

REPORT OF OCCUPATIONAL HEALTH AND SAFETY AUDIT
AT HANSAE VIETNAM COMPANY LIMITED
IN CU CHI INDUSTRIAL ZONE
HO CHI MINH CITY, VIETNAM

PREPARED FOR:

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**REPORT OF OCCUPATIONAL HEALTH AND SAFETY AUDIT AT HANSAE
VIETNAM COMPANY LIMITED IN CU CHI INDUSTRIAL ZONE, HO CHI
MINH CITY, VIETNAM**

TABLE OF CONTENTS

1.0 INTRODUCTION 1

 1.1 Scope of Work 1

 1.2 Background Information 2

2.0 FINDINGS 2

 2.1 Summary of Health and Safety Findings 2

 2.2 Indoor Air Quality..... 3

 2.3 Summary of OHS Program Evaluation..... 4

 2.4 Audit Findings and Corrective Action Plan..... 4

3.0 STUDY LIMITATIONS 5

ATTACHMENT A: Audit Findings and Corrective Action Plan

ATTACHMENT B: OHS Program Evaluation

ATTACHMENT C: Temperature and Relative Humidity Readings

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1.0 INTRODUCTION

The Maquiladora Health and Safety Support Network (MHSSN) and Alliance Consulting International (Alliance) are pleased to present The Worker Rights Consortium (WRC) the results of the Occupational Health and Safety (OHS) Audit of operations at the Hansae Vietnam Company Limited (Hansae) facility located in the Cu Chi Industrial Zone of Ho Chi Minh City (HCMC), Vietnam. The site audit was conducted on October 13 and 14, 2016 at the request of WRC. The audit was performed by Garrett Brown, MPH, CIH, MHSSN's Coordinator, and Enrique Medina, MS, CIH, CSP, President of Alliance with coordination from Mr. Bent Gehrt, WRC's Field Director for Southeast Asia.

The introduction to this report describes the scope of work and the Site's background. Section 2.0 presents a summary of the findings of the site inspection and document review. Section 3.0 presents the study limitations. The Attachment section contains the Corrective Action Plan with a complete list of findings, recommendations, and regulatory citations, and the Program Analysis of Hansae's OHS Program.

1.1 Scope of Work

The purpose of the OHS audit was to make an evaluation of conditions at the Hansae facility (which includes 12 separate factories and other buildings) and the status of regulatory compliance with current Vietnam health and safety laws and regulations, guidelines of the Better Work Program's (BW) Vietnam Guide to Vietnamese Labor Law for the Garment Industry, and the labor standards of the WRC's affiliate universities, as well as globally recognized standards for health and safety Best Management Practices. This audit was also designed to further investigate, via onsite inspection and measurement, the issue of excessive workplace heat and cases of workers fainting, and other health and safety issues, identified by the WRC through offsite worker interviews and addressed in a WRC report published on May 6, 2016. The WRC's report was followed by a June 2016 report by the Fair Labor Association (FLA) and by further investigation in the ensuing months by the WRC and the FLA. The worker health and safety aspects audited included elements of electrical safety, ergonomics, emergency response, fire protection, hazardous materials, industrial hygiene, job risk assessment, machine guarding, personal protective equipment, respiratory protection, training, recordkeeping, and OHS program, among others. Due to the limited time available, the audit approach to the two-day site visit included the following tasks:

- Holding an opening conference involving facility management, the WRC's investigative team, and representatives of Nike and the FLA, to describe the scope of work, and timetable.
- Conducting a walk-through inspection of selected factory buildings.

- Reviewing available documentation provided by management regarding reporting of occupational illnesses and injuries, safety inspections, accident investigations, and OHS personnel and committee activities.
- Interviewing facility representatives to obtain information on OHS management practices, written programs and procedures, and internal reporting.
- Holding a closing conference with facility management, and representatives of Nike, and FLA.
- Preparing an audit report with findings and recommendations for corrective measures. Observations on BMPs to enhance worker protection where host country regulations and industry guidelines are absent or considered to be outdated were included as appropriate.

1.2 Background Information

Founded in December 1982, Hansae Company Limited has apparel manufacturing operations in China, Guatemala, Indonesia, Nicaragua, Saipan and Vietnam. In 2015, Hansae had sales of more than \$1.4 billion, an operating profit of \$125 million, and sent 93% of its production to the United States. The company has operated its facility in Vietnam since 2001, and Nike has sourced from the facility for more than 10 years.

Hansae is an experienced, well-funded manufacturer with the resources to develop and implement an effective, world class OHS program directed by OHS professionals with appropriate funding, staff and full corporate support that is capable of anticipating, recognizing, evaluating and controlling the various types of workplace hazards that arise from mass production of garments. In July of 2016, the WRC reached an agreement with Nike and Hansae to conduct a limited onsite audit of Hansae's operations, involving two days on-site, in conjunction with a team from the FLA, which will issue a separate report of its own audit findings.

2.0 FINDINGS

2.1 Summary of Health and Safety Findings

There are 41 findings listed in the attached Corrective Action Plan (CAP). 16 are ranked as Priority 1 findings that require immediate attention due to their potential for injury or illness to workers. 24 findings are considered Priority 2, which relate to potential non-compliance or hazards and could result in injury, and the one remaining finding related to recordkeeping requirements is classified as Priority 3. Detailed descriptions of individual findings in each of the aspect areas, and recommended corrective actions, along with the regulatory citations, are presented in the Corrective Action Plan in the Attachment section.

The main occupational health issues identified during the site visit are excessive heat and high humidity inside the factories, and evaporative cooling fans that fail to keep the temperature within Vietnam standards; cleaning rooms where acetone is sprayed with

inadequate ventilation and respiratory protection equipment, and noise exposure from use of compressed air guns to clean clothes; and ergonomic risk factors from the generalized use of wood benches in the sewing areas with no back support, adjustments, or cushioned seats. Safety issues include exposed electrical wires in the cleaning room where flammable liquids are sprayed; locked or lockable emergency exit doors; and machine guarding deficiencies in tool grinders in the maintenance shops. Other issues of concern include the absence of job risk assessments; inadequately trained and underutilized OHS department employees; ineffective incident investigations and safety inspections - all of which point to a dysfunctional OHS program and lack of management support.

