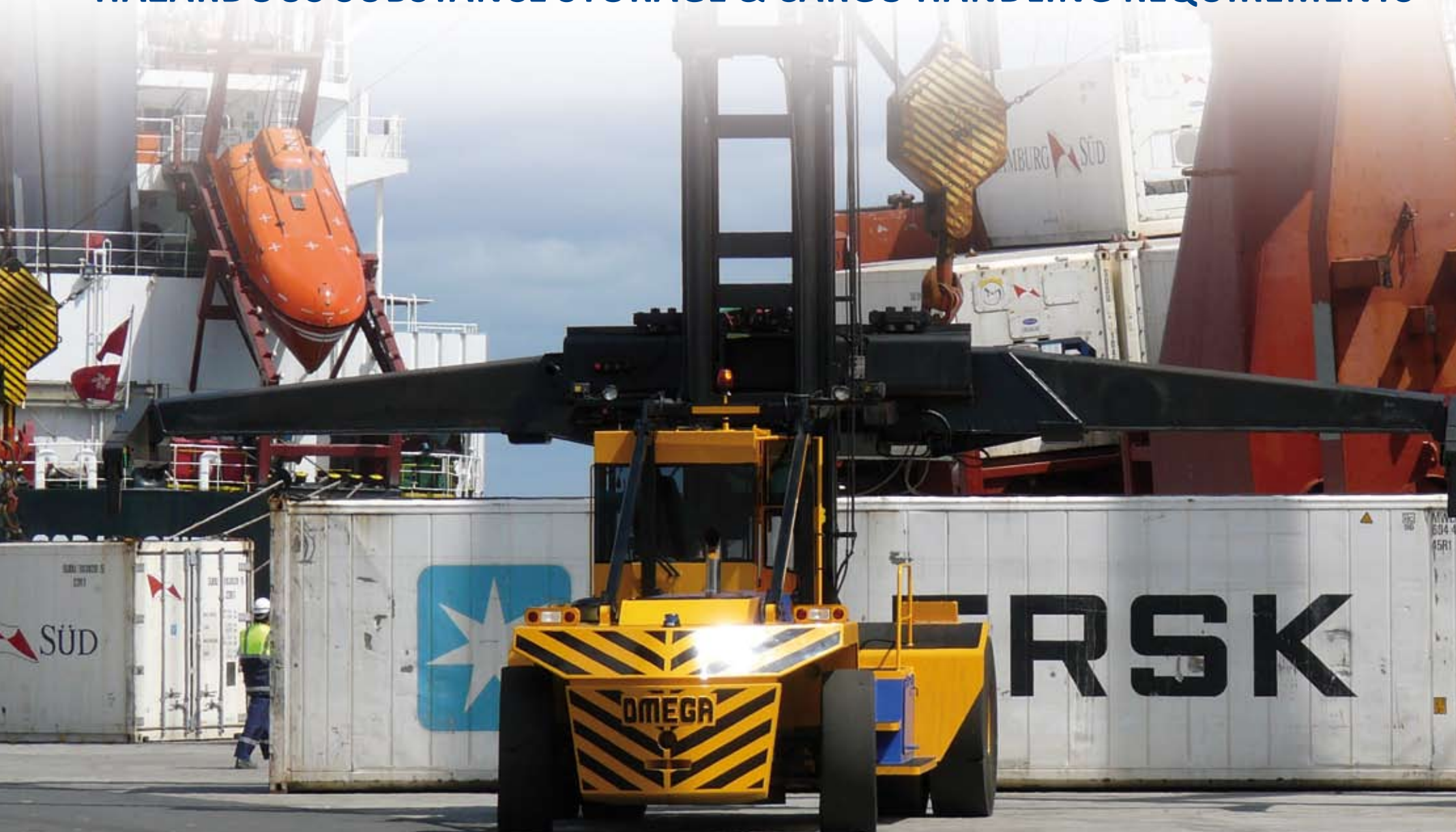




# HAZARDOUS SUBSTANCE STORAGE & CARGO HANDLING REQUIREMENTS



## EXECUTIVE SUMMARY

Hazardous cargoes could present a risk to people, property or the environment if damaged, spilt or ignited. The primary function of a Port is to facilitate the transport of cargo and as such it is necessary to ensure hazardous substances are handled across wharves safely and within both maritime and territorial regulations. The purpose of this document is to provide information on a number of these general minimum requirements.

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## Document Revision History

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## DEFINITIONS & ABBREVIATIONS

### Hazardous Substances -

Hazardous substances and dangerous goods are substances that have one or more of the following intrinsically hazardous properties.

