

IMO CCC 10 Meeting Summary

October 03, 2024



The 10th meeting of the IMO's sub-committee on Carriage of Cargoes and Containers (CCC 10) was held 16-20 September 2024 at the IMO Headquarters in London, supplemented by hybrid (remote) participation. This CCC 10 report also includes the relevant outcome of the 41st session technical and editorial group (E&T 41) held 23-25 September 2024 on the IMSBC Code, which was authorized to report the outcome to the Maritime Safety Committee (MSC) directly on the matter relating to the next batch of the amendments to the IMSBC Code.

LISCR participated in the following groups of CCC 10 in addition to the plenary as follows:

ID	Title and subject
WG 1	Development of Technical Provisions for Safety of Ships using Alternative Fuels
WG 2	Review of the IGC Code
WG 3	Amendments to the IMDG Code
DG 1	Review of resolution A.1050(27)
DG 2	Prevention of the Loss of Containers at Sea, Revision of MSC.1/Circ.1353/Rev.2 and Development of Performance Standards and Guidelines for Lashing Software

New fuels

The IMO has worked to complete the necessary guidelines for the safe use of new fuels that reduce emissions. Two back-to-back meetings, namely the first session of the Intersessional Working Group on the Development of Technical Provisions for the Safety of Ships Using Alternative Fuels (ISWG-AF 1) and CCC 10, have made significant progress, as outlined below.

Ammonia fuel

CCC 10 developed the Interim Guidelines for Ships Using Ammonia as Fuel, set for final adoption by the 109th session of the Maritime Safety Committee (MSC 109), scheduled for December 2024.

While the IGF Code and other alternative fuel guidelines primarily address fire hazards, the new guidelines must also address hazards arising from the toxic nature of ammonia. This element poses a significant challenge in developing the guidelines.

The guidelines are kept as high-level guidelines, with a few exceptions, focusing on Goal and Functional Requirements to assist various experimental projects. These guidelines may be further developed as more experience is gained, but they serve as initial guidance for the projects already taking place.

The key features of the guidelines are:

- Application: Ships subject to the IGC Code are governed by the IGC Code, not these guidelines (see LISCR report on MSC 108 regarding the approval of amendments to Chapter 16 of the IGC Code for adoption by MSC 109);
- Toxic Area and Space Classification: CCC 10 agreed that the current zone classification for fire hazards is inadequate. Instead, it developed analysis-based criteria using 220 ppm as the threshold, considering the location (open deck/enclosed space);
- Safe Haven: Provisions for safe havens, allowing refuge for all persons on board in case of an ammonia release, have been introduced;
- Leak Detection and Control: Detection levels (25 ppm/110 ppm/220 ppm depending on location), alarm systems (depending on manned/unmanned locations), and gas detectors (two detectors are required for a voting system) were developed, while remaining high-level;
- Machinery space protection: Machinery spaces containing ammonia fuel systems and/or ammonia fuelled machinery should be arranged such that the spaces may be considered gas safe under all conditions, normal as well as abnormal conditions, i.e. inherently gas safe;
- Fuel Supply System: Automatic shut-off valves and emergency ventilation to remove residual ammonia from the fuel line were agreed upon;
- Ammonia Release: Under normal operation, there should be no direct release of ammonia. In cases where release is foreseeable, controllable, and necessary, provisions for ammonia treatment systems are required to minimize the amount of released ammonia. Uncontrolled and untreated ammonia release should only occur in catastrophic situations;
- Bunkering: Requirements include a vapour return line, a method to confirm the absence of residual liquid fuel in bunkering pipes, sampling arrangements, testing requirements for fuel hoses, and dry-disconnection protocols;
- Material: Prescriptive/restrictive use of specific materials was agreed upon, with references to the IGF Code; and
- Training: The matter was referred to the Sub-Committee on Human Element, Training, and Watchkeeping (HTW) for further development.

Hydrogen fuel

In general, the meetings aimed for a conclusion and made substantial progress. Hydrogen presents several challenges in its containment systems, including embrittlement and permeation. Additionally, the ignition of hydrogen requires only a small amount of energy compared to LNG.