2.2 Indoor Air Quality

High temperature and relative humidity constitute a potential source of heat stress to Hansae garment workers, which can lead to or exacerbate some of the reported medical conditions, such as dizziness, headaches, and fainting episodes. The table below presents the averages of 62 temperature and relative humidity readings recorded in the Hansae factories during the two-day site visit, along with a comparison of indoor and outdoor levels at each factory, and between those factories with and without evaporative cooling systems. The table also shows the maximum allowable temperature in the workplace in Vietnam of 32⁰C (89.6⁰F) as per Decision 3733-2002/QĐ-BYT standard referenced in the Better Work Vietnam Guide to Vietnamese Law for the Garment Industry, 2016 edition. The complete data set is included in Attachment C.

Table 1: Temperature and Relative Humidity in Hansae Vietnam Factories

Date	Factory	Average Temp °C	Average R.H.%	Inside T°C > outside	Inside R.H.% > outside	Evaporative Cooling System
13-Oct	3	31.1	69.7	No	Yes	Yes
13-Oct	5	32.5	64.0	Yes	Yes	No
13-Oct	11	29.6	71.2	No	Yes	Yes
13-Oct	12	33.0	57.5	Yes	No	No
13-Oct	outside	31.5	61.4			
14-Oct	7	33.9	58.4	Yes	Yes	No
14-Oct	9	31.8	61.5	No	Yes	No
14-Oct	10	34.8	55.7	Yes	Yes	No
14-Oct	outside	34.1	50.5			
Regulatory	Maximum	32.0	80.0			

Notes: > = greater than; Temperatures in **bold** exceed the maximum limit as per Decision 3733-2002/QĐ-BYT standard for “normal” work referenced in the Better Work Vietnam Guide to Vietnamese Law for the Garment Industry, 2016 edition.

Temperatures in six of the seven factories inspected over two days exceeded the maximum temperature allowed by Vietnamese regulations of 32⁰C (89.6⁰F) in at least half of the work areas measured. The average interior air temperatures exceeded the limit in four of seven factories. Average interior humidity levels were higher inside than outside in six of seven factories, including both of those with evaporative coolers. The average indoor temperatures in factories 3 and 11, both which have evaporative cooling

systems were, on average less than 1.5⁰C lower than the outside temperature. Factory 3 was only 0.9⁰C below the maximum limit, but 8.3% more humid. Factory 11 was 2.4⁰C below the regulatory limit, and almost 10% more humid than outdoors. This data demonstrates that the use of evaporative coolers is not an effective means of controlling indoor temperatures to within Vietnamese standards in large measure because they are not designed to reduce humidity levels in air, which is a key component of comfort ventilation. An example of effective climate control is the system currently operating in Hansae's administrative office building.

2.3 Summary of OHS Program Evaluation

Hansae's OHS organization consists of a two-person, designated worker health and safety staff that reports to the Maintenance Manager, and a joint labor-management Health and Safety Committee that conducts and documents OHS quarterly meetings required by regulation. In addition, the Compliance Department is responsible for safety inspections, and individual factories conduct their own accident investigations with wide latitude for implementing and enforcing OHS rules. A central health clinic attends to all minor injuries and illnesses, classifies and reports injury and illness statistics, and participates in incident investigations.

The Safety Department staff has collateral duties in other areas, and do not meet the required two full-time equivalents, or have the training required by Vietnamese law for a facility of this size. They also lack the authority and opportunity to manage the OHS program on site. The facility's health clinic has misclassified employee illnesses and may not capture all injuries and illnesses occurring on site. The periodic safety inspections of the factories have not captured and corrected numerous hazards that have been reported in previous audits as well as the present audit. The investigations of incidents resulting in employee injuries and illnesses have not identified or addressed the root causes of the incidents, frequently listing "worker error" or "worker carelessness" as the sole cause of the incident. The Health and Safety Committee generates documentation but does not coordinate or conduct the essential components of effective OHS programs – the recognition, evaluation and correction of both visible safety hazards and more complex health risks.

The resulting OHS program for both the individual factories and the facility as a whole is fragmented, poorly coordinated, and largely ineffective. Overall, there is insufficient management commitment, administrative support and financial, human and technical resources devoted to the OHS program at Hansae Vietnam, at both the corporate and facility levels.

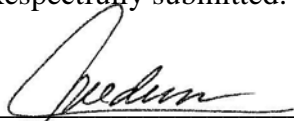
2.4 Audit Findings and Corrective Action Plan

The individual findings in each of the aspect areas with their regulatory citations are presented in the Audit Findings and Corrective Action Plan in Attachment "A". The detailed findings of the OHS Program Evaluation are included in Attachment "B".

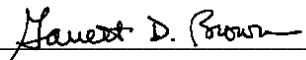
3.0 STUDY LIMITATIONS

The present Occupational Health and Safety Audit is not intended to be an exhaustive or comprehensive investigation of the facility. The information contained in this report relates only to the referenced subject facility as it existed at the time of the investigation and should not be extrapolated or construed to apply to any other facility or operation whatsoever. The contents of this report are valid as of the date of the investigation and are applicable only for the purposes and conditions described in this report. Any change in the conditions, standards, regulations or other professional interpretations outside of our control, may invalidate a part or all of the conclusions in this report, without implying any responsibility on the part of Alliance Consulting International or the Maquiladora Health and Safety Support Network.

Respectfully submitted:


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Date: 10/21/2016

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ATTACHMENT "A"