- Explosiveness
- Flammability
- Ability to oxidize (accelerate a fire)
- Human toxicity (acute or chronic)
- Corrosiveness (human tissue or metal)
- Ecotoxicity (with or without bioaccumulation)
- Capacity, on contact with air or water, to develop one or more of the above properties

These and the relevant quantity define the classes of hazard assigned to substances. The IMDG Code classification is practically the same, uses similar terminology and for all practical purposes the N.Z. categories match the international cargo definitions which staff will encounter. The HSNO Act has additional classifications which may regulate storage but which do not regulate transport.

**Explosive Substance** Class 1 - A range of hazardous substance sensitivities which have different explosive properties as described within Hazardous Substances (identification) Regulations 2001. eg 1.1A = mass explosion & sensitive to heat or impact.

**Flammable Gas** Class 2 - A gas or gas mixture or aerosol as defined in the Hazardous Substances (Classification) Regulations 2001 capable of ignition.

**Flammable Liquid** Class 3 - A liquid is a flammable liquid if it gives off a flammable vapour which ignites in a closed cup flash point test at a temperature less than 93 degrees Celsius.

**Flammable Solids** Class 4 - A range of solids which are flammable or self-reactive or desensitised explosive or spontaneous combustion, pyrophoric and self-heating or emits flammable gas on contact with water.

**Oxidising Substances** Class 5 - Are oxidising substance (5.1) or peroxide bond (5.2) which cause or contribute to combustion/reaction.

**Toxic Substance** Class 6 - A hazardous Substance capable of causing ill health in or injury to, human beings.

**Corrosive Substance** Class 8 - A hazardous substance that has either acid or alkali properties.

**Ecotoxic Substance** Class 9 - A hazardous substance capable of causing ill health, injury, or death to any living organism.

### Designated Transfer Zone -

Means a place used (and required to be designated as such under regulation 46 HSNO (Class 1-5 Controls) Regulations, for the movement of a class 1 substance from one type of transport to another where the movement requires handling of packages or containers; but does not include:

- roll-on roll-off operations in which a vehicle or trailer with its load drives or is driven on to or into another means of transport for the duration of a journey; or
- a hazardous substance location; or
- a designated use zone

### Transit Depot -

Means a place where an amount of hazardous substances that is in excess of the relevant quantity specified within the HSNO (classes 1-5 Controls) Regulations, table 5, Schedule 2 is manufactured or located for more than 2 hours for all Class 1 and Tracked Substances and 18 hours for all Class 2-5 substances not triggering Tracking. Excluding vehicles, ships and aircraft while under direct control of their driver, master or pilot.

### Location Test Certificate -

Means a location that has been issued a Test Location Certificate by a Test Certifier after meeting specific standards described with the HSNO Act and Regulations relating to Class 1-5 substances that trigger such a requirement.

**Maritime Rules, Part 24A** - Carriage of Cargoes, Dangerous Goods Part 24A gives effect to Chapter VII of the SOLAS 74 convention and requires the IMDG Code in New Zealand. There are requirements for reporting of spillages and incidents, for Ports to have emergency plans and to exercise them, and for persons handling or transporting Dangerous Goods to be appropriately trained.

**Maritime Rules, Part 130B** - Oil Transfer Site, Marine Oil Spill Contingency Plans (Tier 1 Plan). As the landlord, Northport Ltd will only allow the transfer of hydrocarbons from or to a vessel whilst at their facility, if the operator of that transfer holds a

current Tier I plan, approved by the Harbourmaster (Northland Regional Council). Any operator without this plan will be refused entry to the Port or the operation prohibited from starting.

## **NRC Navigation Safety Bylaw 2011, Explosives Anchorage -**

An explosive anchorage will be designated by the harbourmaster upon request as per Section 4.1 of the NRC Navigation Safety Bylaw 2011.

## **Person in Charge -**

In relation to a place that is a hazardous substance location, a transit depot or a place of work, means a person who is:

- (a) the owner, lessee, sub lessee, occupier, or person in possession of the place, location, or depot or any part of it;
- (b) or any other person who, at the relevant time, is in effective control or possession of the relevant part of the place, location, or depot

## **International Maritime Dangerous Goods (IMDG) Code -**

This Code was developed as a uniform international code for the transport of Dangerous Goods by sea covering such matters as packing, container traffic and stowage with particular reference to the classification, safe stowage and segregation of Dangerous Goods.

All Dangerous Goods cargoes are classified under this code both for import and export. All packaging from Shipping Containers down to individual cartons or bottles should display the internationally recognized diamond-shape labels showing the classification numbers.

