



## Chapter 44 – Waste Shipments in Freight Containers

A container operator may face the following perils associated with the carriage of waste:

- Structural damage to the freight container due to improper stowage practices at the loadout point
- tainting of the inside of the container due to the waste having odorous properties
- imbalanced load resulting in the vehicle rolling over during road transportation
- rejection at the discharge port due to incorrect and/or incomplete documentation
- rejection at the load and/or discharge ports due to 'green waste' being contaminated with no possibility of its recovery in an environmentally sound manner
- risk of non-payment of storage charges at the load and/or discharge ports because the shipper/receiver fails to take timely and appropriate measures to mitigate the problems that arise following one or other of the above incidents
- the shipper/receiver abandoning their waste and the container operator being left to arrange disposal and/or return to the point of origin with the associated costs.

With the significant amount of waste now shipped in freight containers on some trades, the potential for problems can be high. For example, a ship loading in the UK for China may have up to 65% of its containers carrying various types of recyclable waste.

A major difficulty facing a container operator is that their client, the booking party, may not be the originator of the waste. The booking party will more often than not be a consolidator or NVOCC (non-vessel operating common carrier) and will themselves be dependent upon a third party for the quality and nature of the waste being supplied to them. Therefore, while a container operator may have a good relationship with their booking party, if that party then has a new supplier, problems may be experienced. Also, problems can be masked when, say, good bales of waste are stowed in the doorway of a container concealing poor quality/contaminated bales behind.

## 44.1 International Waste Disposal Legislation

In the late 1980s, a tightening of environmental regulations in industrialised countries resulted in a significant increase in the cost for disposal of hazardous waste, leading to unscrupulous practices such as shipping toxic waste to developing countries.

The Basel Convention, negotiated under the authority of the United Nations Environment Programme, was adopted in 1989 and entered into force in 1992. The Convention was originally designed to address the uncontrolled movement and dumping of hazardous wastes, including incidents of illegal dumping in developing nations by developed world industries.

Transboundary movements of waste have increased significantly over the last decades, primarily due to the international trade for recycling purposes.

The Convention has 176 member countries (parties) and regulates transboundary movement of hazardous and other wastes by applying the 'prior informed consent' procedure (shipments made without consent are illegal). Written consent must be obtained from the States of export, import and transit. The Convention also obliges parties to ensure that hazardous and other wastes are managed and disposed of in an environmentally sound manner. Parties are expected to minimise the quantities that are moved across borders, to treat and dispose of waste as close as possible to their place of generation and to minimise the generation of waste at source. Article 8 of the Convention requires:

*“When a transboundary movement of hazardous wastes, or other wastes to which the consent of the States concerned has been given, subject to the provisions of this Convention, cannot be completed in accordance with the terms of the contract, the State of export shall ensure that the wastes in question are taken back into the State of export, by the exporter, if alternative arrangements cannot be made for their disposal in an environmentally sound manner ...”*

The Convention currently addresses 27 specific categories of waste and 18 waste streams. Annex I identifies the categories of waste to be controlled. Annex II identifies categories of waste requiring special consideration. Annex III provides a list of hazardous characteristics. Annex VIII, otherwise known as List A, identifies waste

characterised as hazardous under Article 1, paragraph 1 (a) of the Convention. Annex IX, otherwise known as List B, identifies wastes not covered by Article 1, paragraph 1 (a) unless they contain Annex I material to an extent causing them to exhibit an Annex III characteristic.

Annex IX (List B) includes paper, paperboard and paper product wastes, provided they are not mixed with hazardous wastes, and covers:

- Unbleached paper or paperboard or corrugated paper or paperboard
- other paper or paperboard, made mainly of bleached chemical pulp, not coloured in the mass
- paper or paperboard made mainly of mechanical pulp (for example, newspaper, journals and similar printed matter)
- other, including but not limited to, laminated paperboard and unsorted scrap.

Among several other categories, Annex IX (List B) also details plastic or mixed plastic materials, provided they are not mixed with other wastes and are prepared to a specification, and electrical and electronic assemblies that are metals or alloys.

Further information on waste categories, waste containers and packaging, and the provisions of the Basel Convention, is available on the Cargo Incident Notification System (CINS) website at [www.cinsnet.com](http://www.cinsnet.com), particularly in their *Awareness Paper for the Carriage of Waste in Containers* published in 2018 (Reference 85).

#### 44.1.1 Illegal Traffic Under the Basel Convention

Statistics compiled by the Secretariat of the Basel Convention suggest that millions of tonnes of hazardous waste are shipped internationally each year.

