

# HEALTH, SAFETY, AND ENVIRONMENT POLICIES AND REGULATIONS

For Mechatronics at  
WorldSkills Abu Dhabi 2017





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# 1 GENERAL

The WorldSkills Competition can prove challenging in terms of Health, Safety, and Environment (HSE) due to the nature of the skill competitions involved and associated hazards, the Competition environment, unfamiliar machines and tools, the time restraints, and the accompanying excitement of participation. For this reason, the WorldSkills Abu Dhabi 2017 Technical Team wishes to stress the importance of general Health, Safety, and Environment awareness in the planning and implementation of the WorldSkills Abu Dhabi 2017 Competition, which will ensure a healthy and safe Competition and working environment is maintained for all accredited participants involved in and attending the event.

Each Technical Delegate is responsible for ensuring that their compatriot Competitors and compatriot Experts have been briefed on the correct conduct and are fully informed of the Competition Organizer's Health, Safety, and Environment regulations before the Competition begins, so that they understand and subsequently adhere to these requirements. All personnel who may be in the workshop need to receive Health, Safety, and Environment information and instruction, this will be given by the Workshop Manager prior to familiarization. Each participant MUST confirm that this is the case by providing a signature directly thereafter.

**This document has been divided into eight sections that relate to:**

- Section 1: All involved with WorldSkills Abu Dhabi 2017
- Section 2: Responsibilities and Insurance
- Section 3: General Health, Safety, and Environment regulations
- Section 4: Risk prevention
- Section 5: First Aid and Emergency Evacuation
- Section 6: Fire Safety
- Section 7: Workshop Safety Zones
- Section 8: Skill-specific Safety requirements

## 1.1 INTRODUCTION TO HEALTH, SAFETY, AND ENVIRONMENT REGULATIONS

The Competition Health, Safety, and Environment regulations and skill-specific Health, Safety, and Environment rules will follow (as a minimum) United Arab Emirates Legislation and Regulatory Code of Practice - OSHAD (Occupational Safety and Health Abu Dhabi): [www.oshad.ae/en/pages/home.aspx](http://www.oshad.ae/en/pages/home.aspx)

This document will combine both the Health and Safety Regulations as detailed by OSHAD (Occupational Safety and Health Abu Dhabi) but also Abu Dhabi National Exhibition Centre's (ADNEC) specific Regulatory Code of Practice and safety management systems.

All participants require a serious and conscientious attitude to health and safety instructions and any required regulations.

This document contains the major safety regulations, which are important for all persons who enter the workshops. It also includes guidelines and information on safe conduct, which will be provided through the Workshop Manager to all persons involved in the competition. All persons involved in the Competition must be strongly committed to preventing accidents and controlling hazards. Every person undertakes responsibility to conscientiously adhere to the accident prevention policies and subsequent sections in this document. They are also aware that any violation of the accident prevention regulations may be punished by exclusion from the workshop or the event.

The measures taken for the purpose of ensuring Health, Safety, and Environment at work were prepared and implemented in consultation with the competent authorities, agencies, and various other related specialists.



The Competition venue in general, and all skill areas will be inspected by the HSE team members before the Competition starts and constantly during the event. The Competition Organizer will provide an Incident Response Plan prior to the event and this will be implemented during the Competition if deemed required.

If you have any general health and safety concerns before the skill competitions begin, please contact WorldSkills Abu Dhabi 2017 Technical Team and/or the Workshop Managers on any skill-specific safety issues.

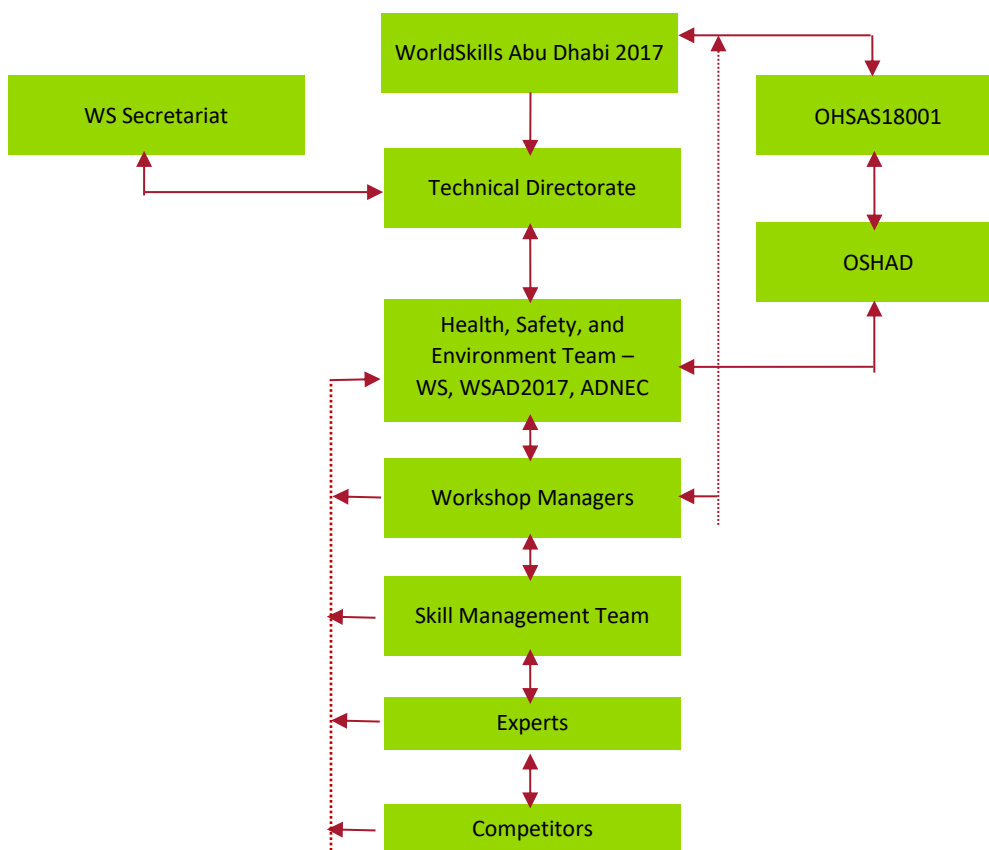
If during Familiarization, or the Competition itself, Health, Safety, and Environment regulations are not adhered too, the Workshop Manager must be informed immediately and this behaviour is obligated to be corrected as a matter of urgency.

WorldSkills Abu Dhabi 2017 reserves the right, in the event of improper handling of work equipment, materials, devices, machines, or overriding of a technical safety installation, to caution accredited persons or exclude the latter from the workshop and event environment.

### 1.1.1 OCCUPATIONAL HEALTH AND SAFETY STRUCTURE

The reporting procedure during the Competition for all Health, Safety, and Environment issues and concerns will be handled as described in Figure 1. All decisions will comply with the United Arab Emirates Health, Safety, and Environment legislation and Regulatory Code of Practice.

Refer to OSHAD (Occupational Safety and Health Abu Dhabi): [www.oshad.ae/en/pages/home.aspx](http://www.oshad.ae/en/pages/home.aspx).



The Competition Organizer Technical team is responsible for all infrastructure, inclusive of the equipment and the set-up which will be in accordance with international legislation.



Experts are responsible for planning and running the Competition and related area according to all Health, Safety, and Environment documented requirements.

The Technical Delegates and all Team Leaders are responsible for ensuring that all Competitors and Experts have been given the correct and full information about Abu Dhabi's Health, Safety and Environment regulations before working with equipment and materials.

Skill competitions must conform to all Health, Safety, and Environment required regulations.

If a difference exists between an Expert's/Competitor's country's/region's Health, Safety, and Environment standards and Abu Dhabi's standards, then the higher Health, Safety and Environment standard will prevail for that Expert/Competitor.