Each substance label may display:

- A numbered class (e.g. Class 4) indicating the intrinsic hazard.
- A numbered division (e.g. subclass 4.2) indicating the type of hazard.

## **Northport Ltd use of IMDG Code**

All cargo, which is, or contains Dangerous Goods, is to be received, stored and despatched using appropriate hazard control procedures based on the IMDG classification.

The Port area should be regarded as though it were a vessel and all cargo is to be planned and stowed in terms of the Code. Planners preparing cargo for loading into ships will use the IMDG Code to ensure safe and compliant stowage on the vessel.

## **Resource Management Act (RMA) -**

This major legislation protects the soil, water and air in which Northport Ltd operates. Resource Consents to construct and operate wharves and carry on the business of The Port are subject to environmental protection conditions and continuing safe operating practices detailed in those consents. Breaches of those conditions, or events which release Dangerous Goods into the environment, constitute serious offences under the RMA and can lead to serious penalties or loss of the consent.

## **Transit Depot -**

A transit depot is a permanent place designed to hold hazardous substances (in containers that remain unopened) for a period of up to 3 days, but for periods that are more than:

- 18 hours (for substances that do not require tracking) or
- 2 hours (for substances that are subject to the Tracking Regulations).

## **Northport Limited (NPL) requires the following for all consignments:**

- Minimum of 48 hours notice of arrival of any dangerous goods, or ship carrying the goods
- Copy of DG declaration for every consignment which carries an IMDG classification
- At least a 2 digit DG definition (e.g. 2.1). If only a single digit is provided, the consignment will be treated as the most hazardous of its class
- The quantity, weight and Net Explosive Quantity (NEQ) for each individual consignment.
- Container or breakbulk numbers must be supplied
- Material Safety Data Sheets (MSDS)
- Emergency contact sheet
- Nominated person in charge of consignment local/discharge
- Emergency response plan





## 1.0 Dangerous Goods - Explosives

- 1.1 Northport wharves are treated as a “Transfer Zone” where Class 1 substances are being transferred from one form of transport to another. Whenever Class 1 Dangerous Goods are transferred through Northport the nominated person is deemed to be the “Person in Charge” of the transfer of the substances (nominated by the shipper or agent).
  - 1.1.1 The vessel to or from which the Class 1 Dangerous Goods are being transferred, and the immediately adjacent wharf are deemed to be the Transfer Zone for any particular operation.
  - 1.1.2 The nominated person at the time of any Class 1 Goods transfer is to be a person who has completed a training course and qualified as an “Approved Handler” for Class 1 Dangerous Goods.
  - 1.1.3 Emergency response plans relevant to the Transfer Zone, and the requirements detailed will be in force. The requirements of these emergency plans are to be available during the transfer of Class 1 Dangerous Goods.
- 1.2 All persons not necessary for the transfer of the Class 1 Dangerous Goods and any not under the direct control of the Port User Shift Supervisor are to be outside the Transfer Zone.
- 1.3 NPL and the nominated person require full details of the sensitivity and safe environmental limits of Class 1 Dangerous Goods being transferred.
- 1.4 The nominated person shall ensure that the time taken to complete the operation is minimized and should be less than 4 hours overall if practicable.
- 1.5 In the event of, or any risk of, a thunderstorm near the Transfer Zone, the operation shall cease. Any opened packages shall be sealed within metal containers and all persons shall be withdrawn to a safe distance based on the NEQ of the goods being handled.

- 1.6 The transfer of Class 1 Dangerous Goods from ship to shore or shore to ship cannot be carried out during the hours of darkness unless a Test Certificate has been issued that certifies there are documented procedures for the transfer that meet the requirements for transfer without natural lighting.

## 2.0 Vessels carrying Explosives

- ( Extract from NRC Navigation Safety Bylaw)

- 2.1 The master of any vessel in any harbour or anchorage having on board, or intending to load or unload explosives must hoist on the vessel code Flag B of the International Code of Signals by day and a red light by night.
- 2.2 The Master of any vessel in any harbour or anchorage, or the pilot, must not allow that vessel to approach within 200 metres of any other vessel that is carrying, loading or unloading explosives, except:
  - 2.2.1 With the written permission of the Harbourmaster; or
  - 2.2.2 For the purpose of loading or unloading that other vessel; or
  - 2.2.3 For the purpose of rendering assistance to that other vessel in an emergency.
- 2.3 The Master of any vessel carrying explosives in any harbour or anchorage, or the pilot, must not allow that vessel to approach within 200 metres of any other vessel, except:
  - 2.3.1 With the written permission of the Harbourmaster; or
  - 2.3.2 For the purpose of loading or unloading that other vessel; or
  - 2.2.3 For the purpose of rendering assistance to that other vessel in an emergency.
- 2.4 Nothing in clauses 2.1, 2.2 and 2.3 applies to any vessel which:
  - 2.4.1 Is carrying not more than 27 kilograms of explosives; or
  - 2.4.2 Is carrying no explosives other than explosives of the first division of the sixth (ammunition) class or the third division of the seventh (fire work) class, as defined by the Explosives Act 1957.

