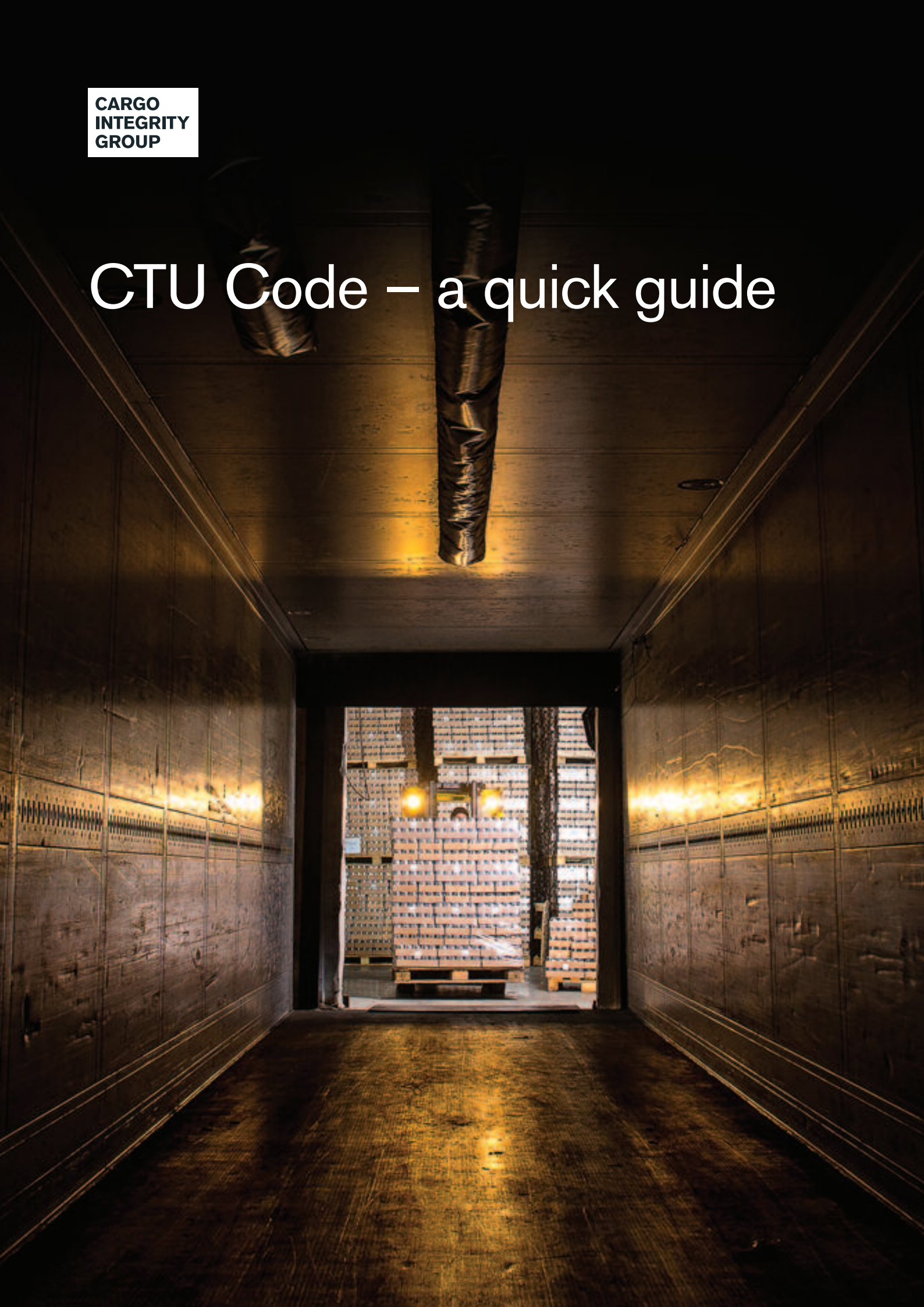
CARGO
INTEGRITY
GROUP

CTU Code – a quick guide



CONTENTS

The Perils of Bad Packing

TT Club devised the 'Containing the Risk' game to allow individuals to assess how good their packing skills really are! The game comprises blocks of various shapes and sizes, marked with a notional mass and symbols for fragile or dangerous goods. In this simplified game schema, if packed correctly, the CTU would be likely to proceed through the supply chain without incident! For more information see www.ttclub.com/cargo-integrity/

Poor practices in the overall cargo transport unit (CTU) packing process, including not just load distribution and cargo securing, but also the workflow from classification and documentation through to declaration and effective data transfer, are estimated to cost the transport and logistics industry in excess of US$6 billion annually.

As a result, and in seeking to promote the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units (CTU Code), the Cargo Integrity Group is collaborating to address the issues that undermine safety and security in the freight supply chain. Working with UN agencies, governments and a spectrum of industry stakeholders, this group is committed to improving standards for the safe and secure packing of cargoes in cargo transport units and the avoidance of contamination by invasive pests.

As at January 2022, the Cargo Integrity Group comprises Bureau International des Containers et du Transport Intermodal (BIC), Container Owners Association (COA), International Federation of Freight Forwarders Associations (FIATA), Global Shippers Forum (GSF), International Cargo Handling Co-ordination Association (ICHCA International), TT Club and World Shipping Council (WSC).

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Acknowledgements
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Disclaimer
The information contained in this document has been compiled with due attention to generally accepted good practice and specifically the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units, 2014 edition (CTU Code).

CTU Code – a quick guide

1.0 Introduction

1.1 The information contained in this document has been compiled with due attention to generally accepted good practice and specifically the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units, 2014 edition (CTU Code)[1].

1.2 The purpose of this guide is to facilitate the proper packing, transport and unpacking of cargo transport units (CTUs), including freight containers. This information is intended to assist in planning and executing the packing of cargo so that its shipment will be satisfactory to the shipper, carrier and consignee. It will also help in the prevention of pest contamination and damage to CTUs and their cargoes transported by road, rail, and by ship.

