



TOKIO MARINE
NICHIDO

Early Recovery from Flooding Damage

Guide to Customers who have Suffered Flooding Damage in Thailand

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Tokio Marine & Nichido Fire Insurance Co., Ltd.

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We would like to extend our deepest sympathies to everyone affected by the recent flooding in Thailand. Many Japanese companies have suffered flooding damage due to this season's flooding, forcing some companies to halt operations. This restoration guide was prepared with the objective of assisting our customers impacted by the disaster to minimize the extent of damage and achieve an early recovery from flooding on their premises and inside their buildings.

*This guide is based on information available as of October 14, 2011.

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I. Steps to Take Before Flooding Recedes

1. Initial Response

As of October 14, 2011, heavy rains and lightning continue over large geographical areas. Water levels at many industrial parks remain high, and further damage over greater areas is a possibility. Affected parties are advised to note the latest information and take steps to prevent damage.

a. Obtaining the most updated information

Obtain correct information on current and forecasted weather conditions by referring to the following, and if necessary by inquiring with public institutions including the Meteorological Department.

(Reference) Government of Thailand Website related pages/contact information:

- Government of Thailand Emergency Operation Center for Flood, Storm and Landslide (provides daily reports on damage in various regions of the country)

<http://disaster.go.th/dpm/flood/flood.html>

(English)

<http://disaster.go.th/dpm/flood/floodEng.html>

- Weather Forecast by the Thai Meteorological Department

<http://www.tmd.go.th/index.php>

(English)

http://www.tmd.go.th/en/7-day_forecast.php

- Thai Prime Minister's Office Hotline (services in English available): 1111 (tel.)
- Thai Tourist Police (services in English available): 1155 (tel.)

b. Confirming the safety and whereabouts of employees

Companies are advised to protect the safety of executives and employees, as well as to confirm the safety and whereabouts of their families to the greatest extent possible.

In principle, employees should report to their company regarding their safety and any damage suffered by a disaster, but it is also important for the company to contact employees depending on the situation.

c. Issuing safety precautions to employees

Provide safety precautions to employees as follows. Strongly advise them to seek safety for themselves and for their families in times of disaster.

- Obtain the most up to date information yourself and use it to prepare for possible flooding damage and devise appropriate safety measures.
- Make sure you have a means of communication. Charge your mobile phone fully and also have an emergency charger on hand.
- Decide on a contact number that you and your family members should call in case of an emergency.
- Have on hand a flashlight, portable radio, cartridge-operated gas stove, etc., as well as food and drinking water.
- Be aware that nearby rivers and residential area street gutters may flood or overflow. Take note in advance of which areas tend to flood, and be prepared for floods in low-lying areas or near waterways.
- Confirm evacuation locations ahead of time, and devise safety precautions to be taken if necessary, including taking refuge at safe locations.
- Flooded bodies of water may contain contaminants such as oil including gasoline as well as household waste, which can be a cause of contagious disease. Do not approach flooded bodies of water.
- Be careful of dangerous animals such as snakes. If you are bitten, wash the wound with hot water, sterilize it with alcohol, and see a doctor as soon as possible.
- Stay clear of fallen wires because they may still be live. Also note that wet wires may leak electricity to entire flooded bodies of water, which can cause electric shock.
- At high tide, stay away from the coastline as well as from rivers and canals.

d. Securing a means of communication/contact

It is important that both executives and employees secure means of communication with each other as well as with Head Office in Japan. Make sure that you have a means of communication in emergency situations including off-hours such as night time. Be sure to also have backup means of communication as necessary, such as a satellite cell phone, in case your land line or regular cell phone fails to work.

2. Recovery Preparations

If flooding has already occurred and, due to persistently high water levels, you are unable to confirm the extent of damages or to begin reinstatement operations, refer to the following instructions designed to facilitate recovery efforts:

a. Staffing considerations and availability

Based on weather and damage conditions, determine when to begin recovery operations, compile a schedule, and estimate the number of employees required. Based on the information obtained on employee safety and whereabouts, confirm the number of employees who can report to the office. Set up a schedule of employees reporting to work, and decide who does what task.

Where there are an insufficient number of employees, consider the option of asking for support from Head Office as well as from affiliate companies.

b. Assessing the extent of damage

Assess damage levels to the greatest extent possible.

If you are unable to approach the area due to flooding, do a rough damage assessment based on external appearance, using a map of the building layout prior to the disaster, etc.

◆ Some examples where confirmation is required:

- Extent of flooding/depth of water on the site
- Extent of damage to the building (depth of water/extent of flooding)
- Extent of damage to utility equipment/electric power access and distribution equipment/cables, etc.
- Number of machines (production machinery, control panels, etc.) flooded by water/extent of damage
- Extent of damage to raw and other materials, semi-finished products and finished products
- Extent of damage to information equipment such as computers, critical data files, etc.

c. Determining "priority operations"

Managers need to decide which of the company's products and services are most important to provide. Operations related to providing those products and services given priority are categorized as "priority operations."