For the purpose of the Convention, illegal traffic is deemed to be:

- *“Without notification pursuant to the provisions of this Convention to all States concerned; or*
- *without the consent pursuant to the provisions of this Convention of a State concerned; or*
- *with consent obtained from States concerned through falsification, misrepresentation or fraud; or*
- *that [which] does not conform in a material way with the documents; or*
- *that [which] results in deliberate disposal (eg dumping) of hazardous wastes or other wastes in contravention of this Convention and of general principles of international law”.*

While many countries receive hazardous waste as a welcome source of business, others receive shipments for which there is no agreement and have difficulty in dealing with it properly.

Examples of ‘illegal trafficking’ incidents involving shipments in freight containers include:

- 60 freight containers containing 1,600 T of waste were seized by the Dutch port authorities. The waste was declared as recovered paper, on its way to China from

the UK. However, it was found to contain bales of compacted household waste, food packaging and residues, plastic bags, waste wood and textiles. The waste was first transported to Dutch ports by lorry and ferry, where the bales were then transferred into the freight containers

- 95 containers of household rubbish were seized and the exporter involved was fined US\$110,000
- a shipment of waste destined for India from the UK was declared to the customs authorities as containing paper. However, when opened by enforcement agents, it became clear, not only from the pervasive smell, that there was a mixture of wastes inside. As well as paper, there were also plastics, wood, metals and textiles, contaminated by food wastes. An attempt by the exporters to save fees payable under the correct procedure landed them with a fine of 10 times as much



Figure 44.1: Compacted and tainted soft plastics.

- 89 containers were exported from England to Brazil with the cargo declared as 'plastics for recycling'. However, upon investigation, the Brazilian authorities found the containers contained plastics, tin, paper, batteries, medical packaging and soiled nappies. The Brazilian government lodged an official complaint with the Basel Secretariat, leading to one of the UK Environment Agency's largest investigations, the return of all 89 containers to England and the prosecution of three companies and five individuals.

The import of electronic waste into mainline China is illegal, but it is alleged that legislation in Hong Kong provides loopholes allowing 'e-waste' to enter the country and make its way to scrap yards in China. The loopholes are said to include:

- No clear definition for 'reuse', 'reprocessing', 'recycling' and 'recovery operations'
- loose definition of the term 'contamination'

- lack of control of some types of electronic waste. While attention is given to old batteries and cathode ray tubes, printed circuit boards are given less attention.

Only about 50% of a computer can be recycled, comprising on average 32% ferrous metal, 23% plastic, 18% non-ferrous metal (lead, cadmium, antimony, beryllium and mercury), 15% glass and 12% electronic boards (including gold, palladium, silver and platinum). The toxicity of the waste is mostly due to the lead, mercury and cadmium. The non-recyclable components of a single computer may contain almost 2 kg of lead. Much of the plastic used contains flame-retardant materials, which makes it difficult to recycle.

## 44.2 Regional Information

### 44.2.1 Hong Kong

Regulatory control over the import and export of waste in Hong Kong comes under the Waste Disposal Ordinance (WDO), which is enforced by the Environmental Protection Department (EPD). The WDO provides for enhanced control on movements of wastes into and out of Hong Kong through a permit system, which corresponds with the Basel Convention.

Under the WDO, any import and export of prescribed hazardous, non-recyclable and contaminated waste for whatever purpose, and import and export of other waste for a purpose other than recycling, must be authorised by the EPD (Hong Kong Special Administrative Region) through a permit. A person who conducts controlled waste import/export activities without a valid permit, or disposes of any imported waste listed in the Sixth Schedule of the WDO, for which an authorisation is required, commits an offence that could be subject to a fine or prison term.

Waste movements between Hong Kong and mainland China are subject to the same control.

'Green waste' is commonly used to describe waste that can be readily recycled and is free from contamination. For the purposes of waste import and export, waste is considered to be contaminated if it is tainted by a substance to an extent that:

- Significantly increases the risk to human health, property or the environment associated with the waste
- prevents the reprocessing, recycling, recovery or reuse of the waste in an environmentally sound manner.

