 <p>Federale Overheidsdienst Mobiliteit en Vervoer <i>la mobilité pour tous</i></p>	<p>Scheepvaartcontrole - Hazmat Natiënkaai 5 8400 Oostende Uw contactpersoon : ing.P. Van Lancker, attaché Tel. :059/561462 - Fax : 059/561474 Gsm : 0477/424204 e-mail : patrick.vanlancker@mobilit.fgov.be</p>
<p>Declaration IMSBC 2013-01-02</p>	

According to section 1.3 and 1.5 of the International Maritime Solid Bulk Cargoes (IMSBC) code, the undersigned, competent authority of the Kingdom of Belgium hereby declares that product

**DIRECT REDUCED IRON (DRI) (C), high moisture content
(By-product fines with high moisture content > 0,3% and <12%)**

may be transported in bulk on seagoing vessels to Belgian ports on the conditions specified hereafter:

1. Company

Diproinduca Canada Ltd and International Materials, Inc.

2. Bulk Cargo Shipping Name

DIRECT REDUCED IRON (DRI) (C), high moisture content

3. Material characteristics

DRI © is a porous, black/grey metallic material generated as a by-product of the manufacturing and handling processes of DRI (A) hot-moulded briquettes and/or DRI (B) lumps, pellets, and cold-moulded briquettes.

Bulk density: 1850 – 3300 kg/m³

Stowage Factor: 0.30 to 0.54 m³/t.

Sizes: under 1 mm not less than 60%; above 6.35 mm not exceeding 30% and negligible amount of particles exceeding 12mm in size.

Moisture Content : 2 – 12%

Approximate Transportable Moisture Limit (TML) : 13.8%

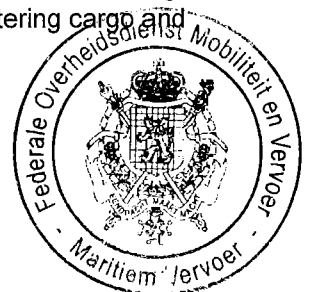
4. Properties

Temporary increase in temperature of about 30°C due to self-heating may be expected after material handling in bulk.

There is a risk of explosion and subsequent fire during transport. This cargo reacts with fresh water or seawater to produce hydrogen. Hydrogen is a flammable gas that can form an explosive mixture when mixed with air in concentrations above 4 per cent by volume. Cargo heating may generate very high temperatures sufficient to cause an explosion, as well as overheating and ignition.

Oxygen in cargo spaces and in enclosed adjacent spaces may be depleted. Flammable gas may also build up in these spaces. All precautions shall be taken when entering cargo and enclosed adjacent spaces.

Cargo may be subject to liquefaction when the TML is exceeded.



5. Stowage and segregation

"Separated from" goods of classes 1 (division 1.4S), 2, 3, 4.1, 4.2, 4.3, 5.1, and class 8 acids in packaged form (see IMDG Code).

"Separated from" solid bulk materials of classes 4.1, 4.2, 4.3 and 5.1

Goods of class 1, other than division 1.4S, shall not be carried in the same ship. Boundaries of compartments where this cargo is carried shall be resistant to fire and passage of liquid.

6. Hold Cleanliness

Before DRI(C) is loaded; holds shall be as dry and clean as reasonably practicable, and free of salts and residues of previous cargoes. Loose dunnage, debris and combustible material of any kind shall be removed.

7. Weather precautions

Any cargo that has been wetted by the weather shall not be loaded into any cargo space or hold unless the cargo has been recertified for moisture content.

Storage in the open air shall be permitted prior to loading. During storage it is recommended that the product shall be piled so as to allow the greatest possible exposure to the atmosphere and thus facilitate its natural ageing. The carrier's nominated technical persons or other representatives shall have reasonable access to stockpiles and loading installations for inspection.

