



# FIRE SAFETY GUIDELINES

*Better Factories Cambodia*

2013

## **A Tool to Prevent Accidents and Catastrophic Loss of Life and Property in Factories**

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NB: Better Work Country Programmes, including Cambodia, have taken into firm consideration the issue of fire fatalities at the workplace and place high emphasis on emergency arrangements and necessary preparations for fire emergencies. Therefore, the issue of holding emergency drill twice per year has been classified as **zero tolerance** for those factories that are non-compliant.

## 1. Purpose of This Guideline

This guideline is designed to provide employers, managers, and workers with key information on the severe risks that fires pose at the workplace as well as on their prevention and control.<sup>1</sup> This document also assists those who are responsible for ensuring safety at the workplace to prevent the catastrophic loss of life and property that could result from a fire.

The recommended actions to be taken by the factory management or responsible officials with respect to fire safety and emergency arrangements are only the basics. Full details are available in the Fire Safety Checklist developed by Better Work Global.<sup>2</sup>

## 2. Introduction

Fire fatalities in factories around the world are the most severe consequence of Occupational Safety and Health (OSH) accidents. For example, recent fires in Cambodia, Pakistan and Bangladesh caused the death of hundreds of workers and civilians:

September 2012	Karachi, Pakistan	<ul style="list-style-type: none"><li>• 289 killed in a fire at a garment factory;</li><li>• 25 workers were injured; and</li><li>• Factory employed 400 to 500 workers.<sup>3</sup></li></ul>
November 2012	Dhaka, Bangladesh	<ul style="list-style-type: none"><li>• 117 killed in fire at a clothing factory;</li><li>• 200 workers were injured as they rushed to get out of the factory; and</li><li>• About 2,000 people were working in the factory when the fire started.<sup>4</sup></li></ul>
December 2012	Siem Reap, Cambodia	<ul style="list-style-type: none"><li>• 8 (including 4 children) killed in a fire at the night market; and</li><li>• Damage from fire was estimated to cost \$1 million.<sup>5</sup></li></ul>

In Cambodia, fires have occurred in many different types of buildings including factories, residences, hotels, night clubs, shops and fuel depots. For instance, an administrative office in a jean garment factory (M.I.G) caught fire on April 19, 2008, damaging all documents and around 10 computers.<sup>6</sup> A few months later, on October 15, 2008, a factory building (CMCW) was burnt down, destroying sewing machines, raw materials, and final products ready for export.<sup>7</sup> On February 28, 2009, a fire broke out in the packing building of Wilson Garment, destroying 70% of the garments and 100

<sup>1</sup> ILO SafeWork, Programme on Safety and Health at Work and the Environment (2012): *Fire Risk Management*, p.2, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/publication/wcms\\_194781.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_194781.pdf)

<sup>2</sup> Better Work (2012): *Fire Safety Checklist*, Geneva.

<sup>3</sup> Raza Sayah, *At Least 289 Killed as Fire in Pakistan Garment Factory Rages*, CNN, Sept. 12, 2012, <http://edition.cnn.com/2012/09/12/world/asia/pakistan-factory-fire/index.html>

<sup>4</sup> Farid Ahmed, *At Least 117 Killed in Fire at Bangladesh Clothing Factory*, CNN, Nov.25, 2012, <http://edition.cnn.com/2012/11/25/world/asia/bangladesh-factory-fire/index.html?iref=allsearch>

<sup>5</sup> Mech Dara and Simon Lewis, *Siem Reap Fire Kills Eight*, The Cambodian Daily, Dec.10, 2012, <http://www.cambodiadaily.com/news/siem-reap-market-fire-kills-8-6531/>

<sup>6</sup> Raksmei Kampuchea, *An Administrative Office of Jean Garment Factory in Tuol Kork Was on Fire*, Apr.20-21, 2008.

<sup>7</sup> Kohsantepheap Daily, *A Garment Factory Was Completely Burnt Down*, Oct. 17, 2008.

sewing machines in that building.<sup>8</sup> The biggest garment factory fire took place on March 31, 2011 and led to the closure of June Textile, a factory that employed 4,096 workers.<sup>9</sup> Learning from these experiences, what preventative measures can we implement to effectively avoid these accidents from happening in the future?

### 3. Legal Framework

The 1997 Cambodian Labour Law requires all enterprises to have procedures in place to handle emergencies (e.g. fires, explosions, and natural disasters), promote health and safety, and prevent work-related accidents. The ILO Guide to the Cambodian Labour Law for the Garment Industry (the Guide) suggests that emergency drills be held regularly at least twice per year. The Guide also recommends installing clearly marked emergency doors that are accessible and unlocked whenever workers are present. The Guide further recognizes that fire extinguishers should be installed and inspected regularly.<sup>10</sup>

The Government of Cambodia has recently passed the Fire Prevention and Fire-Fighting Draft Law (Draft Law) so that it can be discussed and approved by the National Assembly of the Kingdom of Cambodia. The purpose of the Draft Law is to contribute to the maintenance of security, social safety, and public order as well as the protection of life and property.<sup>11</sup> Chapter 3 of the Draft Law addresses fire preventive measures including storage, transportation, management, and sales of flammable substances. This chapter requires the Ministry of Interior to issue relevant policies on fire prevention and provide needed training on effective methods for fire prevention and fire fighting.<sup>12</sup> Taking into account the existing legal framework and good practices, what can employers, workers, and relevant stakeholders do to effectively prevent fires in the workplace? This guideline provides some possible, low cost fire preventive measures as discussed below.