## 3.0 Transit Cargo - Class 1 (Explosives)

- 3.1 The maximum quantities and classifications of Class 1 Dangerous Goods which may at any time transit Northport are subject to an agreement between the NRC and the Chief Inspector of Explosives.
  - 3.1.1 Less than 27 kgs NEQ may remain on vessel, or be landed and stored at a defined “safe remote location” within the Northport facility.
  - 3.1.2 Class 1.4S and 1.4G (lower risk explosive goods) may be landed and stored at a defined “safe remote location” within the Northport facility.

## 4.0 Net Explosive Quantity (NEQ) Limits

- 4.1 The NEQs are determined, using the requirement to ensure blast overpressures, heat radiation and hazardous fragment fallout in the event of an unintended initiation does not cause harm to persons or damage to properties within a designated area.
- 4.2 Maximum permissible quantities of Class 1 explosives have been used to identify the various NEQ for Hazardous Divisions that can be transferred or handled at each designated Northport berth which is permitted, in terms of the public safeguarding distance to handle Class 1 cargoes.
- 4.3 Permissible Class 1 explosive quantities that can be handled over the port are;
  - 4.3.1 Based on 24Kpa not exceeding NPL boundary is 165,000kgs at 387m mark.
- 4.4 Table one gives examples of cargo load discharge points along Northports main berth in relation to maximum permissible NEQ quantities.
- 4.5 Careful berth planning must be undertaken to prevent any avoidable disruptions to the ports operations caused by a vessel carrying, loading/discharging dangerous goods cargo.  
A ship cannot load or discharge cargo if the blast zone from the DG cargo another vessel is carrying, loading/discharging overlaps over that vessel.

- 4.6 The maximum permissible quantities and the explosion risk zone table must be used to add in the berthing calculation.

**Table 1: Maximum Permissible DG Quantities for Berth Mark (metres)**

Berth Handling Area	Public Safeguard Distance	Qty DG Class 1.1 Containers	Qty DG Class 1.1 Breakbulk	Qty DG Class 1.2	Qty DG Class 1.3	Qty DG Class 1.4
387m	395m	165,000 kg	19,000 kg	70,000 kg	200,000 kg+	200,000 kgs +
375-399m	383m	150,000 kg	17,275 kg	58,000 kg	200,000 kg+	200,000 kgs +
327-447m	335m	100,000 kg	11,500 kg	28,000 kg	200,000 kg+	200,000 kgs +
296-478m	304m	75,000 kg	8,500 kg	16,000 kg	200,000 kg+	200,000 kgs +
258-516m	266m	50,000 kg	5,700 kgs	7,650 kgs	200,000 kg+	200,000 kgs +
203-570m	211m	25,000 kg	2,850kg	2,125 kgs	200,000 kg+	200,000 kgs +
188-570m	196m	20,000 kg	2,300 kgs	1,400 kgs	200,000 kg+	200,000 kgs +
179-570m	187m	17,500 kg	2,000 kgs	1,100 kgs	180,000 kgs	200,000 kgs +
170-570m	178m	15,000 kg	1,740 kgs	800 kgs	171,400 kgs	200,000 kgs +
159-570m	167m	12,500 kg	1,400 kgs	580 kgs	140,000 kgs	200,000 kgs +
148-570m	156m	10,000 kg	1,160 kgs	400 kgs	100,000 kgs	200,000 kgs +
133-570m	141m	7,500 kgs	850 kgs	250 kgs	85,000 kgs	200,000 kgs +
127-570m	135m	6,500 kgs	700 kgs	180 kgs	75,000 kgs	200,000 kgs +
114-570m	122m	1000 kgs	50 kgs	100 kgs	55,000 kgs	200,000 kgs +
82-570m	90m	1000 kgs	50 kgs	19 kgs	22,000 kgs	200,000 kgs +

TABLE 2 gives details of the NEQ and the minimum public safe guard distances.

This table is used to aid detailed berth planning (if not displayed on table one) and planning public safe guard zones around a work area and transiting cargo.

