



Australian Compliance Laboratory

Specialising in performance testing of dangerous goods packaging

A mock guide to:

Testing inner packagings

For those wanting to internally test their dangerous goods packagings before laboratory analysis

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1 Mock drop testing procedures

1.1 Inner packagings containing liquids



1. Fill 6 samples to their maximum capacity with water and seal tightly.
2. Drop the samples once in each orientation from 1 metre. Refer to Appendix A for the orientations.
3. Drill a hole in each sample.
4. Samples must not leak after 5 minutes.

1.2 Inner packagings containing solids



1. Fill 6 samples to their maximum capacity and gross mass with polygranules and steel. Seal them tightly.
2. Drop the samples once in each orientation from 1 metre. Refer to Appendix A for the orientations.
3. The samples must remain sift-proof.

2 Mock pressure testing procedures

2.1 Inner packagings containing liquids

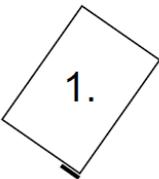
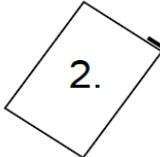
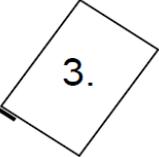
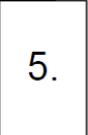
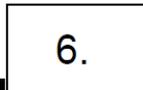


1. Fill 3 samples up to their maximum capacity with water and seal tightly.
2. Pressurise the samples with water to 175kPa.
 - a. **WARNING: Do not use air** to pressurise samples in excess of 20kPa as they may violently explode.
3. Hold the test pressure for 1 minute.
4. The samples must not leak.

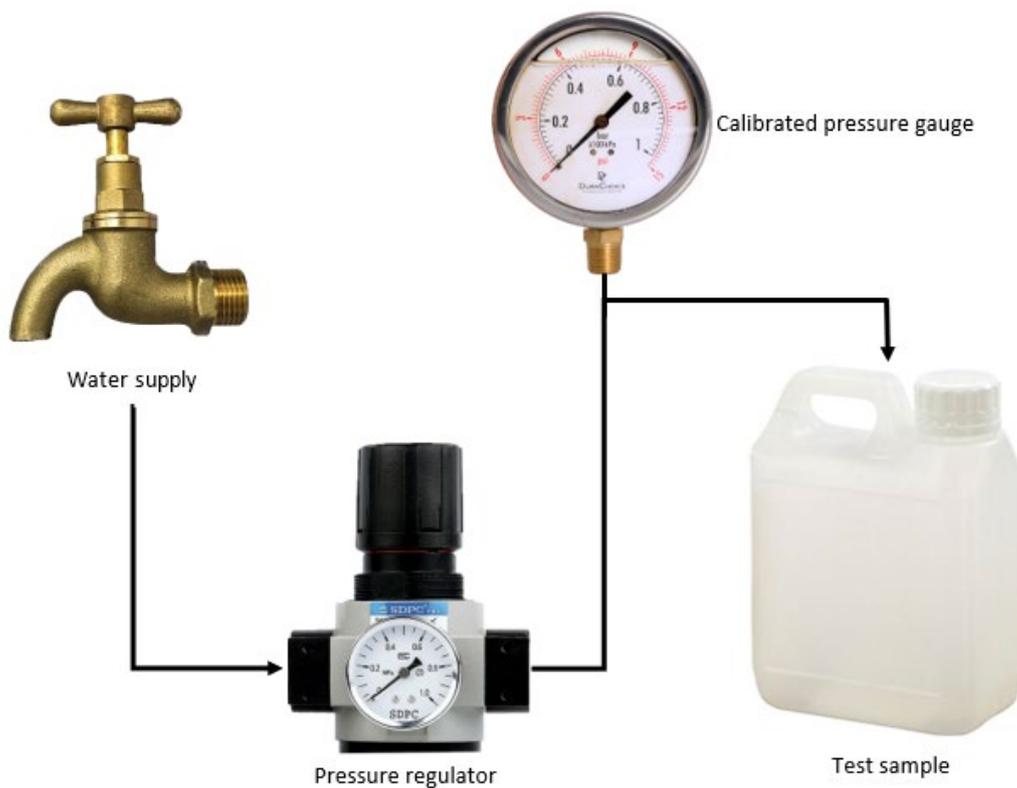
3 Appendices

3.1 Appendix A: Determine the drop orientations

Figure 6.1: The Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code), Edition 7.6

 <p>1.</p>	 <p>2.</p>	 <p>3.</p>	 <p>4.</p>	 <p>5.</p>	 <p>6.</p>
Diagonally, with centre of mass directly above the top edge, adjacent the major closure, so as the closure and seam strike the target	Diagonally, with centre of mass directly above the bottom seam, major closure at the lowest position on the drum head	Diagonally, with centre of mass directly above the top seam diametrically opposite the major closure	Vertically so as to strike the target flat on the bottom	Vertically, so as to strike the target flat on the top	Horizontally, so as to strike the target on the side of the drum with the major closure at the lowest point

3.2 Appendix B: Example pressure test apparatus



4 Document information

4.1 General guidance

1. Mock testing on one package means nothing as it may give an out-lying result. You need to test on many samples to create reliable data. The more samples you test, the more reliable your data.
2. It's prudent to over-test your package before submitting. This can be achieved by exceeding the test requirements and/or performing many tests on one package.
3. The more measurement, control, and repeatability of your tests, the better.
4. The closer to laboratory conditions of your tests, the better.

4.2 The codes

The mock test methods in this document are modelled on those in the [Australian Code for the Transport of Dangerous Goods by Road and Rail \(ADG Code\)](#) and the [United Nations Recommendations on the Transport of Dangerous Goods \(UNRDG\)](#), Chapter 6.1.5.

4.3 ACL contact information

If you need more information then please contact us. We'd love to share our insights.

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4.4 Revision

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4.5 Disclaimer

This article is subject to ACL's [Disclaimer of Published Materials](#). Mock testing equipment, methods, and procedures may not be the same as those used in the laboratory and may produce different results. A passing result using these procedures may not result in a passing result in the laboratory. ACL is not responsible for any of the reader's results, observations, or interpretations arising from this article. Each packaging design may have special clauses or extra testing requirements. Readers should refer to the [ADG Code](#) for complete information.