

Typhoon Precautions

A Step-by-Step Overview



Containers lashed in readiness for adverse weather conditions

Preparation for an incoming typhoon at a container terminal is no easy task and requires hours of work. HIT News speaks to those involved about the steps that are taken before, during and after a typhoon reaches Hong Kong

Typhoons affect Hong Kong every year between the months of May and October, bringing with them excessive rain and high wind speeds that in some cases can be in excess of 185 kilometres an hour.

A container terminal operator such as HIT, has comprehensive and systematic precautionary measures in place for all adverse weather conditions including typhoons, strong winds, and heavy rainstorms.

At HIT, the process of dealing with a typhoon begin as one is forming near the 800km offshore boundary. The 800km boundary is the distance at which the Hong Kong Observatory (HKO) typically raises tropical cyclone warning signal number 1.

As a typhoon moves closer to the territory and warning signals are raised, the precautionary procedures at HIT pick up pace and the different parties involved intensify their activities.

These activities are usually kick-started by an internal meeting held by the Operations and Engineering Departments to discuss precautionary measures. These departments look at the latest weather updates and estimate the time the typhoon will make landfall in Hong Kong.

Working backwards from the estimated arrival time of the storm, an action plan is formulated, providing a timeline from which to co-ordinate activities, from

securing containers and equipment to deciding when to close the terminal.

Throughout the entire process, the safety of HIT's staff and contracted workers is a priority, with every step closely supervised and decisive action taken in accordance to the prevailing weather conditions.

According to Perry Pang, HIT's Manager, Operations Planning Services, "Given the many different operational activities happening in the yard and the volume of containers we handle, it is simply not feasible for us to begin the preparations only after the HKO has hoisted the tropical cyclone warning signal number 1. There is no compromise on safety and we have to start early."

"We rely on the information from the HKO, which includes a three-day weather forecast for typhoons. As a supplement, we also check websites of other meteorological centres in the

region that are in range of the typhoon," Perry said.

The precautionary measures at this early stage involve marshalling lashing materials around the terminals in preparation for the hoisting of signal number 1; ensuring that empty stack containers in the terminal and depots, as



Wind pattern image

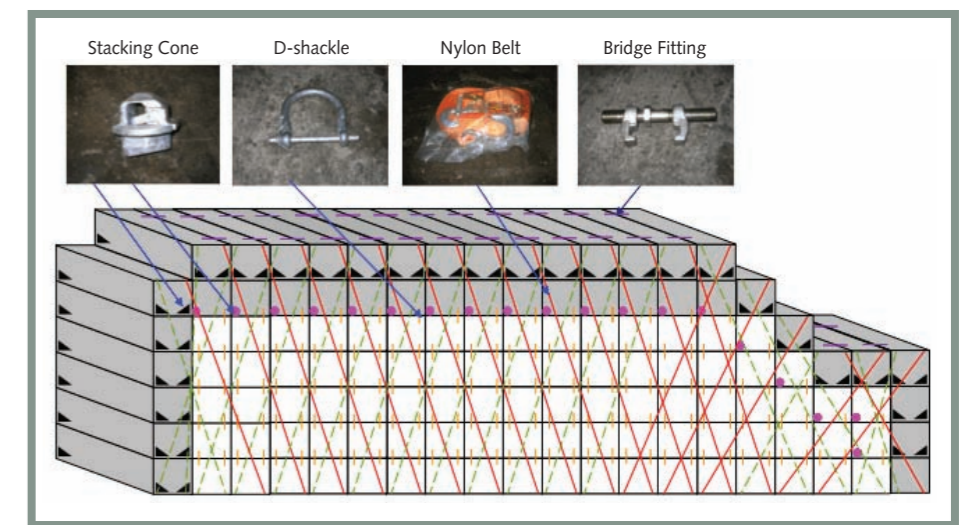
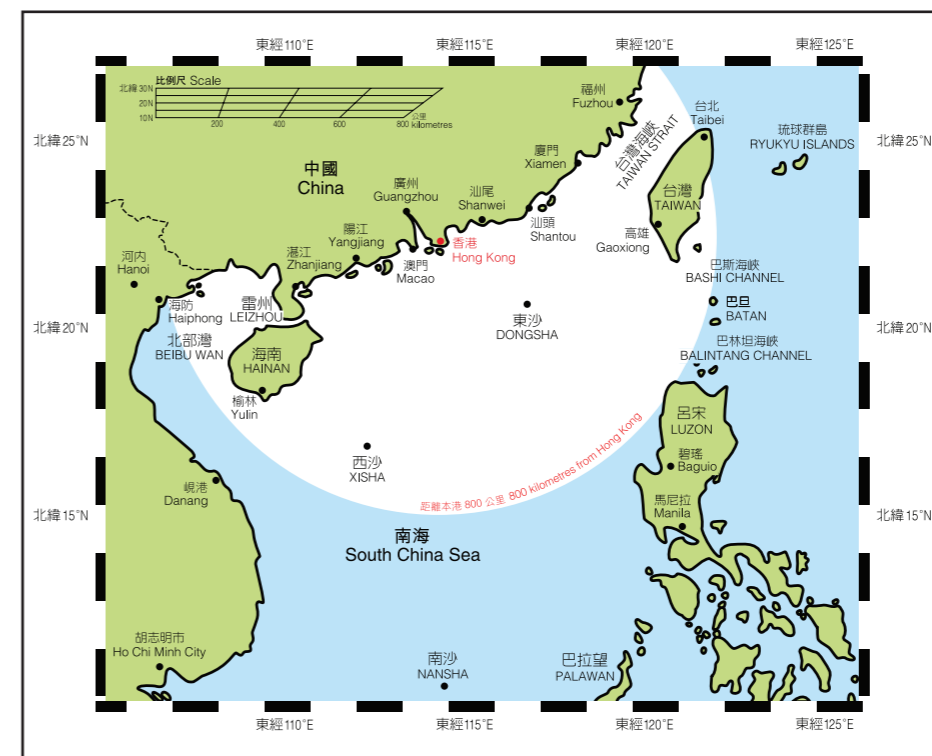


Illustration of full lashing pattern for container stacks



Tropical cyclone plotting map, showing the 800km offshore boundary

well as the outer rows of idle stacks, can be lashed without delay.

