

Chemical Effluent Decontamination Systems must be validated by the user (left), pressure charting: No excursions into positive pressure are allowed according to BMBL 2007 for BSL-3 facilities (middle), BSL-3 autoclaves must have true bioseals (right).

## **Certification Standards**

## BSL-2/3 microbiological and plant facilities

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Microbiological Laborato- ries	<ul> <li>ISO 35001:2019 / CWA 15793:2008 Laboratory Biorisk Management Standard</li> <li>WHO Laboratory Biosafety Manual (4<sup>th</sup> ed., 2020) and associated monographs</li> <li>Expanded checklist from WHO Laboratory Biosafety Manual (Singapore MOH)</li> <li>US CDC/NIH Biomedical and Microbiological Laboratory Guidelines (6th edition 2020)</li> <li>US NIH Biosafety Level 3-Laboratory Certification Requirements (2007)</li> <li>Directive 2000/54 on the protection of workers from risks related to exposure to biological agents at work</li> <li>Directive 2009/41/EC of the European Parliament and of the Council of 6 May 2009 on the contained use of genetically modified micro-organisms</li> <li>EN ISO 14644-3: Clean rooms and associated controlled environments</li> <li>British Advisory Committee on Dangerous Pathogens (2001)</li> <li>TS EN 12128:1998: Biotechnology-Laboratories for research, development and analysis</li> <li>Australian/New Zealand Standard 2243.3:2010 and Draft 2243.3:2019</li> <li>Australian/New Zealand Standard 2982.1:1997 and 2243.3:2002</li> <li>Canadian Laboratory Biosafety Standard (3<sup>rd</sup> ed., 2022)</li> </ul>
Insectaries	<ul> <li>Insectaries and other special applications: US and Canadian arthropod containment requirements (2003)</li> <li>Arthropod Containment Guidelines, Version 3.2 (2019)</li> </ul>
BSL-3Ag	<ul> <li>Veterinary Biosafety Containments: Appendix D of BMBL for loose-housed animals (2007)</li> <li>FAO/EU Minimal Standard for Laboratories Working with FMDV <i>in vitro/in vivo</i>, Appendix 10 (2009)</li> </ul>
Plant Biocontainment	<ul> <li>Australian/New Zealand Standard 2982.1:1997 and 2243.3:2002</li> <li>Australian government's Guidelines for Certification of PC2/3 Plant Containment Facilities</li> </ul>
Recommendations	_ The certification should be against one single standard, not a combination or mix, because some requirements may be conflicting.

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