



# The Allowable Variations to Dangerous Goods Packaging Approvals

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## Background

In this article, we only focus on the variations of Dangerous Goods (DG) Packaging Design approvals (“variations”) of plastic jerrycans since they comprise of the majority of the DG packaging market. Furthermore, we only focus on the Victorian Competent Authority as it is the largest issuer of DG packaging design approval numbers (“approvals”) in Australia. The article’s points can be appropriately compared to other DG packagings (“packagings”) and their material types.

Packagings are issued an initial approval by their state’s CA for identification and auditing purposes. The approval is tied to the specifications of the packaging’s design, its method & materials of construction, and its method of closure.

As client demand varies, so do packagings vary. Over time, numerous variations to a packaging’s original specification would require numerous issued approvals – this would be tedious for the CA and approval holders. Juggling approval numbers for each packaging change would inevitably result in a mistake somewhere in the chain.

To make things manageable, we have *variations* to *initial* approvals. This enables approval holders to have multiple packaging designs operate under the same approval number, provided they only differ in *minor* variations. The term “minor” is defined by the clauses within the regulations and the Competent Authority.



## The DG codes

The *Dangerous Goods (Transport by Road or Rail) Regulations* (“the regulations”) refers to the *Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road and Rail* (ADG Code) which incorporates the requirements of the international *United Nations Recommendations on the Transport of Dangerous Goods* (UNRDG) (“the codes”). The codes state that:

- For variations of plastic jerrycans pigment & inhibitor content:
  - *(6.1.4.8.2) If protection against ultra-violet radiation is required, it must be provided by the addition of carbon black or other suitable pigments or inhibitors. These additives must be compatible with the contents and remain effective throughout the life of the packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, retesting may be waived if the carbon black content does not exceed 2% by mass or if the pigment content does not exceed 3% by mass; the content of inhibitors of ultraviolet radiation is not limited.*
- For variations of packagings reduced height & surface treatments:
  - *(6.1.5.1.2) Each packaging design type must successfully pass the tests prescribed in this Chapter before being used. A packaging design type is defined by the design, size, material and thickness, manner of construction and packing, but may include various surface treatments. It also includes packagings which differ from the design type only in their lesser design height.*
- For variations of packagings dimensions:
  - *(6.1.5.1.5) The Competent Authority may permit the selective testing of packagings that differ only in minor respects from a tested type, e.g. smaller sizes of inner packagings or inner packagings of lower net mass; and packagings such as drums, bags and boxes which are produced with small reductions in external dimension(s).*
- For using different types of inners within a combination packaging:
  - *(4.1.1.5.1) Where an outer packaging of a combination packaging or a large packaging has been successfully tested with different types of inner packagings, a variety of such different inner packagings may also be assembled in this outer packaging or large packaging. In addition, provided an equivalent level of performance is maintained, the following variations in inner packagings are allowed without further testing of the package:*
    - *Inner packagings of equivalent or smaller size may be used provided:*
      - *The inner packagings are of similar design to the tested inner packagings (e.g. shape - round, rectangular, etc.);*
      - *The material of construction of the inner packagings (glass, plastics, metal, etc.) offers resistance to impact and stacking forces equal to or greater than that of the originally tested inner packaging;*
      - *The inner packagings have the same or smaller openings and the closure is of similar design (e.g. screw cap, friction lid, etc.);*
      - *Sufficient additional cushioning material is used to take up void spaces and to prevent significant movement of the inner packagings; and*
      - *Inner packagings are oriented within the outer packaging in the same manner as in the tested package.*
    - *A lesser number of the tested inner packagings, or of the alternative types of inner packagings identified in (a) above, may be used provided sufficient cushioning is added to fill the void space(s) and to prevent significant movement of the inner packagings.*

Any variation(s) to the initial approval may operate under its approval number if they fall under the above clauses.

## Additional Competent Authority variations

We’re in the grey.

There is a Competent Authority (CA) for each state & territory (“state”) of Australia and that CA has the power to grant exemptions to the regulations within their state’s jurisdiction. As a result, this section varies depending on how each CA interprets the regulations and what concessions they grant in “the spirit” of the regulations (if any).

The Victorian CA uphold the codes’ variations *and* they have broadened clause 6.1.5.1.5 to include other minor variations as listed below. This is provided that at least an equivalent level of performance is maintained of the variation against the initial approval. Approval holders must be able to prove this with a NATA endorsed test report at the request of the Competent Authority.

## Minor variations

- The packaging's **design** (lifting handle, rounded, performance rating) must be the same, but minor variations include:
  - a different neck finish,
  - changes of surface treatments,
  - a reduced packaging height, or
  - small reductions in external dimension.
- The packaging's **method & material of construction** (extrusion blow-moulded from HDPE) must be the same, but minor variations include:
  - a different material supplier or material grade,
  - a different quantity of pigment or performance additive incorporated into the material, or
  - a performance coating is added to the package.
- The packaging's **closure size & design** (screw, push, friction) must be the same, but minor variations include:
  - a different closure manufacturer,
  - a different material supplier or material grade,
  - a different feature (vented, tamper-evident, child-resistant),
  - a different sealing method (wedge, annular gasket, wadded, induction seal),
  - a change in thickness of the annular gasket or wad, or
  - a change in a closure's application torque.

## What to walk away with

1. Various Dangerous Goods Packaging Designs can operate under the same approval number provided that they only differ in minor variations from the original design approval. The term "minor" is defined by the clauses within the codes and the Competent Authority.
2. The codes allow for variations of packagings and explicitly allow some variations without the need for further testing.
3. The Competent Authority has the power to grant exemptions from the regulations within their state's jurisdiction. The extent of this depends on each state's Competent Authority, how they interpret the regulations, and what concessions they grant in "the spirit" of the regulations (if any).
4. At least an equivalent level of performance must be maintained of variations to approvals. Approval holders must be able to prove this with a NATA endorsed test report at the request of the Competent Authority.
  - a) *(6.1.5.1.4) Tests must also be repeated after each modification which alters the design, material or manner of construction of a packaging.*
  - b) *(6.1.5.1.8) The Competent Authority may at any time require proof, by tests in accordance with this section, that serially-produced packagings meet the requirements of the design type tests.*

## Support

We're here to help support you with any questions you have. If you have any questions or concerns about variations to packaging design approvals then we will be happy to share our insights. Email: [info@auscompliancelab.com](mailto:info@auscompliancelab.com).

For information about revalidation testing of DG packaging design approvals, then check out our article [Why it's important to revalidate dangerous goods packaging approvals](#).

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