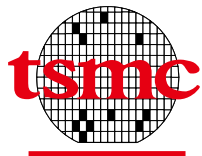


Supplier Sustainability Standards

October 23rd, 2020



**Taiwan Semiconductor
Manufacturing Company, Ltd.**

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Preface

TSMC is committed to ensuring that working conditions in its supply chains are safe, that workers are treated with respect and dignity, and that business operations are environmentally responsible and conducted ethically. To this end, TSMC has established the Supplier Code of Conduct (“Code”) and requires our suppliers to operate in accordance with the principles outlined in the Code and in full compliance with the laws, rules and regulations of the countries in which they operate. In addition, TSMC also expects our suppliers to hold their suppliers, contractors, and service providers to the standards defined in the Code.

The provisions in the Code are derived primarily from the Responsible Business Alliance (RBA, formerly EICC) Code of Conduct and are in alignment with the UN Guiding Principles on Business and Human Rights, as well as key international human rights standards including the ILO Declaration on Fundamental Principles and Rights at Work, the UN Universal Declaration of Human Rights, the ISO 14001 Environmental Management System, and the ISO 45001 Occupational Safety and Health Management System.

To help TSMC suppliers with the implementation and compliance with the Code, TSMC specifically developed the “TSMC Supplier Sustainability Standards” (“Standards”). These Standards are made up of five sections. **Sections A, B, C, D, and E outline standards for Labor, Safety & Health, Environment, Ethics, and Management Systems.**

TSMC looks forward to working closely with suppliers on improving labor, ethics, environmental, safety and health performance to reduce the risk of operational disruption and maintain the stability of material supply and service. While fulfilling our corporate social responsibilities, TSMC guides suppliers to reduce environmental impact, establish safe workplaces and protect workers’ health in a mutually beneficial manner.

A. LABOR

A1 Freely Chosen Employment

A1.1 Any type of forced, involuntary, or exploitative prison, indentured, bonded (including debt bondage), trafficked or slave labor shall not be used (including forced labor provided by North Korean citizens or nationals defined as set forth under U.S. CAATSA, or Countering America's Adversaries through Sanctions Act).

A1.1.1 Voluntary work:

- a. Personnel files and working hour record/wages do not show any form of non-voluntary labor.

A1.1.2 Fees:

- a. All fees and penalties are disclosed to the workers.
- b. Records on Fees are maintained and disclosed to the worker.
- c. Fees are not permitted under any circumstances.
- d. Any fees are required to be returned to the worker within 90 days of discovery.
- e. Fees are defined as "RBA Trafficked and Forced Labor – Definition of Fees" (January 2020). If a fee is not specifically listed in "Definition of Fees" or does not fit any of the example categories, foreign migrant workers shall not be required to pay anything that a local worker would not be required to pay.

A1.1.3 Loans:

- a. Personal loans have a repayment maximum of 10 percent of the worker's monthly gross base wage, (no interest permitted), for no more than 6 monthly installments.
- b. Education loan repayments do not exceed 10% of one year of gross base wages. Any education loan cannot be longer than 1 year per loan.

A1.2 Adequate and effective policy and procedures shall be established ensuring that any form of forced, bonded, involuntary, or exploitative prison, trafficked or slave labor is not used (including forced labor provided by North Korean citizens or nationals defined as set forth under U.S. CAATSA, or Countering America's Adversaries through Sanctions Act).

A1.2.1 Adequate and effective policies and procedures shall be established and implemented.

- a. To ensure that no forced, bonded, involuntary, or exploitative prison, trafficked or slave labor is used.
- b. Stating that workers are not required to pay fees, deposits or incur debt as part of the employment.
- c. Stating that when employment has been terminated voluntarily or involuntarily, worker will be paid appropriate amounts for all hours worked.
- d. To ensure the specific amount of any fees and expenses paid by each individual foreign worker prior to commencement of work.

A1.2.2 Contracts:

- a. Contracts with agreement requirements with labor agents and labor contractors are available to ensure conformance with the policies/procedures.

A1.2.3 Monitoring:

- a. Method of monitoring of conformance with policy, monitoring reports and corrective actions are available for review.

A1.3 Terms of the contract shall be provided in writing and in their native language prior to employment via employment letter/agreement/ contract as required by law and explained verbally in their native language so workers understand what the contract states.

- A1.3.1 Local workers
 - a. Workers are informed prior to employment of the key employment terms and conditions either verbally or in writing via contract in their native language.
 - b. Contracts state that workers can resign without penalty.
- A1.3.2 Migrant workers
 - a. Workers are informed prior to employment and leaving their home country of the key employment terms and conditions either verbally or in writing via contract in their native language.
 - b. Contracts state that workers can resign without penalty.
 - c. No substitution or change(s) allowed in the employment agreement upon arrival in the receiving country unless these changes are made to meet local law and provide equal or better terms.
 - d. Contracts comply with ILO conventions on migrant workers.
- A1.3.3 Verbal explanation to workers of the key components of the employment conditions in a language they can understand:
 - a. Nature of work.
 - b. Working hours, days off and holidays.
 - c. Leave entitlements.
 - d. Benefits (housing, transportation, uniforms, ...).
 - e. What fees the worker will be charged and the amount(s).
 - f. Wages and wage deductions (including all components of social insurance) and how these are calculated.
 - g. Other non-legally required benefits provided (pension, insurances, etc....).

A1.4 Upon hiring, the worker's government issued identification and personal documentation originals shall not be held by employer/ Labor Agent or Contractor (if applicable).

- A1.4.1 Adequate and effective policies and procedures stating no government issued identification or personal documentation originals are held or stored shall be established and implemented.
- A1.4.2 Worker files held by suppliers contain no workers' personal documentation originals.

A1.5 There are no unreasonable restrictions on the movement of workers and their access to basic liberties.

- A1.5.1 Adequate and effective policies and procedures on freedom of movement shall be established and implemented.
- A1.5.2 Entry and leave records (if applicable) showing no restriction in movement shall be kept on file.
- A1.5.3 Workers move freely when needed to access basic liberties (no systems for restriction in place such as toilet passes).
- A1.5.4 Workers are free to leave the facility location or dormitory when not engaged in work.

A2 Young Workers

A2.1 Workers are not below the minimum age.

- A2.1.1 Personnel file sample shows all workers are above minimum age or above company policy minimum age (whichever is greater).

A2.2 An adequate and effective policy and process shall be established to ensure that workers below the legal minimum working age are not hired either directly or indirectly via labor agencies/contractors.

- A2.2.1 Prohibition of Child Labor Policy:
 - a. Adequate and effective child labor prohibition policies and procedures are in place.
 - b. There is an adequate process in place to verify the reliability of age documents. Age verification shall include visual verification of a government recognized photographic identification document.
 - c. There is a reliable ID verification system to control the workers' access into the facility.
 - d. The facility does not refuse the worker's job application after the "child" worker's age meets legal requirements.
- A2.2.2 Remedy for misuse of child labor: shall establish a procedure to assist underage children found working for the facility; such a procedure is designed to provide for the welfare of the child.

A2.3 Workers under the age of 18 are not allowed to perform work that is likely to jeopardize the health or safety of these young workers, including night work or overtime.

- A2.3.1 Young Workers Policy:
 - a. Adequate and effective young worker policies and procedures shall be established and implemented.
 - b. Implementation mechanisms shall be clearly defined, and they include:
 - a) Health checks if required by law.
 - b) Clear risk assessment.
 - c) Restriction on hours worked and time of day worked.
 - d) Identification and assignment of young workers to non-hazardous positions.
 - e) Young workers are not allowed to perform night work or overtime.
 - c. Workers under the age of 18 shall not engage in hazardous work.
- A2.3.2 The implementation mechanisms shall be reflected in personnel files, medical files, and work time records.

A2.4 Adequate and effective apprentice/intern/student worker employment policies and procedures shall be established and implemented if applicable.

- A2.4.1 Apprentice/intern/student worker employment policies:
 - a. Adequate and effective policies and procedures shall be established and implemented on apprentice/intern/student worker's assignments:
 - a) If applicable, a written policy stating that the Supplier does not hire apprentices/ interns/student workers.
 - b) A commitment to only providing internships/student workers assignments and apprenticeships that complement their course of study field or learning of a new vocation.
 - c) Maximum duration of apprenticeship (not more than 6 months if worker is paid below minimum wage).
 - d) No agency or intermediary may be used in connection with the recruitment, hiring, arrangement, and management of student workers, interns, or apprentices.
 - e) All work is voluntary (including choice of learning placement assignment).
 - f) Prohibition of use of student workers, interns, or apprentices to simply fill a labor shortage.
- A2.4.2 Apprentice/Intern/Student Worker employment records shall be kept on files:
 - a. Tri-partite agreement: If applicable, documented specific requirements on tri-party agreement (student workers [and/or legal guardian], school and Supplier)
 - b. Personnel records:
 - a) Maintenance of student worker/intern or apprentices' records in personnel files (includes agreement if applicable, learning objectives, evaluations, reference to training material, assignment, etc....).

- b) Details on promotion/hiring opportunities after successful apprenticeship, eligibility, recruitment, employment agreement, nature of work, working hours, wages, and benefits.
- c. Training material: An outline of training program and copies of the training material are always available.

A3 Working Hours

A3.1 Hours worked in a workweek over the last 12 months does not exceed 60 hours.

A3.1.1 Mandatory sample size of individual time records as well as summary reports shall be kept, and they show the number of hours worked - including overtime - per worker per week not exceeding 60 hours.

A3.1.2 Waivers:

- a. If a government waiver/permit or alternative working hour system is in place, then it needs to comply with the RBA Waiver Policy.
- b. TSMC Code requires that facilities comply with local law or code, whichever is more stringent.

A3.1.3 All overtime must be voluntary.

A3.2 Workers receive at least one (1) day off every seven (7) days.

A3.2.1 Mandatory sample size of individual work records as well as summary reports (if available) shall be kept and they show that the maximum consecutive days worked is equal to or less than 6 days.

A3.3 Adequate and effective policy and system/procedures shall be established to accurately determine, communicate, record, manage and control working hours including overtime, including reliable and detailed records of workers' regular and overtime working hours.

