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# CANADIAN PROCEDURE FOR OBTAINING THE VERIFIED GROSS MASS OF PACKED CONTAINERS AS REQUIRED BY SOLAS VI/2

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<b>Originator</b>	Navigation Safety & Environmental Programs (AMSE) Tower C, Place de Ville 330 Sparks Street, 10th Floor Ottawa, Ontario K1A 0N8	<b>Telephone</b>	1-855-859-3123 (Toll Free) or 613-991-3135	
		<b>Fax</b>	613-993-8196	
		<b>E-mail</b>	<a href="mailto:marinesafety-securitemaritime@tc.gc.ca">marinesafety-securitemaritime@tc.gc.ca</a>	
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## BACKGROUND

Shippers have had to provide the gross mass of cargo units loaded on board ships since the early days of the *International Convention for the Safety of Life at Sea* (SOLAS), 1974 (see Chapter VI, Regulation 2.1 and 2.2.1). Paragraph 3 of this regulation also requires shippers to ensure the gross mass of such units is the same as the gross mass declared on the shipping document.

The International Maritime Organization (IMO) has strengthened these provisions by introducing amendments to the *Convention*, Chapter VI, Regulation 2 of these amendments require shippers to verify the gross mass of the packed container (see MSC.380(94), amendments to SOLAS, Chapter VI, Regulation 2, paragraphs 4 to 6).

The *Cargo, Fumigation and Tackle Regulations* (CFTR), Section 104.(1) requires every shipper of cargo to be loaded in Canadian waters, to comply with SOLAS, Chapter VI, Regulation 2. This includes having to comply with the new provisions, starting from the date the SOLAS amendments come into force; July 1, 2016.

Transport Canada Marine Safety and Security enforces these requirements with authority from the *Canada Shipping Act, 2001* and the *Cargo, Fumigation and Tackle Regulations*.

## OBJECTIVES

This publication sets out the Canadian procedure shippers must follow to calculate the Verified Gross Mass (VGM) of packed containers as required by the new amended SOLAS, Chapter VI, Regulation 2.

## INTERPRETATION

- a) *Qualified weighing equipment* means scales, weighbridges, hopper scales, weighing systems used on lifting equipment or on continuous action loaders; any other weighing device used as part of trade transactions **and** certified for the purpose of trade under the *Weights and Measures Act* and Regulations. Alternatively, in case of exclusive use for checking the gross mass of packed containers, shippers may use the weighing equipment certified and calibrated according to standards that meet the requirements of the International Organization of Legal Metrology (OIML).
- b) *Cargo items* has the same general meaning as the term “cargo” in the International Convention for Safe Containers, 1972, as amended (CSC) and means any goods, wares, merchandise, liquids, gases, solids and articles of every kind whatsoever carried in containers pursuant to a contract of carriage. However, *ship’s stores*, including ship’s spare parts, equipment and supplies, carried in containers are not regarded as cargo (refer to the definition of *ship’s stores* in MSC.1/Circ.1216 - *Revised recommendations on the safe transport of dangerous cargoes and related activities in port areas*).
- c) *Container* has the same meaning as the term "container" in the CSC and means an article of transport equipment:
  - (a) of a permanent character and accordingly strong enough to be suitable for repeated use;
  - (b) specially designed to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading;
  - (c) designed to be secured and/or readily handled, having corner fittings for these purposes; and
  - (d) of a size such that the area enclosed by the four outer bottom corners is either:

- (i) at least 14 m<sup>2</sup> (150 sq. ft.); or
  - (ii) at least 7 m<sup>2</sup> (75 sq. ft.) if it is fitted with top corner fittings.
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- d) *Gross mass* means the combined mass of a container's tare mass and the masses of all packages and cargo items, including pallets, dunnage and other packing material and securing materials packed into the container (see also "*Verified gross mass*").
  - e) *Package* means one or more cargo items that are tied together, packed, wrapped, boxed or parcelled for transportation. Examples of packages include, but are not limited to, parcels, boxes, packets and cartons.
  - f) *Packed container* means a container, as previously defined, loaded ("stuffed" or "filled") with liquids, gases, solids, packages and cargo items, including pallets, dunnage, and other packing material and securing materials.
  - g) *Packing material* means any material used or for use with packages and cargo items to prevent damage, including, but not limited to, crates, packing blocks, drums, cases, boxes, barrels, and skids. Excluded from the definition is any material within individual sealed packages to protect the cargo item(s) inside the package.
  - h) *Predetermined quantity package* means any individual original manufacturer sealed package having its gross mass permanently marked on its surface.
  - i) *Securing material* means all dunnage, lashing and other equipment used to block, brace, and secure packed cargo items in a container.
  - j) *Vessel* means a Canadian or foreign vessel in Canadian waters
  - k) *Shipper* means a legal entity or person named on the bill of lading or sea waybill or equivalent multimodal transport document (e.g. "through" bill of lading) as shipper and/or who (or in whose name or on whose behalf) a contract of carriage has been concluded with a shipping company.
  - l) *Shipping document* means a document used by the shipper to communicate the verified gross mass of the packed container. This document can be part of the shipping instructions to the shipping company or a separate communication (e.g. a declaration including a weight certificate produced by a weigh station).
  - m) *Tare mass of a container* means the mass of an empty container that does not contain any packages, cargo items, pallets, dunnage, or any other packing material or securing material. The tare mass of a container shall be taken as marked on the container in accordance with the International Organization for Standardization (ISO) standard *ISO 6346 – Freight containers – Coding, identification and marking*.
  - n) *Terminal representative* means a person acting on behalf of a legal entity or person engaged in the business of providing wharfage, dock, stowage, warehouse, or other cargo handling services in connection with a ship.
  - o) *Verified gross mass (VGM)* means the total *gross mass of a packed container* as obtained by one of the methods described in paragraph 1 of this publication. (See also "*gross mass of a packed container*").

## APPLICATION

Section 104.(1) of the *Cargo, Fumigation and Tackle Regulations* requires every shipper of cargo to be loaded in Canadian waters to comply with SOLAS, Chapter VI, Regulation 2.

## PROCEDURE FOR OBTAINING VGM OF PACKED CONTAINERS

1. In order to verify the gross mass of a packed container in Canada the shipper shall either
  - a) weigh the loaded container (**Method one**); or
  - b) weigh all the items loaded into the container (including dunnage, securing material, etc.) and add the tare mass of the container to the sum of those single masses (**Method two**).

2. Means of obtaining a verified weight using Method one

The following will be considered as compliance with the requirement of 1. a).

- a) The shipper may weigh the packed container as a whole, using the *qualified weighing equipment*.
- b) Method One may apply to any packed container and particularly to containers loaded with certain types of cargo (e.g. scrap metal, cargoes in bulk) which do not easily lend themselves to individual weighing of separate items to be packed in the containers.
- c) If, for the purpose of verification of the gross mass of a packed container carried on a chassis or on a trailer, the container is being weighed together with the chassis or trailer, then the verified mass of the container shall be determined by subtracting the mass of the chassis or trailer.
- d) If two packed containers are carried on a road vehicle then their gross masses shall be verified by weighing each container separately, with (see paragraph c) above) or without the chassis or trailers on which they are carried.

3. Means of obtaining a verified weight using Method two

Method Two is designed to provide some flexibility to shippers, particularly those packing containers with individual identifiable cargo items, or when the weight of a bulk cargo loaded into a container can be determined by the use of a weighing system installed on continuous loading equipment.

Equipment used to determine the weight of the individual identifiable cargo items and weighing systems installed on continuous loading equipment shall be the *qualified weighing equipment*.

Method Two allows shippers to separately weigh each item of cargo (packaged, non-packaged, unitized), dunnage and securing material to be loaded into a container. The shipper can then add the weight of all items packed in the container to the tare mass of the container.

The following will be considered as compliance with the requirement of 1. b).

**Method Two process:**

Step one - Determine the weight of each item of cargo, dunnage and securing material to be loaded into a container.

- Weigh each item of cargo, dunnage and securing material to be loaded into a container using the *qualified weighing equipment*.
- Where a solid bulk cargo (e.g. unbagged grain) is loaded into a container, weigh the cargo by using the weighing system installed on continuous loading equipment where the system is calibrated and certified for the purpose of trade in accordance with existing weights and measures legislation in Canada pursuant to the Weights and Measure Act and Regulation.
- Where *predetermined quantity packages* are loaded into a container, use the gross mass clearly and permanently marked on the surface of each package.