Nevertheless, the group agreed on the following points:

- To consider both liquefied and gaseous fuels;
- Hydrogen fires should not be extinguished unless by cutting off the supply (source of the leak). Extinguishing the fire without controlling the source can result in hydrogen gas leaks, which are more dangerous;
- ESD-protected machinery spaces should not be accepted for ships using hydrogen as fuel;

However, the following issues still require further discussion:

- Various definitions, including “Hydrogen Consumer Space” and “Cold Box”;
- Venting systems;
- Fuel tank safety relief devices;

- Loading limits for liquefied hydrogen tanks;
- Atmospheric control for fuel containment systems;
- Inerting;
- Materials;
- Fuel piping systems and valve arrangements;
- Provisions for internal combustion engines;
- Fire safety (protection, detection, and extinguishing);
- Control, monitoring, and alarms; and
- Training.

Methanol fuel

All submissions regarding methanol fuel are deferred to CCC 11, scheduled for September 2025.

Low-flashpoint oil fuels

As the meetings concentrated on ammonia and hydrogen fuels, no discussion took place on this type of fuel.

Work plan

CCC 10 agreed to keep the methanol fuel guidelines under review and did not decide to include them as part of the mandatory IGF Code. In the future, the inclusion of methanol fuel and fuel cell guidelines into the IGF Code will be considered.

Liquid Gas cargoes

Revision to the IGC Code

CCC 10 completed the work on the next set of amendments to the IGC Code, which will be submitted to MSC 109 for approval and subsequently adopted by MSC 110. The expected entry into force date is 1 January 2028. While amendments requiring changes in design or construction shall apply to new ships only, operational requirements will apply to both new and existing ships (those constructed between 1 July 2016 and 1 January 2028). The key changes are introduced below:

- Clarifications on the design of cargo tanks, piping, venting systems, and fire safety provisions;
- Cargo tank level alarming testing has been revised to accept alternative arrangements that do not rely on raising the liquid level, subject to approval by the flag Administration;
- The filling limit, including conditions for filling more than 98% of cargo tanks, and the removal of requirements on the prevention of the formation of vapour pockets;
- While the use of ammonia cargo as fuel has already been addressed by MSC 108 (May 2024) for adoption by MSC 109 (December 2024), with an expected entry into force date of 1 July 2026, the use of LPG cargo as fuel has been inserted in chapter 16 as generic (high-level) functional requirements;
- The carriage of CO₂ as cargo, which is now categorized as toxic cargo, was introduced. This applies to all ships constructed on or after 1 July 2016. In addition, the carriage of volatile organic compound (VOC) condensate has been

added to chapter 19 (Summary of Minimum Requirements) for ships constructed on or after 1 July 2016. The application of these requirements to ships constructed before this date was left to each flag Administration;

- While chapter 18 of the Code addresses operational requirements, table 18.1 (Shutdown-Related Systems – Cause and Effect Functions - was editorially revised for clarity and will apply to ships constructed on or after 1 July 2016.

Guidelines on the use of ammonia cargo as fuel

Liberia, along with other co-sponsors, submitted draft guidelines on the use of ammonia cargo as fuel, which will supplement the amendments to Chapter 16 of the IGC Code. CCC 10 agreed to establish a correspondence group (CG) with a target completion date in 2026. The CG will commence work only after the approval of its formation by MSC 109.

Carriage of hydrogen as cargo

At its 108th session, the Maritime Safety Committee (MSC) adopted revised interim guidelines for the transport of liquefied hydrogen in bulk (resolution MSC.565(108)), based on discussions from CCC 9. These updated guidelines focus on safety requirements for independent cargo containment systems but do not yet cover membrane-type systems. To address this, a new part D needs to be added to specify the safety requirements for membrane-type cargo containment systems. Additionally, part A will need some updates to reference the new system's safety requirements.

A submission to CCC 10 highlighted the need for further work to develop the membrane cargo system and invited interested Members to collaborate on a proposal for CCC 11.