A3.3.1 Working hours/days off policy:

- a. Adequate and effective working hours/days off policies and procedures shall be established and implemented.
 - a) Accurately determine, record, manage, control working hours including overtime and days off.
 - b. If non-conformance is detected, corrective action shall be implemented and progress against the corrective action documented.

A3.3.2 Review the facility's time records and system for recording time worked to determine that time is recorded accurately and completely.

A3.4 Workers shall be allowed mandated breaks, holidays, and vacation days, including time off when ill or for maternity leave.

A3.4.1 Breaks, holidays, and vacation days policy:

- a. Adequate and effective policies and procedures for sick leave, holidays, vacation, and paternity/maternity leave shall be established and implemented.
- b. Workers are provided with mandated meal and rest breaks, leave periods, holidays, and vacation days.
- c. Workers can take mandatory breaks which includes at least one meal break per shift.

A3.4.2 Leave records for 12 months are securely kept, accurate and consistent with medical certificates, actual leaves, and holidays.

A3.4.3 Payroll records for these absences show that there was no financial penalty for maternity or sick leave.

A4 Wages and Benefits

A4.1 Wages for regular and overtime hours are correctly calculated and paid to all workers in a timely fashion.

A4.1.1 Wages and compensation policies:

- a. Adequate and effective wages and compensation policies and procedures shall be established and implemented.
- b. "Pay equals time worked" applies; this means any company-required activity.
- c. All workers shall be paid no less than the agreed wage for all regular hours.
- d. Overtime, other compensation, and benefits are paid in addition to agreed wage for regular hours.
- e. Payment made to leavers (resigned workers).

A4.1.2 Wages and compensation records shall be kept on files:

- a. Wages benefits, and overtime are correctly calculated, and accurate pay records are maintained for 12 months.
- b. Wages are paid directly to workers (or a legally designated third party) with no unauthorized deductions (including for disciplinary measures) in a timely manner.
- c. Recurring pay (including overtime, other) shall not be delayed more than two days after the agreed timing for payment
- d. For severance pay, payment (including resigned workers) shall be made in compliance not later than one month after final day on the job.

A4.2 For each pay period, workers are paid on a timely basis and provided with understandable wage statements that include sufficient information to verify accurate compensation for work performed.

A4.2.1 Workers shall be provided with payroll receipts that clearly indicate compensation, including overtime hours and overtime compensation levels and detail of deductions (e.g. insurance contributions, employer, and worker contributions.)

A4.3 Wages shall not be deducted or reduced for disciplinary reasons.

A4.3.1 Disciplinary wage policy: Adequate and effective policies and procedures prohibiting disciplinary wage deductions are in place including "pay equals time worked".

A4.3.2 Disciplinary records, pay slips and payment records of wages or equivalent do show any form of disciplinary wage deduction.

A4.4 Deductions or withholdings shall be calculated correctly and submitted to the appropriate government agency within the time frame required by local law time frame.

A4.4.1 Records of wage deductions or withholding items shall be kept:

A4.4.2 Calculations: Records of employer contributions to worker insurance schemes, e.g. unemployment, retirement/pension, health/medical, life, accident, disability is available on a monthly basis that:

- a. Allows for analysis by individual worker
- b. Total per contribution type.

A4.4.3 Payment: Payment records for these contributions are available for at least 12 months and payments are made on a timely basis.

A4.4.4 Let the workers know the payment information: the salary slips, or equivalent shows the employer and worker's payment.

A5 Humane Treatment

A5.1 No evidence of violence, sexual harassment or abuse, corporal punishment, mental or physical coercion, bullying, public shaming, blacklisting, verbal abuse, or intimidation.

- A5.1.1 Grievance records shall not show instances of inhumane treatment.
- A5.1.2 If instances are found, appropriate corrective actions are taken immediately and documented.
- A5.1.3 Disciplinary records shall not show inhumane disciplinary measures.

A5.2 Adequate and effective policies and procedures on decent/humane working conditions and fair treatment of workers shall be established and implemented.

- A5.2.1 Humane treatment: Adequate and effective policies and procedures on humane treatment shall be established and implemented.

A5.3 Disciplinary actions shall be recorded, consistent with the procedures and reviewed by management.

- A5.3.1 Records of all cases of disciplinary action shall be available for last 12 months.
- A5.3.2 All records of disciplinary action against workers shall be reviewed by management and verifiably communicated to them.
- A5.3.3 Disciplinary records show disciplinary actions with signature or confirmation of worker.

A6 Non-Discrimination

A6.1 No evidence of discrimination.

- A6.1.1 Human resources process:
 - a. Application questions and testing which are not required or necessary to evaluate the candidate's fitness for the job shall not exist.
 - b. Hiring and termination records confirm the candidate's ability to perform the job's requirements.
 - c. Job postings and advertisements shall not discriminate.
 - d. Job descriptions: Written job descriptions that focus solely on occupational qualifications, not personal characteristics are in place.
- A6.1.2 Medical tests:
 - a. Workers or potential workers shall not be subjected to medical tests that could be used in a discriminatory way.
 - b. Health tests, pregnancy testing, or contraception shall not be used as a condition of employment.
- A6.1.3 Pregnancy/Maternity/Paternity: All conditions regarding pregnancy and postnatal employment protections, benefits, and pay shall be met.
- A6.1.4 Personnel records: Statistical samples of hiring records, promotion records, pay slips, general training and disciplinary records shall be reviewed for policy consistency and evidence identification of discrimination with regard to hiring, wages, promotions, rewards, and access to training.

A6.2 Adequate and effective policies and procedures that ban discrimination and harassment shall be established and implemented.

- A6.2.1 No discrimination and harassment policy: Adequate and effective policies and procedures that ban discrimination shall be established and implemented.
- A6.2.2 Decisions in hiring, employing (such as compensation, promotion, access to training, etc.), or terminating workers are based solely on the candidate's ability to perform the job's requirements.
- A6.2.3 The facility shall regularly review hiring practices, compensation records, employee evaluation and promotion documents, training records, employee benefits policies and procedures, and termination/disciplinary records to determine that there is no prohibited discrimination.

A6.3 Reasonable accommodation for religious practices shall be provided.

- A6.3.1 Adequate and effective policies and procedures shall be established and implemented to reasonably accommodate for religious practices and adjustments to the work environment to allow a worker to comply with their religious beliefs while at work or in the job application process.
- A6.3.2 A mechanism for receiving religious accommodation requests shall be established and implemented.
- A6.3.3 Requests records shall be reviewed and kept on files. Decision and reasons for approving (or declining) requests are provided to the requestor in a timely manner.

A7 Freedom of Association

A7.1 Workers can form or enroll in a labor union of their own free will.

- A7.1.1 Freedom of Association Policy:
 - a. Adequate and effective policies and procedures that respect that the right of workers to form or enroll in a labor union, or to refrain from doing so, shall be established, and implemented.
 - b. No interference: Policy shall include that the facility will not interfere with and will not finance a labor union.
- A7.1.2 Records/minutes:
 - a. There are no documented episodes of violence, explicit threats of any kind or any other violations of the right to freedom of association.
 - b. Labor union meeting minutes and financial records for 12 months, if available, to determine source of funding and materials.
 - c. Management contributions are limited to providing meeting space and/or meeting materials (such as note taking material).
 - d. Payroll records confirm that labor union employees are paid the same as other workers in similar job functions.

A7.2 Suppliers respect the legal right of all workers to peacefully assemble as well as respect the right of workers to refrain from doing so.

- A7.2.1 Adequate and effective policies and procedures on peaceful assembly shall be established and implemented noting the right of workers, individually or collectively, to express, promote, pursue, and defend their concerns or ideas; or to refrain from doing so.
- A7.2.2 Respects the right of workers to individually or collectively; to express, promote, pursue, and defend their concerns or ideas as well as respect the right of workers to refrain from doing so.
- A7.2.3 Supplier shall not interfere with, restrain, or coerce workers in the exercise of their right to individually or collectively express, promote, pursue, and defend their concerns or ideas or to refrain from doing so.

A7.3 No evidence of unequal treatment between unionized or worker representatives and other workers exists.

- A7.3.1 No evidence that supplier dismisses, disciplines, or explicitly threatens workers to encourage or discourage workers from forming or joining a labor union, or refraining from doing so.

B. HEALTH & SAFETY

B1 Occupational Safety

B1.1 All permits, licenses and test reports for health & safety required by law are in place and a process is implemented to ensure permits and licenses are up to date at all times.

B1.1.1 An effectively documented control process shall be established and implemented to ensure permits are renewed before expiration.

B1.1.2 All occupational safety permits and licenses required by law shall be available and valid.

B1.1.3 Occupational safety testing reports shall all be available for verification.

B1.2 Potential worker exposures to safety hazards (e.g., chemical, electrical and other energy sources, fire, vehicles, and fall hazards) are to be identified, assessed, and mitigated using the hierarchy of controls, which includes eliminating the hazard, substituting processes or materials, controlling through proper design, implementing engineering and administrative controls, preventative maintenance and safe work procedures (including lockout/tagout), and providing ongoing safety training.

B1.2.1 Safe working environment:

- a. The width of the main personnel channel shall be greater than 100 cm and the distance between machines shall be greater than 80 cm and meet the requirements of local regulations.
- b. Movement paths shall be clearly marked, and there is no situation where the ground surface is uneven, or material obstructing traffic flow.
- c. The materials used for doors, windows (glass) and compartments shall be suitable for the site's production operations (e.g., explosion-proof, corrosion-proof, leak-proof).
- d. Planning for pedestrian circulation and transit lanes shall take safety into account and confirm that the installation is sufficient and does not result in an unsafe working environment.
- e. Power transportation systems (escalators, elevators, lifts, hydraulic presses, forklifts) shall obtain a license for use, and have periodical maintenance plans and records.