The following procedure is used to decide whether a permit is required to import/export waste into/from Hong Kong:

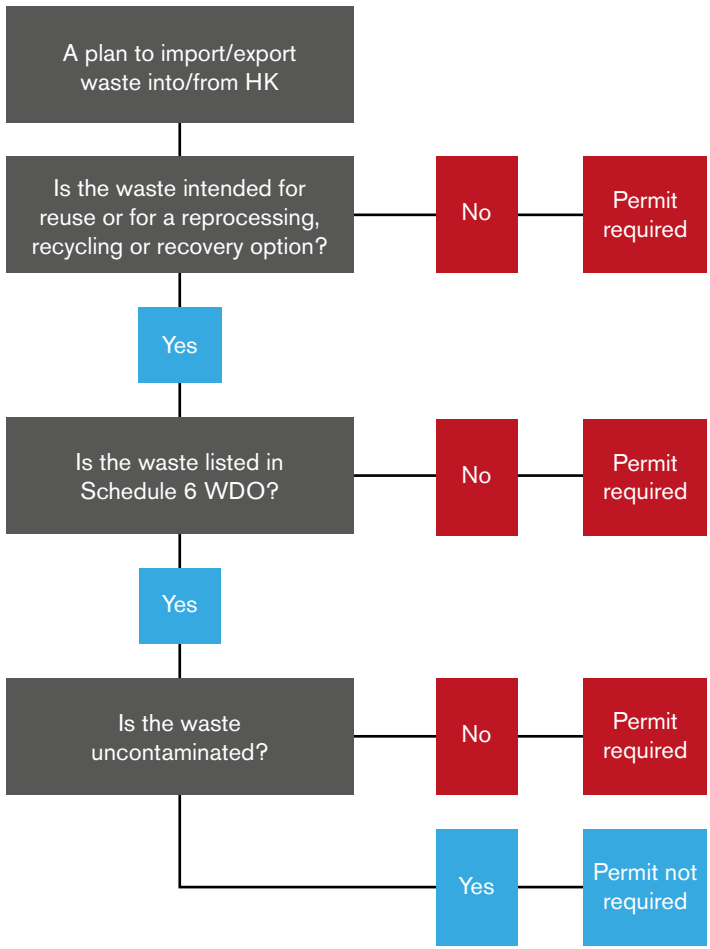


Figure 44.2: Hong Kong import/export procedures.

For green waste to be imported into mainland China from Hong Kong or elsewhere, the shipments concerned may need to be inspected by designated parties at the exporting countries or other places approved by the mainland authorities. Importers, exporters, traders or any parties concerned should confirm the latest requirement prior to effecting any shipments destined for the mainland.

44.2.2 China

China has a long history of importing recyclable waste, such as scrap iron and plastics, from other countries to compensate for the shortfalls of their own domestic resources. The demand for recyclable waste grew rapidly after China joined the World Trade Organization (WTO) in 2001.

Imported recyclable waste consumes less energy and uses up fewer natural resources, so was seen as the optimum choice as source material. However, the trade became

so popular and profitable that China had to impose limits on the amount of recyclable waste it could import yearly.

Eventually, the China State Council declared that it would prohibit the importation of 24 types of recyclable waste, beginning at the end of 2017. In addition, China stopped importing wastes which could be supplied by its own domestic waste sector, as of the beginning of 2019.

The importation of household plastics waste was banned completely by the end of 2017, and the importation of various types of scrap metal and electrical appliance scraps was banned by the end of 2018. These policy changes have had a major impact on global trade in waste, particularly plastic waste.

The Ministry of Ecology and Environment (MEE) of the People's Republic of China, formerly known as the Ministry of Environmental Protection (MEP), is the designated authority for the environmental management of solid waste imports and is responsible for issuing import licences.

Imports should have:

- A Waste Import Licence issued by MEE – this is obtained by recyclers and/or utilisers of the imported waste in China prior to the waste import
- a License of Registration for Overseas Supplier Enterprise of Imported Scrap Materials issued by AQSIQ (AQSIQ Licence)
- a CCIC Pre-shipment Inspection Certificate – pre-shipment inspection of scrap materials to China, to be used for the purpose of customs clearances. More information may be obtained from [www.cciceu.com/en/](http://www.cciceu.com/en/) or [www.cciclondon.com](http://www.cciclondon.com)

CCIC is an inspection and certification company recognised by the General Administration for Quality Supervision, Inspection and Quarantine (AQSIQ) and accredited by the China National Accreditation Service for Conformity Assessment (CNAS). A number of CCIC offices have been set up around the world in countries that export waste materials to China. Container operators who accept waste product bookings to China should request the AQSIQ licence number at the time of booking, as it confirms that the shipper is approved by the Chinese Government authorities to ship waste products to China.