Solid bulk cargoes

IMSBC Code

CCC 10 worked on the next package of the IMSBC Code amendments, i.e. amendment 08-25 which will be adopted by MSC 110 (June 2025) for mandatory entry into force on 1 January 2027. The discussion introduced here includes the outcome of the 41st session of the Editorial and Technical Group (E&T 41) held 23-25 September 2024.

Spare charges for SCBAs (self-contained breathing apparatuses)

Following discussions at CCC 10 and E&T 41, it was agreed to remove the requirement to carry two sets of SCBAs in the IMSBC Code. This change was made because additional SCBAs for the transport of dangerous goods are already covered under SOLAS regulation II-2/10.10. The individual schedule for FERROUS METAL BORINGS, SHAVINGS, TURNINGS, or CUTTINGS (UN 2793) were updated accordingly.

Other cargo-specific issues:

Revisions

- ALUMINIUM FERROSILICON POWDER UN 1395
- ALUMINIUM SILICON POWDER, UNCOATED UN 1398
- ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS UN 3170
- CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE UN 2969
- DIRECT REDUCED IRON (A), Briquettes, hot-moulded
- DIRECT REDUCED IRON (B), Lumps, pellets, cold-moulded briquettes

- FERROSILICON UN 1408 with 30% or more but less than 90% silicon (including briquettes)
- FERROSILICON with at least 25% but less than 30% silicon, or 90% or more silicon
- FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS UN 2793 in a form liable to self-heating
- FISH MEAL (FISH SCRAP), STABILIZED Anti-oxidant treated
- IRON ORE PELLETS

New Cargoes

- ALUMINIUM SULPHATE GRANULAR
- APATITE CONCENTRATE
- ASPHALT GRANULATES
- CRUSHED GRANODIORITE, COARSE
- FERRIC SULPHATE GRANULAR
- FISH MEAL (FISH SCRAP), STABILIZED
- IRON ORE BRIQUETTES
- PEA PROTEIN CONCENTRATE PELLETS
- PHOSPHATE ROCK FINES (uncalcined)
- TUFF, COARSE
- ZINC SLAG (coarse)

Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted

As a consequence of the above amendments to the IMSBC Code, E&T 41 prepared amendments to MSC.1/Circ.1395/Rev.6 on the *Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective* for approval by MSC 110 scheduled for June 2025.

Bulk cargo identification number

The IMO is working on the bulk cargo identification number similar to the UN number for dangerous goods. E&T 41 addressed the matter but could not conclude as the opinions were divided whether the Bulk Cargo ID number should convey information on the cargo, i.e., which group (A, B, C or A&B), or whether the purpose of the number is only to identify the cargo. The issue will be addressed by CCC 11 scheduled for September 2025.

Pesticides

Both submission to CCC 10 and discussion at the Sub-Committee on Implementation of IMO Instruments (III) addressed the review of existing MSC Circulars on the safe use of pesticides for fumigating cargo holds.

E&T 41 reviewed and developed revision to MSC.1/Circ.1264 on *Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo holds* for approval by MSC 110 scheduled for June 2025.

The amendments emphasized the importance of carefully handling gas-generating agents, such as phosphine-generating agents, with a specific instruction not to use loose tablets.

Consequential amendments to the IMSBC Code and the footnotes of SOLAS regulation VI/4 and *Recommendations on the safe use of pesticides in ships* (MSC.1/Circ.1358) were also developed.

Document of compliance with the special requirements for ships carrying dangerous goods

E&T 41 prepared draft amendments to MSC.1/Circ.1266 on *Document of compliance with the special requirements for ships carrying dangerous goods under the provisions of regulation II-2/19 of the 1974 SOLAS Convention, as amended, and of paragraph 7.17 of the 2000 HSC Code, as amended* to insert the description to replace the words "Code of Safe Practice for Solid Bulk Cargoes (BC) Code" with footnote by "International Maritime Solid Bulk Cargoes (IMSBC) Code.

E&T 41 requested the Secretariat to inform MSC 110 of the necessity of the consequential amendment to the footnote to SOLAS regulation II-2/19.4 after the approval of revised MSC.1/Circ.1266

Dangerous goods

At CCC 10, there was intense discussion regarding the carriage of vehicles, particularly battery-driven vehicles. Key topics included the charging limit before loading (e.g., ensuring the vehicle is less than 25% charged), the state of health (condition) of the batteries, and the disconnection of the battery during transportation.