1.3 The use of CTUs reduces certain physical hazards to which their contents are exposed. However, improper or careless packing of cargoes into or onto such units, or lack of proper blocking, bracing and lashing, may result in incidents during handling or transport causing injury, damage to the cargo itself, to the handling equipment, to the transport infrastructure or to the environment.

1.4 The types of cargo carried in CTUs (particularly freight containers) has expanded over the years and innovations in packaging, such as the use of flexitanks, and other recent developments allow heavy, bulky items, traditionally loaded directly into ships' holds (e.g. stone, steel, waste materials and project cargoes), to be carried instead in CTUs. The person who packs and secures cargo into a CTU, and seals it, may be the last person to look inside that unit until it is opened at its final destination. Consequently, a great many people in the transport sector rely on the skill of such persons including:

- vehicle drivers and other road users;
- rail workers;
- crewmembers of inland waterway vessels;
- handling staff and dockworkers at ports/terminals when the unit is transferred from one conveyance to another;
- the ship's crew;
- those who inspect cargoes; and
- those who unpack the unit at its destination.

1.5 In addition, the general public may be at risk from a poorly packed CTU resulting in a road accident or train derailment. Just how important it is to ensure cargo is properly packed and restrained for its journey can be seen in the photographs illustrating the consequences of improper packing procedures shown in the Informative Material section of the CTU Code, IM1.

Informative Material IM1

1.6 The information in this guide can only be of a general nature, as there are many different commodities and cargo types.

1.7 A checklist relating to packing of freight containers only (not other types of CTU) is included at Annex 1.

1.8 It should also be noted that the guidance in this publication is recommendatory.

[1] CTU Code can be found on the websites of both the International Maritime Organization (IMO) www.imo.org/en/OurWork/Safety/Pages/CTU-Code.aspx and United Nations Economic Commission for Europe (UNECE) www.unece.org/trans/wp24/guidelinespackingctus/intro.html.

2.0 Guide to the Code of Practice

2.1 The most important chapters of the CTU Code will depend on the stakeholder but each has a part to play by ensuring due diligence of their own procedures and selection of their subcontractors. Some sections of the CTU Code are directed to specific stakeholders, such as Shippers and Packers. Chapter 3 *Key requirements* and Chapter 4 *Chains of responsibility and information* highlight those parts of the CTU Code that should be adhered to by one, several or all stakeholders in the CTU supply chain.

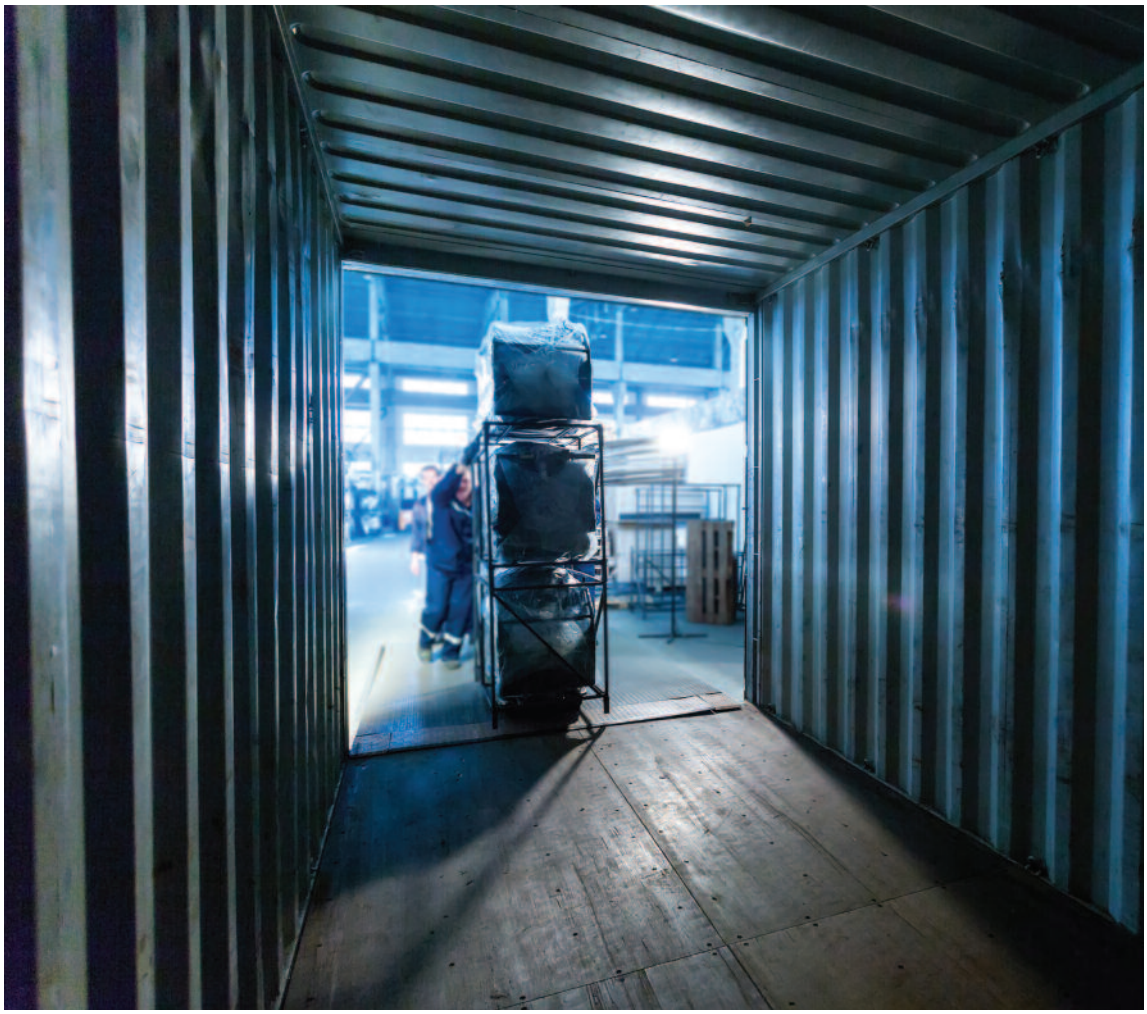
2.2 Within this guide, the major headings found in Chapter 3 of the Code will be explored and where appropriate, the responsibilities of the various stakeholders will be explained.