"The progress and scale of the precautionary works all depends on the likelihood of the typhoon signal being raised to a higher level, so we keep close contact with the HKO to determine if the possibility is fair or low," Perry said.

He added, "we would still look at securing empty stacks even if the possibility of raising the typhoon signal is low."

After signal number 1 has been hoisted, the lashing work intensifies, and the stevedores who are responsible for lashing activities – known as typhoon lashing gangs – spring into action. Each typhoon lashing gang comprises six people and the additional manpower needed for typhoon safety precautions typically numbers around 100 stevedores.



A multi-level scaffold platform, also known as a "wooden horse", ready for container lashing



Worker securing a container



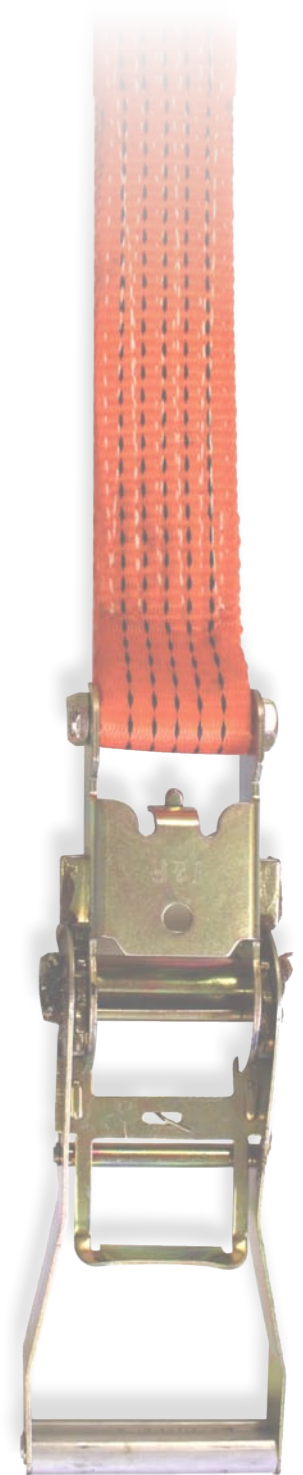
Bridge fitting prevents movement between containers



Worker attaches D-shackle



Lashing belt



"The number of groups of people we deploy depends on the areas that are available for lashing, because some areas will still be occupied with operations during those early stages," Perry said.

In addition to lashing, it is also important to secure the placement of empty containers to a lower tier so that incoming laden containers can be placed on top of them.

"A few years ago we conducted a study with two local universities and found out that by placing laden containers on top of container stacks with empty ones in the middle – as opposed to an entire stack of empty containers – the weight of the laden containers provides protection against strong winds," Perry said.

He noted that by stacking containers in this manner, HIT is able to maximise the effect of lashing, by initially focusing its

attention on areas such as the perimeter and the outer rows that are most exposed to wind.

During tropical cyclone warning signal number 1, the duty manager at HIT monitors the development of the storm with the HKO. When the tropical cyclone warning signal is raised to number 3, the communication with the HKO also increases in order to keep updated on the possibility of the warning signal being raised to number 8.

The likelihood of the warning signal being raised is a trigger for other decisions, including contacting the HK Pilots Association in regards to vessel un-berthing arrangements, securing yard and quay equipment and announcing the closure of the gate.

All these activities have to be initiated several hours before the typhoon reaches

Hong Kong in order to give HIT time to carry out the precautionary measures and finalise all activities in the yard.

The pending closure of the gate is announced to shipping lines, truck associations, the HK Police, the Transport Department, the Kwai Tsing District Council, and local radio and television stations a few hours before tropical cyclone signal number 8 is expected to be raised.

Another important step in the hours before a typhoon arrives is the communication with the pilots to vacate the vessels. "We have to work with the pilots on vessel un-berthing arrangements. The pilots will determine the number of vessels that they are able to bring out of the terminals and decide when to suspend their service," Perry said.

By the time tropical cyclone warning signal number 8 is hoisted, HIT is in the final stages of container and equipment lashing and usually still has one to two hours before the wind speed increases to a level that requires workers to retreat from the yard.

"Inside the terminal we have a wind speed alarm and set the warning at 21 metres per second. If that speed is sustained for several seconds the alarm will go off. After signal number 8 is announced if we hear the warning alarm sound frequently the duty manager will make a decision with the department head whether to summon people from the yard," Perry said.

The work coordinating the reopening of the terminals following the departure of the storm begins while signal number 8

is still hoisted. "We work through a set of pre-planned procedures. We start planning resource allocation so that as soon as tropical cyclone signal number 8 is lowered we are ready to berth ships, open the gate and resume normal operations," Perry said.

Normally an announcement of the gate opening time is made two hours in advance. Now the entire process is reversed: ships return to berth, trucks and workers return to the yard, and containers and cranes are unlash as the terminal scales up to full operational capacity once again.