The Chinese Government continues to approve overseas scrap suppliers and at the same time monitors existing suppliers for the quality of waste supplies. During their inspections, if they find any anomalies, they may simply warn the suppliers and require them to rectify any issues. However, if these issues are not rectified or in the case of serious non-conformities, their licences may be cancelled. Container operators can check the AQSIQ website ([www.aqsiq.net](http://www.aqsiq.net)) for a list of approved companies with details of licences held. Container operators should not accept bookings from shippers who do not hold the relevant valid import licences as listed in this database.

It is good practice for the shipper to provide a copy of the documentation to the container operator as early as possible, but not later than the cut-off time for loading on the main line carrier. If a shipper has not submitted the export declaration, it is likely

that they have not sold the cargo to a specific consignee. This increases the chances of cargo being abandoned at destination.

Following a revision of the solid wastes regulations in China in 2020, some types of MARPOL Annex II and III materials are prohibited from import from 1<sup>st</sup> January 2021. The list of prohibited solid wastes includes some 84 types, such as urban garbage, medical waste, waste organic solvent, waste clothes, waste tyres and tyre pieces, battery waste and scrap, used batteries, waste animal and plant products, waste rubber and leather, waste speciality paper, waste glass, as well as household appliances and waste electric motors including air-conditioners, televisions and computers (including their parts and accessories, dismantled parts, broken parts and scraps unless stipulated otherwise by the state). The container operator's booking department needs to be familiar with such prohibitions.

### 44.2.3 European Union (EU) Regulations

Commission Regulation (EC) 660/2014 amended Regulation 1013/2006 that had applied since 12<sup>th</sup> July 2007 covering the shipment of waste (Reference 73). Commission Regulation (EC) 1379/2007 amended Annexes 1A, 1B, VII and VIII of Regulation (EC) 1013/2006 (Reference 74). Annexes III, IIIA and IIIB of this regulation covered different types of non-hazardous waste, whilst Annexes IV and IVA covered different types of hazardous waste. These regulations were supplemented by Regulation (EC) 1418/2007 *"concerning the export for recovery of certain waste listed in Annex III or IIIA... to certain countries to which the OECD [Organisation for Economic Co-operation and Development] Decision on the control of transboundary movements of waste does not apply"*. Under these rules, stricter procedures must be followed (Reference 75).

Despite several EC regulations, gaps were identified relating to proper enforcement and inspections carried out by EU member States. Regulation 660/2014 is designed to cover these gaps by strengthening Regulation 1013/2006 and providing a mechanism for planning of waste shipment inspections and to prevent illegal shipments. It also requires member States to make publicly available the outcomes of inspections and any measures taken, including penalties imposed on any parties.

It also clarified that the inspection of shipments must include verification of documents, confirmation of identity and, where appropriate, physical checking of waste. Inspections could take place in particular at any of the following stages:

- "a) at the point of origin, carried out with the producer, holder or notifier;*
- b) at the point of destination, including interim and non-interim recovery or disposal, carried out with the consignee or the facility;*
- c) at the frontiers of the Union; and/or*
- d) during the shipment within the Union".*

Under the Regulation (EC) 1418/2007 (Reference 75), currently in force as amended, there are three options for controlling the export of wastes:

- Prohibition
- notification controls
- green list controls (lowest level of control).



### **Prohibition**

Movements are not allowed under any circumstance, including almost all:

- Imports and exports for disposal
- exports of hazardous waste to developing countries, even if moving for recovery.

### **Notification controls**

These apply to all allowed imports and exports of:

- Hazardous waste moving for recovery operations
- all types of waste moving for disposal
- some shipments of non-hazardous waste to non-OECD countries (includes Annex IIIB waste).

### **Green List controls**

These controls contained in Article 18 of Regulation 1013/2006 (Reference 76) require that the exporters of waste must:

- Ensure that the Green List waste type can still be sent to that country under Green List controls
- know where the waste is going to be recovered in the destination country before shipping the waste
- ensure the waste is dealt with in an environmentally sound manner throughout its movement and recovery
- complete the Annex VII document specified in the rules with all the required information, including details of the producer or collector of the waste and the destination facility, before shipping the waste (a copy of this document must be retained for 3 years)
- ensure that a copy of the above document accompanies the waste
- enter into a written contract containing specified provisions for the recovery of the waste with the person receiving the waste before the waste is shipped
- ensure that the person receiving the waste in the destination country signs the document that accompanies the waste to confirm receipt.

Waste being exported under Green List controls must be accompanied by a completed Annex VII form. The person who arranges the shipment of the waste must complete and sign this form. It is good practice for the shipper to provide a copy of this documentation to the container operator as early as possible, but not later than the cut-off time for loading on the main line carrier.