CCC 10 agreed that the following approach would serve as the basis for future discussions.

Consignors are responsible to assess that a vehicle consigned by them is safe for transport and excludes a vehicle from transport when a component or installed article is on fire, when it shows signs of leakage of fuel and other operating liquids or has obvious or suspected damage to electric equipment or supplemental restraint systems. This applies to all vehicles, irrespective whether new, in use or used. Even a new vehicle may suffer damage after being delivered from the factory and before being loaded onto a vessel. In such case, the consignor has the obligation to evaluate whether a recent incident might have possible impacts on the safety of the vehicle. Furthermore, it is clearly stated that any battery which is subject to SP376 shall be removed from the vehicle and that vehicles classified as waste under the applicable regulations in the State of dispatch are not allowed for transport unless otherwise authorized by the competent authorities in the port State of departure, flag State and port State of arrival.

CCC 10 also noted that special consideration is required for Ro-Ro ships.

Container fire

While the Subcommittee on Ship Systems and Equipment (SSE) has addressed fire detection and suppression, the CCC Subcommittee is left to discuss preventive (risk control) measures.

In this regard, Liberia, along with other co-sponsors, pointed out that further discussion is needed on the following topics:

- Misdeclaration of cargoes;
- Stowage requirements; and
- Test methods for self-heating cargoes.

CCC 10 noted the importance of risk control measures, including container scanning in ports and the training of shore personnel.

Prevention of loss of containers

Lashing software

MSC 108 agreed to include in the biennial agenda of the CCC Sub-Committee the 'Revision of the Revised Guidelines for the Preparation of the Cargo Securing Manual (MSC.1/Circ.1353/Rev.2)' to incorporate a harmonized performance standards for lashing software, allowing it to be used as a supplement to the Cargo Securing Manual.

CCC 10 agreed:

- not to include amendments to the CSS Code in this work and tasked the CG to work on the rest;
- Lashing software "may be accepted as a supplement to the Cargo Securing Manual" as part of the ongoing amendments to the Revised Guidelines for the Preparation of the Cargo Securing Manual (MSC.1/Circ.1353/Rev.2); and
- To task the CG to work on amending amend the "Revised guidelines for the preparation of the Cargo Securing Manual" (MSC.1/Circ.1353/Rev.2) and identify issues which need to be included in the performance standards.

Prevention of loss of containers

MSC 107 had agreed to include in the biennial agenda of the CCC Sub-Committee on "Development of measures to prevent the loss of containers at sea". In the course of the discussion, the following views were expressed:

- A significant reduction in container loss was observed in 2023, with only 221 containers lost during the year;
- Despite the reduction, the impact of container loss remains significant;
- The development of performance standards for container lashing software remains relevant; and
- The essential physical effects that a calculation model must be considered.

CCC 10 developed a preliminary inventory of the work items for further development by the CG, which include:

- Review of:
 - VGM (verified gross mass) verification methods;
 - Detection and tracking of containers lost at sea;
 - Applicability of Interim guidelines on the second-generation intact stability criteria (MSC.1/Circ.1627).
- Consider the need for:
 - Revising MSC.1/Circ.1353/Rev.2 and development of performance standards and guidelines for lashing software as a supplement to cargo securing manual;
 - Strength issues of containers and securing gear;
 - Loading, stowage and validation;
 - Operational guidance;
 - Training; and
 - Inspection programmes (container handling, packing and transport and container securing and lashing gear).

The following additional topics will also be discussed:

- Vessel operating limitations;

- Inspection programmes and strength of containers;
- Loading, stowage and validation; and
- Lashing methodologies.