### 4. Emergency Arrangements and Preparing for Fire Emergencies

In order to prepare for emergency situations that may arise due to fires or other natural disasters, factory management or other responsible officials should:<sup>13</sup>

- Ensure that there are procedures in place to handle emergencies (e.g. fire, explosion, and/or natural disaster);
- Ensure that managers, supervisors and workers are aware of these procedures;
- Install automatic fire detection and alarm systems (smoke detectors, heat detectors or flame detectors) in all areas of the building where flammable materials are being stored;
- Post an updated and visible evacuation plan for all workers and visitors;
- Ensure that the factory has sufficient emergency exits that are unobstructed and unlocked at all times and open in the direction of the flow of workers during an evacuation;

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<sup>8</sup> Kohsantepheap Daily, *Fire Broke up at the Packaging Building of Garment Factory*, Mar. 02, 2009

<sup>9</sup> The Phnom Penh Post, *Garment Factory, June Textiles Co., Ltd Cambodia, Under Fire*, Apr. 02, 2011 <http://www.phnompenh.gov.kh/news-garment-factory-june-textiles-coldt-cambodia-under-fire-974.html> and CLEC, *June Textiles Awarded Payment for Termination*, CLEC, Jul. 31, 2011, <http://www.clec.org.kh/proact.php?actID=35&plD=6>

<sup>10</sup> Cambodian Labour Law (1997), Art.230 and Guide to the Cambodian Labour Law for the Garment Industry (Reprinted 2011), p.31.

<sup>11</sup> Xinhua, *Cambodia Passes Fire Prevention Draft Law*, Dec. 14, 2012

<sup>12</sup> Speech of Cambodian Prime Minister, *Statement of Fact on Fire Prevention and Fire Fighting Draft Law*, Dec.27, 2012

<sup>13</sup> Better Work Indonesia: *Newsletter 4<sup>th</sup> Edition*, 2012, p.12 and Cambodian Labour Law Art. 230.

- Where curtains are used, assure that they are of a fire resistant material;
- Ensure that there are at least two exit routes to a safe area outside of the building from every work station;
- Clearly mark each exit route and provide functional lighting so that exit routes are well lit during the day and night;
- Provide an adequate number of exit stairways (at least two) of sufficient strength and width to support the rapid evacuation of all workers from floors above or below ground level;
- Keep exit routes clear of any obstructions;
- Post a warning sign at each lift station (on each floor) indicating **DO NOT USE THE LIFT FOR EVACUATION DURING A FIRE**;
- Ensure that the factory has enough fire-fighting equipment (such as a sufficient number of extinguishers);<sup>14</sup>
- Ensure that all fire-fighting equipment functions properly;
- Place fire extinguishers in a sufficient number of locations based on specific fire hazards;
- Always locate fire extinguishers along the exit route from each area;
- Check with the local fire brigade or labour inspectorate about the appropriateness of types of fire extinguishers for different fire hazards;
- Mount fire extinguishers at a reasonable height and clearly mark each of their locations<sup>15</sup>;
- Keep obstructions cleared from in front of each fire extinguisher; and
- Carry out at least two fire drills per year that require the full evacuation of all workers to areas of safety outside of the workplace.



© Photo by DoLVT/MDG-F: Pile of products and materials block the access way to the fire extinguisher

## 5. Measures to Minimize Fire Risks

The factory management or responsible staff should do the following:<sup>16</sup>

<sup>14</sup> According to section 1926.150(c)(1)(i) of the OSHA, the United States Department of Labour: *Safety and Health Regulations for Construction*, a fire extinguisher shall be placed for each 278.709 square meter (3,000 square feet) of protected building area and the distance for another fire extinguisher shall not exceed 30.48 meters (100 feet), available at [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=STANDARDS&p\\_id=10671](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10671); and the ILO Ergonomic Checkpoints: *Practical and Easy-to-Implement Solutions for Improving Safety, Health and Working Conditions* (2<sup>nd</sup> Edition, 2010), p.172, suggests that a sufficient number of fire extinguishers and place them within about 20 meters of each workplace, available at [http://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/instructionalmaterial/wcms\\_178593.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/instructionalmaterial/wcms_178593.pdf)

<sup>15</sup> The Better Work Fire Safety Checklist recommends that fire extinguishers be mounted within 22.86 meters (75 feet) of outside areas containing flammable liquids, and within 3.048 meters (10 feet) of any inside storage area for such materials.

- Isolate flammable solids, liquids and gases from sources of ignition such as open flames, heated surfaces to prevent fires and explosions;
- Restrict the distribution of flammable materials used for daily work to only the minimum necessary for that day;
- Construct designed fuel storage facilities in a clearly marked location, well separated from areas where personnel are working;
- Ensure that flammable substances or combustible materials are isolated from hot surfaces such as machines, equipment and heated equipment;
- Install and maintain all electrical circuits that are adequately grounded to prevent arcing and sparking, heat caused by overloading and short circuits; and
- Protect each electrical circuit with an adequate fuse or circuit breaker located in a well-constructed box in close proximity to the work station.

## 6. Training

The factory management or responsible staff should perform the following tasks:<sup>17</sup>

- At least twice per year, provide refresher training to all workers on how to eliminate fire hazards and how to respond if a fire is detected;
- Train managers and supervisors on fire safety, fire control (including the use of fire extinguishing systems), and on how to lead an evacuation;
- Train a sufficient number of factory workers to use fire-fighting equipment; and
- Conduct periodic emergency drills for all workers in the factory twice a year.



Access paths are not free of obstruction



Access paths are free of obstruction

<sup>16</sup> ILO SafeWork, Programme on Safety and Health at Work and the Environment (2012): *Action Checklist Fire Safety*, p.2, [http://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---safework/documents/publication/wcms\\_194782.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/publication/wcms_194782.pdf)

<sup>17</sup> *Supra note 13, p.4.*