B1.2.2 Electrical safety:

- a. The power system equipment and configuration of the plant area shall be designed or reviewed by qualified personnel.
- b. The power system design of production equipment shall have relevant qualification certification.
- c. The installation of production equipment shall meet the electrical safety specifications and requirements of the equipment, and the wire size, insulation function and safety coating shall meet the needs of production equipment and the environment.
- d. Repair and maintenance shall have an execution plan, including a list of electrical equipment to be maintained, inspection methods (appearance, functional inspection, equipment commissioning), inspection personnel, frequency of execution and physical characteristics (such as corrosion of wires or connectors) and records shall be kept properly.
- e. It is forbidden to carry out live operations in the electrical system.
- f. The power system of the facility and production equipment shall install correct circuit breakers and fuses.
- g. Electric power systems or production equipment shall be marked as electric hazards.

- h. The electrical room or generator room of the power system shall be equipped with grounding facilities and have access control management.
- i. Electricity systems or equipment inspection and performance tests shall be conducted every year, with appropriate insulated protective equipment, insulated gloves, protective gear, operating rods, and other tools.
- j. Preventive maintenance of electrical equipment shall be conducted at least once every two years (infrared electrical detection, gas analysis in oil-type transformer oil, etc.).
- k. Do not place sundries in electrical equipment rooms (such as transformer rooms).
- l. Overload of electrical equipment shall be forbidden.
- m. Emergency generators shall conduct running tests every month.
- n. The electrical equipment locations shall be kept neat and clean, and the temperature and humidity of the indoor space shall be controlled under appropriate conditions.
- o. Storage of electrically conductive tools and equipment in electrical and generator rooms shall be minimized.

B1.2.3 High-risk operation management:

- a. High-risk operations (e.g. confined space operations, roofing operations, scaffolding erection operations, hanging operations, fire work, piping works, busway operation work, fire alarm isolation and fire suppression suspension), shall be managed with a variety of measures for equipment, operators and supervisors. A procedure for high-risk operation management shall be developed.
- b. The management of confined space operations shall comply with regulatory requirements. Management measures shall include arranging a certified operation supervisor, equipping detectors (oxygen concentration, hydrogen sulfide, carbon monoxide and other hazardous gas concentration), preparing emergency response equipment and ventilation exhaust equipment, and setting a personnel access control procedure.
- c. Scaffolds assembly shall be approved by a professional structure engineer. The certified supervisor shall verify scaffold assembly, safety cables, and the stairway of the movement path. Staff shall wear a back-mounted safety belt and safety helmet.
- d. The certificates required by local laws (e.g., certificate for hoisting mobile crane, certificate of safety and security training for operators and personnel engaged in the lifting operation) shall be checked before carrying out lifting operations to confirm that the construction personnel, the lifting equipment and the relevant certificates are consistent, and the operation site shall be clearly marked to avoid personnel entry.
- e. The dismantling of pipelines shall implement lockout and tagout procedures and confirmed by the construction personnel and supervisors to avoid dismantling incorrect pipelines. Workers shall wear PPE and breathing protection equipment to dismantle piping after chemicals in piping are pumped out completely.
- f. Electrical operations shall clearly mark charged and uncharged areas or equipment (which shall be confirmed by more than two persons), and operators shall avoid using conductive tools, which may cause electrical hazards.
- g. Flammable materials within a radius of 15 meters shall be removed. Flammable materials that cannot be moved shall be covered with fireproof materials before performing hot work, and sufficient portable fire extinguishers shall be placed near the construction site. Ventilation devices shall be equipped for preventing the escape of dust, smoke and offensive smells. Fire supervision personnel shall be present throughout fire work. After the hot work is complete, it shall be confirmed that hot equipment is closed and there is no fire risk at the construction site.
- h. Suspension of fire suppression systems shall require application process and obtain approval from the person responsible for the system. Fire system shall be suspended and restored upon the applied times.
- i. Fences and safety cables shall be installed for overhead work to prevent falls. The persons who are drunk, in poor health or poor mental condition shall not perform overhead work.

B1.2.4 Contract management:

- a. The contractor's safety and health management procedures shall be documented, including the scope of fully or partly contracted operations, re-contract operations or joint operations, and the contractor/sub-contractor shall be informed of the following details before the operation:
 - a) Working environment.
 - b) Hazardous factors.
 - c) Measures required by safety and health regulations.
- b. Notification of the working environment shall explain in detail the conditions of the environment in writing, including the workplace, the facilities, layout, machinery and equipment of the workplace, etc.; notification of the hazards shall, first of all, inform the contractor in writing about the types of accidents that may occur in the environment and the possible causes of such accidents.
- c. When suppliers, contractors and subcontractors individually hire labor for joint operations, the company shall conduct the following necessary measures to prevent occupational accidents:
 - a) Establish a consultative organization and appoint a person responsible for supervision and coordination of the workplace.
 - b) Communicate and coordinate tasks.
 - c) Conduct inspections of the workplaces.
 - d) Guide and assist in safety and health education related to the contracted work.
 - e) Other necessary measures to prevent occupational accidents.
- d. Members of the consultative organization for joint operations shall include workplace leaders, labor safety and health personnel, principals from each contractor and subcontractor, and other necessary personnel. Written records of relevant information shall be maintained. Safety and health education and training, safety and health certification and technical certification of the contractor's personnel shall meet applicable requirements.
- e. The consultative organization (joint operations and contract operations) shall coordinate the following matters on a regular or ad-hoc basis:
 - a) Safety and health management plan.
 - b) Engage in the control of dangerous operations such as hot work, overhead work, excavation, blasting, high-voltage live lines, etc.
 - c) Operational control of operating environments such as entering restricted spaces and hazardous substances.
 - d) Management and control of hazardous machinery and equipment (The safety measure above shall be coordinated for machinery, equipment, and structures including pile loaders, pile pullers, electric machinery, electric appliances, rail devices, acetylene welding devices, arc welding devices, ventilation device and caisson, passageways, construction frames, and work platforms).
 - e) Factory access control for electrical equipment.
 - f) Management of dangerous and hazardous substances.
 - g) Pedestrian and vehicular circulation management.
 - h) Other coordination matters deemed necessary.
- f. The dangerous machines and equipment used by the contractors shall have inspection certificates within the validity period and shall be operated by the persons with qualified licenses, in addition to adopting the entrance permit system, the relevant operation supervisors of the contractor shall supervise on-site, and the supervisor shall have a certificate of training qualification and follow TSMC's work permit system to conduct safety management.
- g. The audit or inspection plan shall be provided with inspection records, the inspectors, inspection time and the status of inspection locations. Inspection results and actions taken shall be signed and understood by the relevant contractors. If necessary, the results shall be tracked and recorded, and reviewed at the coordinating body meeting.

- h. The coordinating body shall have an emergency response plan to ensure that staff can respond and escape in an emergency; joint operations shall include contractors in the suppliers' contingency plan, confirming that the workers can escape in an emergency.

B1.2.5 Change management:

- a. Suppliers shall develop a change management procedure aimed at completing planned change that will temporarily or permanently create new hazards or safety and health risks, and an implementation and control procedure shall be established to confirm that the hazards of the change operation will not affect environmental safety and health performance due to differences in risk.
- b. The change management procedure shall also address the consequences of "non-planned" changes and shall take the necessary actions to mitigate any negative effects. These changes include:
 - a) Newly added or modified products, services, and processes.
 - b) Changes in regulatory requirements or other requirements.
 - c) Changes in hazard knowledge or information.
 - d) The development of knowledge and technology.
- c. The change management procedure shall include risk assessment before the change, countersign/audit, and risk control measures for the change, personnel notification/training before the start, review, and update of relevant documents.
- d. The personnel involved in the safety change discussion shall include the person in charge of the workplace, personnel qualified or familiar with process safety assessment, environmental protection and safety and health personnel, work site operation supervisors, on-site workers familiar with the work site and representatives of other units related to the change.
- e. The operation procedures and safety issues related to the change meeting shall be communicated and confirmed with the contractor in detail, and written documentation shall be retained to confirm the hazards, risks, and control measures of the construction process.

B1.2.6 Chemical safety management:

- a. The facility shall have the most up-to-date chemical list and construct a mechanism to update the list to provide real-time information.
- b. Suppliers shall follow relevant regulations to declare the chemicals they used, and the chemicals' SDS and labelling shall be placed and labeled in the operation areas.
- c. Suppliers shall establish storage areas with consideration to the incompatibility of chemicals stored in the area . The exhaust and leak prevention systems shall be also installed.
- d. New chemicals introduced or used for process changes shall have a review mechanism and implement related improvement works or management measures for reducing safety, hygiene, and environmental risks.
- e. Gas detectors, fire alarm detection and fire suppression systems shall be equipped in chemical storage and operation areas in accordance with regulations, standards, and risk considerations. The safety devices shall work effectively and operate normally.
- f. Explosion-proof equipment shall be equipped in flammable and explosive chemical storage or operation areas; if explosion venting design is required, suppliers shall verify that it is effectively installed and maintained.
- g. Chemical storage equipment and supply systems shall be equipped with effective seismic protection devices in accordance with the provisions of B9.1 3) Earthquake Protection d) of this Standard.
- h. Gases & chemical equipment that is at risk of explosion or fire due to static electricity shall be grounded or adopt other devices to remove static electricity.
- i. Areas and machines where liquid chemicals are used (including storage) shall have leak-proof devices, leak sensors, or other safety protection measures.
- j. Chemical delivery carts shall be equipped with chain/metal buckle and other securing devices, and shall be supplemented by a brake device when temporarily parked.