Table 2 - Explosive Transfer Zone

Net Explosive Quantity (kg)	HD 1.1		HD 1.2	HD 1.3	HD 1.4
	Containerised Public Safeguard Distance (m)	Break Bulk Public Safeguard Distance (m)	Public Safeguard Distance (m)	Public Safeguard Distance (m)	Public Safeguard Distance (m)
5	60	90	71	0	25
10	60	90	80	0	25
15	60	90	86	0	25
20	60	90	91	0	25
25	60	90	95	0	25
30	60	90	98	0	25
40	60	90	103	0	25
50	60	90	107	0	25
60	90	135	111	0	25
70	90	135	114	0	25
80	90	135	117	0	25
90	90	135	120	0	25
100	90	135	122	0	25
200	90	135	138	60	25
300	90	135	148	60	25
400	90	135	156	60	25
500	90	135	163	60	25
600	90	135	168	60	25
700	90	135	173	60	25
800	90	138	177	60	25
900	90	143	181	60	25
1,000	90	148	184	60	25
1,200	135	158	190	60	25
1,400	135	166	196	60	25
1,600	135	174	200	60	25
1,800	135	181	205	60	25
2,000	135	187	209	60	25
2,500	135	201	217	60	25
3,000	135	214	224	60	25
3,500	135	225	231	60	25
4,000	135	235	236	60	25
4,500	135	245	241	60	25
5,000	135	254	246	60	25
5,500	135	262	250	60	25
6,000	135	269	254	60	25
6,500	135	277	258	60	25
7,000	138	284	261	62	25
7,500	141	290	265	63	25

8,000	144	296	268	64	25
8,500	147	303	271	66	25
9,000	150	308	273	67	25
9,500	153	314	276	68	25
10,000	156	319	279	69	25
11,000	161	330	283	72	25
12,000	165	339	288	74	25
13,000	170	348	292	76	25
14,000	174	357	296	78	25
15,000	178	365	300	79	25
16,000	182	373	303	81	25
17,000	186	381	307	83	25
18,000	189	388	310	84	25
19,000	193	395	313	86	25
20,000	196	402	316	87	25
22,000	202	415	321	90	25
24,000	208	427	326	93	25
26,000	214	439	331	95	25
28,000	219	450	335	98	25
30,000	224	460	339	100	25
32,000	229	470	343	102	25
34,000	234	480	347	104	25
36,000	238	489	351	106	25
38,000	243	498	354	108	25
40,000	247	507	357	110	25
42,000	251	515	361	112	25
44,000	255	523	364	113	25
46,000	258	531	367	115	25
48,000	262	538	369	117	25
50,000	266	546	372	118	25
55,000	274	563	379	122	25
60,000	282	580	385	126	25
65,000	290	596	390	129	25
70,000	297	610	395	132	25
75,000	304	625	400	135	25
80,000	311	638	405	138	25
85,000	317	651	409	141	25
90,000	323	664	414	144	25
95,000	329	676	418	147	25
100,000	335	687	421	149	25
120,000	356	730	436	158	25
140,000	374	769	448	167	25
160,000	391	804	459	174	25
180,000	407	836	468	181	25
200,000	422	866	477	188	25

## 5.0 Designated Transfer Zone (DTZ)

- 5.1 When explosives, in excess of the quantities shown in Table 1 are handled from one means of transport to another, a Designated Transfer Zone must be established. The DTZ must contain all forms of transport involved in the transfer.
- 5.2 Quantities of Class 1 substances that activate requirements for a Test Certificate at a Hazardous Substance Location, for a Designated Use Zone, for a Designated Transfer Zone and for Notification of Transport are as follows.

**Table 3: Designated Transfer Zones**

Hazard Classification	Quantities
1.1B, 1.2B and 1.4B	5 kg (NEQ)
1.1 (other than 1.1B or 1.1C), 1.2 and 1.5	50 kg (NEQ)
1.1C and 1.3 (other than 1.3G)	100 kg (NEQ)
1.3G and 1.4 (other than 1.4S or 1.4B)	200 kg (NEQ)
1.4S	1000 kg (NEQ)
Fireworks in classification 1.3G, 1.4G and 1.4S that are controlled under the Hazardous Substances (fireworks) Regulations 2001	10,000 kg (gross weight)
Safety ammunition including pre-primed cartridges and primers of Class 1.4S	25,000 kg (gross weight)

- 5.3 The radius of the DTZ must be the public safeguarding distance shown in table 2 or greater for the total quantity of explosives present in the zone using the laid out explosive classification mixing rules.
- 5.4 Only persons necessary for the transfer and handling of the explosives shipments are allowed inside this area.
- 5.5 Northport is not currently a DTZ for Class 1 explosives. Therefore these must be DMV and below 165,000kgs NEQ.