## 1.2 A SHARED GOAL - ZERO HARM

WorldSkills, its Members, and the Competition Organizer have the shared goal of creating a successful and proactive Health and Safety culture at the WorldSkills Competition. As such we would like to familiarize all accredited participants with the zero harm vision, which is first and foremost a philosophy aimed at encouraging participants to view all incidents as preventable.

The zero harm approach means promoting Occupational Health and Safety awareness by assessing hazards and related risks, compliance with all safety rules, safe operation of tools and machines, wearing personal protective equipment, keeping personal protective equipment in good condition and maintaining good housekeeping throughout the Competition venue.

## 1.3 HEALTH, SAFETY, AND ENVIRONMENT POLICY STATEMENT

The health, safety, and welfare of all individuals involved with WorldSkills Abu Dhabi 2017 are of vital importance. Adhering to the Health, Safety, and Environment policies and regulations as explained in this document is a condition of participation within the WorldSkills Abu Dhabi 2017 event and it is everyone's responsibility and shall not be sacrificed for the sake of expediency.

It is our strong belief that all incidents can be prevented and every effort shall be made to:

- Identify hazards and related risks;
- Inform those who need to know about any potential hazards;
- Control or reduce the risk of those hazards as far as is reasonably practicable.

Safety is a shared responsibility of WorldSkills Abu Dhabi 2017 and WorldSkills International and its Members, as well as these two organization's all volunteers, delegates, Experts and Competitors involved in this event have an equal responsibility towards Health, Safety, and Environment standards. Safety shall be an integral component of Competition activities – together we can create a positive safety culture and ensure a successful event, with on-going proven practices.

All individuals involved have the *Right to Know*; *Right to Participate*, and the *Right to Refuse* and will be expected to fulfil their safety responsibilities and to understand and adhere to the criteria as documented in this manual.

All accredited participants, WorldSkills Abu Dhabi 2017, WorldSkills International, and all volunteers will abide by this manual and the rules and regulations with regards to Health, Safety, and Environment of the Competition venue with no exceptions.



## 2 LIABILITY AND INSURANCE

As a condition of the accreditation of WorldSkills Abu Dhabi 2017, all accredited participants must assume liability for any and all risks of injury or death and damage to property, loss of property, which might be associated with or result from participation in the event.

WorldSkills International and WorldSkills Abu Dhabi 2017 shall not be liable for any damage, injury or illness occurring to a participant due to their participation in the Competition or while travelling or staying within the United Arab Emirates.

**NOTE!** Please be aware that WorldSkills International and WorldSkills Abu Dhabi 2017 will not insure accredited participants for any damage, illness or injury, as advised in the above.

Each team and Member is therefore required to take out the appropriate insurance for its Competitors, Experts, Observers, and other accredited participants. Please consult your insurance company or embassy for further advice regarding this.

Non-accredited participants will not be covered by insurance taken out by WorldSkills Abu Dhabi 2017. Each individual will therefore be liable for any injury, illness, loss of property or any other damage he or she suffers. WorldSkills Abu Dhabi 2017 shall not be liable, and shall not pay any damages, for any injury or loss except those caused due to the negligence of the organizer.

The following sections cover general Health, Safety, and Environment regulations and arrangements, which must be adhered to, for:

- Health and Safety during the Competition
- Safety Regulations for Personal Protective Equipment (PPE)
- Hazardous Substance Safety
- Electrical Safety
- Machine Safety
- Hot Works Safety
- Skill-specific Safety Notifications

For more detailed skill-specific health, safety, and environment instructions, see Section 8.



## 3 GENERAL HEALTH, SAFETY, AND ENVIRONMENT REGULATIONS

### 3.1 PRELIMINARY PREPARATIONS

All personnel who enter the workshops must familiarize themselves with the applicable Occupational Health, Safety, and Environment regulations prior to attending the Competition.

Before transporting tools and equipment to the Competition, please ensure that all machines and devices, as well as any personal protective equipment that you may wish to bring, are in full working order and meet the required standards as documented in this guide or equivalent national/international standards.

#### 3.1.1 HEALTH, SAFETY, AND ENVIRONMENT ORIENTATION

All personnel who enter the workshops will be given a Health, Safety, and Environment orientation before the Competition. These instructions will be the responsibility of the Workshop Manager (WM) within each workshop.

These instructions will cover:

- General Health, Safety, and Environment issues concerning the specific skill competition and the workshop
- Risks/hazards those are specific to the skill competition and overall event
- Machine and equipment-specific Health and Safety requirements
- Injury and accident reporting requirements
- First aid and emergencies
- Fire safety

#### 3.1.2 ENVIRONMENTAL PROTECTION

WorldSkills International and WorldSkills Abu Dhabi 2017 recognizes the crucial importance of environmental protection and, responsible environmental and sustainability management in all areas, as well as the associated opportunities to improve our competitiveness and overall business plans. We therefore aim to ensure:

- All waste produced at WorldSkills Abu Dhabi 2017 will be disposed of by an approved waste disposal contractor.
- Containers will be provided for the different types of waste produced throughout the event.
- The conservation of natural resources and ensuring that waste is disposed of in an environmentally friendly manner as a guiding principle for WorldSkills Abu Dhabi 2017.
- All noise must be kept as low as is practicable during all works.
- All dusts produced by works will be controlled as far as practicable, controlled, and disposed of as per national regulations. (damping down and vacuum used where possible).
- Hazardous substances or dangerous goods may only be present at the Competition venue in the quantities required for the continuation of Competition. They must be stored in their original containers and must not be decanted into smaller quantities. Any safety guidelines provided must be followed when working with these substances. Hazardous substances may only be used for their intended purposes. For example, solvents must not be used for cleaning the skin.
- No hazardous substances or dangerous goods used will be disposed of into drains (domestic or otherwise). Waste substances will be removed from site and disposed of through an approved process.



- Consideration will be given to spillage prevention and control. Vulnerable areas such as streams, public access etc., will be paid particular attention to and spill kits will be available to prevent the contamination spreading. In the event of a spillage refer to the relevant individual safety data sheets.

### 3.1.3 WASTE MANAGEMENT

The Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP-54.0-Waste Management v3.0 establishes principles for waste management and environment protection. The aim of the policy is to decrease the total volume of waste produced and increase the sustainability of solid waste management. Its objective is to reduce, recycle, and reuse. In addition, WorldSkills Abu Dhabi 2017 aims to implement strict measures for the avoidance and recycling of waste before waste is created and to dispose of unused waste sustainably.

### 3.1.4 REGULATIONS FOR PERSONAL PROTECTIVE EQUIPMENT (PPE)

In compliance with requirements for protective clothing the use of Personal Protective Equipment is required by Workshop Managers, Experts, Competitors, and technicians whilst carrying out work in the workshop if working conditions are hazardous to health or safety as defined by risk assessments. Skill-specific requirements for PPE can be found in Section 8. Competitors may be required to provide their own Personal Protective Equipment appropriate to their skill as required. All personal protective equipment used must comply with the appropriate regulations and guidelines. The Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP 2.0 establishes regulations for Personal Protective Equipment.

The condition and safety of all Personal Protective Equipment, like all other equipment, must be inspected before the Competition starts by the Skill Competition Manager, Chief Expert or Workshop Manager. Any personal protective equipment that does not pass this safety inspection will be removed from the workshop. All Competitors must ensure that their personal protective equipment is in good condition, the use of damaged protective equipment is forbidden throughout the event.

When selecting Personal Protective Equipment, particular care must be taken, in order to ensure that the equipment is suitable for the needs of the relevant workshop and its given activity. The manufacturer's information (instructions) and labelling (e.g. protection glasses, special fields of application) of PPE must provide the necessary information, concerning whether the Personal Protective Equipment is suitable for the applicable Competition venue.