DRI(C) shall be protected at all times from contact with water and shall, prior to loading, during precipitation be stored under cover. DRI(C) shall not be loaded or transferred during periods of precipitation. Unloading during precipitation is allowed if approved by the port authorities.

8. Loading

Prior to shipment, the DRI(C) shall be aged for at least 30 days and a certificate confirming this shall be issued by a competent person recognized by the competent authority of the port of loading.

Prior to loading, the terminal shall ensure that the conveyor belts and all other equipment used for loading this cargo contain no accumulation of water or other substances. Each time cargo operations are commenced or restarted, particularly after rain or washing down, any loading belt shall be operated empty and not over a ship's cargo space.

Prior to loading, an ultrasonic test or leak test or another equivalent method with a suitable instrument shall be conducted to ensure that the vessel's hatch covers are in good condition, leak proof (weather tightness) and free of any defects that may lead to entry of water into the cargo hold during transport. Any defects shall be repaired before loading.

Prior to loading, the shipper shall provide the master with a certificate issued by a competent person recognized by the National Administration of the port of loading stating that the cargo, at the time of loading, is suitable for shipment, that it conforms with the requirements of this Authorization, that the moisture content is less than 12 per cent and that the temperature does not exceed 65°C. This certificate shall state that the cargo meets the loading criteria in respect of ageing and material temperature.

The master of the vessel shall have a written certification issued by a laboratory recognized by the competent authority of the country of loading stating the moisture content and TML of the cargo prior to loading.



DRI(C) shall not be loaded if the product temperature is in excess of 65°C.

Trim in accordance with the relevant provisions required under sections 4 and 5 of the IMSBC Code.

The cargo temperature shall be monitored during loading and recorded in a log detailing the temperature for each lot of cargo loaded, a copy of which shall be provided to the master.

9. Precautions

The cargo shall be kept within the permissible moisture content indicated in this schedule at all times during loading and during transport, although reduction in moisture may be expected during the voyage.

Prior to loading, the temperature of the cargo in the stockpile for loading shall be measured and recorded for three (3) continuous days. Measurements shall be taken 20-30 centimeters below the surface and at 3 meter intervals over the length and width of the stockpile.

Prior to shipment, the cargo shall be aged naturally and a certificate confirming this shall be issued by a competent person recognized by the National Administration of the port of loading. As a consequence the fines shall be prepared for transportation from the moment they are produced or in advance prior to loading.

The shipper or shipper's agent shall provide the master of the vessel information on the safety precautions and emergency procedures associated with the transport of DRI(C).

Where practicable, ballast tanks adjacent to the cargo spaces containing this cargo, other than double-bottom tanks, shall be kept empty. Weather tightness shall be maintained throughout the voyage. Bilge wells of the cargo spaces shall be clean, dry and protected from ingress of the cargo using non-combustible material. The introduction of moisture and accumulation of condensation in the cargo spaces shall be avoided.

DRI(C) shall be loaded in such a manner as to avoid a concentration of fines in localized areas in the cargo.

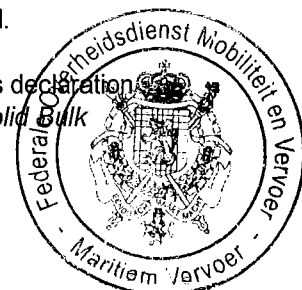
During loading and discharging operations appropriate precautions shall be taken to protect equipment, machinery and accommodation spaces from dust of this cargo. Radar and RDF scanners shall be adequately protected against dust. Persons who may be exposed to the dust of the cargo shall wear protective clothing, goggles, or other equivalent dust eye-protection and dust filter masks, as necessary.

Smoking, burning, cutting, chipping or other source of ignition (hot works) shall not be allowed during loading and unloading or in the proximity to a loaded hold containing DRI(C). "NO SMOKING" signs shall be posted on decks and in areas adjacent to cargo spaces. No naked light shall be permitted in these areas.