Determine which products and services must be delivered/offered in what quantity by what time, based on the extent of the damage. In some cases the quantity and/or delivery date may not meet customer needs, depending on the scale of the disaster. In such cases, it is important to quickly contact your customer and politely explain the situation in order to obtain their understanding.

d. Contacting customers and suppliers/confirming their status

■ **Contacting customers/making necessary adjustments**

In the process of re-starting operations, it is important to contact customers (sales destination) first. Both parties should be aware of each other's damage levels/status. Upon doing so, if customers need certain products or services that appear to require time to be reinstated, try to locate alternate methods/materials as necessary.

◆ **Some examples where confirmation is required:**

- Re-confirm contact information for both parties
- Check on the extent of damage suffered by your customers/time frame for reinstating operations
- Check on your customers' inventory
- Confirm the date of your customers' reinstatement of operations

■ **Contacting suppliers and affiliate companies/making necessary adjustments**

With a view to reinstating operations which our customers require, companies need to contact suppliers and affiliate companies to assess their situation.

◆ Some examples where confirmation is required:

- Re-confirm contact information for both parties
- Check on the extent of damage incurred by suppliers/affiliate companies and time frame for reinstating operations
- Check on suppliers' inventory
- Find out when products required by your company will be shipped and requesting shipment

If it is difficult for you to procure supplies from existing suppliers or affiliate companies, and if a customer (sale destination) has allowed you to delay the reinstatement of the products/services they require, you can send your own staff to the affected suppliers or affiliate companies to help the restoration efforts. If time is limited, you may need to find a substitute supplier. In the latter case, since there can be issues with differences in product specifications and reliability, decide on strategies in close communication with your customer (sales destination).

Meanwhile, if damage to your company is very extensive and a lengthy period of time is required to reinstate operations, if possible it is important to request suppliers, affiliate companies, etc., to assist in order to reinstate your own operations in a timely manner.

In addition, it is also important to work with suppliers and affiliate companies to ensure smooth distribution operations. Gather the following information and share it with all concerned parties.

- Real-time information on damage/restoration efforts, restrictions, etc. on roads (transport routes)
- In light of heavy traffic conditions along routes to specific locations, identify a number of alternate routes
- Information on gas stations where fuel can be obtained

e. Procuring and securing machinery and materials required for restoration of operations

In a situation where many companies are affected by disaster, procuring the machinery and materials necessary to restore operations can be extremely difficult. Companies are advised to quickly address the issue of procuring machinery and materials required for restoration efforts, taking note of the following:

■ Procuring and securing equipment and materials required for yard drainage

First, it is important to quickly stop flooding on the site and in the buildings.

The following equipment and machinery is required to achieve this:

- Sandbags, water stops, etc.
- Portable wastewater pipes and pumps
- Portable power generator (*can be used for other restoration procedures as well)
- Power generator fuel, etc.

■ Procuring and securing equipment and materials needed for cleaning and drying flooded production equipment and building structures

To minimize damage, production equipment and building structures contaminated by floodwater must be cleaned and dried as quickly as possible.

Secure the following machinery and materials.

- Clean water for cleaning
*Use a pure water production system to clean electronics, etc.
- High-pressure water sprayers
- Buckets, brushes, etc.
- Sponges/cloths for wiping
- Anticorrosives
- Large blower fan

- Procuring equipment and materials necessary for proper safety and sanitation during operations

To implement safe restoration of operations, acquire the following protective gear for each individual worker:

- Helmets
- Goggles
- Masks
- Work gloves
- Heavy work gloves (for use in handling concrete, blocks, waste materials, scrap wood, etc.)
- Solvent- and chemical-resistant gloves (for handling solvents, chemicals, etc.)
- Safety shoes, waterproof boots
- Earplugs

- f. Establish response procedures, a restoration process plan, and staffing plans

To the greatest extent possible, establish response procedures as well as a restoration process plan and staffing plans to be implemented once the flooding has receded.

- Prioritize what needs to be done once the flooding has receded
- Set up a procedure for investigating damage levels
- Devise means of salvaging important equipment
- Check that the concerned parties have the appropriate technical knowledge to preserve equipment and structures

- g. Training for employees responding to the disaster

In order to implement safe and efficient operations for each of the different types of operations, be sure to provide employees with proper explanation and training on procedures and machinery operations, and point out things that they need to pay attention to.

h. Arrange for contractors/hold meetings with them to discuss the work

When contracting restoration efforts to external contractors, quickly secure the necessary operators because they may tend to be overloaded during times like these. It is advisable to determine the scope of the work and to decide on the schedule ahead of time.