Work must only be carried out if the required Personal Protective Equipment is available and ready for use (without defects). Depending on the work to be conducted, this includes:

- Safety footwear
- Protective gloves
- Safety helmet
- Protective glasses/face protection, if required
- Hearing Protection, if required
- Respiratory protection (dust masks for when milling slots), if required

Should protective equipment become damaged, the Competitor must contact the Skill Competition Manager, Chief Expert, or Workshop Manager for replacement equipment before any work continues.

#### 3.1.4.1 HEAD PROTECTION

Industrial safety helmets are intended to protect against the danger of falling, overturned, or flying objects and hits to the head by objects. Depending on the task being completed, bump caps may also be appropriate in some cases, this will be determined by the Skill Competition Manager, Chief Expert, or Workshop Manager. Where there is a risk of entanglement long hair must be tied back or a hairnet must be worn when working with or preparing food.





#### 3.1.4.2 HEARING PROTECTION

Extremely loud individual sound and/or high noise levels during Familiarization and the Competition days may cause hearing damage. Without adequate hearing protection, hearing loss may occur.

Hearing protection must be worn when the noise level exceeds 85 decibels and is experienced for a duration longer than eight continuous hours. Earmuffs and earplugs are the most common form of hearing protection. All persons involved in the Competition, who do not produce any noise, but are required to cope with high noise levels above the maximum threshold limit value (TLV) due to the location of workshops or given activity, must wear hearing protection.

- Personal entertainment
  - The use of electronic audio devices and other modes of personal entertainment for Competitors during the Competition must be approved by the Skill Management Team before the Competition starts. (The use of personal entertainment will depend on the industry standard for each skill competition and hazards linked to the tasks).

#### 3.1.4.3 EYE AND FACE PROTECTION

Eye and face protection must be used to prevent risks to the eyes and face, caused by mechanical, optical, chemical, or thermal effects, for example, when completing the following tasks:

- Welding, grinding, and cutting work
- Cutting and chiselling work
- Stone cutting and masonry
- Work involving power-actuated tools
- Work with acids, alkalis, disinfectants, and corrosive cleaning agents

When selecting eye and face protection, consider the tasks that will be carried out. Refer to the skill-specific requirements in Section 8.

#### 3.1.4.4 HAND PROTECTION

Protective gloves must be worn if hand and skin injuries or skin contact with hazardous substances and preparations cannot be prevented by technical and organizational measures.

A distinction is made between gloves that protect against:

- Thermal loads
- Mechanical loads
- Chemical loads
- Biological work materials (e.g. seeds, viruses, bacteria)
- Ultraviolet rays
- Electrostatic charge
- Electrical voltage
- Vibration

When selecting gloves, as well as the actual substance (chemical), concentrations, temperature, time, and its effect when substances are mixed, must be a consideration.

If gloves become contaminated, damaged, or are affected by heavy perspiration, a second pair of gloves should always be made available.



#### 3.1.4.5 FOOT AND KNEE PROTECTION

Sturdy enclosed footwear must be worn at all times. Sandals and high-heeled shoes are prohibited throughout every workshop.

Depending on the workshop and tasks to be completed, suitable shoes must be selected, based on:

- Fuel-resistant outsole
- Anti-static properties
- Energy absorption in heel area
- Water-penetrant/absorbent
- Penetration resistant shoes
- Profiled outsole

Any work that involves kneeling may lead to a variety of superficial injuries, caused, for example by temperature or chemicals, such as bursitis, meniscitis, gonarthrosis (premature wear to the cartilaginous joint surfaces of the knee joint) and pressure damage to the nerves.

Knee protection is designed to distribute the resulting forces equally and prevent injuries caused by the subsurface and applicable materials and working methods. Knee protection must be selected according to the activity and subsurface area.

#### 3.1.4.6 RESPIRATORY PROTECTIVE EQUIPMENT

If substitute materials cannot be used and the production of gases, vapours, mists, or dusts (aerosols), which are damaging to health cannot be prevented by constructional, technical, or organizational protective measures, respiratory protective equipment must be used.

Unlike blow filter devices with hoods or helmets, masks are not suitable for persons with beards.

Filters must be selected according to the pollutant type and concentration. At the same time, the manufacturer's instructions and restrictions of use must be respected.

#### 3.1.4.7 PROTECTIVE CLOTHING

Protective clothing must be selected according to the activity and related risk, according to the manufacturer's information, and must comply with the relevant standards. A balance needs to be struck between optimum protection and comfort so far as reasonably practicable.

When working with rotating machines, individuals must ensure that close-fitting clothing is worn, in order to avoid clothing becoming entangled in the equipment.

During the Competition, depending on the activity and related risk, all jewellery (necklaces, earrings, rings, wrist watches, etc.) must be removed.

As the protective clothing itself can contribute to accidents, it should be made in such a way that it fits to the body as closely as possible and prevents any items becoming entangled in the equipment.

##### **Protective clothing**

- Must be used for its intended purpose in compliance with the manufacturer's information.
- Must not be subject to any influences that may compromise its safe state.
- Must be checked for damage (tears, holes, defective fasteners) prior to use.

If the protective attributes of the clothing are damaged and cannot be repaired, the Competitor must inform the Workshop Manager, in order to replace the protective clothing before continuing work. Contaminated clothing must be properly disposed of if it poses a risk.

##### **Requirements for electrical work**

- Fire Resistant clothing, minimum arc rating of 4cal/cm<sup>2</sup>
- Arc-rated long-sleeve shirt and pants or arc-rated coverall
- Arc-rated face shield or arc flash suit hood



### Other protective equipment depending on the task

- Hard hat
- Safety glasses or safety goggles
- Hearing protection
- Leather gloves
- Leather work shoes or safety boots
- Leather aprons

## 3.2 ELECTRICITY

Electrical areas in workshops and live installations and components are sealed off and must not be made accessible without proper authorization.

**Only the event-approved contractor are allowed to perform electrical installations.** Refer to Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP 15.0 as this establishes requirements for Electrical Safety.

Damaged devices and tools must **NOT** be used. The latter must be replaced immediately by fault-free devices and tools.

The following distinctions should be made between damaging effects of electric current on people:

- Damage caused by the passage of an electrical current through the body caused by direct effect to the heart and muscles
- Damage caused by light arcs, e.g. burns, electro-ophthalmia
- Secondary damage caused by fright, shock, etc.

The severity of the injury depends on the current strength and duration of exposure. Even passage of currents at approximately 15mA can cause cramps in the respiratory muscles. Higher currents will cause fatal ventricular fibrillation even after a short duration of exposure.

The nominal electrical supply at ADNEC for use on temporary installations is 230V single phase/400V three phase at 50Hz frequency on the event floor, but arrangements can be made to facilitate 110V tools if required. All electrical hazards must be identified: Electrical hazard = a dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast. It is essential to reduce the risk in a quantifiable way.

A good example is the prolific use of centre tapped earth transformers for temporary power (the yellow boxes), this reduces the voltage risk from 230V to a safer 110V or below on the event floor if required.

All persons involved in the Competition, who bring electrical equipment to Abu Dhabi, should remember to bring an adaptor for each individual item.

ALL REPAIRS OR ALTERATIONS WILL BE LOCKED OUT (Lockout = placement of a lock on an energy-isolating device in accordance with an established procedure, thereby indicating that the energy isolating device is not to be operated until removal of the lock or in accordance with an established procedure).

Work on exposed energized electrical conductors and circuit parts, including voltage testing = CATEGORY 1 RISK LEVEL must wear insulated gloves and use only insulated tools for testing live (Cat III).

### 3.2.1 ELECTRICAL SAFETY

Before work commences on electrical installations and equipment, their voltage-free state must be ensured and checked by a qualified electrician or authorized person trained for this as follows.



Five safety regulations must be respected.