Cargo spaces containing this cargo and adjacent spaces may become oxygen-depleted. No person shall enter a loaded cargo space or an enclosed adjacent space unless the space has been ventilated and the atmosphere tested and found to be gas-free and have sufficient oxygen to support life.

After loading, the hatches shall be closed at all times until the DRI(C) is unloaded.

The consignor shall certify that the material conforms with the requirements of this declaration and with the transport requirements for DRI(C) in the *International Maritime Solid Bulk*



Cargoes (IMSBC) Code, 2009 edition, except that provisions pertaining to inerting the cargo hold and the 0.30% moisture content limitation are waived. This waiver is only valid for transports of DRI(C) of the companies mentioned in 1 to Belgian ports. All other transports shall be approved by the Belgian competent authority.

The ship shall not sail until the master and a competent person recognized by the National Administration of the port of loading are satisfied that:

- a) all loaded cargo spaces are correctly closed;
- b) the temperature of the cargo has stabilized at all measuring points and that the temperature does not exceed 65°C; and
- c) on completion of loading, the concentration of hydrogen in the free space of the holds has stabilized and does not exceed 1 per cent by volume (25% of lower explosive limit).

10. Ventilation

Mechanical surface ventilation is required in cargo spaces, and shall be kept available during transport of the cargo in accordance with the results of hydrogen concentration measurements taken inside the cargo spaces, which shall not exceed 1 per cent by volume (25% of lower explosive limit) for this type of cargo.

An explosion-proof mechanical ventilation system is required that can remove any quantity of hydrogen gas that may be generated inside the cargo spaces. Mechanical surface ventilation means a power-assisted system which ventilates only the cargo surface as stipulated in the IMSBC Code. The ventilation system must be capable of operating in any environment, especially the harshest weather conditions, without allowing ingress of water to the cargo spaces. If operation of the ventilation places the ship or cargo at risk, it shall be switched off unless this poses the problem of an explosion or other type of hazard relating to the switching-off of the ventilation. In any case ventilation should be maintained for a reasonable period prior to discharge.

The ventilation ducts shall be located in the upper part of the hold. They shall be capable of restricting ingress of water from outside as much as possible. Gases in the hold shall be extracted rather than blowing in moist air from outside. Use of portable equipment (such as hydraulic ventilators) shall be permitted.

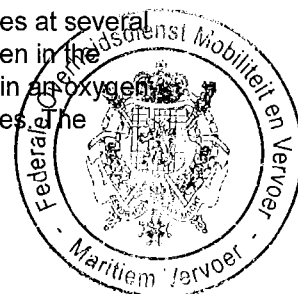
Ventilation equipment shall be capable of maintaining a hydrogen concentration level not more than 5 per cent of the lower explosion limit to prevent accumulation of hydrogen in the hold. Ventilation ducts shall be open or portable ventilators used where available and if weather conditions permit.

11. Carriage

The loading, unloading or transfer operations shall be supervised by a qualified cargo technician person familiar with the safety precautions and emergency procedures associated with handling DRI(C). The loading, unloading or transferring operators shall be trained in the appropriate safety precautions and emergency procedures for handling DRI(C).

During the carriage, a qualified cargo technician shall be on the vessel to monitor the cargo temperatures and gas compositions. Monitoring shall be carried out in the presence of the vessel's representative and the data collected daily shall be given to the master.

The ship shall be provided with the means for reliably measuring the temperatures at several points within the stow and determining the concentrations of hydrogen and oxygen in the cargo space atmosphere on the voyage. The detectors shall be suitable for use in an oxygen depleted atmosphere and of a type certified safe for use in explosive atmospheres.



concentrations of hydrogen and oxygen in the cargo spaces carrying this cargo shall be measured at regular intervals during voyage, and the results of the measurements shall be recorded and kept on board at least till the cargo is unloaded and the holds are clean and free of the cargo.