B1.2.7 Flammable substance management:

- a. Flammable and combustible materials shall be stored properly to prevent vapor accumulation.
- b. Fire hazards (such as smoking, electric sparks, open flames, etc.) shall be eliminated in the areas where flammable materials are stored or used.
- c. Equipment operating with gases or chemicals shall be grounded or use other devices to remove static electricity due to possibility of explosion or fire caused by static electricity.
- d. The fire load shall be controlled at the production area and flammable materials shall not be stored at the production area for more than one day.
- e. Personnel engaged in the operation of flammable substances shall attend initial and follow-up training for routine management and emergency response.
- f. Flammable chemicals/gas operations (storage/ supply) rooms are required to be equipped with a firewall/fire door with 1-hour fire resistance.
- g. Electrical equipment in flammable chemicals/gas operations (storage/ supply) rooms shall have an explosion-proof rating.
- h. Flammable chemicals/gas operations (storage/supply) rooms are required to be equipped with automatic sprinkler system (except for water reactive substances).
- i. Pipelines shall not be corroded. The ends of expansion pipeline shall be sealed.
- j. Flammable chemical production/storage areas shall not be established in basements.
- k. The flammable chemical storage area shall be established with (but not limited to) the following facilities:
 - a) Appropriate ventilation system.
 - b) Appropriate fire protection and control equipment.
 - c) Temperature and humidity measurement and control equipment.
 - d) Flammable gas detector.
 - e) Flammable liquid leak detector.
 - f) Dikes or collection trenches/tanks to prevent diffusion outside the storage area.
 - g) Flammable and combustible chemical warehouses shall be equipped with anti-static devices and explosion-proof electrical devices.
 - h) Emergency response equipment, including personal protective equipment (PPE), eye wash stations and leak handling tools.
- l. Suppliers shall set up smoking areas with sufficient safety protection to avoid people smoking in non-smoking areas.
- m. Inlet ports of the exhaust lines in the areas where flammable substances are heavier than air shall be within 30 cm of the ground.
- n. Containers for storing flammable substances shall be placed in a cabinet with appropriate exhaust measures, and the maximum safe storage capacity shall be marked prominently on the outside of the cabinet.

B1.3 Appropriate Personal Protective Equipment (PPE) is consistently and correctly used and free of charge where required to control safety hazards and worker exposure. Protective programs shall include educational materials about the risks associated with these hazards.

B1.3.1 Personal protective equipment management:

- a. Suppliers shall have management procedures on the selection, use, education and training, testing, cleaning and use period of personal protective equipment. Personal protective equipment shall be free of charge.
- b. The selection of personal protective equipment shall be based on the results of the risk assessment. The personal protective equipment selected shall comply with relevant certifications, such as CNS, US CDC/OHSA, CEN.
- c. Employees shall be educated and trained on the use of personal protective equipment to confirm that they understand the principles of protective equipment and their purpose.

- d. Safety and health personnel and production line supervisors shall:
 - a) Maintain the good use of personal protective equipment in the operating environment, and ensure employees are able to use personal protective equipment when required during operation.
 - b) Check the operation site for inadequate protective effects (coefficients) of personal protective equipment, inappropriate choices, or reluctance of personnel to use them.
 - c) Inspect the mask or glasses of personal protective equipment for scratches or damage, resulting in poor visibility when worn.
- e. Respiratory protective equipment shall be periodically tested for fitness, and the wearing method shall be adjusted, the size of the protective equipment shall be changed, or new equipment shall be adopted according to the results.
- f. Personal protective equipment provided on site shall be kept adequate and any damaged or unserviceable personal protective equipment shall be replaced with new ones.
- g. The repair, cleaning and maintenance of personal protective equipment shall be carried out periodically, with attention to personal hygiene and infection risk.
- h. Suppliers shall pay attention to the cleaning and storage of personal protective equipment to avoid cross infection or contamination.

B1.4 Reasonable steps must also be taken to remove pregnant women/nursing mothers from working condition with high hazards, remove or reduce any workplace health and safety risks to pregnant women and nursing mothers including those associated with their work assignments, as well as include reasonable accommodations for nursing mothers.

- B1.4.1 Pregnant women/nursing mothers' protection management: There shall be informational procedures or implementation records for pregnant women/nursing mother's protection (workplaces with more than 300 people shall have management measures), and the content shall include management control standards, labor allocation mechanism, inspection mechanism and work right protection practices.
- B1.4.2 Hazard identification and risk assessment procedures shall be implemented in the workplace of maternal employees. The procedures shall include human, physical (noise, vibration, abnormal pressure and radiation), biological factors (pathogens that affect the mother, fetus, or infant) and Chemical (reproductive or teratogenic) hazards, and conduct compliance management procedures based on the results of hazard identification and risk assessment.
- B1.4.3 Employees applying for pregnant women/nursing mother's protection shall not be treated unfairly or discriminatorily, which would lead to employees not being protected by laws and regulations.
- B1.4.4 Within one year after childbirth, suppliers shall provide private and hygienic breastfeeding rooms and reasonable rest time for lactating mothers to meet their breastfeeding needs.

B2 Emergency Preparedness

B2.1 All permits, licenses, and inspection/testing reports for fire safety equipment required by law shall be available and ensure that permits and licenses are kept up to date.

- B2.1.1 Suppliers shall install fire alarms and fire suppression equipment and obtain the permits or licenses issued by the local fire authority.
- B2.1.2 Suppliers shall undergo inspection/testing by the local authorities and make improvements based on the inspection/testing results and keep the relevant reports and improvement records.
- B2.1.3 Suppliers shall establish and implement a process to ensure timely renewal of licenses and permits.

B2.2 Suppliers shall have adequate and effective fire detection, alarm and suppression systems in place and maintain the functional effectiveness of fire safety equipment through inspection and maintenance.

B2.2.1 Special firefighters shall be required to be responsible for firefighting training and firefighting system maintenance /repair.

B2.2.2 Fire system setup and maintenance.

- a. Basic management requirements.
 - a) Suppliers shall follow local laws and regulations to install fire alarm and suppression equipment and strengthen the installation of fire protection systems according to fire risk.
 - b) Suppliers shall develop and implement fire system maintenance procedures, specifying the maintenance frequency, inspection items, qualification criteria, and maintenance personnel. Maintenance can be performed by the supplier or outsourced, and maintenance records shall be kept on file.
 - c) The frequency of testing and maintenance shall not be less than the frequency required/recommended by the manufacturer, local regulations or insurance company, whichever is more stringent.
 - d) When the fire protection system needs to be temporarily suspended due to factors such as construction, the relevant personnel (e.g. construction sponsor) shall submit an application to the safety department in the organization, stating the reason for the application, the duration of the temporary suspension, etc. The fire protection system suspension shall not exceed 8 hours per day, and shall require the relevant personnel to maintain vigilance at the scene. If required by the insurance company, the application for temporary suspension of the fire system shall be issued to the insurance company prior to the execution of the suspension and the application shall be kept on record.
- b. Fire detection and alarm systems.
 - a) Suppliers shall have temperature detectors, smoke detectors or other fire detection equipment.
 - b) The detection signal needs to be transmitted to a 24-hour manned premise, such as a duty room, control room or security room.
 - c) When the detection system detects a fire, an audible and visual alarm shall be generated.
 - d) A manual fire alarm button shall be installed in or along the evacuation lane leading to the exit.
- c. Fire extinguishers:
 - a) Suppliers shall install portable fire extinguishers, such as ABC dry powder, Carbon Dioxide, or Class D dry powder extinguishers, according to the characteristics of the protection site and fire-fighting materials.
 - b) Large trolley-type fire extinguishers are required for indoor areas where large quantities of flammable materials are stored and manufactured.
 - c) Fire extinguishers shall be located in a marked and designated location and provide evidence (e.g., inspection plate) that they have been inspected.
 - d) Fire extinguishers shall be placed in an accessible and safe location and inspected once a month, and the extinguishing agent shall be replaced according to the fire extinguisher manufacturer's recommendations.
- d. Automatic fire sprinkler systems (required by law or as a result of a risk assessment).
 - a) Suppliers shall install automatic fire sprinkler system in accordance with local laws, if the risk of fire and explosion is high, the automatic fire sprinkler system shall be installed exceeding regulatory requirements.
 - b) The alarm check valve of the sprinkler system shall be maintained in the fully open position and labeled, and the valve shall be fixed with locks or equipped with monitoring devices to prevent arbitrary closure.

- c) The automatic sprinkler system shall be fixed properly, and the sprinkler head shall not be too close to structural/non-structural components. (vertical clearance > 45 cm, horizontal clearance > 30 cm).
- d) Exhaust ducts or other objects cannot obstruct the protection area of the sprinkler head, if obstructed, additional sprinkler heads shall be added under the exhaust ducts or objects.
- e) The alarm check valve bell shall sound automatically within 120 seconds in pipe-end drainage tests.
- e. Fire hydrants.
 - a) Indoor/outdoor fire hydrants shall be provided with water hoses and nozzles. The hoses shall be checked/replaced periodically to avoid water leakage due to decay.
 - b) The number of hydrants, the length of the water hose and the range of the fire hydrants shall be sufficient to protect all areas.
 - c) No object shall be placed in front of the fire hydrant to obstruct its use.
 - d) Indoor/outdoor fire hoses are free of rust and are fixed.
- f. Fire pumps.
 - a) The fire pump shall be set to start automatically.
 - b) The starting pressure shall be properly set by the original fire pump manufacturer or a professional fire company.
 - c) The fire pump room shall be protected with a 1-hour fire separation wall and free of flammable/ combustible materials. If located outdoors or indoors without an 1-hour fire separation, the fire pump shall be located at a safe distance from the flammable/explosive material storage/process area, or buildings with at least a 1-hour fire separation shall be located between the fire pump and the flammable/explosive material storage/process areas.
 - d) The fire pump shall be tested and operated at least once a month and the performance curve test shall be performed annually.
- g. Firefighting pools.
 - a) Fire water tanks shall be dedicated for that sole use.
 - b) The capacity of the fire water tank shall be sufficient to provide the sum of water capacity of automatic sprinklers and indoor/outdoor hydrants as required by local code.
- h. Fire Separation:
 - a) Fire separation reviewed and approved by government fire authorities shall not be destroyed.
 - b) The fire door shall be kept closed, and if the fire door needs to be kept open because it is located in an area with frequent personnel access, it shall be interlocked to the fire alarm system. If the fire alarm is activated, the fire door shall immediately be closed automatically.
 - c) Fire doors shall be kept completely closed and repaired as soon as possible in case of poor closing conditions.
 - d) Openings in the firewall shall be properly sealed with a fire stop.
 - e) Building exterior walls shall be constructed of non-combustible materials.
 - f) Storage and supply facilities for flammable substances shall be equipped with 1-hour firewall and 1-hour fire door.
 - g) Firewalls shall comply with the requirements of government regulations.
- i. Emergency exit:
 - a) There shall be sufficient and effective emergency exits in each area.
 - b) Access to the exit shall be free of obstructions, including piles of objects, fences, locked doors, etc., to ensure the safe and rapid evacuation of workers in the event of a fire or other emergency.
 - c) The access is not used for any purpose other than evacuation.
 - d) Each floor is provided with exit signs indicating the exit, which are illuminated by lights and/or glow in the event of a power outage.