1. Disconnection:  
Switching operations can only be conducted by an authorized person. In installations with nominal voltages of up to 1000V, all outer cables must be disconnected at both ends. Installations with nominal voltages of over 1 kV must be disconnected at all ends and poles.
2. Protect against accidental reactivation:  
For hand-activated switches, e.g. key switches, padlocks, etc. and for force-activated switches, for example, this may involve shutting off the compressed air, releasing the spring, etc.
3. Determine absence of voltage:  
The voltage can only be tested by a qualified electrician or authorized person trained for this purpose. The test should be conducted with a suitable device for measuring voltage levels (VDE Test Certificate stating the voltage), which are checked immediately before and after testing for functionality.
4. Earthing and shorting:  
Work can only be carried out on cables and capacitors after the installation has been switched off on all sides and the electrical charge has been discharged, while capacitors must remain short-circuited.
5. Cover or cordon off any live components:  
The five safety requirements also apply if there is a risk that other live components may be touched directly with tools or materials while work is carried out. If it is not possible to ensure that the equipment is voltage-free, these components must be reliably protected against touching by being covered. The workplace must be marked, in order to prevent confusion arising between live components. Ladders or bulky objects may only be moved close to live components, if this task is conducted or supervised by qualified electricians or persons authorized to conduct electrical work.

**ANY WORK ON LIVE INSTALLATIONS AND EQUIPMENT IS STRICTLY PROHIBITED!**



### 3.2.2 **AUTHORIZATION TO WORK ON ELECTRICAL INSTALLATIONS**

The workshop can only be approved by a qualified electrician or an electrically instructed person and only when the above measures (five safety requirements) have been implemented (this also applies for persons working alone). In doing so, the supervising person simultaneously assumes responsibility for the correct configuration during the relevant work.

If work is interrupted or the workshop is left for a short period, the relevant protective measures must be rechecked prior to resuming work.

The slightest deviation from these requirements may result in a fatal accident or major damage to electrical networks.

When uncertainty or discomfort is experienced - work must be stopped immediately!

### 3.2.3 **SAFETY REQUIREMENTS FOR ELECTRICAL INSTALLATIONS AND EQUIPMENT**

All electrical installations and equipment must meet Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP 15.0 as this establishes requirements for Electrical Safety.

In addition, all fixed and mobile electrical installations and equipment must be tested according to the electrical regulations, marked with a test seal and documented with a test report as instructed by Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP-35.0 Portable Power Tools v3.0.

Tools, installations, and other technical equipment must only be used for their intended purpose. They must not be used without authorization. If damage or defects appear in machines or electrical equipment, which is a potential risk, these installations must be shut down and the Skill Competition Manager, Chief Expert, or Workshop Manager must be informed in the first instance.

Prior to use, all electrical installations and equipment must be checked by the Competitor for visible damage or defects. Electrical installations and equipment must only be assembled, modified, and repaired by a qualified electrician according to the electrical regulations. Protective devices fitted to machines and installations must not be removed or made to function less efficiently, as this would compromise the perfect state of the machine in terms of safety requirements and increase the risk of accident.

Before the Competition begins, the WorldSkills Abu Dhabi 2017 Technical Team will conduct the required tests on all electrical installations and equipment. Electrical installations and equipment, which fail to pass this test, must be removed from the workshop.

### 3.2.4 **MANAGING THE CONTROL OF HAZARDOUS ENERGY (LOCKOUT)**

If machinery or equipment is to be serviced, repaired, tested, adjusted, or inspected no work shall be performed on the machinery or equipment until:

- It has come to a complete stop;;
- It is disconnected from power supply;
- All hazardous energy at the location at which the work is to be carried out is isolated by activation of an energy isolating device;
- It is rendered inoperative (locked-out/isolated) in a manner that prevents the unintentional activation of the machinery or equipment.

Each workshop will be provided with an energy isolating device(s) to be used as indicated above. It is the responsibility of the Workshop Manager in each skill competition to ensure this procedure is followed at all times without exception.



### 3.2.5 MACHINE SAFETY

Before familiarization commences, all persons involved in the Competition will be given Health and Safety instructions including operation of and any safety devices on the machines to be used. The instructions must be documented in writing. During work on the machines, the applicable Health and Safety regulations must be followed. The Competition Organizer is not responsible for providing instructions for machines and equipment, which have been provided by the Competitors themselves.

Refer to Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP-47.0-Machine Guarding v3.0.

### 3.2.6 SAFE OPERATION

Competitors, Experts, Skill Competition Managers, and Workshop Managers must:

- Always perform visual checks on their equipment, wires, and contacts before starting work
- Always perform a visual check on the condition and earthing of extension cords and other wires before starting work
- Monitor the condition of equipment connections and extension cords
- Replace brittle, cut, split, or otherwise damaged cords
- Never patch cords with regular or insulating tape
- Immediately report any defects in electrical equipment to the Workshop Manager, Skill Competition Manager, or Chief Expert
- Not conduct any electrical work unrelated to the skill competition
- Always switch off the mains voltage from the mains switch when stopping work
- Only use extension cords with splash-proof, flap-protected sockets may be used outdoors
- Not bypass or override safety and protective devices on machines and equipment
- Halt operation immediately if defects or faults become apparent
- Ensure that a dust extraction or dust collection system is fitted to tools where operation produces dust








WorldSkills Abu Dhabi 2017 is not responsible for providing operating instructions for machines and equipment brought by Competitors;

- Training in the use of such machines and equipment must be performed before arriving at the Competition.
- Machines and equipment must not be operated prior to the provision of the appropriate training requirements.
- Competitors are required to follow the machine safety instructions as set out in their specific skill.
- Any equipment that is deemed to be faulty by the Experts, Competitors, or Workshop Managers will be removed from the workshop.



### 3.2.7 COMPLIANCE APPROVAL MARKS

All electrical installations and equipment must meet the minimum requirements of WorldSkills International and WorldSkills Abu Dhabi 2017 and display an approval mark from the country/region of origin or an acceptable alternative international mark some of which are listed below - European Economic Area Marking, Korea Mark, Australia Mark, Japan Mark, and China Mark.

MARK	MEANING	COUNTRY/REGION
	The mandatory European product mark for access to the EU/EEA countries (and even some of the EU accession countries in Eastern Europe), which is required by EU Directives and the associated national requirements.	Europe
	Used in conjunction with the INMETRO Mark of the National Institute of Metrology, Standardization and Industrial Quality in Brazil, the UL-BR Mark indicates that a product complies with the Brazilian standards that are primarily modelled after IEC/ISO standards with some local deviations. Certification is mandatory for specific products.	Brazil
	Used in conjunction with the mandatory S Mark of Argentina's National Office of Internal Commerce (Dirección Nacional de Comercio Interior, or DNCI), the UL-AR Mark indicates a product's compliance with Phase III of Argentina's Resolution 92/98. Most electrical and electronic products entering Argentina will have to display the S Mark adjacent to the mark of an accredited and recognized third-party certification organization such as UL de Argentina, S.R.L.	Argentina
	These marks along with the Compliance Certification (cc) number indicate that a product is in compliance with the requirements of the energy efficiency and electrical safety standards for the U.S. market. (The Compliance Certification (cc) number is obtained from the U.S. Department of Energy).	USA
	The CSA Mark may appear alone or with indicators. If it appears alone, it means that the product is certified for the Canadian market, to the applicable Canadian standards.	Canada
	In Russia, there is a compulsory requirement that goods are certified, in a similar way to CE certification. As the Russian government does not recognise the European quality certificates, some products, such as electrical goods, which are exported to Russia, must be tested for compliance with the Russian standards and requirements, which are documented in the GOST-R Certificate.	Russia
	The CCC (China Compulsory Certification) is required for market access in China for many listed products. It was implemented on May 1, 2002, and replaces the earlier mandatory CCEE and CCIB certification.  Factory inspection is required for CCC. The initial inspection must be conducted by CQC, but the annual follow up inspection can be subcontracted to test centres approved by CQC.  Each CCC certificate is valid for a maximum of 5 years and is subjected to an annual license fee.	China



