

Center for Community
Health and Development

STANDARD PROCESS

of **HEATSTRESS**

PREVENTION

AT WORK FOR WORKERS



THE
ROCKEFELLER
FOUNDATION

PREFACE

Vietnam is a country being affected by increasingly severe climate change. This is particularly evident in the increase in average temperature and heat waves, which have increased both in intensity and maximum temperature.

In assessing the need for action to reduce the thermal impact on workers and reduce labor insecurity caused by the heat, **COHED Centre** has developed this document “Standard process of heat stress prevention at work for workers” within the framework of the project funded by the **Rockefeller Foundation**. Participation and positive contributions have been received from the **Labour Safety Department** of the **Ministry of Labour, Invalids and Social Affairs** and the **Department of Labour, Invalids and Social Affairs of Da Nang**.

This document is issued for the purpose of guiding and supporting businesses to take measures and specific actions to prevent and adapt to the effects of heat in their production and business activities. The document also suggests specific activities for each department’s participation in a model of work Health and Safety, organization and management that Vietnamese enterprises have deployed under the provisions of the State of Vietnam.

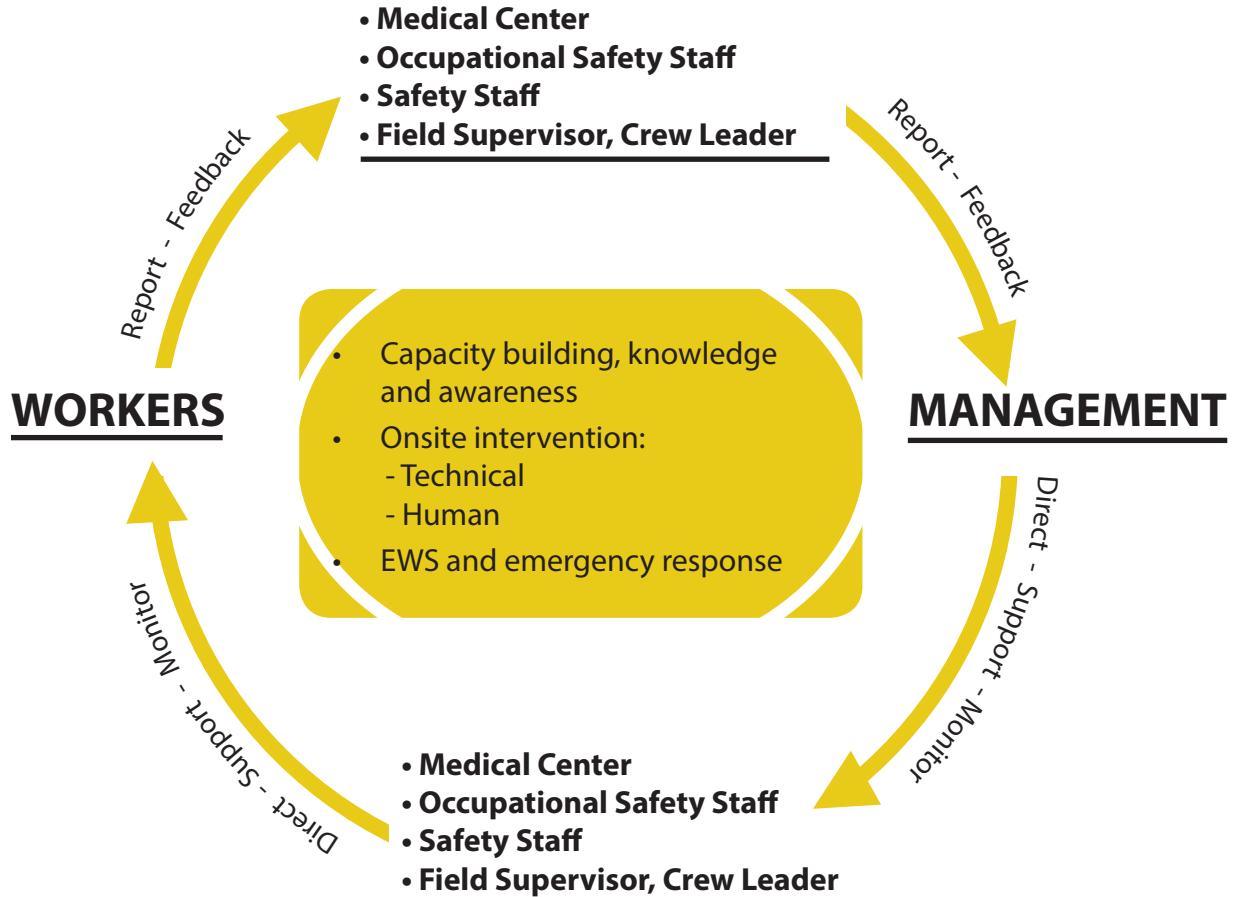
COHED Center is pleased to thank the professionals, agencies and organizations that have contributed to the compilation of this document. We are especially pleased to acknowledge the effective and practical contribution made by the enterprises in Da Nang in compiling this document.

