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RISKS ASSOCIATED WITH THE TRANSPORTATION OF SCRAP METAL CARGOES

The carriage of scrap metal poses significant challenges, including risks of fire and explosion, structural damage, corrosion, radiation, and health hazards. The nature of the cargo and potential impurities it may contain can jeopardize both the vessel's safety and the health of the crew. (Pg.3)



MOISTURE TESTING AND TRANSPORT SAFETY IN BULK CARGOES

For the safety of Group A cargoes at risk of liquefaction in bulk cargo transportation, it is crucial to conduct Transportable Moisture Limit (TML) and Moisture Content (MC) tests accurately and timely. The TML test should be conducted no more than 6 months before the loading date, while the MC test should be performed close to the loading date. The risk of changes in the MC value due to environmental factors should always be considered, and tests should be repeated if necessary.(Pg.5)

RADIOACTIVE HAZARD IN SCRAP IMPORTS



Scrap materials used in steel production undergo strict inspections at ports. During these processes, monitoring radiation levels is crucial for protecting both the environment and human health.

Radioactive Scrap Alarm in Turkey

In a recent incident in Turkey, a cargo piece triggered alarms at the port due to radioactive contamination. A secondary inspection was conducted using portable detectors, and the contaminated material was safely isolated within the port area, in coordination with the Turkish Nuclear Regulatory Authority (NDK). Upon investigation, it was discovered that the documentation certifying the absence of radioactivity had not been issued by an authorized entity. As a result, the contaminated scrap piece was ordered to be returned to its origin.

Additional Liabilities on Vessels

Receivers are required to return such cargo to its point of origin. However, in practice, there are instances where the cargo is reloaded onto vessels. Customs and port authorities often prohibit the vessel's departure until the issue is resolved. This situation imposes additional costs and operational challenges for shipowners and operators.

Cargo Identification: Determine whether the cargo is Scrap Metal or self-heating cargo such as Ferrous Metal Borings, classified as Group B under the IMSBC Code.

Impurity Control: During loading, inspect for foreign materials such as lithium batteries or plastics. If hazardous impurities are detected, loading operations must be stopped immediately.

Radiation Testing: Conduct radiation testing, especially for cargoes loaded from specific ports, and obtain a "Radiation-Free Certificate" issued by an authority accredited by the Nuclear Regulatory Authority.

Pre-Loading Survey: Document the condition of cargo holds and deck areas before loading to establish a baseline for potential damage assessments.

Crew Safety: Ensure the crew uses appropriate Personal Protective Equipment (PPE). Entry into cargo spaces should only be conducted by trained personnel following established safety protocols.

Compliance with IMSBC Code: Ensure the cargo is loaded and transported in full compliance with the IMSBC Code, and avoid handling the cargo during precipitation.



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Fire and Explosion Risks:

- **Self-Heating and Combustion:** Metal shavings, especially if contaminated with flammable substances such as water or cutting oil, can self-heat and cause a fire. According to the IMSBC Code, such materials are classified under Group B and carry a risk of self-heating.
- **Hazards from Impurities:** Impurities such as lithium batteries, oil filters, plastics, and other flammable materials may be present within the cargo, increasing the risk of fire. These impurities must be carefully monitored during loading operations and promptly addressed if detected.

Loading and Discharge Damage:

- **Structural Damage:** The irregular shapes and sharp edges of scrap metal can cause damage to vessel structures, including the tank top, pipelines, ladders, hatch coamings and hatch covers during loading and discharge operations. Heavy and bulky pieces may lead to cracks and deformation due to improper handling or inadequate equipment.
- **Equipment Damage:** Scrap metal can cause wear or damage to deck cranes and other equipment used during cargo operations.

Moisture and Oxidation Risks:

- **Rapid Oxidation and Fire Hazards:** Wet or damp scrap metal, especially in the form of shavings, is prone to rapid oxidation, generating heat through an exothermic reaction. This process can lead to spontaneous ignition. The IMSBC Code recommends keeping the cargo dry and avoiding handling during precipitation.
- **Corrosion Risks:** Ferrous metals transported in humid conditions are susceptible to rapid corrosion, reducing the value of the cargo and potentially causing environmental pollution.