MARK	MEANING	COUNTRY/REGION
	<p>The KC mark is mandatory for certain types of electrical products in Korea.</p> <p>This purpose of this mark is to protect consumers from the hazardous aspects of electrical appliances (electric shock, energy hazards, fires, mechanical hazards, thermal hazards, radiation hazards, chemical hazards, etc.)</p>	Korea
	<p>The “Mutual Recognition Agreement” (MRA) between Australia and the European Union makes it possible to conduct conformity assessment procedures in Europe and market products in Australia. Bilateral agreements between Australia and New Zealand ensure that products with Australian approvals can also be marketed in New Zealand.</p>	Australia/New Zealand
	<p>BSMI (Bureau of Standards, Metrology and Inspection) certification is the approval scheme for ITE and audio/video products in Chinese Taipei.</p>	Chinese Taipei
	<p>The Circle PSE (Product Safety Electric Appliance and Materials) Mark is mandatory in Japan for all electrical appliances (other than the specified electrical appliances) to show that the product complies with the Japanese technical standards for electrical devices.</p> <p>This conformity with the Japanese requirements is declared by the manufacturer. It is not a requirement that tests are conducted by an approved test centre.</p>	Japan
	<p>The Diamond PSE (Product Safety Electric Appliance and Materials) Mark is mandatory in Japan for all specified electrical appliances that fall within Category A. These special appliances and materials are subject to mandatory testing by an approved certification body, in order to show that the product complies with the Japanese technical standards for electrical devices.</p>	Japan

### 3.3 GENERAL SAFETY REGULATIONS FOR HOT WORK AREAS

Hot works must only be conducted in the work areas provided for this purpose. Refer to Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP-28.0-Hot Work Operations (e.g. Welding and Cutting) v3.0. If hot works are to be conducted, a permit must be obtained for ALL hot works by the Workshop Manager from the relevant workshop responsible person before any work commences.

All combustible material and substances must be removed from the area according to the hot works permit.

The following are considered hot works:

- Gas and arc welding
- Torch and arc welding
- Friction welding
- Metal grinding
- Work using a blowtorch or other naked flame
- Work using a hot-air blower

Note: No lead soldering is permitted within the venue.





Extra caution is necessary in all hot work areas. The condition of tools and Personal Protective Equipment used in hot work must meet the requirements set by the applicable safety regulations.

- Skill Competition Managers, Competitors, and Experts must be aware of the locations of the emergency exits, and ensure that the route to such exits remain obstruction free at all times.
- Competitors must not bring additional materials that are flammable or explosive and unrelated to their skill competition (for example, cigarette lighters).
- Work involving a fire hazard or the need for heat protection requires clothing protecting the worker from splatters of molten metal etc., brief exposure to a naked flame, and ultra-violet radiation.
- Such protective clothing must be made of non-flammable, spark-proof material.

A fire extinguisher must be in the work area at all times when any hot works are taking place. The Workshop Manager must be trained in its correct usage and how to tackle small fires. The Workshop Manager, Skill Competition Manager, and Chief Expert are to monitor all hot works activities within their workshop.

### 3.3.1 USE OF GAS CYLINDERS

In compliance with United Arab Emirates authorities, gas cylinders will be colour-coded:

Gases	Compound Formula	Tank
Oxygen	O <sub>2</sub>	Black
Acetylene	C <sub>2</sub> H <sub>2</sub>	Maroon
Propane	C <sub>3</sub> H <sub>8</sub>	Red

Gas cylinders must be attached to a transport cart so that, if necessary, they can be moved quickly out of the hall or workshop in an emergency. All cylinders must be made safe after use and will remain in-place in the workshop overnight. All cylinder connections must be checked before and after use to comply with the required fire safety standards such as Abu Dhabi Occupational Safety and Health System Framework (OSHAD-SF) CoP-28.0-Hot Work Operations (e.g. Welding and Cutting) v3.0.

#### 3.3.1.1 SAFETY INSTRUCTIONS IN WELDING

- Compressed gas cylinders must be secured and protected against tipping.
- Applicable fire extinguisher for welding and other similar tasks must be easily accessible within the workshop.
- Visual inspection of all welding equipment to check for external or safety-relevant defects must be carried out daily by WorldSkills Abu Dhabi 2017 appointed competent persons.
  - Pay special attention to insulation, cables, pressure regulators, gas hoses, and hose connections.
- Should a backfire occur, close the welding gun's adjustment valves immediately.
- Should a hose fire occur, close the cylinder valves immediately.
- Always close the cylinder valves after finishing work or when leaving the work area.
- If the gas is about to run out or unusual recurring sounds are heard, Competitors must report these to the Workshop Manager.
- Ensure that on each hose of an oxygen-fuel system;
  - a flashback device is installed at either the torch end or the regulator end, and
  - a back-flow prevention device is installed at the torch end



### 3.3.1.2 PERSONAL PROTECTION

- Competitors and all other persons involved in the Competition in welding bays must wear the non-combustible Personal Protective Equipment required for welding.
- Welding gloves must provide protection from small spatters, brief exposure to a naked flame, heat, and UV radiation.
- Welding masks must protect the eyes and face from ultraviolet and infrared radiation and intense light welding masks may be attached to a headband or hardhats.
- The capacity of the welding glass and shields must be selected according to the welding method undertaken.
- Other personnel in the welding bay must also protect themselves from radiation when necessary, for example using welding helmet.

## 3.4 HAND-ARM VIBRATION AND NOISE

The Abu Dhabi Occupational Safety and Health System Framework CoP-3.1-Vibration v3.0 aims to protect workers from risks to health from Hand-Arm Vibration. The regulations introduce action and limit values for hand-arm and whole-body vibration.

The regulations introduce:

- Exposure action values of  $2.5\text{m/s}^2$  A(8) at which level employers should introduce technical and organizational measures to reduce exposure.
- Exposure limit value of  $5.0\text{m/s}^2$  A(8) which should not be exceeded.
- All work-related activities involving hand power tools require an itemized HAV Assessment.

WorldSkills Abu Dhabi 2017 has a low-noise purchasing policy for all its powered tools. All powered tools sponsored or purchased by WorldSkills Abu Dhabi 2017 are of reduced noise and vibration by design. Use of noise producing equipment will be reduced to a minimum and all reasonable measures will be taken to protect Experts and Competitors and other persons from noise exposure. All accredited persons, Experts, and Competitors will be provided with ear protection, which must be worn when powered equipment is being used in the vicinity.

## 3.5 GRINDING AND WORKS THAT PRODUCE DUST

Guidance should be considered regarding the precautions for the prevention of accidents in the use of grinding machines grinding and works that produce dust, abrasive wheels and other work equipment. The Abu Dhabi Occupational Safety And Health System Framework Cop-52.0-local exhaust ventilation v3.0 covers ventilation and extraction but also the CoP-47.0-Machine Guarding v3.0 should also be considered.

Signs must be fitted to every grinding machine, which include information on the maximum permissible diameter for the relevant grinding body and maximum number of revolutions for the grinding disc and indicate that PPE should be worn during dry grinding.

The shaft ends on the grinding and polishing machines must be covered, if the ends exceed the shaft diameter by more than one quarter. Smooth shaft ends that are under 50 mm in length do not need to be covered, but must be rounded off. Female threads must be protected.

Every grinding tool must bear an inscription, indicating the dimensions, bonding, degree of hardness, and structure. Most discs have ceramic bonding. Discs with mineral bonding must be provided with a durable white stripe, which extends across the entire diameter. These disks must only be used for dry grinding.



Cracked, broken, dull, or clogged discs must be immediately rectified using the appropriate tool. It is prohibited to repair grinding discs using methods such as trimming. Discs with an unbalance must not be used. They must be balanced prior to further use. Dressing diamonds must be used for balancing.