- e) All emergency exit doors shall open directly to the outside, shall not be locked to restrict access, and shall not require the use of keys or sliding doors that require effort to open.
- f) Each floor shall have at least two or more (if regulations apply) clearly marked unobstructed exits.
- j. Emergency lighting.
 - a) A sufficient number of emergency lights shall be installed in aisles, corridors, staircases and the position above each exit and in other areas that need to be lighted in the event of a power outage.
 - b) Batteries for emergency lighting shall be tested periodically.

B2.3 Utilities shall be installed with an adequate fire protection system with proper material and design for achieving effectiveness.

B2.3.1 Exhaust Duct

- a. Fume exhaust ductwork in new constructed factories shall be made of non-combustible materials (stainless steel or galvanized metal).
- b. Exhaust air ducts with more than 10 inches of combustible ductwork installed in existing facilities shall use metal materials or to be equipped with automatic fire sprinkler protection for the existing plastic air ducts, following American Fire Protection Association standards.

B2.3.2 Central Scrubber

- a. Fire hydrants shall be provided on building roofs where combustible central scrubbers are located. It shall be confirmed that the combustible central scrubbers are covered in the protection area of outdoor fire hydrants.
- b. Central scrubbers made of combustible material shall install duct sprinkler heads. The sprinkler heads shall be installed in the inlet, main body, and outlet of the combustible scrubber.

B2.3.3 Cooling Tower

- a. Fire hydrants shall be installed on the building roofs where combustible cooling towers are located. It shall be confirmed that the combustible cooling towers are covered in the protection area of outdoor fire hydrants.
- b. Cooling towers made of combustible material (e.g. FRP, wood) shall install wet-type deluge sprinkler system.

B2.3.4 Electrical System

- a. Rooms where electrical systems (e.g. main transformer, substation, switchgear, MCC-Motor Control Center, UPS) are located shall install inert gas fire suppression systems (e.g. INERGEN-IG541, CO₂, FM-200).
- b. Rooms where electrical systems are located shall maintain 1-hour fire separation.
- c. Outdoor main transformers shall equip wet-type deluge spray systems. Fire suppression systems are is not necessary for oil-type main transformers if the insulation oil is not combustible.
- d. IR inspection shall be executed for electrical systems. Improvements shall be made based on inspection results and recommendations.
- e. Gas analysis of insulating oil shall be implemented annually for oil-type main transformers. If the concentration of gas in oil (e.g., acetylene, hydrogen, methane, ethane, ethylene, carbon monoxide, etc.) exceeds the specification, the insulating oil shall be replaced.

B2.3.5 Wet Bench

- a. Wet bench equipment with combustible liquid or heated components shall install a CO₂ suppression system.

B2.3.6 Cleanroom

- a. The installation of fire safety systems in cleanrooms shall follow the requirements of NFPA318 or local codes.

B2.4 Supplier shall set up adequate and effective emergency assessments and periodical drills to ensure the effectiveness of emergency preparedness.

B2.4.1 Emergency assessment and preparation:

- a. Assess potential emergency situations, refer to past events, assess high-risk events, and establish emergency procedures.
- b. To assess potential emergency situations, the following hazards shall be considered:
 - a) Hazard to life
 - b) Hazard to the environment
 - c) Hazard to property
- c. Emergency response procedures shall include: emergency notifications, onsite personnel notifications, contingency handling procedures, emergency organization, evacuation plans, employee training and drills, adequate evacuation facilities and recovery plans, and the procedures shall be updated every two years to ensure personnel health and safety, environment and property is protected.
 - a) The emergency shall cover at least:
 - a1 Fire
 - a2 Chemical/gas leakage (if chemical/gas is used)
 - a3 Earthquake (if located in an earthquake zone)
 - a4 Severe weather (rain, floods, typhoons, frost, snow, etc.).
 - a5 Other emergencies
 - b) Each area (including production area, warehouse, office area, laboratory) and all work shifts (including night shifts) shall have adequate and effective emergency response procedures.
 - c) The notification process and level shall be clearly planned, and periodically tested and reviewed. The emergency notification process shall include notification to TSMC within 4 hours of the incident.
- d. Establish emergency response organizations, such as commanders, disaster relief teams, ambulance teams, and support teams, and prepare and execute initial and re-training of emergency response training.
 - a) An emergency response team shall be formed in the supplier organization and assigned trained personnel is to be on standby during all work shifts and post the up-to-date emergency contact information (including day, night, and holiday contact information).
 - b) Define emergency grouping methods for the entire facility's staff based on personnel responsibilities.
 - c) Prepare emergency response materials. All personnel shall receive emergency response training and pass the exam before becoming formal emergency response members. Each member who passes the initial training needs to receive retraining once a year (in different forms, such as: classroom lessons, wearing of protective equipment, emergency equipment operation, drills).
 - d) Emergency response training can cover but is not limited to chemical hazards and preventive measures, spill prevention and spill removal, fire hazards and response, proper handling and disposal of chemicals and contaminated absorbent materials, selection and use of protective equipment.
 - e) Suppliers shall be able to provide the latest training information and past training records for future reference.
- e. Installation and maintenance of emergency response equipment:
 - a) Supplier facilities shall be equipped with emergency personal protective equipment that is adequate to meet conditions, and kept in a safe place near areas with potential accidents, make a periodical inventory of emergency response equipment (including gas/chemical leakage treatment, fire and gas detection equipment and personnel first aid equipment), and perform periodical checks and maintenance.

- b) Periodically test evacuation broadcast systems (manual and automatic) to confirm normal operation.
- c) Supplier facilities are required to establish emergency evacuation gathering points, which are able to accommodate the maximum evacuation number of people to be evacuated, clearly mark gathering point of each unit, and make necessary preparations for a roll call, such as roll form. Rendezvous points include rendezvous points inside buildings (hurricane/extreme weather shelter in place), and rendezvous points outside buildings (fire, chemical emissions).
- d) Prepare enough emergency communication equipment, such as Walkie-Talkie.
- e) Equipment required for emergency response and disaster relief shall be installed in a safe place close to the meeting point of the emergency response team, including backup personal protective equipment, floor plan, emergency communication equipment emergency, and an up-to-date version of emergency contact information (including day, night, and holiday contact information).

B2.4.2 Emergency response drill:

- a. All employees shall conduct adequate and effective evacuation drills for fire and other identified emergency situations and keep drill records.
- b. Emergency contingency drills (including evacuation exercises) are required every year or as required by local law, whichever is more stringent. If the supplier is located in a high-risk earthquake area, they shall hold at least one emergency contingency drill for seismic conditions at least every 2 years.
- c. Scenario setting for emergency response drills shall be a high-risk potential situation, and the situation shall have a certain severity. For example, an earthquake scenario shall be set to a magnitude of 5 or higher, and a fire scenario shall be set to an open fire requiring a fire hydrant to extinguish the fire, and personnel shall be evacuated outside the factory.
- d. The time of occurrence of various scenarios in the exercise shall be to be set at different time periods, such as day, night, and holidays .
- e. Emergency contingency drills shall first prepare the exercise script, and in the process of writing, consider ways to reduce the impact of accidents on production/ supply.
- f. Records of emergency response drills (scripts, photos) including employee evacuation, ambulance, and disaster relief are required.
- g. After the drill, senior executives and important emergency response team members shall discuss the strengths and weaknesses of the drill, seek opportunities for improvement, and set an action plan.
- h. If the turnover rate is greater than 20% since the last exercise, a new exercise shall be conducted.
- i. All shift personnel shall participate in firefighting training at least once every two years. Those who fail to complete the training shall carry out follow-up training. Fire drill records shall be kept intact for at least 5 years.

B2.4.3 Business continuity and recovery:

- a. Sufficient and up-to-date operating continuity and recovery procedures shall be maintained.

B2.5 Supplier shall establish an adequate and effective accident investigation process to ensure the effectiveness of cause investigation and analysis, corrective measures, and accident notification.

- B2.5.1 A written accident investigation procedure shall be established, including cause investigation and analysis, corrective measures, and accident report.
- B2.5.2 Personnel interviews, written documents, operating procedures, on-site photos, operation records or equipment information of accident investigations shall be properly kept with documented data.
- B2.5.3 The method of accident investigation and analysis shall have scientific or academic basis and be able to analyze the basic causes.

- B2.5.4 Statistics and analysis of the causes of accidents shall be included in the next year's safety and health goals.
- B2.5.5 The implementation of correction or improvement measures for accident investigation results shall have a tracking and checking mechanism.
- B2.5.6 TSMC and related parties shall be notified of accidents and the results of investigations, and the content shall include people, event, time, location, and materials.

B3 Occupational Injury and Illness

B3.1 Investigations shall be conducted for determining the root cause of work-related injuries/illnesses and implementing relevant corrective/preventive actions. The investigations shall be recorded, communicated to affected employees and tracked to closure.

- B3.1.1 Management of occupational Injury and Illness investigation:
 - a. A written occupational Injury and Illness investigation procedure shall be established, including notification, preliminary assessment, cause investigation and analysis, corrective measures, and accident report.
 - b. Legal requirements of occupational Injury and Illness investigation shall be included in suppliers' documentation procedures.
 - c. The implementation of correction or improvement measures for the investigation results of occupational Injury and Illness shall have a tracking and checking mechanism.
- B3.1.2 Health services and management (including occupational injury and occupational disease management):
 - a. Supplier shall set up a health management organization according to law, including doctors, nurses, emergency personnel.
 - b. On-site nurses and emergency personnel shall periodically complete on-the-job training.
 - c. Occupational injuries or diseases shall be reported in accordance with the law without any concealment.
 - d. The suppliers shall conduct physical health examinations, annual physical examinations, and special physical examinations according to law, and manage, track, and analyze the results.
 - e. Health promotion shall be included into the promotional goals of suppliers' management system, with themed promotional and education and training activities.
 - f. Health services shall include psychological needs such as consultation or emotion management.
 - g. Emergency medical procedures shall be included in the emergency response plan, and drills for medical treatment and evacuations shall be conducted according to the type of disaster.
 - h. On-site doctors' services shall include consultation with high-risk health groups or high-hazard exposure groups.
 - i. For cases or suspected case of occupational diseases, follow-up work risk discussion, occupational disease consultation, causal-and-effect discussion, health management and work distribution management shall be conducted.
 - j. Operation procedures for major or legal epidemic or infectious diseases shall be developed.