COHED Center



ORGANIZATIONAL PREVENTION PROCESS

The occupational safety and health management departments of firms are responsible for implementing **heat stress (HS)** preventive activities at the work place



B

IMPLEMENTING HEAT STRESS PREVENTION

I

REGULAR ACTIVITIES

1

Monitoring the weather and providing warning if at risk of HS *(Include but are not limited to the following)*

OCCUPATIONAL SAFETY STAFF AND SAFETY STAFF

- Check the weather forecast daily.
- Provide early warning to the Foreman, Field Supervisor and Crew Leader if experiencing an extremely hot day or heat wave

SUPERVISOR/ FOREMAN/FIELD SUPERVISOR/ CREW LEADER

- Warn workers of HS level
- Take into consideration when it will be necessary to make modifications to the work schedule:
 - Reschedule the job
 - Work at night or during the cooler hours of the day
 - Increase the number of water and rest breaks

SAFETY STAFF

- Monitor temperature and humidity at sites
- Promptly warn Foreman, Field Supervisor and Crew leader
- Require workers to stop working if at risk of HS illness or occupational accidents

MEDICAL STAFF AT SITES

- Do first aid and apply the correct process on recognizing the signs that a worker is suffering from HS
- (Guidance on measuring temperature and providing warning are presented in Part C)

2

Provision of water

(Include but are not limited to the following)

WORKERS

- Drink water actively and regularly
- Workers should make sure they are drinking enough fluids to prevent dehydration, even when they do not feel thirsty

SUPERVISOR/ FOREMAN

- Ensure that the provision of water is part of the regular plan of the company

FIELD SUPERVISOR AND CREW LEADER

- Bring drinking water containers to the site everyday
- Cups or disposable cups will be made available to workers and will be kept clean until used
- Water containers are to be placed at a convenient location for all workers to access
- Schedule work to have time to take rest and drink water

OCCUPATIONAL SAFETY STAFF AND SAFETY STAFF

- Check the provision of water periodically
 - Encourage workers to drink water frequently

OCCUPATIONAL SAFETY STAFF, MEDICAL STAFF AT SITES

- Train and remind workers of the importance of drinking enough water during the “Occupational safety and health” training course

3

Personal Protective Equipment (PPE)

(Include but are not limited to the following)

WORKERS

- Wear protective clothing, PPE while working

SUPERVISOR/ FOREMAN/FIELD SUPERVISOR

- Ensure that the provision of PPE is part of the regular plan of the company

OCCUPATIONAL SAFETY STAFF AND SAFETY STAFF

- Make sure that workers wear protective clothing

4

Acclimatization

(Include but are not limited to the following)

FIELD SUPERVISOR AND CREW LEADER

- Schedule a work plan and gradually increase the intensity of work for new workers or workers who return from 7 days absent
- Reschedule work time during a heat wave or heat spike

WORKERS (NEW WORKERS OR WORKERS WHO RETURN FROM 7 DAYS ABSENT)

- Actively arrange the work schedule (if possible) and gradually build up to heavy work

5

Technical and engineering controls

(Include but are not limited to the following)

EVERYONE

- Be creative and actively apply Technical Controls in order to isolate heat sources and mitigate the adverse impacts of heat

EMPLOYER/FIELD SUPERVISOR

- Apply a bonus policy for good ideas and realizable solutions

6

Monitoring and creating health records of workers

(Include but are not limited to the following)

WORKERS

- Self-awareness of health by themselves
- Those people who are unacclimatized, overweight, older in age and suffer from heart diseases should inform the medical staff to be monitored and prepare effective prevention

SUPERVISOR/ FOREMAN/FIELD SUPERVISOR

- Hold periodical health checks annually and regularly monitor workers' health

OCCUPATIONAL SAFETY STAFF, MEDICAL STAFF AT SITES, FIELD SUPERVISOR AND CREW LEADER

- Collaborate to monitor sick days and the health situation of workers

Training and raising awareness

(Include but are not limited to the following)

7

WORKERS

- Be trained to prevent HS once a year. Content of training course: HS preventive measures, Rules of HS prevention, how to do first-aid for sick workers and how to handle emergency situations
 - New workers: Will be trained on HS before starting to work

EMPLOYER/FIELD SUPERVISOR

- Approve budget for training and communication of HS prevention each year

MEDICAL CENTER

- Training for medical staff on: doing first-aid; dealing with emergency situations, building the prevention guideline

OCCUPATIONAL SAFETY STAFF AND SAFETY STAFF

- Annual training
- Guidance on monitoring weather, temperature and early warning instruction.
 - Preparing emergency response
- Planning awareness raising and training on HS; training for new workers
 - Submit ideas and plans to employers