It is vital that grinding discs do not come into contact with water. This does not apply to grinding discs, for which it is expressly recommended that water is used for cooling.

### 3.5.1 BENCH GRINDER

- Appropriate PPE must always be used during grinding work. See skill-specific requirements in Section 8.
- A visual inspection of the bench grinder and grinding discs should be conducted before and after all works.
- The maximum safe operating speed of the grinder accessory in revolutions per minute is equal to or greater than the maximum speed of the grinder shaft in revolutions per minute.
- When changing the grindstone or beginning grinding work, check that there are no cracks in the grindstone.
- The opening angle of the shield above the rest should be no more than 65°.
- Test run a new grindstone following the replacement of an old one before beginning grinding.
- Keep the distance between the grindstone and the rest under 3 mm.
- If you notice a recurring vibration or unusual noise in the grinder, stop the machine and report the noise or vibration to the Workshop Manager, Skill Competition Manager, or nearest Expert immediately
- The work piece supports on the grinding machines must be adjustable. At all times, they must be fitted securely to the grinding disc on all sides.

### 3.5.2 ANGLE GRINDER

- Appropriate PPE must always be used during grinding work. See skill-specific requirements in Section 8.
- A visual inspection of the angle grinder and grinding discs should be conducted before and after all works.
- All grinders must be equipped with a grinder guard as per the manufacturer's specifications.
- The maximum safe operating speed of the grinder accessory in revolutions per minute is equal to or greater than the maximum speed of the grinder shaft in revolutions per minute.

### 3.5.3 WET GRINDING

- During wet grinding, there is a risk of bursting. Permissible rotation speeds and maximum allowable peripheral speeds must be shown on the relevant disk (sticker).

### 3.5.4 CHECK THE FOLLOWING BEFORE BEGINNING GRINDING

- Is the grinding wheel undamaged and properly fastened?
- Is the wheel shield in position and properly fastened?
- Is the insulation for the connection cord in good condition? If the insulation is damaged the machine must not be used.
- Check the condition of the start and stop button.
- Ensure secure control of the grinder prior to starting.
- Check that any sparks generated will not reach clothes, other people, or sensitive materials.
- Cutting wheels are not intended for grinding.
- Disconnect the machine from the mains when replacing the wheel.
- Test-run a new grinding wheel following the replacement of the old one before beginning grinding work.



## 3.6 COMPRESSED AIR

All Competitors who use compressed air in their skill competition must be instructed how to handle compressed air by the appointed responsible person. The Abu Dhabi Occupational Safety and Health System Framework CoP-49.0-Compressed Gases and Air v3.0 outlines the required standards.

Compressed air hoses must be positioned so that they are protected from damage. If pressure hoses are required for variable connection to tools, they should be unwound in the shortest possible lengths and positioned so that there is no risk of entanglement (e.g. spiral hose). Only approved hose joiners and safety clips may be used.

Compressed air must **NOT** be used to remove dust or other substances from clothing on yourself or any other persons.

## 3.7 TOOLBOXES

Any Competitors required to bring toolboxes or tools to WorldSkills Abu Dhabi 2017 as stated in the Technical Description must ensure that their equipment arrives in United Arab Emirates on time for the Competition. Once toolboxes have arrived at ADNEC from the storage warehouse or direct from the Competitor's home country/region there will be requirements for electrical testing (as stated in section 3.2.3), so toolbox access will be required.

From C-4 onwards a representative from the country/region of origin of the toolbox must be available with the required key for their toolbox. Toolboxes will be opened in the presence of the key holder, a member of the WorldSkills Abu Dhabi 2017 Technical Team and a member from the inspections team. Once opened the toolboxes will be inspected for any hazardous substances and all applicable electrical tools will be inspected by a registered electrical PAT tester (Portable Appliance Testing) as required by local regulations.

- C-12 – The last day for the delivery of any toolboxes to the warehouse facilities.
- C-5 – The last day for the delivery of any toolboxes to ADNEC from the warehouse.
- C-2 – Last available day for testing electrical tools to be used at WorldSkills Abu Dhabi 2017.

Once tested all electrical test information will be recorded and held on file for the duration of the Competition and for any future reference as decided by WorldSkills International.



## 4 RISK PREVENTION

All accredited personnel involved in the Competition must ensure Health and Safety both for themselves and for all persons that may be affected by their actions or failure to take preventative steps.

In the event of violations or failure to respect the Health, Safety, and Environment policies and UAE regulations, the Skill Competition Manager, Chief Expert, the Workshop Manager, or the WorldSkills Abu Dhabi 2017 Health and Safety Team will be empowered to instruct Competitors to stop work in order to ensure that the facilities are assessed and accordingly made safe.

All accredited personnel involved in the Competition must immediately report all dangerous behaviour, defects, or faults affecting the facilities to one or more of the following responsible personas; Skill Competition Manager, Chief Expert, or the Workshop Manager.

### 4.1 HOUSEKEEPING

Good housekeeping in all areas is vital for an accident-free Competition. All accredited personnel are responsible for ensuring general housekeeping is maintained and the workshops are hazard-free. Traffic routes, gangways, corridors, staircases, and especially emergency exits, fire extinguishers, and other rescue equipment must always be kept clear of obstacles and must not be moved. Tripping hazards, such as those caused by cables, objects, waste or similar things on the floor, must be removed immediately. This also applies for packaging materials that are no longer required.

- All Competitors must ensure that their work materials do not disturb any other Competitors.
- All workshops must be tidied and cleaned at the end of each day or when required or instructed.
- Cables that are laid across traffic routes must be protected with cable covers.

### 4.2 FOOD HYGIENE

Food Hygiene for Food Service Code of Practice No. (13)/2011 and The Abu Dhabi Occupational Safety and Health System CoP-19.0-Occupational Food Handling and Food Preparation Areas v3.0 requires that all persons involved in the handling of food must ensure that personal hygiene standards are adhered to, cleanliness of their tools, and hands. Good hygiene is particularly important for skill competitions which involve handling foodstuffs or dealing with any customers or visitors.

Refer to <http://www.adfca.ae/english/Pages/Home.aspx>

**NOTE:** Competitors competing in skills related to food must provide a statement, in the form of a written declaration, confirming their state of health. At the Competition, Competitors must also sign to certify that they do not have gastrointestinal disorders, skin problems, or other contagious illnesses. Competitors must ensure that they are free of salmonella prior to departing from their home country or region.

Perishable foods must only be prepared, handled, or put into circulation by persons, who have the relevant professional expertise and certified training.

The personal hygiene of each individual person that handles food during the Competition is an important aspect of food hygiene. Together with health, the following hygiene regulations and codes of practices must also be respected:

- Cut wounds to the hands and arms must be covered and made watertight using dressings such as rubber finger covers, gloves, or approved adhesive bandages. In food preparation skill competitions these adhesive bandages must be bright blue.
- No persons must have ulcerous or weeping wounds on their arms and hands.
- No sneezing or coughing is permitted close to food.



- Work clothes must be clean at all times.
- Suitable headwear must be worn

Washing hands represents a key aspect of personal hygiene. Germs are transmitted to food by direct contact with the hands. For this reason, the hands must be washed at regular intervals with the supplied anti- bacterial hand wash liquid:

- After using the toilet
- After touching raw foods (e.g. fish, meat, poultry, eggs, etc.)
- After coming into contact with waste
- Before commencing competition and after each break
- After touching the hair, uncovered body parts, wiping the nose, coughing, or sneezing
- After handling soiled equipment or utensils
- After handling chemicals
- After handling tobacco
- After consumption of food or drink

Disposable towels must be used for drying the hands. If disposable gloves are used, they must be regularly changed and certainly after contact with unclean areas or objects (e.g. packaging material, waste bins, money).

The following points must be considered when selecting work clothing:

- No jewellery and/or wrist watches
- Appropriate protective clothing, e.g. hairnet, gloves, apron
- The use of nail extensions, nail varnish, and perfume is prohibited.

