Australian Compliance Laboratory

Specialising in performance testing of dangerous goods packaging

A mock guide to:

Drop testing jerrycans

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

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1 Mock drop testing procedures

1.1 Plastic jerrycans containing liquids

1. Determine the drop height from Appendix A.
2. Fill 6 samples to their maximum capacity with antifreeze and seal tightly.
3. Chill the samples to ≤-18°C.
4. Drop the cold samples from the test height. Refer to Appendix B for the orientations.
    a. drop 3 samples in Orientation 1
    b. drop 3 samples in Orientation 6
5. Drill a hole in each sample.
6. Samples must not leak after 5 minutes.

1.2 Plastic jerrycans containing solids

1. Determine the drop height from Appendix A.
2. Fill 6 samples to their maximum capacity and gross mass with polygranules and sand. Seal them tightly.
3. Chill the samples to ≤-18°C.
4. Drop the cold samples from the test height. Refer to Appendix B for the orientations.
    a. drop 3 samples in Orientation 1
    b. drop 3 samples in Orientation 6
5. Check that the samples remain sift-proof.

1.3 Metal jerrycans containing liquids

1. Determine the drop height from Appendix A
2. Fill 6 samples to their maximum capacity with water and seal them tightly.
3. Drop the samples from the test height. Refer to Appendix B for the orientations
    a. drop 3 samples in Orientation 1
    b. drop 3 samples in Orientation 6
4. Drill a hole in each sample.
5. Samples must not leak after 5 minutes.

1.4 Metal jerrycans containing solids

1. Determine the drop height from Appendix A.
2. Fill 6 samples to their maximum capacity and gross mass with polygranules and sand. Seal them tightly.
3. Drop the samples from the test height. Refer to Appendix B for the orientations.
    a. drop 3 samples in Orientation 1
    b. drop 3 samples in Orientation 6
4. Check that the samples remain sift-proof.

2 Appendices

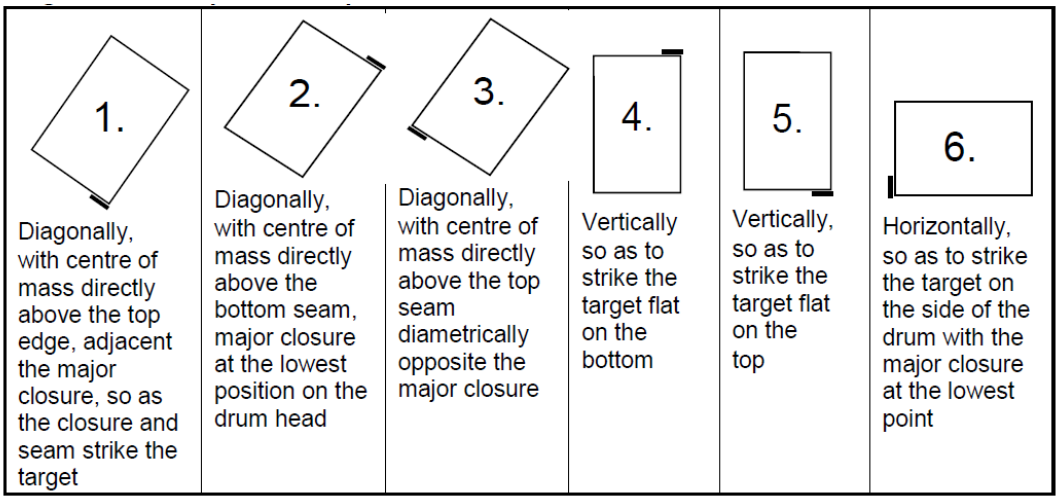
2.1 Appendix A: Determine the drop height

	Drop height (metres)		
Packing group	**I**	**II**	**III**
Solid contents (powders, granules, articles)	1.8	1.2	0.8
Liquids contents ≤1.2kg/L			
Liquid contents >1.2kg/L	1.5 x SG	1.0 x SG	0.67 x SG

Where SG is the specific gravity of the liquid expressed as kg/L

2.2 Appendix B: 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



3 Document information

3.1 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.

3.2 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.

3.3 ACL contact information

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3.4 Revision

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3.5 Disclaimer

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