- 5.6 The Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001 at Part 3, section 11, defines a DTZ but notes that a DTZ does not include roll-on roll-off operations in which a vehicle or trailer with its load drives or is driven on to or into another means of transport for the duration of a journey.

## 6.0 Mixing Rules

When explosives of different Hazardous Classifications (HC) are present, the required public safeguarding distances are determined as follows, unless it has been determined by explosive trials that explosives of different classes would not contribute to the effects of an explosive event:

- a) HC 1.5 is treated as HC 1.1 and HC 1.6 is treated as HC 1.2.
- b) The NEQ of explosive from HC 1.4 is not added to other HCs as HC 1.4 does not contribute significantly to explosive events.
- c) When explosives of HC 1.1 and 1.2 are present, the total aggregate NEQ is treated as HC 1.1.
- d) When explosives of HC 1.1 and 1.3 are present, the total aggregate NEQ is treated as HC 1.1.
- e) When explosives of HC 1.2 and 1.3 are present, the total aggregate NEQ is treated as HC 1.2.
- f) When explosives of HC 1.1, 1.2 and 1.3 are present, the total aggregate NEQ is treated as HC 1.1.

### Class 1.3C Propellants

All UN 0160/0161 powder, smokeless, Class 1.3C, in quantities greater than 500 kg are classified as 1.1C for purposes of transportation and transfer.





## 7.0 Class 2 (Compressed Gas)

- 6.1 Class 2 gases and cylinders of gas of any class are to be stored with adequate ventilation and protection from the environment.
- 6.2 An area is required to be designated for the storage of any Class 2 Dangerous Goods. It is the responsible Port Users duty to ensure any Test Certification requirements under the HSNO Act are met at all times when these cargo/substances are on site.
- 6.3 The storage or cargo handling area is to be clean and tidy, at least 3 metres away from a building or other dangerous goods, and with clear access in the event of an emergency.
- 6.4 Gas cylinders, full or empty, are to be stored inside a secure cage. No cylinder is to be freestanding or unprotected.
- 6.5 Cylinders are only to be positioned only in areas that are safe from accidental damage, from heavy traffic and cargo movement.



## 8.0 Classes 3, 4 and 5 including Discharge, Land & Restow (DLR)

- 7.1 Where practicable, temporary storage of these Dangerous Goods is to be in closed general shipping containers with the following qualifications:-
  - 7.1.1 A separate container to be used for any Class 3, Class 4.1, Class 4.2, Class 4.3 and Class 5.1.
  - 7.1.2 Containers of Class 3 and Class 5.1 must be at least 1 container space apart from each other.
  - 7.1.3 No containers with any Dangerous Goods to be closer than 10 metres to any building used as an office or amenity, or to any boundary fence line.
  - 7.1.4 No smoking or naked lights permitted within 15 metres of the material being stored and signs must be placed to this effect.
  - 7.1.5 Containers in use for Dangerous Goods to be identified with appropriate placard.
  - 7.1.6 In the event that storage of Dangerous Goods should prove impracticable (e.g. due to volume or other operational difficulties) then an isolated area should be designated for temporary outside stowage. This area to be at least 10 meters clear of all buildings, all other cargo operations and storage, and at least 10 meters clear of any other stored dangerous goods.
- 7.2 The storage precautions set out above for "DLR" cargo do not remove the obligation from the Port User Supervisor to make all reasonable efforts to ensure the cargo is restowed on the day of discharge.

- 7.3 The 72 hour storage permission for “DLR” cargo is a MAXIMUM and is to be applied only if and when efforts fail and three day storage cannot be avoided.



## 9.0 Class 5 (Oxidising Agents)

- 8.1 Ammonium Nitrate when mixed with fuel oils has the capacity to be used as an explosive. For transport purposes when any Ammonium Nitrate is transported in consignment with Class 1 explosives the total aggregate (ie explosive plus ammonium nitrate) must be treated as Class 1 explosives.
- 8.1.1 Ammonium Nitrate moving without Class 1 Explosive present however is treated as Class 5.1 Oxidising substance.
- 8.1.2 All Ammonium Nitrate handling for discharge at wharves should be treated as DMV (Direct to Motor Vehicle).
- 8.1.3 Class 5.1 quantity limits are:
- 8.1.3.1 Break bulk limits
- Steel drums 25 tonnes
  - Bags on pallets 25 tonnes
- 8.1.3.2 Container cargo limits
- 400 tonnes
- 8.2 Transit containers of Ammonium Nitrate are to be stowed on a hatch of the vessel so that no other cargo is worked immediately adjacent to, or lifted over the Ammonium Nitrate, (other than a portion of the total consignment which may be discharged at Northport).
- 8.3 At all times the lashings are to remain on the containers so that doors are secure.
- 8.4 The vessel must maintain its engines at Stand-by whenever the relevant Dangerous Goods remain on board.