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
1	Canteen by Factory 6	Flammable gases	Butane gas cylinders are located in a separate room next to the kitchen accessed from the outside. The cylinders are manifolded to one pipe with a manual shut-off button to turn off gas flow in an emergency. However, a one gas line does not go through the manifold connected to the shut off button. The gas cylinder storage room is kept locked and cannot be accessed quickly in the event of a fire.	Reconfigure the butane fuel emergency shut-off devices to verify that all butane tanks connected to the manifold distribution system are turned off by a single shut off valve. Ensure unobstructed access to the storage room in the event of a fire in the canteen.	1	Labor Code, Articles 138 and 147; Circular 30/2012/TT-BYT; Circular 15/2012/TT-BYT; Joint Circular 13/2014; Circular 19/2011/TT-BYT	Open
2	Canteen by Factory 6	Food safety	Fluorescent light tubes on the kitchen ceiling are not protected to keep them from dropping glass shards and possibly mercury if they break over food preparation areas.	Install slip covers or other shielding on fluorescent lamps in food preparation areas.	2	Labor Code, Articles 138 and 147; Circular 30/2012/TT-BYT; Circular 15/2012/TT-BYT; Joint Circular 13/2014;	Open
3	Canteen by Factory 6	Food safety	The floor in the food preparation area is very slippery and there are no anti-slip mats next to the stove where workers handle pots with hot oil or boiling water.	Install anti-slip mats in front of the stove, and where there is a risk of slipping and injury from hot liquids.	2	Labor Code, Articles 138 and 147; Circular 30/2012/TT-BYT; Circular 15/2012/TT-BYT; Joint Circular 13/2014;	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
4	Cleaning Room. Factories 3,5,7,9,10,11, 12	Respiratory Protection	Single use filtering face piece masks with charcoal layer are used with acetone spray guns to clean stains. The masks are not NIOSH approved. The facepieces are not stored in bags, where they continue to absorb organic solvents while not in use and become saturated. There is no set mask replacement schedule.	Provide adequate respiratory protection based on industrial hygiene air monitoring. Train cleaning room employees on the proper use, care, and limitations of respirators, and implement a change out schedule for respirators to prevent vapor breakthrough.	1	Labor Code, Articles 138, 149 and 150; Circular 27/2013/TT-BLDTBXH; Circular 04/2014/TT-BLDTBXH	Open
5	Cleaning Room. Factories 3,5,7,9,10,11, 12	Compressed Gases	Compressed air guns used for cleaning spots operate at between 4-6 kg/cm ² pressure (56-85 psi). The nozzles do not have pressure reducers or relief devices to lower outlet pressure to 30 psi or less to prevent injury to workers.	Install an inline air pressure reducer in the room main air line or provide pressure reducer tips to each nozzle to keep air gun outlet pressure to 30 psi or less.	2	Labor Code, Articles 138 and 147	Open
6	Cleaning Room. Factories 3,5,7,9,10,11, 12	Hearing Protection	The sound level at the ear of the cleaning operator using a compressed air gun in one factory was 96 dBA, above the 90 dBA maximum noise limit, which represents four times the maximum loudness. The noise reduction rating of the ear plugs worn by the operator were not available.	Install a pressure reducer nozzles on the air guns to no more than 30 psi to help reduce the noise level, and evaluate the ear plugs to ensure they provide the required noise reduction to keep noise levels below 85 dBA daily average exposure.	2	Labor Code, Articles 138 and 147; Decision 3733/2002/QD-BYT' Standard TCVN 3985-1999	Open
7	Cleaning Room. Factories 3,5,7,9,10,11, 12	Respiratory Protection	No personal or area air monitoring for acetone has been conducted of cleaning room operators.	Conduct personal air monitoring to establish acetone concentrations and provide adequate respiratory protection, as needed.	2	Labor Code, Articles 30 and 138; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
8	Cleaning Room. Factories 3,5,7,9,10,11, 12	Ventilation	The cleaning rooms where acetone is sprayed in the open do not have local exhaust ventilation (LEV) systems to capture the vapors. Wall-mounted fans installed to exhaust air from the room do not provide adequate ventilation.	Install spray booths with LEV to capture acetone emissions from spray guns, and conduct acetone spraying inside enclosure hoods to prevent build-up of potentially toxic and flammable atmospheres in the room.	2	Labor Code, Articles 138 and 147; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open
9	Cleaning Room. Factories 3,5,7,9,10,11, 12	Electrical	Electrical outlets for plugging in emergency eye wash station pumps are not rated as ground fault circuit interrupt (GFCI) to prevent electric shock to workers.	Install GFCI outlets within 6 feet of where water is present, and where portable tools are used, such as pattern cutting saws. This finding was corrected after the audit subject to verification of photographic documentation provided.	1	Labor Code, Articles 138 and 147; Standard TCVN 11-48 /1996; Decree 35/2003/ND-CP; Decree 105/2005/ND-CP	Open
10	Cleaning Room. Factories 3,5,7,9,10,11, 12	Electrical	Emergency eye wash stations electric water pump motors are placed directly below the eye wash. The electric motor is not connected to a GFCI outlet. There is no floor drain to capture water stream presenting an electric shock hazard to users from energized equipment.	Relocate electric pump away from the eyewash station to keep water from contacting energized equipment, and install pipe to floor drain or bucket to capture water stream to keep area dry. Plug electric motor to GFCI outlet.	1	Labor Code, Articles 138 and 147; Standard TCVN 11-48 /1996; Decree 35/2003/ND-CP; Decree 105/2005/ND-CP	Open
11	Cleaning Room. Factories 3,5,7,9,10,11, 12	Flammable liquids	Open spraying of a Class 1B flammable liquid acetone with no local exhaust ventilation occurring immediately below non-explosion-proof lighting represents a possible explosion and fire hazard.	Install spray booths with LEV to prevent open air spraying that creates airborne mist of flammable liquid, and install appropriate explosion proof lighting and electrical wiring in the rooms.	1	Labor Code, Articles 138 and 147; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

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Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
12	Cleaning Room. Factories 3,5,7,9,10,11, 12	Personal Protection Equipment	Cleaning room employees transfer acetone from the 30 liter (7.9 gallon) containers to the spray gun containers using a manual pump. The employees wear eye protection, and chemical protective gloves, but their feet are unprotected in open toed sandals.	Provide protective footwear, such as closed-toed shoes, rubber boots, or chemical resistant rubber overshoes during liquid transfer operations. Correct fitting footwear must be individually assigned to each employee that requires it. Overshoes of various sizes may also be made available for common use.	1	Labor Code, Articles 138 , 147 and 149; Decree 26/2011/ND-CP; Standard TCVN 5507:2002; Circular 04/2014/TT-BLDTBXH	Open
13	Cleaning Room. Factories 3,5,7,9,10,11, 12	Flammable liquids	30-liter (7.9 gallon) containers of acetone are stored in the open inside plastic totes, not in flammable cabinets. Inventories observed ranged from one to three containers per room.	Store flammable liquids inside approved or listed metal flammable containers with adequate secondary containment capacity, tight sealing doors, and properly grounded.	1	Labor Code, Articles 138 and 147; Standard CVN 5507:2002; Decree 68/2005/ND-CP	Open
14	Cleaning Room. Factories 7,9,10,11, 12	Electrical	Exposed wires are evident in plugged electrical equipment, such as emergency eye wash water pumps in FA 7,9,11, and 12, and Fulontoon spot removing local exhaust ventilation system in factory 10.	Repair all deficiencies in electrical installations to ensure they comply with the electrical code and best practices. Portions of this finding were corrected after the audit subject verification of photographic documentation provided.	1	Labor Code, Articles 138 and 147; Standard TCVN 11-48 /1996; Decree 35/2003/ND-CP; Decree 105/2005/ND-CP	Open