2.3 Chapters 5, 6 and 7 discuss general transport conditions and the various properties and suitability of the different types of CTU. Additional guidance to these topics is provided in Annex 3 (Prevention of Condensation Damage), Annex 4 (approval plates), Annex 5 (receiving CTUs) and Annex 6 (minimizing the risk of visible pest contamination).

2.4 Chapter 8 is intended to help shippers confirm that the CTU is compliant with applicable regulations without serious deficiencies or visible pest contamination and is fit for its intended cargo.

2.5 Chapters 9 and 12 are of key importance to those directly involved with packing and unpacking activities. Chapter 9 directs the Packer to the related provisions in Annex 7 where detailed information on load distribution, securing arrangements, capacity of securing devices etc. is provided. Informative Material IM5 (Quick Lashing Guides) further assists the Packer with lashing techniques and the calculation of forces. Chapter 12 makes the Consignees and/or those unpacking cargo aware of the actions that should be taken upon the arrival and unpacking of a packed CTU.

2.6 Chapter 10 provides additional advice on the packing of Dangerous Goods, while Chapter 11 describes actions to be carried out after packing is completed and before the CTU is collected for the next stage of its journey. This would normally include the affixing of seals, which is also covered in Informative Material IM9.

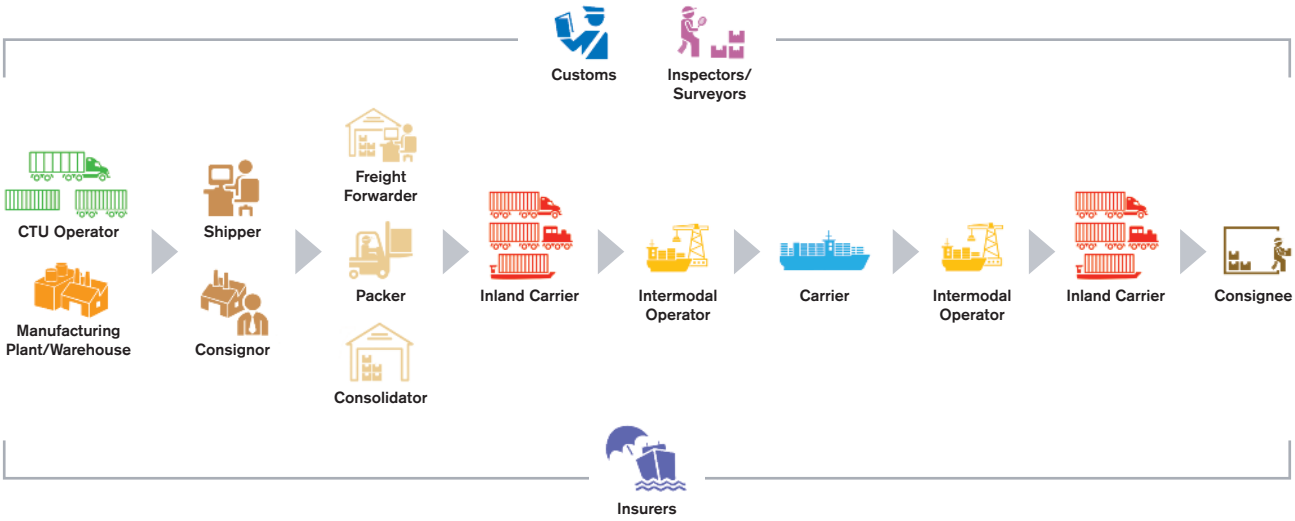


CTU Code Chapters 3 & 4
CTU Code Chapters 5, 6 & 7
CTU Code Annexes 3, 4, 5 & 6
CTU Code Chapter 8
CTU Code Chapters 9 & 12
CTU Code Annex 7
Informative Material IM5
CTU Code Chapters 10 & 11
Informative Material IM9

3.0 Stakeholders

3.1 The CTU Code defines the stakeholders and identifies their responsibilities. A summary of the Key Requirements for each of the major stakeholders is set out in section 4 below.

3.2 It should be recognized that there are many more stakeholders, including those set out in MSC.1/Circ.1531[2], who may influence or have a role to play in ensuring the safe transport of the cargo from consignor to consignee and have been included in the diagram below.



It is also worth remembering that many of these functional roles may be undertaken by a single organization, or come under a single organizational umbrella, for example the Shipper may encompass:

Similarly, in any given intermodal supply chain, there may be multiple transhipments using differing transport modes:

3.3 Effective communication of all information required for safety, security, phytosanitary, customs or other regulatory purposes between the stakeholders is essential to ensure compliance with legal requirements and to minimize risks through the entire journey. Accurate, complete and timely communication of all the characteristics of the cargo is particularly critical.