8

Emergency response

(Include but are not limited to the following)

OCCUPATIONAL SAFETY STAFF :

- Provide a map along with clear and precise directions, to avoid a delay of emergency and medical services

OCCUPATIONAL SAFETY STAFF , MEDICAL STAFF, SUPERVISOR, CREW LEADER:

- Carry cell phone or other means of communication to ensure that emergency medical services can be called

SAFETY STAFF:

- Remind and encourage workers to report immediately to their supervisor any signs and symptoms of heat stress they are experiencing



ACTIVITIES IN SPECIFIC CASES

1

Working environment is higher than 32 degrees

WORKERS

- Will be observed for alertness and signs and symptoms of heat illness by Safety staff and colleagues
- Will be reminded throughout the work shift to drink plenty of water
- Have been trained on symptoms and signs of heat illness

CREW LEADER, SAFETY STAFF

- Provide first-aid boxes
- Prepare means of communication if it is necessary to call 115

2

Workers show signs of heat illness

When an employee displays possible signs or symptoms of heat illness, move her/him to a cooler place. Safety staff should apply first aid if necessary or call emergency services as required

FIELD SUPERVISOR AND CREW LEADER

- Communicate with Medical Center/ medical staff for guidance

CREW LEADER, SAFETY STAFF, COLLEAGUES

- Call emergency services immediately if any employee displays signs or symptoms of HS illness such as: loss of consciousness, incoherent speech, convulsions, red and hot face, does not get better after drinking cool water and resting in the shade
- Prepare means of communication if it is necessary to call 115

3

High heat (heat wave)

OCCUPATIONAL SAFETY STAFF AND SAFETY STAFF

- Consider modifying the work schedule and changing the work plan
- Monitor provision of water

SUPERVISOR

- Provide cool water or mineral water or fruit juice
- Cut short or reschedule the work time if needed



GUIDANCE ON MONITORING TEMPERATURE & PROVIDING WARNING

Monitoring temperature (apply in first year for enterprises which have stable sites)

V.1

Method (outdoor)

- Time: between 1PM and 3PM
- Place: the hottest place

Method (indoor where exposed to heat sources)

- Time: between 1PM and 3PM
- Place: the hottest place

Creating Records in order to compare the differences between forecast temperature and measured temperature

V.2

- Monitoring table
- Difference between forecast temperature and measured temperature

$$\Delta T(\text{daily}) = T(\text{Measured}) - T(\text{forecast})$$

- Average of $\Delta T(\text{daily})$

$$\text{Average of } \Delta T = [\Delta T_1 + \Delta T_2 + \Delta T_3 + \dots + \Delta T_{30}] / 30$$

Warning HS Risk

Early Warning

- Monitor forecast weather: Forecast temperature
- Forecast temperature at work: $T = T(\text{forecast}) + \text{Average of } \Delta T$
- Determine the level of HS index
- Implement HS prevention

V.3

Warning at work site

- Check the thermometer at work
- Determine the level of HS index
- Implement HS prevention

MONITORING TABLE

Place:

Name: Title:

Time (month):

Date	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TB	
Measured Temperature																																	
Forecasted Temperature																																	
Δt																																	
Humidity																																	
HS Index																																	
Level of HS risk																																	

No. of days at level 1:

No. of days at level 3:

No. of days at level 2:

No. of days at level 4:

No. of days under the warning level:

Monitor

HEAT STRESS INDEX

		TEMPERATURE (°C)																
		27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
RELATIVE HUMIDITY (%)	40	27	28	29	30	31	32	34	35	37	39	41	43	46	48	51	54	
	45	27	28	29	30	32	33	35	37	39	41	43	46	48	51	54	57	
	50	27	28	30	31	33	34	36	38	41	43	46	49	52	55	58		
	55	28	29	30	32	34	36	38	40	43	46	48	52	55	59			
	60	28	29	31	33	35	37	40	42	45	48	51	55	59				
	65	28	30	32	34	36	39	41	44	48	51	55	59					
	70	29	31	33	35	38	40	43	47	50	54	58						
	75	29	31	34	36	39	42	46	49	53	58							
	80	30	32	35	38	41	44	48	52	57								
	85	30	33	36	39	43	47	51	55									
	90	31	34	37	41	45	49	54										
	95	31	35	38	42	47	51	57										
	100	32	36	40	44	49	54											

Heat stress Index (°C)	Level	General effect of heat index on health
27–32	Caution	Fatigue possible with prolonged exposure and/or physical activity
32–41	Extreme caution	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity
42–54	Danger	Sun stroke, heat cramps or heat exhaustions likely, and heatstroke possible with prolonged exposure and/or physical activity
Above 54	Extreme danger	Heat/sunstroke highly likely with continued exposure