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Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
15	Cleaning Room. Factory 10	Ventilation	The "Fulontoon" spot removing Local Exhaust Ventilation (LEV) machines were turned off, and several did not work when turned on.	Employees in the cleaning rooms cannot be exposed to hazardous levels of airborne chemicals above regulatory limits. If ventilation is required to maintain levels below regulatory limits, then the local exhaust ventilation (LEV) systems must be functional and effective. LEV systems that are non-functional or ineffective must be removed from the cleaning rooms.	2	Labor Code, Articles 138 and 147; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open
16	Cleaning Room. Factory 11	Slips and falls	A wet cloth mat placed underneath the emergency eyewash presents an immediate slipping hazard on tile floor. None of the cleaning rooms inspected have drains at the eyewash stations.	Install a pipe to floor drain or bucket to capture water stream for all eyewash stations to keep areas dry, and place anti-slip mats on the floor to prevent slips and falls during an emergency.	1	Labor Code, Articles 138 and 147	Open
17	Cleaning Room. Factory 12	Emergency Eyewash	Access to the emergency eye wash station is blocked in the cleaning room.	Maintain clear access to all emergency eyewash stations.	1	Labor Code, Articles 138 and 147; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open
18	Cleaning Room. Factory 7	Emergency Eyewash	The emergency eye wash paddle lever in the cleaning room has been replaced with a valve handle that is difficult to find and open in an emergency.	Replace eyewash handles with paddles for easy activation.	1	Labor Code, Articles 138 and 147; Decree 26/2011/ND-CP; Standard TCVN 5507:2002	Open
19	Emergency Exit. Factory 11	Electrical	The emergency exit sign and light are plugged in to wall outlets instead of being hardwired. The emergency light cord has been patched.	Permanent equipment such as emergency lighting and exit signs must be hard wired to the electrical system. Patched electrical cables must be removed and replaced.	1	Labor Code, Articles 138 and 147; Standard TCVN 2622-1995; Standard TCVN 439/BXD-CSXD	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
20	Facility. Factories 3,5,7,9,10, 11, 12	Ventilation	Temperatures in six of the seven factories inspected exceeded the maximum allowed 32°C (89.6°F) in at least half of the work areas measured. Average interior air temperatures exceeded the limit in four of seven factories. Average interior humidity levels were higher than outside in six of seven factories, including both of those with evaporative coolers. High temperatures and humidity in all work areas constitute a potential source of heat stress. Evaporative coolers are not an effective means of controlling indoor temperatures to within Vietnamese standards.	Make the necessary engineering controls to comply with Vietnamese temperature regulations, and modify work practices to prevent heat stress and ensure worker comfort.	2	Labor Code, Articles 138 and 147; Standard TVN 5508-1991; Decision 3733/2002/QD-BYT	Open
21	Facility. Factories 3,5,7,9,10,11, 12	Emergency Exits	The emergency exit doors in all of the buildings inspected had panic bar devices and also locking bolts that were bolted from the inside, or hasps with eyelets to fit a padlock.	Remove all bolts that can obstruct immediate exit in the event of a fire. This finding was corrected in some of the buildings inspected.	1	Labor Code, Articles 138 and 147; Standard TCVN 2622-1995; Standard TCV 439/XD-CSXD	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

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Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
22	Facility. Factories 3,5,7,9,10,11, 12	Respiratory Protection	The disposable filtering facepiece respirators (dust masks) provided for mandatory use by all factory workers do not fit many employees properly to make a good seal with the face, and are not replaced frequently enough to be effective even when they fit. The facility has not conducted independent air monitoring to establish the need for these masks, which are uncomfortable to wear all day, and lose their shape and integrity when they get moist from perspiration or become deformed from repeated storage.	Conduct representative personal air monitoring for each type of worker and job duties to establish fabric dust concentrations and verify the need for respiratory protection. Implement dust reduction measures, and provide proper fitting filtering facepiece respirators only if required based on results. Disposable facepiece respirators should be replaced daily or more frequently if needed.	2	Labor Code, Articles 137, 138, 147 and 149; Circular 04/2014/TT-BLDTBXH	Open
23	Fire Pump Room	Hazardous materials	The diesel tank for the back up generator located in the fire pump house does not have a hazard label, or container capacity. The tank has no secondary containment or diking to capture spills.	Apply the required placarding and install secondary containment. This finding was corrected after the audit subject verification of photographic documentation provided.	2	Labor Code, Articles 138 and 147; Standard TCV 5507:2002; Decree 68/2005/ND-CP	Open
24	Fire Pump Room	Electrical	Exposed wires are evident in the backup electric fire pump.	Repair all deficiencies in electrical installations to ensure they comply with the electrical code and best practices.	1	Labor Code, Articles 138 and 147; Standard TCVN 11-48 /1996; Decree 35/2003/ND-CP; Decree 105/2005/ND-CP	Open
25	Inspection, Ironing, Packing. Factories 3,5,7,9,10,11, 12	Ergonomics	The inspection, ironing and packaging operations represent ergonomic risk factors from prolonged standing, even with rubber slippers or anti-fatigue mats.	Conduct a job risk assessment of ergonomic risk factors for all operations with prolonged standing and modify the work process to reduce the risk of musculo-skeletal injury.	2	Labor Code, Articles 137, 138 and 147;	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

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Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
26	Maintenance shop. Factories 3,5,7,11, 12	Machine guarding	Grinding wheels in some maintenance shops did not have shield protectors, tongue guards, or tool rests, and in those that did the tool rest was more than 1/8" from the wheel. The grinder tables were not bolted to the floor.	Install appropriate guards to cover all hazard points from moving parts and secure them to the floor. Portions of this finding were corrected after the audit subject to verification of photographic documentation provided.	1	Labor Code, Articles 138 and 147; Circular 05/2014/TT-BLDTBXH; Circular 06/2014/TT-BLDTBXH	Open
27	Maintenance shop. Factories 9,12	Drill presses	Unbolted drill presses were not secured to the floor, and can tip over onto workers.	To prevent tipping over, the drill press in FA 9 used as mobile tool can be bolted to a sturdy wood platform that can be moved, and the FA 12 drill press must be bolted to the table in its permanent location.	2	Labor Code, Articles 138 and 147; Circular 05/2014/TT-BLDTBXH; Circular 06/2014/TT-BLDTBXH	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