#### **44.2.4 United States of America**

The Resource Conservation and Recovery Act (RCRA) is the public law in the United States that creates the framework for the proper management of hazardous and non-hazardous solid waste.

Since the United States is not a party to the Basel Convention, it can export waste to those countries with which the US Government has negotiated a separate waste trade agreement.

### 44.3 Shipments of Waste at the Load Port

The first indication for a container operator that there is anything untoward with a container load of waste is when it is received by the loading terminal and the container is damaged. This is most likely to be the sidewall panels bulging outwards beyond their accepted envelope. Figure 44.3 is a series of pictures that show different problems with waste shipments.



It is not always possible to identify the cause of damage to the structure of a container from a doorway inspection at the loading terminal. Identification of the cause may only be possible when the container is unpacked, which may take place some distance from the port.



The stow in the doorway when the container was opened. The container had been loaded with bales of waste plastics (eg bottles and packages). The bales were of rectangular shape with a long tack (right-hand bale) and a short tack (two left-hand bales).



This shows the right-hand side bales stowed tight to the underside of the roof panel. This was because two bales had been stowed with their long tack upright. This resulted in the roof panel bowing upwards. The bales were also of non-uniform size.



This picture is from an incident where the exporter had declared his shipment as being three container loads of electrical motors. However, these had been thrown into the containers with other rubbish that included plastic intermediate bulk containers (IBCs).



Picture 5 shows an incident where it was found that the top right-hand bale of waste paper in the row (marked by the red arrow) was 'canted' at an angle on the horizontal plane. This resulted in pressure being applied during the course of loading to the left and right-hand sidewall panels, resulting in them bulging outwards and being permanently deformed by up to 100 mm.



Picture 6 shows another incident where the cause of damage became apparent during unloading. The bale of waste paper in the top left-hand row was not stowed with its side parallel to the fore and aft line of the container, but was 'cocked' at an angle thereby increasing its width in the stow. This bale was stowed adjacent to the maximum bowing outwards of the left-hand sidewall panel.



Poor stowage of bales within the container was not the only problem. The waste paper was contaminated with tin cans, some of which had sharp jagged edges, plastic bottles, plastic bags, pieces of wood and twigs, and a complete inflatable rubber mattress.

Waste paper contaminated with other such waste cannot be recovered in an environmentally sound manner. This type of waste should not be moved under Green List controls.



The container in picture 8 was rejected by the ship's personnel at the time of loading because liquid was leaking out from the door seal. When inspected at the terminal's leaker bay, the front of the door sill was found to be heavily stained with a black oily substance.



When the container doors were opened, a distinct oily type odour was detected and emulsified oil was found on top of the door sill. Two solid plastic IBCs were stowed in the doorway, containing shredded plastic waste.



Behind these IBCs, shredded plastic waste had been stowed loose to approximately half the height of the container.

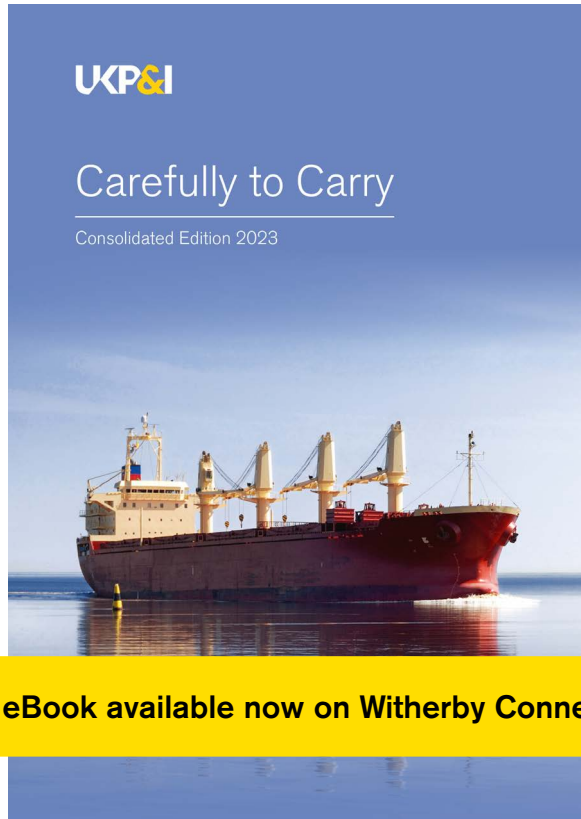


Other IBCs had been stowed on top of the loose shredded plastic waste. These IBCs were free to move, which would have made the container unstable during handling and transportation.

Figure 44.3: Different problems with waste shipments.



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