Smoking is prohibited in the food preparation and handling area!

Risk Assessments will be carried out by the Workshop Manager for all food related workshops, inclusive of all HACCP's (Hazard analysis and critical control points).

**NOTE:** that **NO** food sampling should take place without prior agreement with the WorldSkills Abu Dhabi 2017 Health and Safety Team.

## 4.3 HAND AND SKIN PROTECTION

Hand protection is a precautionary measure and appropriate gloves should be worn depending on the activity being performed, or as dictated by the risk assessment, for example:

- Hazards presented by machines or equipment (slashes, punctures, tears, abrasions) must be avoided by using slash gloves.
- The appropriate protective rubber gloves must be used in wet work and when handling chemicals according to the safety data sheet.
- Welding gloves must protect from spatters, brief exposure to a naked flame, heat, UV radiation, and mechanical damage.
- Gloves must fit well and be replaced whenever necessary.
- Gloves must not be worn when working on moving parts.
- Missing, inappropriate, or damaged gloves lead to injuries and/or skin complaints. Disposable gloves and partly coated gloves only provide extremely limited protection.
- Increased perspiration in the gloves reduces the protective barrier on the skin. Swelling and softening of the skin makes it vulnerable to mechanical injuries.
- Wearing gloves as frequently, for as long as necessary, and for the shortest possible time.

See the skill-specific requirements in Section 8.



## 4.4 WORKING AT HEIGHT

Working at height will only take place where no other reasonable option is available. When working at height the task must be properly planned and supervised by the Workshop Manager or an Expert (whichever is present), and carried out by trained persons. The use of ladders is NOT permitted inside the workshop. Steps and 500mm hop ups can only be used if the Workshop Manager authorizes this. If working at height is not being carried out safely, it will be stopped until the situation has been resolved. Persistent offenders will be asked to leave the workshop.

The use of stools, chairs, tables, boxes, and similar objects to reach high areas is dangerous and will **NOT** be tolerated, offenders will be asked to leave the workshop.

Refer to The Abu Dhabi Occupational Safety and Health System Framework CoP-23.0-Working at Heights v3.0.

## 4.5 HAZARDOUS SUBSTANCES AND DANGEROUS GOODS

Hazardous substances are chemical substances or combined substances (preparations), which represent a potential threat to human health. Substances hazardous to health are defined under Control of Substances Hazardous to Health (COSHH) as those that are: Very Toxic, Toxic, Corrosive, Harmful or Irritant. They include all substances allocated a Workplace Exposure Limit (WEL).

Only hazardous substances and dangerous goods can be utilized, which have previously been approved by the WorldSkills Abu Dhabi 2017 Health and Safety Team. For this purpose, the safety data sheet for the relevant substance must be submitted to Daniel Ward, WSAD2017 Health and Safety Manager, no later than the 30 April 2017 for audit purposes.

Refer to The Abu Dhabi Occupational Safety and Health System Framework CoP-1.0-Hazardous Materials v3.0.

Regulations aim to protect all persons involved in the Competition, who are required to handle these hazardous substances and dangerous goods, against any related risks that may occur. For this reason, hazardous substances and dangerous goods may only be present at the Competition venue in the quantities required for the continuation of the skill competition. They must be stored in their original containers and cannot be decanted into smaller quantities. Labelling is to include the name of the substance, name of the manufacturer, danger symbol with risk phrase, information regarding particular dangers, and safety guidance. If these markings are missing or incomplete, this must be reported to the Workshop Manager. The unauthorized use of dangerous substances is strictly prohibited.

**NOTE:** All unauthorized substances inclusive of substances with incorrect or inadequate labelling will be removed from the workshop and disposed of at the expense of the individual's Member organization.

Any safety guidelines provided must be followed when working with Hazardous Substances. Hazardous Substances and dangerous goods may only be used for their intended purposes. For example, solvents must **NOT** be used for cleaning the skin.

At the Competition venue, only the quantities required for the completion of work must be present at the workstation within the workshop. It is prohibited to store hazardous chemicals in drink bottles due to the risk of confusion. All hazardous chemicals must be clearly marked. Any safety guidelines provided must be followed when working with these substances.



## 4.6 SLIP AND TRIP HAZARDS

Slips, trips, and falls can result in injury such as the most common ones like musculoskeletal injuries, cuts, bruises, fractures, and dislocations but more serious injuries can sometimes also occur.

Slips occur when a person's foot loses traction with the ground surface due to wearing inappropriate footwear or when walking on slippery floor surfaces such as those that are polished, wet, or greasy.

Trips occur when a person unexpectedly catches their foot on an object or walks on an uneven surface. In most cases people trip on low obstacles that are not easily noticed such as uneven edges in flooring, opened drawers, untidy tools, exposed electric cables, or pipes from gas, compressed air, water, and waste.

Competitors and Experts are required to keep their work area clear of slip and trip hazards at all times and report any concerns to the Workshop Manager.

## 4.7 DANGEROUS BEHAVIOUR

In the event of any accredited personnel engaging in dangerous behaviour or disregard for the Health, Safety, and Environment policies and regulations, the Skill Management Team, the Experts, or Workshop Manager will be empowered to immediately stop the work or activity.

An individual will be verbally warned once, then verbally and written warned a second time, but on the third occasion disciplinary action will be undertaken. On each occasion the required corrective action will be explained. The activity or task will be stopped and the individual will be removed from the activity or task. If this should be a Competitor in the middle of their competition, time will NOT be stopped whilst the warning and corrective action takes place.

Competitors and Experts are required to report any suspected Health, Safety, or Environment breaches immediately to the Skill Competition Manager, Chief Expert, or the Workshop Manager. The WorldSkills Abu Dhabi 2017 Health and Safety Team, including Health and Safety volunteers, will also monitor and report any concerns.

This also means that all actions, such as pranks, banter, and arguments which could lead to accidents, must be avoided.

## 4.8 NO ENTRY OR ACCESS CONTROL

Unauthorized access is not permitted to any areas that are locked or marked with warning signs.

Dangerous areas, proximity to dangerous machines, areas where vehicles and lifting gear are operated or transported, and transport routes, which are not clearly marked, should not be entered without authority from the Workshop Manager.





## 5 FIRST AID AND EMERGENCY EVACUATION

In accordance with the Emergency and Medical Guidelines the necessary facilities, procedures, and materials will be available for the purpose of first aid and evacuation operations.

Refer to The Abu Dhabi Occupational Safety and Health System Framework CoP-4.0-First Aid and Medical Emergency Treatment v3.0

For any Police requirement whilst on the ADNEC premises please in the first instance call the security control room (+971 02 406 4444) who will coordinate directly with the Police. This will expedite the Police being directed to the exact location they are needed on site.

- Sufficient first aid materials must be available in every workshop (First Aid kits and Evacuation Plan).
- Evacuation and Emergency Exits must be kept clear at all times.
- Corridors, paths, and exits must not be blocked or obstructed by objects. Objects on the evacuation and rescue routes create tripping hazards. If these objects are made from combustible materials, they may help fire to spread.
- All persons involved in the Competition must be informed of the location and direction followed by escape and rescue routes. Each person must ensure that these routes are not altered.
- It is the duty of each person to familiarize themselves with the escape and rescue routes within their workshop. Fire service access routes must be kept clear.
- Doors on escape routes and emergency exits must not be locked during the preparation days, familiarization, and Competition period.

All accredited personnel involved in the Competition are required to assist in the first aid process if an accident occurs. This assistance must be appropriate and prompt (e.g. calling emergency services or an ambulance – see the Emergency and Evacuation Plan available in the workshop).