[2] Due diligence checklist in identifying providers of CTU-related services (MSC.1/Circ.1531)

4.0 Key requirements

(for container packing see also Checklist questions 1-7 in Annex 1)

CTU Code Chapter 3

4.1 The carriage of cargo in CTUs follows a common procedure, starting with the planning of the consignment, through packing all the way to delivery at the destination, irrespective of the mode of transport and the contract of carriage. The safe transport and arrival of the cargo in or on the CTU will depend on all the stakeholders in the transport chain but also that:

- the Consignor provides packaging that protects the cargo, where appropriate;
- the Packer checks that the CTU is free from signs of damage, visible infestation by pests, or of previous cargo residues and prevents contamination. The cargo to be packed into the CTU must also be pest free;
- the Packer places the cargo items and/or packages into or onto the CTU, ensuring that they are properly positioned and secured to withstand the expected dynamic forces during transport;
- the Shipper correctly classifies and declares the cargo, including, for freight containers, the Verified Gross Mass (VGM), to the carrier as early as required by the carrier;
- the Carriers handle the CTU with care through the transport chain; and
- the Consignee checks for visible pest contamination, correctly reports on the condition of the cargo to the shipper and consignor and cleans the CTU after unpacking.

4.2 General

1 Arrange for a safe working environment using correct and safe handling equipment and the appropriate personal protective equipment; and

2 Do not smoke, eat or drink during packing, securing and unpacking operations.

4.3 Planning and arrival

Informative Material IM3

1 Select the most suitable CTU type to accommodate the cargo for the intended transport. Informative Material IM3 describes the various types of CTU available for all transport modes.

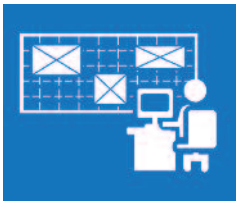
The physical characteristics of dry cargo, or restrictions at the packing/unpacking facility, may require the use of special CTUs (including open-top or side loading flatbeds). Liquid bulk tanks and dry bulk units are specially designed for a variety of bulk commodities. If a temperature-controlled environment is required, a refrigerated CTU should be used. Insulated and other specialized CTUs are also available for specific commodities.

2 Ensure that the CTU is positioned so that safe packing can occur;

3 Confirm that the CTU and the cargo to be packed are both free from visible pest contamination[3]. Take necessary steps to prevent contamination by pests;

4 Prepare a packing plan;

5 Do not exceed the permitted payload limits of the CTU or the maximum allowed gross mass according to national regulation and the CSC[4] Safety Approval Plate; and

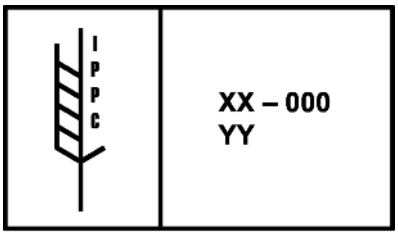


Select correct CTU type

Position for packing

Check interior and exterior

CSC Safety Approval Plate



IPPC Mark

6 If timber is used for packing and bracing, ensure that it has been properly treated and marked in accordance with IPPC's ISPM 15[5]. Failure to do so may result in the transport of pests that can devastate crops, plants, trees, and animals. The CTU and its cargo may also be denied entry and be required to be returned to its origin.

[3] See International Plant Protection Convention guide 'Sea container supply chains and cleanliness: An IPPC best practice guide on measures to minimize pest contamination' (www.fao.org/publications/card/en/c/CA7963EN) and related leaflet 'Reducing the spread of invasive pests by sea containers' (www.fao.org/documents/card/en/c/ca7670en)

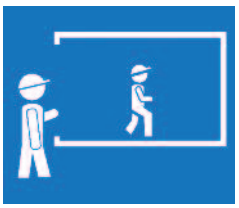
[4] International Convention for Safe Containers (CSC), 1972, as amended.

[5] International Standard for Phytosanitary Measures (ISPM 15) Regulation of wood packing materials in International Trade by the International Plant Protection Convention (www.fao.org/3/a-mb160e.pdf)

5.0 Enclosed space entry

(applicable in relation to both packing and unpacking processes)

5.1 Be aware that the atmosphere in the CTU may be dangerous. Proper ventilation should therefore be undertaken prior to initial entry.



5.2 The internal atmosphere of the CTU may have been affected by previous cargoes, with the result that there is insufficient oxygen or toxic gas is present. If the CTU has carried a cargo known to produce a modified atmosphere or if the cargo has been subject to fumigation[6], then the interior should be tested prior to any entry and if possible before the doors are opened. Guidance can be found in the Code in Annex 5 *Receiving CTUs Section 5 Measuring Gases,* Annex 5 *Receiving CTUs Section 7 Ventilation,* and Annex 9 *Fumigation, Section 4 Ventilation.*

CTU Code Annex 5

CTU Code Annex 9

5.3 When safe, the doors should be opened and the interior ventilated.

5.4 When entering, only one person should initially enter and a second person should remain outside to monitor their actions. If the person who enters the CTU cannot make their own way out of the CTU the other person should call for assistance and only enter the CTU when appropriate PPE[7] is available and/or emergency services called.

[6] Containers that have been fumigated should be appropriately marked. Since not all CTUs are so marked, care must be taken when opening the doors.

[7] Personal Protective Equipment

6.0 CTU condition checks

(for container packing see also Checklist questions 8-12 in Annex 1)

1 Check the CTU to ensure that the CSC approval plate is valid, and both the exterior and interior are free of signs of damage, rust, cargo residues, stains and debris;

2 Residues, stains and debris may cause damage to the cargo or packages;

3 Major damages may adversely affect packing capacity;

Dust and cargo residue

Transferable stains[8]

Debris and dunnage

4 Check for signs of rust or water trails that may indicate holes or other water ingress. If the condition of the CTU is not satisfactory, and /or does not meet the requirements for the goods to be packed, contact the CTU operator; and

5 Check for internal and external visible pest contamination of the CTU and of the cargo to be packed. If there are signs of visible pest infestation, contact your local office of the National Plant Protection Organization (NPPO) for plant related contamination or, if animal origin contamination, the Animal Quarantine Office for guidance.

Soil contamination

Animal contamination

Insect contamination

[8] Image used with kind permission from IICL (www.iicl.org)

7.0 Dangerous Goods (DG) planning

7.1 The term “Dangerous Goods” specifically refers to those commodities that have been defined as such in international regulations (and applied e.g. in the International Maritime Dangerous Goods (IMDG) Code), being a substance, material or article capable of posing a risk to health, safety and property when transported.