Step two – Determine the tare mass of the container.

- The *tare mass of a container* shall be taken as marked on the container in accordance with the International Organization for Standardization (ISO) standard *ISO 6346 – Freight containers – Coding, identification and marking*.
- In case of non-ISO containers, the *tare mass* shall be determined by weighing the clean and empty container using the *qualified weighing equipment*.

Step Three – Calculate the VGM of the packed container

- To calculate the VGM of the packed container, combined weight of the cargo items, packaging, pallets, securing materials and dunnage is to be added to the *tare mass of the container*.

## **PREDETERMINED QUANTITY PACKAGES**

1. The gross mass permanently marked on the surface of any predetermined quantity package shall be used for the purpose of calculating the VGM according to Method two.

## **THIRD PARTIES OBLIGATIONS**

1. If a container is packed by multiple parties, the shipper of the container is responsible for obtaining from those parties the documents to verify the final gross mass of the packed container.
2. Any third party that has performed some or all of the packing of the container shall determine the mass of all the items that the party has loaded into the container (including dunnage, securing material, etc.) as described in this procedure, properly document the process of determining that mass and provide the documents to the shipper in order to facilitate the final verification by the shipper of the gross mass of the packed container.
3. In a normal situation, in order to fulfill the responsibility for providing the accurate VGM of a container, the shipper shall obtain the documents from the third party confirming that on a certain date the identifiable items (cargo, dunnage, securing materials, etc.) loaded by this third party into the container was weighed using the identifiable qualified weighing equipment.

## **RECOMMENDATION FOR INTERMODAL AND/OR INTERNATIONAL MOVEMENT**

1. In case of intermodal and/or international movement and transshipment of containers, it is recommended that the VGM of a packed container is provided to the next party taking custody of the container.
2. When provided to the next party, this information shall be accepted as the VGM for the purpose of loading the container onto a *vessel* in a Canadian port.
3. The VGM should be derived from either Method 1 or Method 2

## **THE SHIPPING DOCUMENTS**

1. Upon completion of packing and sealing of a container, the shipper shall ensure that the verified gross mass of the container is stated in a shipping document, the shipping document is signed by a person duly authorized by the shipper and submitted to the ship master or his representative and to the terminal representative sufficiently in advance of loading onto a vessel so that it could be used in the preparation of the ship's stowage plan.
2. The shipping document can be part of the shipping instructions to the shipping company or a separate communication (e.g. a declaration including a weight certificate produced by a

weigh station utilizing properly calibrated and certified equipment on the route between the shipper's origin and the port terminal).

3. The shipping document could be provided by electronic means such as Electronic Data Interchange (EDI) or Electronic Data Processing (EDP).
4. The shipping document should clearly declare that the gross mass provided is the verified gross mass determined in accordance with the requirements of SOLAS, Chapter VI, Regulation 2.
5. The signature of the person duly authorized by the shipper may be an electronic signature or may be replaced by the name in capitals of the authorized person.
6. The shipper shall retain a copy of the shipping document providing the VGM of the packed container as well as any third party documents related to weighing of the container for a minimum period of three months.

## **DISCREPANCIES IN GROSS MASS AND TOLERANCE**

1. Re-weighing a packaged container shall only be required if there are sufficient grounds to believe that the actual gross mass of a container does not correspond to the VGM declared on the shipping document.
2. If the discrepancy in gross mass is confirmed, then the shipper's responsibility for providing the accurate VGM of a container shall, among other things, result in the shipper taking necessary corrective actions to avoid misdeclaration of VGM in the future.
3. 5% variation in VGM of a loaded container is applied as a threshold for compliance and enforcement purposes but not more than 500 kg.

## **CALIBRATION AND CERTIFICATION OF WEIGHING DEVICES**

For information on requirements regarding the calibration and the certification of weighing equipment for the purpose of trade the shipper may contact any of the authorized service providers (ASP) recognized by Measurement Canada and listed on the following web site at

<https://www.ic.gc.ca/app/mc/asp/srch/aspSearch.html>