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Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
28	OHS Program	Accident Investigation	10 accident investigations between November 2015 and August 2016 where workers were transferred to the hospital for medical treatment beyond first-aid, including electrical shock resulting in a fall and head trauma, crushed fingers, fractured hands, needle punctures, and cut hands requiring stitches all concluded that the cause of all the incidents was "worker error" or "worker carelessness." No investigation was conducted of the equipment or work procedures involved in the incident. The only corrective actions listed were "worker retraining" and "frequent reminders" to work safely. All accident investigations are conducted at the factory level by mostly managers and supervisors.	The incident investigation process and make-up of the investigation team needs to be reorganized to focus on identifying the actual underlying causes of injuries and illnesses and preventing them in the future. Incident investigations must be conducted in an objective independent manner by shifting authority and responsibility away from the factory management and relying more on the OHS department. The investigation team must receive training in incident investigation, root cause analysis, and incident reporting and recordkeeping.	2	Labor Code, Articles 137, 138, 142, 147 and 151; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open
29	OHS Program	Occupational Injury and Illness records	Monthly Sickness reports prepared by the health clinic staff do not use uniform classifications to allow month to month comparisons. Some conditions, such as fainting incidents are classified as digestive distress or hypoglycemia, which does not allow an accurate representation of occupational health and safety risks.	Develop a consistent reporting system to improve tracking of occupational illness and injuries. Ensure all illness and injuries are captured by the factory's surveillance system and investigated as to their root cause so that action can be taken to prevent their reoccurrence.	3	Labor Code, Articles 137, 138, 143, 147 and 151; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open

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Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
30	OHS Program	OHS Department	The two assigned OHS staff do not work full-time in safety as required by regulation. One is 50% OHS, and 50% maintenance, and the other is 25% environmental and 75% safety. OSH staff do not participate in accident investigations or regular factory safety inspections, in the preparation of reports to the government Department of Labor, which includes the company's risk assessments, or receive monthly illness and injury report, and are not members of the OHS Committee, although they attend the quarterly Labor-Management safety Committee meetings.	Assign OHS staff to full-time duty or hire additional personnel dedicated to full time OHS duties, as required by Vietnamese regulations. Reorganize duties to incorporate OHS staff in all safety related activities and groups, including accident investigations, risk assessments, safety inspections, OSH Committee, and review of illness and injury reports.	2	Labor Code Articles 137, 138, and 139; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open
31	OHS Program	Risk Assessments	Comprehensive risk assessments of health hazards have not been conducted at the facility. Hansae relies exclusively on very limited snapshot annual inspection by government auditors of temperature, humidity, noise, lighting, and airborne chemical and dust levels.	Conduct independent job risk assessments for all the job functions at the facility, including representative air monitoring using recognized industrial hygiene methods to determine full shift exposures to airborne contaminants such as dust, acetone, heat, and noise, as well as evaluation of ergonomic and repetitive motion hazards and associated human factors, and management of facility-wide programs like respiratory protection.	2	Labor Code, Articles 137, 138,139 and 148; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
32	OHS Program	Safety Inspections	The factory safety inspections conducted by factory personnel and the Compliance Department have not captured a wide range of safety hazards to workers at the facility. Only worker PPE violations are noted, while unsafe conditions of equipment, installations and machinery, such as those identified in this assessment are not recognized or are ignored.	The safety inspection procedures and make-up of the inspection team needs to be reorganized, and the inspectors must receive proper training in inspection procedures, and risk assessment to identify and correct deficiencies, as well as documenting and reporting repeat violations.	2	Labor Code, Articles 137, 138 and 147; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open
33	OHS Program	Training	Each of the two assigned OHS staff have received less than 14 hours of function-specific training from Hansae, Hansae's client brands, or government agencies all together since establishing the Safety Department three years ago. Current Safety Department employees did not receive any OHS training until their second year in the department, and the total hours are well below what is required by Vietnamese law.	Provide training required by Vietnamese law for "Group 2" employees (full- and part-time OHS officers and managers) of 48 hours OHS training at initial job assignment and 8 hours of refresher training every two years.	2	Labor Code, Articles 137, 138, 139 and 150; Circular 27/2013/TT-BLDTBXH	Open
34	Restrooms. Factories 5, 12	Toilets	One of the men's toilets in factory 12 was out of operation and covered with wet rags. The toilet paper holders in two of the women's stalls in factory 5 were empty.	All toilet facilities must be working and supplied with toilet paper at all times in accordance to Vietnamese regulations.	2	Labor Code, Article 138; Decision 3733/2002/QD-BYT	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
35	Restrooms. Factories 9, 12	Hand washing facilities	There is an insufficient number hand washing taps below the required 30 workers/tap: FA 9 has 164 men, and only 3 functioning taps, or 55 men per tap. FA 12 has 200 men, and 4 faucets or 50 men per tap.	Install sufficient numbers of working handwashing taps in all restrooms according to Vietnamese regulations.		Labor Code, Article 138; Decision 3733/2002/QD-BYT	Open
36	Sewing. Factories 3,5,7,9,10,11, 12	Ergonomics	Wood benches assigned to sewing operators are not ergonomically appropriate to the task. The benches lack back support, seat padding, arm rests, casters, swivel, seat pan height and back adjustment, and lumbar support. Operators "fix" the chairs by placing cushions on the seat.	Provide ergonomically adjustable chairs for operators required to sit for most of the work shift.	2	Labor Code, Articles 137 138 and 148; Joint Circular 01/2011/TTLT-BLDTBXH-BYT	Open
37	Sewing. Factory 5	Machine guarding	The Plexiglas barrier guard on the belt drive of a snap machine was missing a section, leaving exposed hazard points.	Install appropriate guards to cover all hazard points from moving parts. This finding was corrected after the audit subject to verification of photographic documentation provided.	1	Labor Code, Articles 138 and 147; Circular 05/2014/TT-BLDTBXH; Circular 062014/TT-BLDTBXH	Open

