900.9:2023	
Flame and Heat	AS/NZS ISO 16900.10:2023	
Field of Vision	AS/NZS ISO 16900.11:2023	
Work of Breathing	AS/NZS ISO 16900.12:2023	
Regenerated Breathable gas	AS/NZS ISO 16900.13:2023	
Noise Level	AS/NZS ISO 16900.14:2023	
AS/NZS ISO Respiratory Protective Devices - Human Factors -		Description
Respiratory Flowrate	AS/NZS ISO 16976.1:2024	Provides information on factors related to respiratory and metabolic responses to rest and work at various intensities when using RPD
Anthropometric	AS/NZS ISO 16976.2:2024	Provides detailed information on factors re human anthropometry and RPD.
Physiological Limitations	AS/NZS ISO 16976.3:2024	Provides detailed information on factors related to physiology and oxygen/CO2 levels in the breathing environment.
Work of Breathing	AS/NZS ISO 16976.4:2024	Describes how to calculate Work of Breathing and limits.
Thermal Effects	AS/NZS ISO 16976.5:2024	Describes thermal effects of RPD on the human body.
Psycho-physiological effects	AS/NZS ISO 16976.6:2024	Describes the interaction between RPD and human Psycho-physiological effects
Hearing and Speech	AS/NZS ISO 16976.7:2024	Describes the interaction between RPD and the human body functions of hearing and speech.
Ergonomic Factors	AS/NZS ISO 16976.8:2024	Describes the generic ergonomic effects of RPD on the human body.

INDEX	AS/NZS ISO Document/s	Corresponding AS/NZS 1716:2012 requirements
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Breathing resistance	AS/NZS ISO 16900.2:2023	<p>See Appendix P for tables summarising conditioning and testing requirement clauses for AS/NZS 1716.</p> <p>Table P1: Summary of relevant examination and general requirement clauses</p> <p>Table P2: Summary of general performance requirements and corresponding tests</p> <p>Table P3: Summary of conditioning and testing requirements for complete respirators</p> <p>Table P4: Summary of specific performance requirements and corresponding tests – air filtering respirators</p> <p>Table P5: Summary of specific performance requirements and corresponding tests – air supplied respirators</p>
Classification of RPD	SA/SNZ TS ISO 16973:2023 - All parts, Annex A for examples, AS/NZS 17420-1:2022 – Classification Overview	
Compatibility	AS/NZS 17420-1:2022 Clause 5.4	
Definitions, symbols, vocabulary	AS/NZS ISO 16972:2023	
Ergonomics	AS/NZS 17420-1:2022 Clause 5.8.6	
Field of vision	AS/NZS 17420-1:2022 Clause 5.2, Test Method AS ISO 16900-11:2025	
Filter - Gas/Vapour and classes	SA/SNZ TS ISO 16975.1:2023 Annex A.2.3.3, A.3.3, SA/SNZ TS ISO 16973:2023 Clause 9.2,	
Filter - particle	SA/SNZ TS ISO 16975.1:2023 Annex A.2.3.2, A.3.3, SA/SNZ TS ISO 16973:2023 Clause 9.1, Test Method AS ISO 16900-3:2015	
Filter service life - Gas/Vapour cartridges	AS/NZS16975-1 Annex A.2.3.3, A.3.3, Annex B.2.2, Annex D.5.1.2.2, Test Method AS ISO 16900-4:2015	
Filter service life - particle filters	AS/NZS16975-1 Annex A 2.3.2, A.3.3	
Filter Types - Gas/Vapour cartridges & test gases	AS/NZS 17420.2:2021 Clause 6.10.1.3, Table 8-13, Test Method AS ISO 16900-4:2015	
Filter Types - particle	SA SNZ ISO 16975-1:2023 Annex A.2.3.2, A.3.3, Annex B.3, Annex I Table 1.1, Test Method AS ISO 16900-3:2015	
Fit testing competencies	AS/NZS ISO 16975-3:2023 Clause 5	
Fit testing Evaluation	AS/NZS ISO 16975-3:2023 Clause 5.2, Annex A	
Fit testing Procedures	AS/NZS ISO 16975-3:2023 Clause 8	
Fit testing Records	AS/NZS ISO 16975-3:2023 Clause 7	
Fit Testing Standard Document	AS/NZS ISO 16975-3:2023	
Fogging	AS/NZS 17420-1:2022 Clause 5.8.5, AS/NZS ISO 16900-7 Annex A	
Inward Leakage	AS/NZS ISO 16900-1:2021, SA SNZ 16975 1 2023 Annex K.1, K.3, AS/NZS 17420-1:2022 Clause 5.7.1 - 2	
Inspection of Test RPD	AS/NZS 17420-1:2022 Clause 6.2	

Leak tightness for RI class a	AS/NZS 17420-1:2022 Clause 6.3	<p>See Appendix P for tables summarising conditioning and testing requirement clauses for AS/NZS 1716:</p> <p>Table P1: Summary of relevant examination and general requirement clauses</p> <p>Table P2: Summary of general performance requirements and corresponding tests</p> <p>Table P3: Summary of conditioning and testing requirements for complete respirators</p> <p>Table P4: Summary of specific performance requirements and corresponding tests – air filtering respirators</p> <p>Table P5: Summary of specific performance requirements and corresponding tests – air supplied respirators</p>
Marking & Information	AS/NZS 17420.2:2021 Clause 8 for filtering RPD, AS/NZS 17420.4:2022 Clause 8 for Supplied breathable gas RPD, SA/SNZ TS ISO 16973:2023 Clause 12, Annex B	
Noise	AS/NZS ISO 17420-2:2021 Clause 6.5, Test Method AS/NZS ISO 16900.14:2023	
Pandemic/epidemic/outbreak - Selection, use & maintenance issues	SA/SNZ TS ISO 16975.4:2024	
Practical Performance	AS/NZS 17420-1:2022 Clause 5.8	
Protection Levels	SA SNZ ISO 16975.1:2023 Clause 7.3.2.4, Annex C.1, Annex K, SA SNZ ISO 16975 2 2023 Clause 4.3, 6.5,	
Resistance to Flame	AS/NZS 17420-1:2022 Clause 5.3, Test Method AS/NZS ISO 16900-10:2022	
Respiratory Interface Classes	SA/SNZ TS ISO 16973:2023 Clause 7, Annex E, SA/SNZ TS ISO 16975.1:2023 Annex A.2.3.2, Annex I for overview, AS/NZS 17420.1:2022 Clause 4 for overview	
Special Applications	SA/SNZ TS ISO 16973:2023 Clause 11, Annex C, Series ISO 17420.5 to .9	
Testing – samples required	AS/NZS 17420-1:2022 Clause 5.1	
Visual Clarity	AS/NZS 17420-1:2022 Clause 5.9.1.2,	
Weight of filters	AS/NZS 17420.2:2021 Clause 6.11.2.2	
Work Rates	SA/SNZ TS ISO 16973:2023 Clause 6, Annex D	