

LOCAL VESSELS ADVISORY COMMITTEE

**Consolidated Amendments of Code of Practice – Safety Standards for
Class I, II, III and IV Vessels**

Introduction of standards for battery powered vessels

Purpose

This document outlines the proposed amendments by the Marine Department (MD) to the Code of Practice for Safety Standards for Class I, II, III, and IV vessels (COP). The aim of these revisions is to establish the safety standards for vessels powered by batteries.

Background

2. To fulfill the objectives of decarbonization, the traditional petroleum-based ship fuels may be substituted with eco-friendly batteries with the ultimate goal of zero emissions.
3. As the existing vessel safety standards were written for ships using conventional fuels, there is a need to introduce new standards to ensure the safety of vessels using batteries.

Proposed Standards

4. To ensure safety of battery powered vessels, MD proposes to adopt a two-tiered approach. While relatively lower risk vessels below 24 meters in length, will need to comply with the relevant applicable ISO Standards¹, higher risk vessels irrespective of length and any vessels above 24 meters in length will need to comply with classification society rules. The proposed amendment for safety standards for battery powered vessels are provided in Annex I.

Way Forward

5. Subject to member's comments and acceptance, the new Chapters of will be gazetted and come into effect on 22 July 2024.

Marine Department
Local Vessels and Examination Division
June 2024

¹ The ISO Standards include Small Craft – Electric Propulsion System (ISO 16315:2016); Small craft — Fire protection (ISO 9094); Technical Specification Small Craft – Lithium-ion batteries (ISO/TS 23625:2021) or their equivalent.

CHAPTER XV

SPECIAL REQUIREMENTS FOR BATTERY POWERED VESSELS

1 Application

- 1.1 This chapter applies to local vessels that use electric power for the propulsion or general electrical loads with an installed battery capacity greater than 600Wh using cells and batteries containing alkaline or other non-acid electrolytes. Such vessels shall comply with the requirements of this chapter in addition to any other applicable requirements of this code of practice.

2 Requirements

- 2.1 Batteries shall be constructed and tested in accordance with the relevant IEC Publications or equivalent where applicable.
- 2.2 Any lithium-ion batteries and battery systems with a capacity greater than 600 Wh installed a local vessel shall comply with the Technical Specification Small Craft – Lithium-ion batteries (ISO/TS 23625:2021) or equivalent.
- 2.3 Any local vessels of 24 meters or above, or any of the vessel type listed below, shall comply with the relevant rules published by an Authorized Organization for Electric Propulsion Systems or equivalent.
- Class I vessels;
 - Dangerous goods carrier;
 - Oil / Noxious liquid substance / Gas carriers;
 - Special purpose vessels;
 - Mobile fishing vessels; and
 - Any Class II vessels that may navigate within river trade limits.
- 2.4 Any local vessels that does not belong to the vessels in paragraph 2.3 shall comply with the following:
- (a) Vessels shall be constructed to the International Standards – Small Craft – Electric Propulsion System (ISO 16315:2016) and Small craft — Fire protection (ISO 9094), or their equivalent.
 - (b) Batteries shall be positioned aft of the collision bulkhead.
 - (c) Boundaries of battery compartment which is part of a vessel's structure or enclosures shall be of equivalent structural integrity and A-60 fire integrity.

- (d) A battery compartment shall be fitted with fire/heat detectors or detection system where suitable.
- (e) A battery compartment with combined stored energy over 50 kWh in lithium ion batteries shall be equipped with a type of fixed fire extinguishing system recommended as suitable for suppressing battery fire by the battery maker of that batteries.