If an Expert or Competitor takes medication or requires regular medical supervision (e.g. adrenalin auto injection, insulin, heart tablets), the Chief Expert and the Competitor's Team Leader and Expert must be informed before preparation and familiarization commences. Details of such medical conditions must be documented using the Action Plan for Anaphylaxis or Asthma Action Plan forms provided to the Technical Delegates. Action Plans for Anaphylaxis must be displayed on the wall of the Workshop Manager's office. Note this form is exempt from privacy requirements.

The Workshop Manager, Skill Competition Manager or Chief Expert and the Competitor's Team Leader, Technical Delegate, and/or Expert must be told immediately if any Expert or Competitor becomes ill or has an accident.

First aid and medical personnel will be available at ADNEC, in order to respond as rapidly as possible in emergency situations.

### **ADNEC First Aid**

First Aid Rooms are located between Halls 1 & 2 and 7 & 8.

To contact First Aid please call Ext: 4444 (or +971 02 406 4444 if dialing from a mobile or outside line). In an emergency - including requesting an ambulance - please telephone the Security Control Centre Ext: 4444. Their knowledge can save vital time in the event of an emergency. Please state clearly:

- The name of the skill competition
- The location and the number of the nearest skill competition or stand to the incident
- Your name
- The type of accident or emergency, e.g. heart, broken limb
- Stay with casualty until help arrives



Operating hours will be consistent with the venue opening times during the Competition period. For build-up and break-down days standard operating hours are 08:00 to 18:00.

## 5.1 EYE WASH STATIONS

Eye wash baths or modules will be available in each workshop and will be well marked and located in the first aid area.



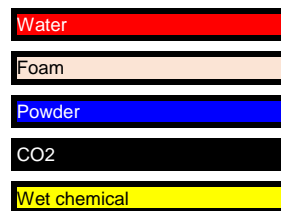
## 6 FIRE SAFETY

Fire safety serves to protect valuable goods, as well as human life and safety at the Competition. All accredited personnel involved in the Competition are required to prevent fires and, in the event of fire, to sound the alarm. Only trained personnel are allowed to activate a fire extinguisher to fight a fire.

Every person must be strongly committed to preventing fires and accidents. Each individual is required to respect the Health, Safety, and Environment policies.

The workshop layouts and organization of skill competitions involving work producing sparks, the use of a naked flame, or intense heat levels have been planned and implemented with particular care.

Each workshop will be equipped with fire extinguishers and fire blankets according to the requirements of the skill. The following are the selection of fire extinguishers available;



- **Class A** fire extinguishers are for ordinary combustible materials such as paper, wood, cardboard, and most plastics.
- **Class B** fires involve flammable or combustible liquids such as gasoline, kerosene, grease, and oil.
- **Class C** fires involve electrical equipment, such as appliances, wiring, circuit breakers, and outlets. Never use water to extinguish class C fires - the risk of electrical shock is far too great.
- **Class D** fire extinguishers are commonly found in a chemical laboratory. They are for fires that involve combustible metals, such as magnesium, titanium, potassium, and sodium.
- **Class K** fire extinguishers are for fires that involve cooking oils, trans-fats, or fats in cooking appliances and are typically found in restaurant and cafeteria kitchens.

ADNEC is equipped with a fire alarm system and automated fire protection systems.

### 6.1 PREVENTIVE FIRE SAFETY

- Avoid any accumulation of paper waste or other combustible materials. If they are required in the workshops, only the amounts of combustible liquids required for each individual day must be stored in the workshop.
- Highly combustible waste, such as paper, cardboard packaging, foils, etc. must only be placed in the waste containers provided for this purpose. These containers will be emptied at least once per day into the waste containers (or containers provided for this purpose) outside the building.
- Sufficient fire extinguishers will be provided, which are appropriate for each workshop. These fire extinguishers will be labelled accordingly.
- Fire extinguishing equipment must not be moved.
- The Workshop Manager will be instructed how to use a fire extinguisher.
- In high fire risk areas: no open flames should be used.



## 6.2 IN THE EVENT OF FIRE

- Report the fire as instructed in the Event Emergency Procedures.
- Competitors and Experts are to switch off the machines (by activating the emergency stop switch) and leave the workshop. All persons involved in the Competition must immediately locate the collection point using the shortest possible route out of the building.
- If people are in danger, they should be helped or help should be requested.

## 6.3 ATTEMPT TO EXTINGUISH THE FIRE

- Ensure personal safety.
- Only trained personnel are allowed to activate a fire extinguisher to fight a fire.
- Only attempt to put out a fire when all persons have left the dangerous area.
- Any person putting out the fire must have identified a clear exit route.
- If high concentration of smoke develops, the area must be evacuated immediately.
- Only use approved extinguishers for the medium of the fire.

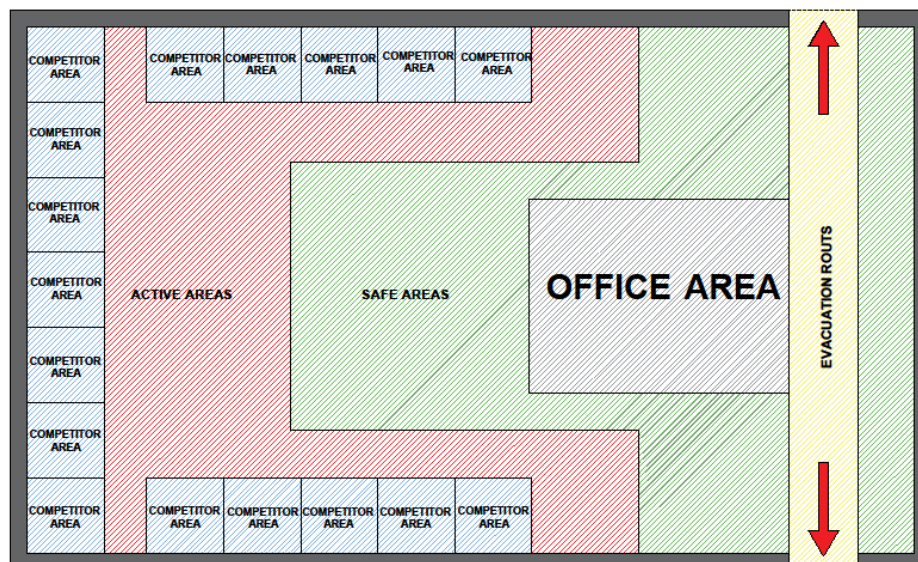
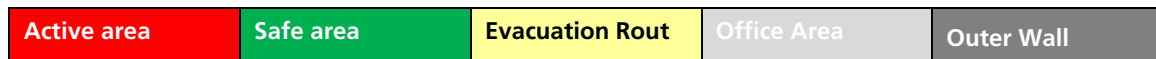
## 6.4 SMOKING

Smoking is prohibited throughout ADNEC including all temporary structures and is only permitted in designated areas around the venue.



## 7 WORKSHOP SAFETY ZONES

Below is a generic reflection of a workshop area - Personal Protective Equipment (PPE) is required by all personnel within the Active Areas. Any individual found to be operating within the Active Area without the required PPE will fall under the previously outlined disciplinary process and proceedings and asked to leave the workshop, this applies to all accredited personnel - this will be enforced by WorldSkills International and WorldSkills Abu Dhabi 2017.





## 8 SKILL-SPECIFIC HEALTH, SAFETY, AND ENVIRONMENT REQUIREMENTS FOR WSC2017

TASK	SAFETY GLASSES WITH SIDE PROTECTION	SAFETY SHOES WITH PRTECTIVE CAP	STURDY SHOES	TIGHT FITTING WORK CLOTHES (LONG TROUSERS)
General PPE for safe areas			X	X
Using tubes longer than 500mm, not fixed during commissioning	X		X	X
During working/commissioning time in the workshop		X		X
In the case of using electrical screwdrivers with electrical power (not battery) drive to be used with a drill bit.	X			
When Experts inspecting, checking or working with a Competitor's project;			X	X