Enclosed space entry

Revised Recommendations for Entering in Enclosed Spaces aboard Ships

The CCC Sub-Committee was tasked to review resolution A.1050(27) on *Revised Recommendations for Entering Enclosed Spaces Aboard Ships*. Subsequently, CCC 10 revised the recommendation for adoption by MSC 110 as an MSC resolution. The key changes to the resolution are as follows:

- Highlighted the active involvement of the ISM Company;
- Minor changes and improvements to definitions;
- Removed the prescriptive example of enclosed spaces, but emphasized the need for ship-by-ship risk assessments to designate spaces, which requires involvement of the ISM Company. As part of the risk assessment process, an enclosed space register must be maintained;
- Introduced the concepts of “connected space” and “adjacent space”;
- Emphasized the shipper’s responsibility to provide cargo information and the support by the ISM Company;
- Set a maximum CO₂ limit of 0.5% (5,000 ppm) and devices for testing CO₂ must be used;
- Single-person entry into enclosed spaces is no longer permitted;
- Established compatibility with SOLAS requirements (e.g., regulation III/19) and provided supplemental information to support the SOLAS requirements; and
- Proper training for competent persons (management level officers who can fill in the permit to work) and responsible persons (junior officers with operational level competency).

Incidents involving dangerous goods

Inspection programs for cargo transport units carrying dangerous goods

CCC 10 was informed that, out of the 74,870 CTUs inspected, 8,236 CTUs were found to have deficiencies, which means that 11% of the CTUs inspected had deficiencies.

Unified Interpretations

IGF Code

Side shell distance of fuel piping

Interpretations on the distance of the location of fuel pipes were proposed:

Paragraph 5.7.1 of the Code

5.7.1 Fuel pipes shall not be located less than 800 mm from the ship's side."

Interpretation

The term "fuel pipes", as used in paragraph 5.7.1 of the IGF Code, should be considered to also include fuel tank vent piping and all other fuel gas vent piping. The transverse distance requirement should be made applicable for such piping.

CCC 10 agreed to report the above outcome of the consideration of document CCC 10/10 to MSC 110.

Clarification of application (meaning of low flashpoint fuels)

The following interpretation were proposed:

"The definition of Low-flashpoint fuel in SOLAS II-1/2.29 should mean:

- .1 gaseous fuel, i.e. any material having a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C, that is used as fuel; and
- .2 liquid fuel having a flashpoint lower than otherwise permitted under SOLAS regulation II-2/4.2.1.1."

CCC 10 agreed to recommend MSC 109 to revise SOLAS Chapter II-1 to align with the above proposal.

Gas carrier with separate fuel system

A unified interpretation of SOLAS regulation II-1/56.4 was proposed, concerning the use of low-flashpoint fuel instead of cargo on gas carriers. It sought views on whether to apply the IGF Code to the design and arrangement of fuel storage and supply systems for gas carriers that do not use cargo as fuel.

CCC 10, recalling that the "one code, one ship" principle was decided by MSC 95, referred the matter to MSC 109 for their decision.

Further information

For further information please contact: imo@liscr.com

Annex

Provisional list of draft resolutions, circulars and other output

- Draft the Interim Guidelines for Ships Using Ammonia as Fuel
- Draft amendments to the IGC Code
- Draft amendments to the IMSBC Code (amendment 08-25)
- Draft amendments to MSC.1/Circ.1395/Rev.6 on *the Lists of solid bulk cargoes for which a fixed gas fire-extinguishing system may be exempted or for which a fixed gas fire-extinguishing system is ineffective*
- Draft amendments to MSC.1/Circ.1264 on Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo holds
- Revision to the footnotes of SOLAS regulation VI/4
- Draft amendments to *Recommendations on the safe use of pesticides in ships* (MSC.1/Circ.1358)
- Draft amendments to MSC.1/Circ.1266 on *Document of compliance with the special requirements for ships carrying dangerous goods under the provisions of regulation II-2/19 of the 1974 SOLAS Convention, as amended, and of paragraph 7.17 of the 2000 HSC Code, as amended*
- Consequential amendment to the footnote to SOLAS regulation II-2/19.4
- Draft amendments to resolution A.1050(27) on *Revised Recommendations for Entering Enclosed Spaces Aboard Ships*
- Unified interpretations on
 - Paragraph 5.7.1 of the IGF Code
 - SOLAS II-1/2.29 and amendments