Hansae Vietnam Health and Safety Audit Corrective Action Plan

Facility: Hansae Vietnam

Audit Date: Oct 13-14, 2016

Finding No.	Area Audited	Category	Description	Recommended Corrective Action	Priority Level	Regulatory Citation	Status
38	Shipping Warehouse. Factories 3,5,7,9,10,11,12	PPE	Workers in the shipping area use pallet jacks to move plastic pallets load with incoming materials and outgoing product. Shipping dock workers also used rolling conveyors to load boxes into trucks. The workers are wearing only open-toed sandals. Jacks, pallets and materials that can fall from the conveyor represent a crush hazard on unprotected feet. Reportedly, loading operations and jacks are used intermittently, at most 2 hours a day.	Provide protective footwear, such as steel-toed shoes, or removable toe guards that can be slipped on and off and used just for the period of time the jacks are used and loading operations take place when feet are exposed to potential crush hazard. Correct fitting footwear must be individually assigned to each employee that requires it, or toe guards of various sizes that can be for common use may be made available.	2	Labor Code, Articles 138 , 147 and 149; Decree 26/2011/ND-CP; Standard TCVN 5507:2002; Circular 04/2014/TT-BLDTBXH	Open
39	Statistics area in Factory 9, and QC area in Factory 11	Slips and falls	Raised platforms present a tripping and falling hazard when employees step onto or step off of the raised platform.	Place warning tape or other effective method on the leading edge of the platform and also on the floor right where the people get on and off to warn employees of the break in elevation and trip/fall hazard.	2	Labor Code, Articles 138 and 147	Open
40	Warehouse. Factories 3,5,7,9,10,11,12	Storage Racks	Storage racks are not bolted to the floor.	Bolt storage racks.	2	Labor Code, Article 138 ad 147; Circular 05/2014/TT-BLDTBXH; Circular 062014/TT-BLDTBXH	Open
41	Warehouse. Factories 3,5,7,9,10,11,12	Material Handling	Employees who walk up and down the platform ladder to store and retrieve oversize and heavy boxes over 25 kg with limited visibility face a risk of falls and serious injury.	Provide mechanical lifting devices to access high level racks with heavy or oversize boxes.	2	Labor Code, Articles 138 and 147	Open

ATTACHMENT "B"

Evaluation of the OHS Program at Hansae Vietnam

Founded in December 1982, Hansae Co. Ltd., has apparel manufacturing operations in China, Guatemala, Indonesia, Nicaragua, Saipan and Vietnam. In 2015, Hansae had sales of more than \$1.4 billion, an operating profit of \$125 million, and sent 93% of its production to the United States. The company has operated its facility in Vietnam since 2001, and Nike has sourced from the facility for more than 10 years.

Hansae is an experienced, well-funded manufacturer with the resources to develop and implement an effective, world class occupational health and safety (OHS) program directed by OHS professionals with appropriate funding, staff and full corporate support that is capable of anticipating, recognizing, evaluating and controlling the various types of workplace hazards that arise from mass production of garments.

Because the October site-visit was limited to two days, it was not possible to review every relevant document, but interviews of key staff and a review of critical documents provided the basis for evaluating the scope, activities and impact of the OHS program for a factory of 10,000 workers, 12 manufacturing buildings, five dining halls, a large administrative and related buildings.

Designated OHS Staff

Hansae has a plant-wide Health and Safety Department consisting of two designated staff members, and 23 part-time staff at the 12 separate factories that make up the facility. Since the factory-level part-timers are managers with major production responsibilities, the only safety staff are the two persons assigned at the facility-level.

However, interviews with the two safety staff indicated that even these staff members do not spend all of their time on worker safety as required by Vietnamese regulations for facilities of this size. One of the safety staff spends 50% of his time on strictly maintenance issues (water and electrical systems); while the second staff person spends at least 25% of his time on environment issues (hazardous waste storage and disposal).

The staff member with environmental responsibilities (3 years at Hansae) has a university degree in environmental management, with two semesters of health and safety course work; while the maintenance-related staff member (13 years with Hansae) has no formal education in OHS and spent the first decade of his Hansae employment in the maintenance department. Both safety staff members were assigned to the Safety Department three years ago. Both report to the Korean manager of plant maintenance for the entire facility.

Both safety staff members have each received less than 14 hours each of OHS training from Hansae, Hansae's client brands, or government agencies since establishing the Safety Department three years ago. According to Vietnamese law, "Group 2" employees (full- and part-time OHS officers and managers) are required to receive 48 hours OHS training at initial job assignment and 8 hours of refresher training every two years. Hansae's current Safety

Department employees did not receive any OHS training until their second year in the department, and the total hours are well-below what is required by Vietnamese law.

The two designated members of the Safety Department do not participate in the key activities of the facility's OHS program. They do not participate in the periodic safety walk-around inspections of the 12 manufacturing plants (these are done by untrained factory and facility-wide Compliance Department personnel). They do not conduct investigations of accidents or incidents that produce injuries and employee reports of illness (also done by factory personnel). They do not conduct any measurements of airborne contaminants, such as chemical solvents used in the cleaning/spot-removing rooms. They do not directly interact with the five-members of the facility health clinic. They do not directly interact with the facility-wide Compliance Department which receives and investigates employee complaints. They are not members of and do not participate in meetings of the facility's 27-member Health and Safety Committee. They do not participate in the development and writing of the twice-yearly report on labor protection to the government Department of Labor (submitted in January and July of every year), which includes the company's assessment of risks on-site.

The safety-related activities that the two Safety Department staff members actually perform consist of conducting pro-active inspections of machinery and equipment for the first staffer, and checking that workers are using personal protection equipment (PPE) and evaluating factory levels of heat and noise for the second staffer. Both also meet quarterly with members of the 122-member "OHS Collaborators Network" to receive employee complaints and suggestions, such as the request of boiler operators to have a bench seat at their workstation.

Surveillance of Worker Injuries and Illnesses

Hansae's facility includes a health clinic staffed by one physician and four nurses. The 10-bed facility provides only diagnosis and first-aid level treatment, and workers needing treatment beyond first-aid are transported by company vehicle to a nearby hospital. The clinic manager reported that no ambulance has entered the Hansae compound and all transport to the facility is by company vehicle.

Clinic records indicated that during calendar year 2015, there were 15,116 visits by workers to the clinic, or approximately 1,200 visits a month. For the period of July-August-September 2016, there were 3,204 worker visits to the clinic, of which 25 cases were transferred to the hospital for treatment beyond first-aid.

One key component of an effective OHS program is ongoing surveillance of worker injuries and illnesses to identify and then investigate the cause of these injuries and illnesses. At Hansae it appears there are issues of misclassification of illnesses, which would impede the identification of the cause, and the possibility of significant undercounting of illnesses.

In July 2016, the clinic received two workers who had fainted at their worker stations in factories 5 and 11. The observation that they had fainted was recorded in the hand-written clinic log book of worker visits for each factory, where they are marked with a letter "X" next to the diagnosis, and on a separate page of the monthly report. However, when these two incidents were entered

into the summary charts for the month, neither was listed as “fainting,” but rather one was listed as “hypoglycemia” and the other as “digestive disorder.” In fact, none of the summary charts from January 2015 to September 2016 listed any cases of “fainting.”

Moreover, the WRC received credible reports from off-site worker interviews that at least two workers fainted at their work stations in factory 5 this year and were then taken to the facility clinic for treatment, including one worker in March and another worker in July. However, a page-by-page review of the 2015 and 2016-to-date clinic log books for factory 5 conducted on October 14, 2016 showed only one entry for a fainting incident – the July 18th fainting, which was listed as hypoglycemia on the summary charts. The March fainting incident does not appear on the factory 5 log book. A similar review of the 2015 and 2016 log books for factory 12 did not list any fainting incidents in over 21 months.