7.2 The stowage of different classes of Dangerous Goods within the same CTU is strictly regulated and is generally prohibited. The general segregation chart in the IMDG Code should be consulted when mixing classes of Dangerous Goods within the same unit, where allowed.

7.3 In addition to the general class segregation and separation requirements, the shipper should be aware of chemical specific incompatibilities between individual Dangerous Goods. It is important to check the individual entries for each chemical or article being shipped in order to be fully aware of and avoid any incompatible stows within a CTU.

7.4 There are numerous requirements relating to:

- the proper packaging of Dangerous Goods;
- documentation that must be prepared to describe fully and accurately the goods being transported and their packing; and
- placards, marks or signs that must be affixed to a CTU packed with Dangerous Goods.

7.5 It is imperative that the shipper is, as a minimum, aware of and meets all the requirements of the international Dangerous Goods regulations relating to safety in transport and ensures that the packer is aware of these requirements.

8.0 Packaging

8.1 The use of CTUs to contain goods has not eliminated the need for adequate interior and exterior packaging of cargo. Packaging requires careful consideration. The packaging should be sufficiently strong to accommodate stacking within a CTU and the vertical and horizontal pressures sustained during transit by road, rail or ship. Further information can be found in the Code in Chapter 5 *General transport conditions.*

CTU Code Chapter 5

8.2 All packaging, whether it is cases, drums, crates, etc should have adequate ability to withstand all the forces of normal transport while effectively containing the cargo. The strength and required service life of both interior and exterior packaging depends on the product, the trade route, and the different modes of transport used between the point of origin and destination.

8.3 Special packaging

1 It is important that the cargo does not move within the carton, box, or other receptacle in which it is packaged. In order to immobilize the contents, it is necessary to provide adequate cushioning within the packaging and/or block and brace the contents;

2 Heavy machinery and items that are not uniform in shape or dimension should be crated, boxed, or palletized to permit ease of handling and compact stowage; and

3 Each carton or box should be able to withstand the weight and pressure of cargo stacked up to eight feet high.

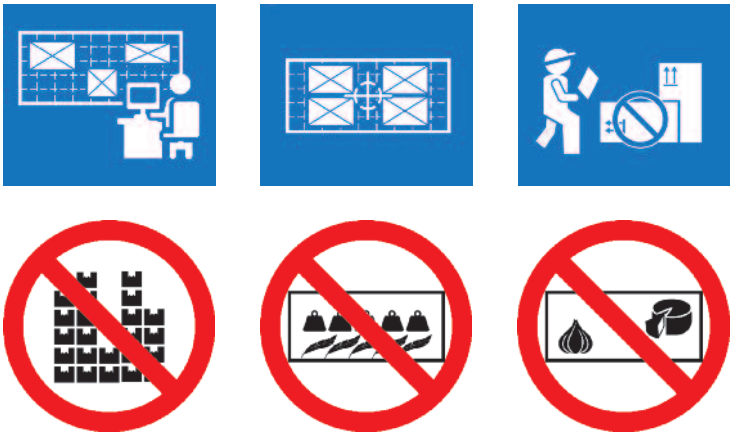
8.4 In addition, boxes, cartons, and crates should be able to survive lateral pressures exerted by adjacent cargo of up to 70% of the vertical stacking weight. This will help to prevent crushing of contents caused by the forces encountered during transport.

9.0 Packing

(for container packing see also Checklist questions 13-19 in Annex 1)

9.1 General principles

When planning the packing of the CTU a number of basic rules should be applied:



1 Use locking, blocking or lashing, or a combination of these methods, to prevent the cargo from sliding and tipping in any direction;

2 Distribute heavy cargo over the floor area and ensure that the centre of gravity of the packed CTU is correctly located;

3 Do not build up irregular layers of packages. Irregular stacks without blocking and proper securing will result in damaged cargo;

4 Do not stow heavy goods on top of light goods;

5 Do not stow goods with tainting odours together with sensitive merchandise; and

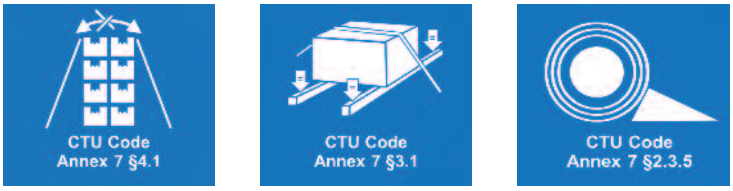
6 Observe all handling instructions on packages such as “this side up”.

9.2 Packing exceptional goods

1 High centre of gravity cargoes (tall, small footprint and/or light support structure) are subject to tipping and falling. Such items need support from adjacent packages or cargo items in a tight stow, or sufficient space around to ensure that direct lashings can be applied;

2 Heavy cargo items (with a mass greater than 0.25P[9]), such as machinery (which may also have a high centre of gravity) and dense cargoes (steel coils, marble and granite blocks), all require the load to be distributed onto the major structural components of the CTU; and

3 Road and other wheeled transport items, drums, coils and tubes should be packed in such a way that the CTU floor/cargo deck is not compromised. Non-pneumatic wheels, coils and tubes (that may also be considered as a heavy cargo item) should be supported on beams, which should in turn be placed onto the major structural components of the CTU. Additionally, chocks of sufficient size should be placed against the curved surface and affixed to the supporting beams. Chocks should not be nailed to the CTU deck.



[9] Items heavier than 25% of the payload of the CTU

9.3 Packing Dangerous Goods
(for container packing see also Checklist questions 20-23 in Annex 1)

CTU Code Chapter 10

Chapter 10 of the Code provides packers with additional advice on the packing of Dangerous Goods:

- Check that all packages are properly marked and labelled;
- Pack Dangerous Goods near to the doors if possible;
- Affix required placards on the exterior of the CTU; and
- Do not pack damaged packages.