II. Response After Flooding has Receded

1. Safety and Sanitary Precautions During Operations

Even after flooding has receded, all workers should carefully observe the following precautions when starting recovery work, and consider safety and sanitary factors when proceeding with operations.

a. Precautions regarding power sources

When electricity is restored after a blackout or power shutdown, there is risk of electrical shock, fire, etc. In order to prevent accidents, it is important to pay attention to the following points.

- If an electric device is wet, turn off the power source before power is restored.
- Do not turn on the power source until after a professional electrical engineer has completed inspections.
- Never touch cut electrical wires.
- When electricity is to be supplied to a building by a power generator, turn off the main breaker switch or the service panel before starting the power generator.
- Before power is restored, switch off all breakers, and unplug all equipment. After power is restored, switch on the breaker and then plug in the equipment.
- Disconnect all electric heating equipment from the electrical socket.
- Exercise due care regarding leak accidents, since detectors such as the gas leak detectors are not active during a blackout.
- Similarly, security systems may also be inactive, and should be inspected.
- In the event of a power shutdown, data entered while using OA equipment such as a PC may be lost, or the equipment may be damaged. Turn off beforehand.

b. Precautions regarding removal of garbage/driftwood, etc., and onsite cleaning work

Regarding the removal of garbage/driftwood, etc., and onsite cleaning work in response to a flood, it is important to pay attention to the following points.

- Wear protection gear according to the work, as previously described (p.10).
- Excessive noise from equipment such as chainsaws, blowers, and dryers can cause ear ringing and hearing disorders. Use ear plugs in situations where noise is above yelling level.
- Do not start engines of cars which have been submerged in water (it may catch fire).
- In the event that hazardous materials (such as gas cylinders) are found on roads, etc., do not approach or handle them. Notify the police department.
- If injured during work, thoroughly wash the affected area with running water and disinfect, removing any foreign matter such as sand and metal (prevention of tetanus).

2. Survey of Damage Conditions

Conduct a detailed survey of the damage conditions, including points which could not be inspected until after the flooding receded.

a. Survey of damage conditions of the building, machinery, etc.

In order to resume business, the safety of the employees and visiting customers must be ensured. Damage to the building and equipment must be inspected, and confirmation that there are no problems regarding safety must be carried out.

◆ Examples of items which require confirmation (factory/warehouse, etc.)

- Subsidence of the site.
- Contamination or damage of the pillars, beams, exterior walls, ceiling material, window glass, etc.
- Contamination, damage, or failure of the air conditioning equipment and lighting equipment.
- Water inundation, contamination, or damage of manufacturing equipment.
- Damaged or broken pipes or cables.
- Leaking hazardous materials, etc.

◆ Examples of items which require confirmation (office)

- Damage of the exterior walls or window glass.
- Contamination or falling of fixtures or furniture.
- Contamination or falling of cabinets or lockers
- Failure of elevators, etc.
- Leaking toilet water.
- Leaking gas in the hot-water service room.

b. Survey of damage conditions regarding operational resources needed to resume business

Reconfirm and survey the damage conditions regarding other operational resources required to resume business.

- Damage conditions of the lifeline (infrastructure needed for production, such as electricity, gas, and water, and transportation)
- Ensuring adequate staffing
- Damage conditions regarding information systems and communications networks
- Damage conditions of suppliers and affiliated companies (→refer to p.7)
- Possibility of securing alternative supplies or production methods

3. Implementation of Recovery Operations

Recovery operations should proceed based on the pre-planned response procedures, recovery process schedule and staffing plan (refer to p.10).

Emergency measures to control water drainage and drying operations immediately after the flooding has receded, and how to minimize damage of flooded important machinery in order to promote early recovery are introduced here.

a. Water drainage and drying operations on the site (building surroundings)

Construct a flood bank with sandbags etc., as quickly as possible, and prevent water from entering the site. Start pumping out water instead of waiting for water to recede. After draining out water, carry out drying in affected areas.

b. Cleaning and drying operations inside the building

Drain any water inside the building, and clean all surfaces (walls, floors, etc.) affected by the flooding with clean water. If possible, use a high-pressure water sprayer, etc.

Afterwards, remove any water trapped in the floor, open the windows and doors, perform drying and dehumidification by an air blower, etc.

c. Cleaning and emergency measures for important machinery

Even after the water has receded, flooded machinery may be irreparable if it has been left uncleaned and the metal surface has corroded. Performing the emergency measures below are effective in controlling corrosion of machinery. (For machinery parts (frame, moving parts, etc.)

- Clean all metal surfaces with clean water by a high-pressure sprayer, etc. If unavailable, use buckets and brushes.
- After cleaning, remove any remaining moisture from surfaces using a sponge, cloth, etc.
- Apply anticorrosive coating on any unpainted surfaces.



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