The scale of the illness misclassification is unknown without cross-checking the log book entries to the summary charts for each factory. However, there appears to be a substantial discrepancy between the health clinic reports, and independent reports from worker interviews. This means that the total number and causes of fainting cases is also unknown. Illnesses that are not captured by the factory’s surveillance system will not be investigated as to their cause nor action taken to prevent reoccurrence of the illness.

Investigation of Incidents Causing Worker Injuries and Illnesses

Another key element of effective OHS programs at a factory-level is a thorough investigation of incidents resulting in worker injury or illness to identify the underlying cause of the incident and the means necessary to prevent future incidents and injuries.

A random survey of ten cases between November 2015 and August 2016 where workers were received at the clinic and then transferred to the hospital for medical treatment beyond first-aid were reviewed during this audit. The workers’ injuries included electrical shock resulting in a fall and head trauma, crushed fingers, fractured hands, needle punctures, and cut hands requiring stitches

In every case, Hansae’s incident investigation committee concluded that the cause of the 10 incidents was “worker error” or “worker carelessness.” No investigation was conducted of the equipment or work procedures involved in the incident. The only corrective actions listed were “worker retraining” and “frequent reminders” to work safely.

The incident investigations are conducted at the factory level – there are 12 separate factories in the facility – and the investigation committees consist overwhelmingly of factory managers. Some investigation committees consist of eight persons, only one of whom is not a manager, and the other members typically include the factory’s General Manager and Vice Manager, Manager of Human Resources, and an Executive Board member of the factory trade union who is also a vice manager of the factory. Other investigation committees include five members, only one of which is an hourly employee, and the other members typically include the General or Vice Manager of the factory and a union board representative who is also a manager of the facility.

Having incident investigation committees consisting of a majority of managers who have direct responsibility for the factory where the incident occurred creates a conflict of interest that keeps them from identifying the actual underlying causes of injuries and illnesses in an objective and unbiased manner, and making the necessary changes to prevent the same incidents from occurring in the future.

Factory Inspections and Risk Assessment

Like the incident investigations, periodic safety inspections of each factory are conducted by personnel of each specific factory. Effective safety inspections are critical to identifying and correcting hazards to workers and assessing the risks to employees that can be addressed to prevent injuries and illnesses.

Given the limited time available for this audit, the safety inspection process was reviewed in the context of the summary chart of factory inspections contained in the minutes of the quarterly Health and Safety Committee meetings in September and December 2015 and April and July 2016.

Of the 70 inspection categories summarized in the reports, the only two areas where deficiencies were noted in each of the four summaries were in employee use of personal protective equipment (gloves and dust masks). No other deficiencies were reported apart from those attributed to worker non-compliance. Given the findings of the last Better Work audit in September 2015, the FLA audit in July 2016, and the current audit – the factory safety inspections conducted by Hansae have not captured a wide range of safety hazards to workers at the facility.

Moreover, effective OHS programs at the facility level must include comprehensive risk assessments of health hazards in addition to identifying visible safety hazards. These assessments should include air monitoring to determine full shift exposures to airborne contaminants, heat and noise; evaluation of ergonomic/repetitive motion hazards and associated human factors; and management of complex programs like respiratory protection.

This critical risk assessment activity appears to be virtually absent at Hansae. The annual inspection by government auditors includes only direct-reading measurements (a single snapshot in time rather than measurement of full-shift exposures) of temperature, humidity, noise, lighting, and airborne chemical and dust levels.

Without specific health risk assessments, Hansae is unable to determine other health risks on site, including the following:

- What is the actual full-shift exposure to workers in the cleaning rooms to acetone? What controls are needed to eliminate or reduce these exposures, such as spray booths with dedicated local exhaust? What types of personal protective equipment are necessary to protect workers against the actual, measured hazards in the cleaning room?
- What are ergonomic hazards experienced by sitting sewing operators or standing ironing workers? What type of adjustable chairs – as opposed to the standard backless bench now in use throughout the facility – are needed to support sewing operators of different

heights and body sizes? What anti-fatigue mats or stools are needed to support standing ironing workers?

- What ergonomic and safety hazards are experienced by workers manually handling materials without mechanical assistance such as forklifts, in the materials storage and shipping departments? What controls and training are needed to avoid injuries?
- What respirators – as opposed to dust masks – are required by the actual, measured exposures to airborne chemicals and dusts to prevent unhealthy exposures to workers? If respirators are required, how can an effective respirator program involving fit-testing workers to achieve air-tight seals on workers' faces, conducting effective worker training, and for cleaning and storing respirators, be established and maintained over time?

Worker Training

The effectiveness of worker safety training at Hansae could not be evaluated in the time available for this audit. Worker training is a critical element of effective OHS programs along with surveillance of injuries and illness, safety inspections and risk assessments, and adequate staffing and leadership support for the safety department and committees.

In general, training programs are evaluated for whether they cover all hazards and risks on site; whether workers have the time to participate; whether the training methods are understandable and effective with the specific workforce; and whether workers are able to retain and use the safety information.

Anecdotally, the selection of the filtering facepiece respirator worn by the cleaning room employees, which is not adequate for this task, was reportedly made by one of the two OHS staff members who does not have training in industrial hygiene, and a factory-level “expert” with unknown qualifications. This example points to the need for additional training and corporate support to the facility's OHS function.

Facility-wide Health and Safety Committee

Hansae has a 27-member Health and Safety Committee which meets quarterly and includes 10 hourly or production workers and 17 managers. A group interview was conducted with five of the 10 worker members of the committee, and the last four quarterly committee meeting minutes were reviewed.

The committee produces minutes; reviews injury and illness reports; reviews incident investigations; reviews the annual government audit, and generates the twice-a-year report on labor protection for the government Department of Labor.

The fact that this audit confirmed previously documented ongoing and repeated safety hazards and health risks at Hansae reported by the FLA and Better Work assessments indicates that the OHS program at Hansae favors generation of documents over effective assessment and control of hazards.

Interestingly, four of the five interviewed worker members of the Health and Safety Committee work in the maintenance department of their factories as do the two designated safety officers. It appears that Hansae management views worker health and safety as largely a maintenance department function, rather than a stand-alone department with adequate staffing and resources.

Conclusion

Hansae has a two-person, designated worker health and safety staff, and a joint labor-management Health and Safety Committee that conducts and documents quarterly meetings required by Vietnam regulations. However, the OHS program for both the individual factories and the facility as a whole is ineffective in several respects.