B3.2 Effective first aid procedures shall be developed and sufficient first aid responders shall be available to provide initial treatment in place for injured or ill workers.

- B3.2.1 Adequate and effective first-aid procedures shall be developed and implemented, including emergency response process based on the severity of emergency medical incident (first aid, medical office, local hospital).

B3.2.2 Suppliers shall assign trained/certified first-aid personnel, and consider shifts, areas, and number of people to set up a sufficient number of first-aid personnel, including qualified agents and responders, taking into account shift, area, and number of people to set up a sufficient number of first responders, including qualified substitutes.

B3.3 Employees in designated areas are provided with adequate first aid equipment and kits for treatment of injured or sick workers. First aid kits are fully stocked and checked monthly.

B3.3.1 Adequate and effective procedures shall be established and implemented for inspection, maintenance, and storage of all first aid equipment and kits, and all inspections shall be carried out at least once a month.

B3.3.2 Supplier shall prepare sufficient first-aid medicines and equipment according to the size, distribution, dangerous conditions, and number of workers of the workplace. The first-aid kit inspection records, inventory list and replacement records shall be retained.

B4 Industrial Hygiene

B4.1 All permits, licenses and testing reports for potential industrial hygiene exposures required by the laws are in place and a process is implemented to ensure permits and licenses are up to date at all times.

B4.1.1 An effectively documented industrial hygiene license control process shall be developed and implemented, and a control tracking mechanism for the validity period of various licenses shall be implemented.

B4.1.2 All industrial hygiene permits, and licenses required by laws shall be available and valid.

B4.1.3 Industrial hygiene monitoring test reports as required by regulations shall be implemented, and monitoring records shall be retained for at least 10 years.

B4.2 Worker exposure to chemical, biological, and physical agents is to be identified, evaluated, and controlled according to the hierarchy of controls. If any potential hazards are identified, supplier shall look for opportunities to eliminate and/or reduce the potential hazards. If elimination or reduction of the hazards is not feasible, potential hazards are to be controlled through proper design, engineering, and administrative controls.

B4.2.1 Laboratory safety and health management:

- a. Newcomers or transferring colleagues shall complete laboratory environmental protection, safety and health education and training before working in labs. Contractors or equipment suppliers shall complete hazard notification and keep records before entering each laboratory.
- b. Special operational health/physical examinations shall be conducted for people working in laboratories in accordance with regulatory special physical examination requirements and exposure risks.
- c. Suppliers shall provide appropriate personal protective equipment based on laboratory hazards, operation type and exposure risk, and specify the correct personal protective equipment to be worn during operation.
- d. Gloves contaminated with chemicals or samples are not allowed to touch door handles, elevator buttons and other public equipment.
- e. If equipment uses hazardous chemicals, it shall be equipped with ventilated exhaust equipment to avoid the risk of chemical exposure to personnel due to the escape of chemicals.
- f. Chemicals shall be marked and stored in proper locations according to law, incompatible materials shall not be stored together, and liquid chemicals shall be stored in devices able to contain leaks.

- g. No beverages or food shall be stored in the laboratory and no drinking or eating shall be permitted.
- h. The laboratory shall be equipped with general ventilation and local exhaust facilities, and confirm their effectiveness, to avoid environmental problems, such as fugitive air or odor due to the use of chemical substances or experiments. The capture air speed of the chemical exhaust cabinet at the opening shall meet recommended specifications, working environment monitoring results shall meet regulatory requirements.
- i. If hazardous gas cylinders are to be installed in the laboratory, they shall be placed in a cylinder cabinet with an exhaust device to ensure that there is no risk of hazardous gas leak in the operating environment; Cylinder caps shall be added to unused cylinders to avoid damage and air leakage when accidentally struck. The location of the exhaust valve of liquid nitrogen cylinders need to be considered for possible asphyxiation problems in confined spaces.
- j. Waste shall be sealed according to their characteristics. Bottles of waste liquids shall be placed in dedicated storage locations. Waste liquids shall be collected in waste liquids drums. Containers shall have a classification number indicating the name of the organization that generated the waste, the date of storage, the quantity, the composition, and the hazard characteristic mark.

B4.2.2 Workplace Noise management:

- a. If there are high-noise equipment or systems in the workplace, such as rotating equipment, motors, air guns, and vibration equipment, noise control shall be performed.
- b. A "Hearing Protection Plan" shall be developed and a documented record of implementation shall be kept.
- c. For areas with high noise volume (greater than 85 dBA), periodical measurement and notification of relevant authorities shall be carried out in accordance with the law.
- d. Individual noise measurement personnel shall plan and screen based on similar exposure groups (SEGs) and confirm whether the individual exposure samples are representative.
- e. The results of noise measurement (environmental measurement) shall be announced or informed to all persons in this workplace.
- f. If there are groups exposed to noise operations, special health checks shall be performed in accordance with the law and analyzed in conjunction with the exposure assessment results.
- g. If there is a workplace with a declared noise hazard (greater than 90 dBA), engineering control shall be adopted to reduce the labor noise exposure time, so that the average amount of labor noise exposure on a 8-hour time weighted average workday does not exceed the allowable standard. (dB value/permissible time, 90/8, 92/6, 95/4, 97/3, 100/2)
- h. Regular training on noisy workplaces or employees exposed to noise shall be provided and training records shall be kept.
- i. Personal protective equipment for employees exposed to noise shall be provided. Personal protective equipment shall be periodically inspected and maintained.

B4.2.3 Radiation management:

- a. If there is ionizing radiation machinery and equipment regulated by law in the facility, the relevant license and periodical measurement data shall be implemented and reported to the authority according to regulations.
- b. Operators of ionizing radiation equipment shall obtain a permit or a certificate of registration of such equipment and substances in accordance with the law.
- c. Persons who are exposed to ionizing radiation operations shall be tracked and subjected to special medical examinations, and provided with free radiation armbands and related personal protective equipment (such as lab coats, gloves, etc.).

- d. Areas where the ionizing radiation Equipment is used and areas where the radioactive material is stored shall be marked, and consumption of non-essential items such as food and drink shall be strictly prohibited; the machine or equipment shall have a hazard warning message or label.
- e. Standard procedures and operation safety requirements for radiation operations shall be posted in prominent places on the premises. Related personnel shall complete training and regular hazard communication to confirm that all personnel entering the areas are aware of the operation safety regulations.

B4.2.4 Combustible Dust Hazard Management:

- a. Identification and Evaluation of Potential Hazards:
 - a) Identification of Potential Hazards: Any dust used or created by one of the following processes shall be considered a Potential Combustible Dust Hazard:
 - a1 A process where a dry or wet dust collector is being used to collect dust.
 - a2 Any grinding, sanding, cutting, milling, routing, or drilling process that creates dust.
 - a3 Any polishing or buffing process that creates dust.
 - a4 Any other process or manufacturing operation that generates or handles dust or media blasting or other powders.
 - b) Evaluation of Potential Hazards:
 - b1 Supplier shall evaluate all identified Potential Combustible Dust Hazards to confirm whether they are explosive.
 - b2 If the dust is determined to be explosive, it shall be deemed a Combustible Dust and those areas of the facility where the Combustible Dust is present shall be deemed to present a Combustible Dust Hazard.
 - b3 Supplier shall document each potential Combustible Dust Hazard and permanently maintain such records.
- b. Management of Combustible Dust Hazards: Supplier shall implement measures to mitigate the risk and meet the requirements of this section for Combustible Dusts and Combustible Dust hazards.
- c. Where a Combustible Dust hazard exists, new building expansions or alterations shall include process safety requirements and a Combustible Dust risk analysis shall be conducted and documented by an engineer knowledgeable in applicable building construction and safety requirements.

B4.2.5 Chemical hygiene management:

- a. Suppliers shall know whether the chemicals used and stored contain substances that are toxic or have carcinogenic, teratogenic, or reproductive risk (CMR) properties.
- b. Storage areas or facilities for toxic or CMR (carcinogenic, germ cell mutagenic or reproductive toxic) substances shall be equipped with effective alarm devices and exhaust ventilation systems and connected to supply systems to ensure active shutdown function during emergencies and perform periodical maintenance to ensure effective function.
- c. Suppliers shall perform a chemical exposure and risk assessment process and present risk ranking.
- d. Chemical SDS and labels shall be stored at the operation areas and labeled.
- e. Personnel responsible for special operations shall have the relevant licenses.
- f. Suppliers shall develop working environment monitoring procedures, implement them exactly, and keep records.
- g. The responsibility to protect employees and the environment shall be met by the installation of contingency exhaust treatment systems for toxic chemistry and substances of concern storage and operation areas as required by law or relevant regulations.
- h. Chemical operators shall wear effective personal protective equipment, be clearly aware of the purpose of wearing PPE and correctly implement PPE management measures, including replacement frequency and the methods of cleaning, storage and wearing.

- i. Specific chemical operators shall perform relevant health examinations in accordance with the law.
- j. Improvement measures addressing abnormal results of working environment monitoring and special health examinations shall be confirmed for their effectiveness, implementation status and the acceptability after improvement.

B5 Physically Demanding Work

B5.1 The risks of workers performing physically demanding work shall be effectively identified, assessed, communicated, and controlled.