9.4 Commodity specific packing and securing instructions

The variety of cargo types and package designs means that it is impossible to provide specific detailed guidance in this document. Commodity/packaging specific guidance may be available; seek information from the CTU operator.

10.0 Securing

(for container packing see Checklist questions 24-26)

CTU Code Annex 7

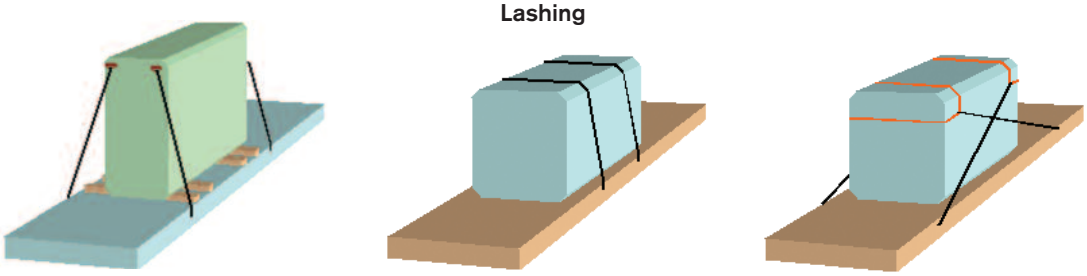
10.1 Packing planning should aim at producing either a **tight stow** (where all cargo packages are placed tightly within the boundaries of the side and front walls of the CTU) or a **secured stow** (where packages do not fill the entire space and will therefore be secured within the boundaries of the CTU by blocking, bracing, shoring and/or lashing). See in the Code Annex 7 section 1 *Planning of Packing*.

10.2 In a **tight stow** small gaps between the unit loads and similar cargo items, which cannot be avoided, and which are necessary for the smooth packing and unpacking of the goods, are acceptable and need not be filled. The sum of the void spaces in any horizontal direction should not exceed 15 cm. Where such a cumulative void is exceeded, the cargo items must be blocked in each gap or moved so as to consolidate them into a single void which can then be filled with appropriate dunnage or blocking.

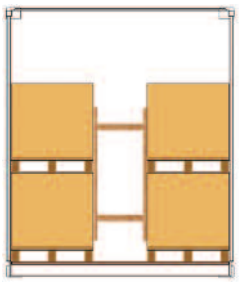
10.3 Tight stows of small packages will need to be secured to prevent them from lifting during transport. Dunnage bags or netting may be required to ensure stow integrity.

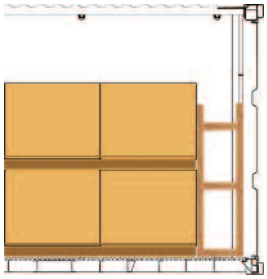
10.4 Loose or **secured stows** require individual cargo items to be secured, and the Packer should consider lashing individual packages to prevent tipping, and introduce friction and bracing to prevent sliding.

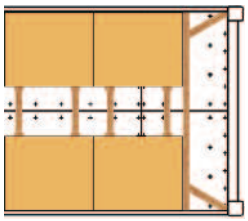
Lashing



Bracing







10.5 The use of the corner posts to prevent cargo from shifting fore and aft is highly recommended. If a shipment is moved by rail there should always be adequate bracing in the front and rear of the CTU utilizing the corner posts as restraints.

10.6 Cargo should be blocked and braced to the outer extremities of the floor in order to prevent lateral movement. The walls and doors of the CTU should not be used to support blocking and bracing.

10.7 The additional strength needed to prevent cargo from shifting and damaging the doors of the CTU and/or the cargo itself can be obtained by blocking and bracing against the top end rail (rear header), which connects the two rear corner posts.

10.8 When using timber for blocking and bracing cargo, ensure that it has been properly treated and marked in accordance with ISPM 15. Such timber should be sound and free from cross-grain, dry rot, knots, knotholes, or splits, which might affect its strength.

10.9 When securing cargo:

1 Secure the cargo in a way that forces are distributed over a sufficiently large area of the CTU;

2 Use non slip surface friction material where appropriate to reduce sliding of packages;

3 Use hooks or shackles to fasten lashings where applicable;

4 Do not secure the cargo with devices overstressing the structure of the CTU;

5 Do not overtighten the lashings which may damage the cargo; and

6 Do not fasten web lashings by means of knots.

7 Do not nail dunnage, blocking or bracing to the cargo deck of closed CTUs.

11.0 On completion of packing

(for container packing see also Checklist questions 27-34 in Annex 1)

11.1 Before closing the CTU the Packer should carry out packing completion tasks. These tasks ensure that the cargo can be transported safely to its destination and should conform to the requirements of the CTU Code as described in Chapter 11.

CTU Code Chapter 11

11.2 While not specifically mentioned in Chapter 11, prior to the final closing of the CTU, cargoes that require fumigation should be treated in accordance with local legislation and should conform to Annex 9 of the CTU Code.

CTU Code Annex 9

11.3 Fumigation

1 Significant hazards may remain in fumigated goods and bulk cargoes packed in CTUs. Gassing incidents, due to inadequate ventilation of containers after they have been opened, have occurred in many countries; and

2 CTUs that contain fumigated goods are considered to be class 9 Dangerous Goods by the IMDG Code, UN number 3359. The Code should be checked for any current placarding requirements and the correct wording of the warning sign that must be posted on the CTU doors.

11.4 Determine that both the interior and the exterior of the container, and its cargo, are free from visible infestation by pests.

11.5 Affix an ISO 17712 compliant seal when the CTU is being transported internationally. More information on seals can be found in Informative Material IM9.

Informative Material IM9

An accurate seal record should be maintained from point of origin to point of destination. Seal numbers should be recorded on appropriate documents. Whenever it becomes necessary to break a seal, (e.g. customs inspection) the reason for the break and the number of the new seal should be annotated.