The Safety Department staff do not have the training required by Vietnamese law or the authority and opportunity to direct the OHS program on site. The facility's health clinic has misclassified employee illnesses and may not capture all injuries and illnesses occurring on site. The periodic safety inspections of the factories have not captured and corrected numerous hazards that have been reported in previous audits as well as the present audit. The investigations of incidents resulting in employee injuries and illnesses have not identified and addressed the root causes of the incidents, frequently listing "worker error" or "worker carelessness" as the sole cause of the incident. The Health and Safety Committee generates documentation but does not coordinate or conduct the essential components of effective OHS programs – the recognition, evaluation and correction of both visible safety hazards and more complex health risks.

The result is an OHS program for both the individual factories and the facility that is fragmented, poorly coordinated, and largely ineffective. Overall, there is insufficient management commitment, administrative support and financial, human and technical resources devoted to the OHS program at Hansae Vietnam, at both the corporate and facility levels.

Recommendations

- 1) Hansae Co., Ltd. needs to establish an effective corporate-wide program run by OHS professionals for worker health and safety in Vietnam as well as other locations with clearly stated and tangible top management support;
- 2) Hansae Vietnam needs to establish an effective OHS program at the facility – managed by OHS professionals on-site and supported by Hansae Headquarters, and reporting directly to facility senior management with a sufficient number of personnel who have received, at a minimum, the OHS training required by Vietnamese law;
- 3) The health clinic needs to revise its procedures to accurately capture and report worker injuries and illnesses occurring on site, and assist the Health and Safety Department and Committee in determining the causes and possible prevention measures of these injuries and illnesses;
- 4) The procedures for investigation of incidents need to be revised to have investigations led by trained health and safety staff and include more production level members and fewer managers to eliminate potential conflicts of interest;

- 5) The factory safety inspections need to be led by trained health and safety staff and include more production level members and fewer managers with potential conflicts of interest;
- 6) The Health and Safety Department staff must undertake assessments for both health and safety risks, and implement programs and controls as needed to reduce or eliminate health and safety hazards to workers in all factories and job classifications
- 7) The Health and Safety Department staff must work with the Human Resources Manager to conduct periodic reviews of the worker training programs on site to ensure that all required and needed topics are covered on a timely basis, and in a manner that is accessible, understandable and usable by workers exposed to health and safety hazards on site;
- 8) The Health and Safety Department staff needs to be part of the Health and Safety Committee and become the critical intersection of the various aspects of the OHS program and where the program is coordinated, periodically evaluated and revised as needed.

ATTACHMENT "C"

Temperature and Relative Humidity Readings at Hansae Vietnam Factories

Date	Factory	Area	Temp °C	RH%
10/13/2016	3	packing	33.4	59.7
10/13/2016	3	ironing	32.1	68.4
10/13/2016	3	sewing	30.0	75.5
10/13/2016	3	sewing	32.6	62
10/13/2016	3	sewing	30.3	
10/13/2016	3	cutting	28.9	80
10/13/2016	3	warehouse	30.6	72.7
Average	3		31.1	69.7
10/13/2016	5	warehouse	32.2	65.4
10/13/2016	5	warehouse	31.7	64.7
10/13/2016	5	warehouse	32.4	63
10/13/2016	5	toilet	31.8	65.3
10/13/2016	5	sewing	33.0	62.7
10/13/2016	5	inspection	33.1	63.2
10/13/2016	5	inspection	32.4	65.5
10/13/2016	5	packing	32.9	63.3
10/13/2016	5	cleaning	33.1	62.7
Average	5		32.5	64.0
10/13/2016	11	packing	29.2	72.7
10/13/2016	11	sewing	28.9	72.9
10/13/2016	11	sewing	28.9	74.5
10/13/2016	11	cutting	29.0	73.7
10/13/2016	11	warehouse	30.1	67.2
10/13/2016	11	sewing	30.1	71.3
10/13/2016	11	inspection	30.0	69.9
10/13/2016	11	sewing	29.6	70.6
10/13/2016	11	office area	30.4	68.2
10/13/2016	11	sewing	30.0	
Average	11		29.6	71.2
10/13/2016	12	packing	33.4	56.9
10/13/2016	12	office area	32.8	58.4
10/13/2016	12	ironing	32.9	57.2
10/13/2016	12	sewing	33.8	54.7
10/13/2016	12	cutting	33.0	57
10/13/2016	12	cutting	32.4	59.2
10/13/2016	12	sewing	32.7	58.8
10/13/2016	12	ironing	33.1	57.6
Average	12		33.0	57.5
10/14/2016	7	sewing	32.5	67.3
10/14/2016	7	sewing	34.1	59.1
10/14/2016	7	sewing	34.2	57.4
10/14/2016	7	sewing	34.4	55.9
10/14/2016	7	cutting	33.9	55.9
10/14/2016	7	inspection	33.9	57.4
10/14/2016	7	packing	34.3	55.5
Average	7		33.9	58.4

Temperature and Relative Humidity Readings at Hansae Vietnam Factories

Date	Factory	Area	Temp °C	RH%
10/14/2016	9	office area	32.7	52.3
10/14/2016	9	packing	32.8	51.9
10/14/2016	9	ironing	32.8	53
10/14/2016	9	sewing	32.4	60
10/14/2016	9	thread cutting	31.1	62.7
10/14/2016	9	warehouse	31.4	64.1
10/14/2016	9	warehouse	30.8	68.4
10/14/2016	9	thread cutting	30.3	71.5
10/14/2016	9	sewing	31.4	66.3
10/14/2016	9	cutting	32.1	64.9
Average	9		31.8	61.51
10/14/2016	10	cutting	35.0	51.7
10/14/2016	10	inspection	35.1	54.4
10/14/2016	10	cleaning	34.3	59.8
10/14/2016	10	sewing	34.7	56.8
Average	10		34.8	55.7
10/13/2016	5	outside	29.4	65
10/13/2016	11	outside	29.2	75.1
10/13/2016	11	outside	31.2	62.1
10/13/2016	12	outside	32.8	57
10/13/2016	12	outside	34.7	47.8
Average			31.5	61.4
10/14/2016	9	outside	32.5	53.6
10/14/2016	10	outside	35.7	47.3
Average			34.1	50.5

Instruments:

TSI Model 9565 Air Velocity meter and Model 982 Temperature and RH probe

TSI Model 7565-X-Q-Trak meter and Model 982 Temperature and RH probe

Instruments were calibrated according to manufacturer's specifications