- B5.1.1 Suppliers shall conduct ergonomics exposure and risk assessment and implement risk management procedures through engineering improvement and operation process modification.
- B5.1.2 Suppliers shall evaluate and improve the operation process if manual material handling and heavy or repetitive lifting, prolonged standing and highly repetitive or forceful assembly tasks are involved in the workplace.
- B5.1.3 If there are cases of repetitive moving or lifting of overweight goods (over 9 kg) or single moving of overweight goods (over 23 kg) in the workplace, the work shall be evaluated and improved.
- B5.1.4 Supplier shall evaluate and improve the operation of machinery or equipment regularly operated in the workplace which may cause vibration hazard exposure.
- B5.1.5 Supplier's safety and health training shall include ergonomics or musculoskeletal awareness and prevention.
- B5.1.6 If the design of machine or equipment causes the head, neck, back, upper limbs, lower limbs and waist to be over-extended or over-exerted, and the exposure exceeds 1-3 hours, the work shall be evaluated and improved.
- B5.1.7 Improvement measures taken in response to ergonomic hazards shall consider suitability and effectiveness for personnel to effectively control risks.
- B5.1.8 Inspections, audit or operation observations shall include the identification of ergonomic hazards and communication with the operating personnel, and maintain records.

B6 Machine Safeguarding

B6.1 All permits, licenses and testing reports for machinery required by law are in place and a process is implemented to ensure permits and licenses are always up to date.

- B6.1.1 Suppliers shall develop and implement an effectively documented control process to ensure permits are renewed before expiration.
- B6.1.2 All machine-related permits and licenses required by laws shall be available and valid.

B6.2 An adequate and effective machine-safeguarding program is implemented, and workers may operate machinery safely.

- B6.2.1 Mechanical safety:
 - a. Mechanical equipment shall have a certificate of conformity for relevant design and manufacturing.
 - b. Mechanical equipment (including original electrical components) shall be securely installed, including fixation, proper operation space and grounding.
 - c. Rotating parts and sharp parts of mechanical equipment shall be properly covered or protected.
 - d. Machinery and equipment shall have an operating manual (which can be obtained at the operating site) containing safety requirements and confirmation of relevant personnel certification.
 - e. Machinery operators shall complete training and obtain certification in accordance with the law or relevant regulations and confirm periodical training records.

- f. Mechanical equipment safety devices shall be properly installed, tested, and incorporated into the periodical maintenance of machine equipment.
- g. Safety procedures shall be included in machine equipment maintenance procedures, or safety settings must be properly enabled to ensure the safety of personnel.
- h. Safety features and emergency braking devices shall be tested periodically and shall be able to be effectively activated, and various mechanical test reports shall be kept.
- i. All hazards of hazardous mechanical equipment are clearly marked on the machine.
- j. Lighting in workplaces with mechanical equipment shall be sufficient and meet specifications.
- k. Noise generated by the machine operation shall be properly managed or controlled.

B6.2.2 Robot safety:

- a. Robots shall comply with relevant standards, such as ISO 10218-1, CNS 14490-1, ANSI RIAR 15.06. and other relevant national standards.
- b. Fixed robots shall be equipped with physical protection, and related detection equipment shall meet safety requirements. The above equipment and protective mechanisms shall be periodically maintained, and records shall be kept.
- c. Collaborative/mobile robots shall conform to relevant specifications, such as SEMI S10, S17, S22, etc.
- d. Batteries (lithium batteries) and charging stations used by collaborative/mobile robots shall comply with relevant certifications, such as IEC, ISO, SAE, CNS, UL, etc.
- e. Collaborative/mobile robots shall undergo operational risk assessment and functional test. The testing scope shall include related machine equipment, and the test process and results shall retain image data for subsequent verification.
- f. Collaborative/mobile robots shall be tested for seismic resistance, and the test result shall meet the regional seismic resistance requirements.
- g. Collaborative /mobile robots shall undergo periodical maintenance and records shall be maintained.
- h. Robot operators shall complete training and certification to meet requirements for operating qualifications.
- i. Emergency response plans shall include response to robotic accidents, the response scenarios shall be consistent with the results of the robotic risk assessment, and documented information shall be retained for the above response.
- j. When an emergency case occurs, the coordinated/mobile robot shall automatically move away from the evacuation line to avoid interfering with personnel escape.

B6.2.3 Machine risk assessment:

- a. An effective machine risk assessment process shall be implemented and documented.
- b. The machine risk assessment plan may provide a method to identify the safety requirements of the machine. Safety checks shall be implemented before procurement and installation.

B6.2.4 Control plans:

- a. Appropriate methods shall be adopted to ensure that safeguards are installed to control the identified risks.
- b. Periodical inspection and preventive maintenance of machines and related safety protection devices and emergency shutdown devices shall be conducted.

B6.2.5 Operation guide:

- a. Operation instructions written in a language understandable by the worker operating the machine shall be developed.
- b. Machine safe operation guidance shall be developed and provided.

B7 Food, Sanitation and Housing

B7.1 All health & safety licenses, permits, registrations and certificates related to sanitation, food and housing required by law are in place and an adequate and effective process is established to ensure permits and licenses are up to date at all times.

B7.1.1 A documented process shall be in place to ensure permits are renewed before current permits expire.

B7.1.2 All required sanitation, food and housing permits and licenses required by law shall be available and valid.

B7.1.3 All sanitation, food and housing testing reports shall be available for verification.

B7.2 Dormitories, bathrooms, and employee spaces are clean, safe, and well-maintained and meet international housing standards, and canteens (cafeterias) are clean, well maintained, and well managed.

B7.2.1 The dormitory space configuration provided by suppliers shall consider the following contents: dormitory facilities, personal space, bed size/configuration, toilet/bathroom.

B7.2.2 The dormitory configuration shall be separated between men and women, and men and women shall not be in the same room. Bunks provided shall not exceed three levels, and the residents of each room shall not exceed 8 people. The staff's personal use space is provided for the storage of personal belongings; and suitable movement paths (1.2m) are in place.

B7.2.3 The dormitory shall provide ventilation, proper air conditioning system and natural lighting windows.

B7.2.4 Public toilets and bathrooms shall be provided in accordance with the staffing ratio (1:15) and hot water shall be provided in the bathrooms. The distance between the toilet/bathroom and the dormitory shall not be greater than 60 meters. The male and female configurations shall be completely segregated and marked with the gender of use.

B7.2.5 Suppliers shall provide safe and hygienic drinking water, and distance from the dormitory shall not exceed 60 meters. Drinking water quality testing shall be carried out in accordance with the relevant laws.

B7.2.6 The dormitory area shall be equipped with appropriate lighting, and electrical equipment shall be periodically inspected and maintained in accordance with the law, and no chemicals or hazardous substances shall be stored.

B7.2.7 Emergency response equipment in the dormitory shall be periodically inspected and maintained to confirm that the escape route, fire detection system, fire suppression facilities, and emergency lighting are in normal operating condition. Periodical emergency evacuation drills shall be held, and all personnel shall be confirmed to have completed the training.

B7.2.8 The cafeteria and kitchen shall prepare, store, and cook raw and cooked food separately, and the relevant processes are in compliance with sanitary management regulations; periodical inspection, maintenance and repair of the cooking equipment shall be conducted periodically.

B7.2.9 All catering staff shall complete special health examinations and wear personal protective equipment to avoid contamination of food.

B8 Health and Safety Communication

B8.1 Suppliers shall provide workers with clearly posted workplace health and safety information and related training on all identified workplace hazards faced by workers, in a language that workers use or can understand. Workers shall be encouraged to raise health and safety concerns without fear of retaliation.

B8.1.1 Language used for communication and training:

a. All communication and training shall be conducted in a language that workers can understand.

- b. All warning signs/hazard labels shall be made in a language that workers can understand.

B8.1.2 Training plan:

- a. Implement a sufficient and effective training plan and properly maintain training plan and execution record.
- b. The training plan has minimum training requirements (mechanical, electrical, chemical, fire, and physical hazards), covering training determined through training needs assessment, but shall include:
 - a) Proper use of appropriate PPE.
 - b) The types of emergency situations that may occur at the workplace and what to do in an emergency, including internal and external evacuation locations.
 - c) Machine safety and the use of safeguards and emergency shutdown devices.
 - d) Process of how to report injury or illness.
 - e) Hazardous gas and confined space work procedures performed before entering confined space.
 - f) Lockout/Tagout (LOTO) program.
- c. Training shall be provided to all workers prior to the beginning of new work and periodically thereafter according to the training plan
- d. The workers responsible for storing, removing, or disposing of chemical emissions shall receive special training.
- e. Occupational health professionals or first aid responders shall be trained by external institutions or, as permitted by local laws, trained, and certified by qualified internally qualified health professionals (such as doctors).

B8.1.3 Communication process:

- a. An adequate and effective labor/employee communication plan shall be developed covering all identified situations.
- b. Potential workplace hazards faced by workers shall be clearly posted in the supplier or placed in a place workers can identify and access.
- c. All hazards present on site and actions to promote health and safety workplace improvement shall be included in the content of communications.
- d. All employees and visitors shall be informed of internal and external safe evacuation locations.

B8.1.4 Notification of health and safety issues:

- a. There shall be an adequate and effective plan for receiving, reviewing, and responding to reported safety issues. (For example, incentive system, etc.)
- b. Workers shall be encouraged to raise health and safety issues without fear of retaliation.

B8.1.5 Effectiveness evaluation:

- a. Training, communication and health and safety problem notification plans shall be periodically evaluated, and the interval shall not exceed 3 years. If there are major changes, they shall be evaluated in advance.

B8.1.6 Communication and training records include:

- a. Training records shall include verification of training effectiveness.
- b. Provide workers with educational materials (e.g., safe practice guides, operating instructions, etc.) related to the risks related to the hazards of their job so that they can perform their duties safely. Examples of control measures include personal protective equipment (safety glasses, gloves, and earplugs), operating procedures (locking/hanging plates, chemical mixing), and engineering control measures (ventilation, machine safety protection, building fire protection systems).