11.6 Determine the gross mass of the CTU. For freight containers carried by sea, shippers are required to provide a Verified Gross Mass to the terminal and the ship's master as a condition of loading on board. For all CTUs the gross mass of the packed CTU should not exceed the maximum permitted gross mass value of the CTU nor any national regulation that may restrict the gross mass of the CTU on any particular mode of transport.

11.7 Provide documentation to the carrier when Dangerous Goods are packed in or on the CTU, which shall include a Shipper's Declaration and, where required, a Packing Certificate declaration. A Safety Data Sheet may be requested and, if so, should be provided in hard copy to Inland Carriers where the CTU is to be transported by road, rail or inland waterway.

11.8 Include the CTU number, the verified gross mass and, when required, the seal number in the information to be provided to the carrier as early as required by the carrier.

12.0 Receipt and unpacking of CTUs

12.1 General

1 The Consignee or unpacker of a CTU should check that the unit is in good condition, notifying the CTU operator of any significant damage;

2 Where applicable, check the integrity of the seal and ensure the number matches what is stated in the transport documentation;

3 Be alert to external signs that the consignment may present hazards, such as abnormally high temperatures, substances leaking from the unit or deformation of CTU panels. These may indicate that the unit should be isolated or other special care be required before unpacking the cargo;

4 Be aware that the unit may present a harmful atmosphere, either emanating from the cargo or remains of fumigants. In general, see section 5 above; and

5 The consignee or unpacker should check that the CTU and the cargo is free from visible pest contamination. Remove any visible pest contamination in accordance with applicable local regulations or notify the Responsible Authority as required.




12.2 Unpacking a CTU

1 Conduct an appropriate risk assessment in relation to the planned unpacking activities, including any requirement to access the CTU or any part of it at a height above ground level. Ensure that suitable unpacking equipment and techniques are used;

2 Take additional precautions when opening the unit in case cargo has shifted during transport. The use of a safety strap secured around the inner locking rods will minimize the free movement of the door when it is first opened;

3 Take account of the nature of the consignment (e.g. low friction plates or items with high centre of gravity) and be careful in removing lashing or blocking; and

4 Any damage to the cargo detected during unpacking should be documented and notified to the carrier and/or CTU operator and shipper, as appropriate.




12.3 Returning the empty CTU

1 Unless otherwise agreed, the Consignee is responsible for ensuring that the CTU is completely clean, free of cargo residues, noxious materials, and visible pests;

2 Comply with the applicable local environmental regulations in relation to disposal of cargo residues, waste, dunnage, securing material, and visible pests; and

3 Where the goods unpacked from the CTU include Dangerous Goods, particular care should be taken to ensure that no hazard remains. This may include special cleaning. All placards and other markings referring to the last shipment should be removed or obliterated.

CARGO INTEGRITY GROUP

Container packing checklist

A checklist for the safe packing and avoidance of pest contamination of freight containers[1].

Instructions: Complete the checklist for each container to be packed. If ANY of the answers are "NO", stop packing, alert your supervisor. DO NOT dispatch the container.

		YES	NO	N/A	CTU Code reference[2]
The packing area					
1	Is the type of container appropriate for the cargo to be carried?	☐	☐	☐	Ch 7
2	Is the container positioned so that it can be accessed safely?	☐	☐	☐	Ch 8.3 / Annex 5 S2
3	Have steps been taken to avoid contamination of the packing area by pests?	☐	☐	☐	Ch 8.2.4 / Annex 6
4	Has a packing plan been prepared showing the arrangements of goods in the container?	☐	☐	☐	Annex 7 S1
5	Are the maximum permitted payload limits of the container sufficient for the intended load?	☐	☐	☐	Annex 4 S2
6	Do all timber pallets, dunnage or other wood packing material meet ISPM-15 standards and show the required markings?	☐	☐	☐	Annex 7 S1.14
7	Have staff assigned to pack the container been trained to understand the practices of safe packing and securing and avoidance of pest contamination?	☐	☐	☐	Ch 13 / Annex 10
Container condition					
8	Is the container exterior free from soil or other visible infestation by pests?	☐	☐	☐	Ch 8.2.2.9 / Annex 6
9	Is the container exterior in good condition, and not significantly distorted, cracked or bent?	☐	☐	☐	Ch 8.2.2
10	Does the container have a valid CSC Approval Plate?	☐	☐	☐	Ch 8.2.1 / Annex 4
11	Is the container interior free from signs of damage, signs of water ingress, rust, residues, stains or debris?	☐	☐	☐	Ch 8.2.3 / Annex 6
12	Is the container interior free from soil or other visible infestation by pests?	☐	☐	☐	Ch 8.2.4 / Annex 6
Packing the container					
13	Is the cargo to be packed free from soil or other visible infestation by pests?	☐	☐	☐	Annex 6
14	Has the heavier cargo been packed at the bottom of the container with any lighter weight cargo on top?	☐	☐	☐	Annex 7 S3.2.3
15	Is the cargo distributed evenly across the floor of the container to spread the load?	☐	☐	☐	Annex 7 S3.1
16	Is the centre of gravity approximately in the centre of the container?	☐	☐	☐	Annex 7 S3.1.4
17	Has the cargo been packed in approximately even layers?	☐	☐	☐	Annex 7 S3.2
18	Have packages with package orientation labels been stowed the correct way up?	☐	☐	☐	Annex 7 App 1 S3
19	Has locking, blocking or lashing been used to prevent the cargo from sliding and tipping in the container in any direction?	☐	☐	☐	Annex 7 S2