Cargo Handling

## 10.0 Class 7 (Radioactive Material)

### Direct to Motor Vehicle - DMV

For Import and Export, Class 7 Dangerous Goods need to be removed from Northport’s site immediately and must be Direct to Motor Vehicle (DMV).

The Ministry of Health’s Office of Radiation Safety administers the Radiation Protection Act 1965 and the Radiation Protection Regulations 1982 on behalf of the NZ Government and is responsible for classification, storage, transport and packaging approval for Class 7 (radioactive material) . For information on the transport of Radioactive materials contact the Ministry of Health.

Website: <http://www.health.govt.nz/our-work/radiation-safety>

Email: [orsenquiries@moh.govt.nz](mailto:orsenquiries@moh.govt.nz)

Phone (03) 9742357

Emergency Contact 021393632

[http://www-pub.iaea.org/MTCD/publications/PDF/Pub1570\\_web.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/Pub1570_web.pdf)



## 11.0 Direct to Motor Vehicle (Or Vessel) – DMV

- 10.1 Class 1 cargo (except 1.4S and 1.4G) for Import is to be the first cargo off the vessel, before any other cargo is worked.
- 10.2 The cargo is to be placed by the original unloading crane direct to motor vehicle which is then to depart the wharf area immediately.
- 10.3 Class 1 cargo for Export is to be the last cargo onto the vessel before its departure, with no other cargo being worked at the time on that ship, and is to be loaded by crane direct from motor vehicle to stowage position.
  - 10.3.1 When using a ship crane it is permissible to land the container onto the wharf beneath, in order to fit or remove spreaders and use mobile plant to/from the truck.
- 10.4 The transfer of Class 1 Explosives from ship to shore or shore to ship cannot be carried out during the hours of darkness unless a Test Certificate has been issued that certifies there are documented procedures for the transfer that meet the requirements for transfer without natural lighting.
- 10.5 The following Classes of Dangerous Goods need to be actively managed so that they are removed from the Port within 24 hrs of their arrival.
  - 10.5.1 Class 1, 1.4G and 1.4S fireworks and safety ammunition
  - 10.5.2 Class 2.1.1A compressed or liquefied flammable gas e.g LPG
  - 10.5.3 Class 5.1.1A oxidising agent high hazard e.g. Ammonium Nitrate
  - 10.5.4 Class 7 radioactive substances

## 12.0 All other Dangerous Goods Cargo – DLR

- 11.1 The objective is to minimise hazard levels on wharves.
- 11.2 Dangerous Goods with this Receipt and Despatch classification should be exchanged within a maximum of 72 hours of the vessels arrival or departure respectively.

- 11.3 All parties involved should work to either load the goods to the vessel, or arrange transport to remove the goods as quickly as possible.
- 11.4 The goods may be landed and stored in wharf areas temporarily within the total 72 hour time frame. The only exception to this requirement is when MPI or Customs are exercising their powers in regard to a shipment.

## 13.0 Determining DMV or DLR

- 12.1 Receipt & Dispatch (DMV) for all Cargos of:
  - Class 1 Explosives (First Off - Last On)
  - Class 2 Flammable Gases – LPG and Hydrogen. Any size of container.
  - Class 4.2 Substances liable to spontaneous combustion
  - Class 5.1 Ammonium Nitrate  
Ammonium Nitrate Fertiliser  
All Chlorates, All Chlorites  
Consignments greater than 1000kg of any other class 5.1 goods
  - Class 5.2 Organic Peroxides
  - Class 7 Radioactive substances
- 12.2 Receipt & Dispatch (DMV) for Packing Group 1 for Cargos of greater than 1000 kg of Class 3, 4, 6 and 8 Dangerous Goods
- 12.3 DLR hand is permitted for all classes other than above and if less than 1000 kg

## 14.0 Segregation of Hazardous Containers for Stowage

- 13.1 The IMDG Code rules are to be applied to the stowage of Dangerous Goods containers aboard vessels.
- 13.2 Segregation of cargo within the Port will also be according to the recommendations of the IMO IMDG Code, using Table 4. Containers may be over-stowed if the segregation code in the chart is X.
- 13.3 Class 2, 3 and 4 over-stowing is prohibited. (Note that the same Class may be stacked on itself).