Radiation Risks:

- **Presence of Radioactive Materials:** Improperly disposed radioactive materials can mix with scrap metal, posing significant safety hazards during transportation and handling. Cargoes loaded without proper radiation testing may be rejected by port authorities or lead to the detention of the vessel.

Health and Safety Risks:

- **Physical Injuries:** Irregularly shaped and sharp-edged pieces of scrap metal pose risks of cuts and punctures during handling. Heavy metal pieces also present a risk of crushing or falling injuries.
- **Harmful Fumes and Gases:** Residues of paint, plastics, or chemicals within scrap metal can release toxic fumes and gases during transportation and handling, posing respiratory health risks to the crew.

Environmental Risks:

- **Pollution:** Contaminants such as oil and chemical residues within scrap metal can leak into the marine and port environment under improper storage or transport conditions, causing environmental damage.



MARINE POLLUTION PENALTIES TO INCREASE IN TURKEY IN 2025

As part of efforts to combat marine pollution, penalties for violations will be increased by 43.93% in 2025. This adjustment has been determined based on the inflation update rate announced by the Revenue Administration under the Ministry of Treasury and Finance. The revised penalties will come into effect on January 1, 2025.

Scenarios with Heavier Penalties:

- **Discharge of Hazardous Waste:** The penalty tariff is increased tenfold for cases involving the discharge of hazardous waste into the sea.
- **Specially Protected Areas:** Penalties are doubled for pollution incidents occurring within Specially Protected Areas, including the Marmara Sea, Istanbul Strait, and Çanakkale Strait.
- **Repeat Breaches:** Penalties may be doubled or tripled for repeated breaches.

Comparisons between 2024 tariff and 2025 tariff:

<u>Category</u>	<u>Tonnage Range</u>	<u>2024 Penalty (TRY)</u>	<u>2025 Penalty (TRY)</u>
Oil and Petroleum Products	Up to 1.000 GT	3.184,81	~4.587
	1.000-5.000 GT	796,23 per additional GT	~1.145
	Above 5.000 GT	79,56 per additional GT	~114
Dirty Ballast	Up to 1.000 GT	580,25	~835
	1.000-5.000 GT	115,76 per additional GT	~166
	Above 5.000 GT	18,37 per additional GT	~26
Garbage and Sewage Water	Up to 1.000 GT	796,23	~1.146
	1.000-5.000	159,25 per additional GT	~229
	Above 5.000 GT	18,37 per additional GT	~26

*Penalties are doubled for repeated breaches and subsequently increased by 200%.

MOISTURE TESTING AND TRANSPORT SAFETY IN BULK CARGOES: COMPLIANCE WITH THE IMSBC CODE



In bulk cargo transportation, especially for Group A cargoes at risk of liquefaction, it is essential to accurately conduct Transportable Moisture Limit (TML) and Moisture Content (MC) tests to ensure safe transportation. These tests are critical for the safe maritime transport of the cargo and must be conducted in accordance with the IMSBC Code.

The TML test should be conducted no more than 6 months before the loading date. The validity of this test is determined by the test completion date specified on the laboratory certificate. Since TML is dependent on the structural properties of the cargo, it does not change significantly over time; however, it must still be presented to the ship before the test's validity expires. This ensures that the ship's captain can be confident in the safe transport of the cargo.

The MC test, on the other hand, should be conducted close to the loading date. Typically, this test is performed at the loading site with simpler equipment, and the test and sampling dates are close to each other. MC test results can be valid up to 7 days before loading. However, environmental factors such as heavy rain after the test date can affect the MC. If the cargo has been exposed to such conditions, the moisture test should be repeated.

Key Considerations for Safe Loading

- Factors such as rain or snow during loading can affect the MC value. In this case, the ship's captain may request updated test results to verify that the cargo's MC value remains below the TML.
- Since the TML depends on the physical properties of the cargo, it does not change over time. Therefore, test only needs to be valid at the beginning of loading.
- With the possibility of MC changing during loading, continuous monitoring should be performed to ensure it remains below the TML.



In maritime terminology, a “wake” is the trail of water left behind by a moving vessel. This trail indicates the path the vessel has taken and continues for a while after the vessel has passed. The size and intensity of a wake can indicate the vessel's size and speed.

The phrase ‘in its wake’ is used to describe the effects or events that follow a significant incident or action. Much like the trail left behind by a vessel, this phrase emphasizes the changes and impacts that follow an event.