		YES	NO	N/A	CTU Code reference[2]
Dangerous goods					
20	Are all Dangerous Goods packages marked and labelled in accordance with the IMDG Code?	☐	☐	☐	Ch 10.2.10 IMDG Code
21	Are all Dangerous Goods packages undamaged and in sound condition?	☐	☐	☐	Ch 10.2.8
22	Where Dangerous Goods comprise only part of the cargo, are they packed as close to the doors as possible?	☐	☐	☐	Ch 10.3.8
23	Has the container been placarded in accordance with the IMDG Code?	☐	☐	☐	Ch 11.2
After packing the container but before closing the doors					
24	Have all void spaces (gaps) within the cargo stow and/or between the cargo and container structure been filled?	☐	☐	☐	Annex 7 S2.3
25	Is the cargo blocking and bracing distributed over a sufficiently large area of the container (e.g. by use of spreader beams)?	☐	☐	☐	Annex 7 S.2.3
26	Are lashings secured to the container so as not to over-stress its structure?	☐	☐	☐	Ch 9.4 Annex 7 S2.4 and S4
27	Are both the interior and the exterior of the container, and its cargo, free of soil, or other visible infestation by pests?	☐	☐	☐	Annex 6
Closing the container					
28	Have the doors of the container been securely closed and latched?	☐	☐	☐	Ch 11.1
29	Has a seal been affixed to the container and its number recorded?	☐	☐	☐	Ch 11.1.2
Dispatching the container					
30	For the packed container, has the Verified Gross Mass been communicated to the carrier as early as required by the carrier?	☐	☐	☐	Ch 11.3.2
31	For the packed container, has the identity of the container and the seal number been communicated to the carrier as early as required by the carrier?	☐	☐	☐	Ch 11.3.3
32	For the cargo, has an accurate description (including classification) of the cargo itself and the packaging been communicated to the carrier, as early as required by the carrier?	☐	☐	☐	Ch 4.2.3 and 4.2.4
33	For the cargo, have the number and types of packages and the cargo mass (for Customs purposes) been communicated to the carrier, as early as required by the carrier?	☐	☐	☐	Ch 4.2.3 and 4.2.4
34	For Dangerous Goods, has a Shipper's Declaration and, where required, a Packing Certificate declaration been made and communicated to the carrier as early as required by the carrier?	☐	☐	☐	Ch 11.3.6

[1] The information in this Checklist relates only to freight containers.

[2] The CTU Code is the IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units, 2014 edition. CTU Code can be found on both the websites of the International Maritime Organization (IMO) www.imo.org/en/OurWork/Safety/Pages/CTU-Code.aspx and the United Nations Economic Commission for Europe (UNECE) www.unece.org/trans/wp24/guidelinespackingctus/intro.html.

Cargo Integrity Group (as at January 2022)

Bureau International des Containers
The Bureau International des Containers (BIC) was founded in 1933 under the auspices of the ICC as a neutral, non-profit, international organization. BIC seeks to promote efficiency, safety, security, standardization and sustainability in the container supply chain. Publisher of the BIC Code Register since 1970, BIC also operates other industry databases, including the BoxTech Global Container Database (bic-boxtech.org), the BIC Facility Code Database, and the Global ACEP Database. BIC holds official observer status at IMO, WCO, and UN/CEFACT. BIC participated in developing the CTU Code.

www.bic-code.org

Container Owners Association
The Container Owners Association (COA) is an international organization representing the common interests of all owners of freight containers. Its principle aims are to develop standards in order to enhance industry efficiency, to disseminate information through conferences, training and education, to promote the safe of operation of containers and to strengthen environmental awareness. Full Members of the Association include container shipping lines, leasing companies and intermodal operators, while Associate Membership is open to suppliers of a wide range of container equipment, systems and services.

www.containerownersassociation.org

FIATA
FIATA, the International Federation of Freight Forwarders Associations, is a non-governmental, membership-based organization representing freight forwarders in some 150 countries, overall representing an industry of 40,000 freight forwarding and logistics firms worldwide. FIATA's objectives include standardizing and improving the quality of services rendered by freight forwarders, such as promoting uniform forwarding documents and digitization, and assisting with vocational training for the freight forwarding industry worldwide. Based in Geneva, FIATA is 'the global voice of freight logistics' and participated in the development of the CTU Code.

www.fiata.org

Global Shippers Forum
Global Shippers Forum (GSF) is the international business organization representing the views of exporters and importers as cargo owners in global supply chains . Our members are national shippers' organizations in over 20 countries across five continents seeking safe, competitively efficient and environmentally sustainable global trade. GSF works to ensure the customer's voice is heard in the development of international transport policy and regulation, and participated actively in the drafting of the CTU Code.

www.globalshippersforum.com

ICHCA International
ICHCA International is an independent, not-for-profit organisation dedicated to improving safety, productivity and efficiency of cargo handling and movement worldwide. ICHCA's privileged NGO status enables it to represent members and the cargo handling industry to national and international agencies and regulators. Its Technical Panel develops best practice and a wide range of practical cargo handling publications. ICHCA provides a focal point for informing, educating and networking to improve knowledge and best practice throughout cargo handling. ICHCA was actively involved in the development of the CTU Code.

www.ichca.com

TT Club
TT Club is the established market-leading independent provider of mutual insurance and related risk management services to the international transport and logistics industry. TT's primary objective is to help make the industry safer and more secure. The Club enjoys substantial industry support spanning container owners and operators, ports and terminals, and logistics companies, working across maritime, road, rail, and air modes, TT is renowned for its high-quality service, in-depth industry knowledge and enduring Member loyalty. TT Club participated in the development of the CTU Code.

www.ttclub.com

World Shipping Council
The World Shipping Council (WSC) is the united voice of liner shipping, the international container and vehicle carriers that make global trade possible. We work with policymakers and industry groups to shape the future growth of a socially responsible, environmentally sustainable, safe, and secure shipping industry. We are a non-profit trade association with offices in Brussels, Singapore and Washington, DC. The WSC has observer status with the IMO, and was actively involved in the development of the CTU Code.

www.worldshipping.org

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