**TABLE 4: IMO IMDG CODE: DANGEROUS GOODS SEGREGATION**

SEGREGATION SHOULD ALSO TAKE ACCOUNT OF A SINGLE SUSIDIARY RISK LABEL

Class	1.1																
	1.2																
	1.5	1.3	1.4	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7	8	9
Explosives 1.1,1.2,1.5	•	•	•	4	2	2	4	4	4	4	4	4	2	4	2	4	X
Explosives 1.3	•	•	•	4	2	2	4	3	3	4	4	4	2	4	2	2	X
Explosives 1.4	•	•	•	2	1	1	2	2	2	2	2	2	X	4	2	2	X
Flammable gases 2.1	4	4	2	X	X	X	2	1	2	X	2	2	X	4	2	1	X
Non-toxic, non-flammable gases 2.2	2	2	1	X	X	X	1	X	1	X	X	1	X	2	1	X	X
Poisonous gases 2.3	2	2	1	X	X	X	2	X	2	X	X	2	X	2	1	X	X
Flammable liquids 3	4	4	2	2	1	2	X	X	2	1	2	2	X	3	2	X	X
Flammable solids 4.1	4	3	2	1	X	X	X	X	1	X	1	2	X	3	2	1	X
Spontaneously combustible substances 4.2	4	3	2	2	1	2	2	1	X	1	2	2	1	3	2	1	X
Substances which are dangerous when wet 4.3	4	4	2	X	X	X	1	X	1	X	2	2	X	2	2	1	X
Oxidising substances 5.1	4	4	2	2	X	X	2	1	2	2	X	2	1	3	1	2	X
Organic peroxides 5.2	4	4	2	2	1	2	2	2	2	2	2	X	1	3	2	2	X
Poisons 6.1	2	2	X	X	X	X	X	X	1	X	1	1	X	1	X	X	X
Infectious substances 6.2	4	4	4	4	2	2	3	3	3	2	3	3	1	X	3	3	X
Radioactive material 7	2	2	2	2	1	1	2	2	2	2	1	2	X	3	X	2	X
Corrosives 8	4	2	2	1	X	X	X	1	1	1	2	2	X	3	2	X	X
Miscellaneous dangerous substances and articles 9	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Numbers and symbols in table

Number of containers separation

- 1 “Away from”
- 2 “Separated from”
- 3 “Separated by a complete compartment or hold from”
- 4 “Separated longitudinally by an intervening complete compartment or hold from”
- x Nil segregation unless specifically defined by DG declaration

\* Refer to EPA Advisor - Explosives & DG.

Segregation Requirement	Vertical	Horizontal
1 - Away from	Prohibited	Fore & Aft - one container space Athwartships - one container space
2 - Separate from	Prohibited	Fore & Aft - one container space Athwartships - two container spaces
3 - Separate by a complete compartment or hold	Prohibited	Fore & Aft - two container spaces Athwartships - three container spaces
4 - Separate longitudinally by an intervening compartment	Prohibited	Fore & Aft - minimum 24 metres Athwartships - minimum 24 metres



## 15.0 Hazardous Substance Classifications

		Dangerous Goods Classes and Divisions									
<b>1.1, 1.2, 1.3</b>	EXPLOSIVES		<b>2.3</b>	TOXIC GASES		<b>5.2</b>	New Label, ORGANIC PEROXIDES		<b>7 Cont.</b>	FISSILE MATERIAL	
<b>1.4</b>	Substances and articles which present no particular hazard		<b>3</b>	FLAMMABLE LIQUIDS		<b>5.2</b>	Old Label (not permissible after 1 January 2011)		<b>8</b>	CORROSIVE SUBSTANCES	
<b>1.5</b>	Very insensitive substances which have a mass explosion hazard		<b>4.1</b>	FLAMMABLE SOLIDS		<b>6.1</b>	TOXIC SUBSTANCES		<b>9</b>	MISCELLANEOUS DANGEROUS SUBSTANCES & ARTICLES	
<b>1.6</b>	Extremely insensitive articles which do not have a mass explosion hazard		<b>4.2</b>	SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION		<b>6.2</b>	INFECTIOUS SUBSTANCES		MIXED CLASSES (for road or rail transport or for storage in Australia)		
<b>2.1</b>	FLAMMABLE GASES		<b>4.3</b>	SUBSTANCES WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES		<b>7</b>	RADIOACTIVE MATERIAL (Category 1)		ELEVATED TEMPERATURE SUBSTANCES		
<b>2.2</b>	NON-FLAMMABLE NON TOXIC GASES		<b>5.1</b>	OXIDIZING SUBSTANCES		<b>7</b>	RADIOACTIVE MATERIAL (Category II or III)		ENVIRONMENT HAZARDOUS SUBSTANCES		