If the temperature in the cargo space exceeds 65°C or the monitored hydrogen concentration exceeds 1 per cent (> 25% of lower explosive limit) by volume, increased ventilation shall be carried out in accordance with the procedures provided by the shipper in case of emergency. If in doubt, expert advice shall be sought.

Bilge wells shall be checked regularly for the presence of water. If water is found, it shall be removed by pumping or draining the bilge wells. Consideration shall be given to increasing the frequency of cargo monitoring following periods of bad weather.

12. Discharge

Before opening the hatches, the hydrogen concentration in the cargo space shall be measured. If the hydrogen concentration is greater than 1 per cent (> 25% of lower explosive limit) by volume, increased ventilation shall be carried out in conformity with the procedures provided by the shipper or, in case of emergency, the recommendations of the competent authority.

During precipitation, all cargo operations shall be suspended and holds containing cargo shall be closed. Monitoring for hydrogen in those holds containing cargo shall be resumed.

13. Clean-up

Accumulations of dust from this cargo on deck or in proximity to cargo spaces shall be removed as quickly as possible. Contact with seawater shall be avoided. Consideration shall be given to carefully cleaning exposed radio communications equipment to which dust from the cargo might adhere, such as radar, radio aerials, VHF installations, AIS and GPS.

14. Additional transport requirements

All other relevant provisions of the IMSBC code shall be complied with.

All provision of the United States Coast Guard Special Permit 2-12 shall be complied with.

The Port Authority of the port of unloading shall be informed at least 24 hours in advance of the expected time of arrival. The ship may not enter the port or the river Scheldt if the concentration of hydrogen is above 1% by volume, unless authorized by the port authority.

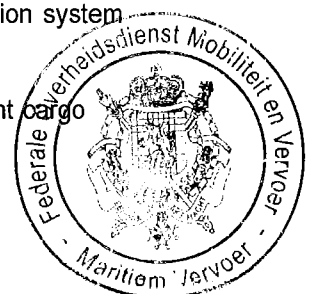
Each bill of lading, shipping paper, or other shipping document issued in connection with the transport of DRI(C) under the terms of this authorization shall bear the notation "Belgian authorization IMSBC 01/13".

This authorization in no way affects the need to obtain any required authorizations from the competent authorities of the port of loading and the flag administration of the cargo vessel.

The consignor or his agent shall provide the master of the vessel a weather routing plan associated with the shipment of DRI(C) to ensure that safe ventilation can be maintained throughout the voyage.

The master of the vessel shall ensure that an inspection of the mechanical ventilation system has been carried out prior to loading to confirm that it is functioning properly.

Precautions shall be taken to prevent the penetration of hydrogen gas into adjacent cargo compartments, voids, bilges, and wells, and behind ceiling boards.



The master of the vessel shall wait at least 24 hours before departing after the vessel has been loaded with DRI(C). During this waiting period the temperature of the cargo shall be monitored to ensure that any self-heating has stabilized prior to departure. If cargo is found to be self-heating uncontrollably during the 24 hour period, the affected cargo hold shall be completely discharged and the cargo from that hold shall not be reloaded.

A copy of this declaration together with the authorization of the competent authority of the port of loading and the authorization of the competent authority of the ship's flag shall be on board the vessel when transporting DRI(C).

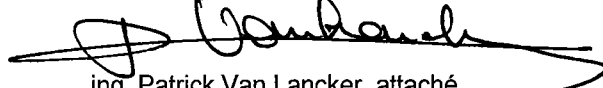
15. Reporting and validity

The representatives of the transport shall send to the Belgian Maritime Inspection, Hazmat – Oostende Bureau - detailed report of any incident or accident during the loading, the carriage and unloading of the vessel.

This administration reserves the right to withdraw this declaration at any time it considers necessary to do so. The declaration ceased to be valid when acting contrary to it.

In any case this declaration will expire on the 31st of December 2017, but can be subject to renewal.

Oostende, the 21st of November 2016


ing. Patrick Van Lancker, attaché