B9 Natural Disaster Risk Mitigation

- B9.1 Suppliers shall understand the potential for natural disasters at their location, such as earthquakes, droughts, floods, typhoons, etc., assess the likelihood and severity of personnel injuries, property damage, and operational disruptions, and based on this assessment, mitigate the risk of natural disasters by establishing hardware protection, developing contingency procedures, training and drills, and implementing contingency plans.**

- B9.1.1 Flood risk:
- a. Important production equipment/factory facilities shall not be placed in basements or at a relatively low level outdoors.
 - b. Suppliers shall establish flood emergency response procedures and perform relevant personnel training.
 - c. Suppliers located in high flood risk areas (based on the definition in the supplier's location) shall prepare flood emergency response equipment.
 - a) Watergate.
 - b) Water retaining sandbags at doorways, low-lying areas.
 - c) Water Pumps.
 - d. Suppliers located in high-risk areas for floods shall make the following preparations after a rainstorm or typhoon warning is issued.
 - a) Establish an emergency response team and initiate a notification mechanism.
 - b) Confirm that all sewers are unobstructed.
 - c) Set up water gates.
 - d) Stack retaining sandbags at doorways and low-lying areas
 - e) Test pumps.
 - f) Staff remaining on duty confirm that there is no water accumulation in the plant.
- B9.1.2 Risk of windstorm:
- a. Establish an emergency response procedure for windstorms and perform relevant personnel training.
 - b. Roof designs shall comply with the wind resistance level of building codes.
 - c. The following preparations are required after a windstorm warning is issued.
 - a) Establish an emergency response team and initiate a notification mechanism.
 - b) Check doors, windows, and roller shutters to confirm the tightness and strengthen the fixing.
 - c) Clean or fix of outdoor items and enhance fixing and inspection of outdoor equipment.
 - d) Signboards hanging outside the building shall be removed or nailed to prevent them from being blown off by the wind.
 - e) If plant facilities are found to be damaged, shall be repaired immediately.
 - f) Construction materials shall be covered and secured, and pipe bridges shall be strengthened.
 - g) Shipment arrangements during the storm and communication with customers.
 - h) Protection measures for trucks, lorries and trailers during the storm.
- B9.1.3 Earthquake protection:
- a. Buildings shall have a license for use, and permission shall be applied for changes.
 - b. The supplier's production equipment, factory facilities, fire protection pipelines, power supply system, product shelves, warehouse shelves, gas cabinets, storage tanks, pipelines, and gas/chemical container storage/ distribution racks shall be fixed to the structure.
 - c. Gas cylinders shall be fixed by upper and lower metal chains to the storage/ distribution rack.
 - d. Storage equipment and supply system of chemical barrels shall be equipped with metal chains or other blocking mechanisms, effective anti-seismic measures, and the storage height of chemical containers not placed and fixed on the shelves shall not be higher than 2 levels or 180 cm.
 - e. Multiple shelves can be connected to increase the bottom area and enhance anti-seismic ability.
 - f. Inspection equipment and the table on which it is placed shall be fixed.
 - g. Raised floors shall be anchored on the concrete floor.

C. ENVIRONMENT

C1 Environmental Permits and Reporting

C1.1 Supplier facilities have obtained all required environmental permits, approvals, licenses, and registrations.

- C1.1.1 An adequate and effective documented environmental protection-related license control process shall be established and implemented, and a control tracking mechanism for the validity period of various licenses shall be implemented.
- C1.1.2 Any changes that may change the registration status and cause the content of the approved environmental protection license to be changed shall be reported to the relevant local and national regulatory agencies.
- C1.1.3 Various environmental permits, approval documents, registration certificates and licenses required by regulation shall be available and available for review within the validity period. e.g.:
 - a. Air emissions.
 - b. Wastewater discharge.
 - c. Storm water exposure.
 - d. Hazardous materials storage and use.
 - e. Industrial waste treatment.
- C1.1.4 Current copies of all industrial waste vendors' licenses and/or approvals shall be kept on file.

C2 Pollution Prevention and Resource Reduction

C2.1 Adequate and effective programs, including objectives and targets, to identify, manage, minimize, or eliminate at the source emissions and discharges of pollutants and generation of waste and conserve the use of natural resources.

- C2.1.1 An adequate and effective plan shall be established and implemented to identify, manage, reduce, or eliminate the emission and release of pollutants and the generation of waste at the source, and use natural resources sparingly, including:
 - a. Evaluation of significant factors: Identify significant environmental factors and develop plans to monitor and control risks in these aspects.
 - b. Set clear annual targets and indicators for various sources of material emissions, waste (including hazardous waste) and natural resources used. Annual progress shall be also indicated.
 - a) Reduce resource consumption.
 - b) Reduce the generation of waste and pollution.
 - c) Reuse substances that may enter the waste treatment process.
- C2.1.2 The following records shall be kept:
 - a. Assessment of significant factors (updated when equipment, processes, or used substances or suppliers change).
 - b. Data on various substance emissions, pollutant releases, waste, and natural resources.

C3 Hazardous Substances

C3.1 Hazardous substances including chemical and wastes are properly categorized, labeled, handled, stored, and transported and disposed using government-approved and/or licensed vendors, and safely disposed of including a disposal Supplier(s) assessment.

C3.1.1 Hazardous industrial waste collection and storage.

(Refer to “B1.2.6 Chemical safety management” and “B4.2.5 Chemical Hygiene Management” for related record review of hazardous substance management.)

- a. Hazardous industrial waste collection and storage practices: Suppliers shall collect and store hazardous industrial waste separately from general industrial waste in accordance with applicable regulations and the requirements of this standard, including but not limited to:
 - a) Waste shall be collected and stored in appropriate containers according to their chemical and physical characteristics.
 - b) During the process of collecting and transferring hazardous industrial waste from the production area to the hazardous industrial waste storage area, a secondary container shall be provided to prevent leakage.
 - c) Waste containers shall be marked in accordance with the regulations prescribed by regulations. The label shall contain at least: the type of waste, hazard warning, and the date of generation.
 - d) The waste container shall be intact and able to prevent leakage or overflow.
 - e) The storage time of hazardous industrial waste on site shall not exceed regulations.
 - f) Hazardous industrial waste containers shall be inspected weekly to ensure that the containers are intact to prevent and control leakage, and include proper labeling. The supplier shall keep written records of inspections for at least five years.
- b. Hazardous industrial waste storage area: Supplier’s hazardous industrial waste storage area shall meet the following requirements:
 - a) Construction materials and electrical equipment shall be compatible with the stored hazardous industrial waste.
 - b) Labels stipulated by relevant laws and regulations shall be posted inside and outside the hazardous industrial waste storage area.
 - c) Unauthorized access to hazardous industrial waste storage areas is prohibited.
 - d) Use sealed storage or other covering methods to prevent the pollution of the environment by harmful industrial waste.
 - e) Equipped with a secondary container that can collect and store spills or overflow.
 - f) Design and build an overflow dike in the storage area of liquid hazardous industrial wastes to prevent the overflow or leakage of hazardous industrial wastes that may cause surface water pollution or rainwater ditches.
 - g) Fire-fighting equipment shall be readily available and accessible.
 - h) Set up an alarm system to alert workers and external emergency rescuers in an emergency.
 - i) Places where volatile, acidic, alkaline, or corrosive substances are stored shall be equipped with a forced ventilation system.
 - j) Personnel handling hazardous industrial waste shall be equipped with personal protective equipment.
 - k) The personal protective equipment storage area shall be located outside the hazardous industrial waste storage area and equipment is kept intact and functioning normally.
 - l) Sufficient space at entrances and exits to provide access for emergency response personnel and equipment.

C3.1.2 Hazardous industrial waste disposal and treatment:

- a. The supplier shall entrust legally licensed industrial waste disposal, treatment, and reuse manufacturers to treat the industrial waste.
- b. Suppliers shall audit their entrusted industrial waste handling vendors every year. The audit shall include reviewing compliance with relevant environmental protection regulations and suppliers’ licenses. If any environmental violations are found, the supplier shall:

- a) Require vendors to formulate and implement preventive measures for improvement.
 - b) All written records related to the disposal of industrial waste and the disposal and treatment declaration form shall be kept in accordance with local and national regulations.
- C3.1.3 Evaluation of hazardous industrial waste disposal and treatment vendors.
- a. Suppliers shall audit their entrusted hazardous industrial waste disposal and treatment vendors and corrective action plan processes every year to evaluate whether vendors comply with contract terms and conditions.
 - b. Hazardous waste disposal and treatment vendors shall be evaluated at least every three years, or when major changes occur.
 - c. Before selecting new vendors, an evaluation shall be conducted.

C4 Solid Waste

C4.1 Supplier shall implement a systematic approach to identify, manage, reduce to meet legal requirements, and responsibly manage, treat, and dispose of or recycle general Industrial waste.

- C4.1.1 Waste Treatment Permits:
- a. Supplier shall have the required waste permits and other required approvals for its current operations.
 - b. Supplier shall plan and provide adequate time to update current waste permits and permits for any alteration that may change the environmental impact of the supplier's operations.
 - c. Supplier shall comply with applicable industrial waste permitting and reporting requirements in accordance with applicable regulations. Supplier shall implement the following:
 - a) Register all industrial waste in accordance with applicable regulatory requirements.
 - b) Obtain permits for pollutant discharge, industrial waste handling, industrial waste storage, and hazardous waste transport in accordance with applicable regulatory requirements.
 - c) Report any alteration that may change the status of registration and permitted industrial waste generation to the appropriate local and national regulatory agencies.
- C4.1.2 Direct Responsible Individual: Supplier shall identify a responsible individual(s) in charge of industrial waste management.
- C4.1.3 Identification of waste source:
- a. Supplier shall identify all sources of waste and characterize each waste source as either hazardous waste or non-hazardous Waste as per applicable regulations, or if no regulations apply, in accordance with this Standard.
 - b. Supplier shall develop and maintain a waste inventory for all waste generated. The waste inventory shall include generated quantities of waste per month; the waste category (hazardous or non-hazardous); the method of disposal, recycling, or other disposition for all waste; and names of waste transport and disposal vendors.
 - c. Supplier shall review the facility waste inventory annually.
 - d. Supplier shall update the waste inventory to reflect any process or production changes.
- C4.1.4 Evaluation of general industrial waste disposal and treatment vendors.
- a. Supplier shall entrust industrial waste disposal, treatment, and reuse to vendors with licenses to dispose waste.
 - b. Suppliers shall audit their entrusted general industrial waste handling vendors and adopt corrective action plan processes for evaluating vendors' compliance with contract terms and conditions.

- c. Waste disposal and treatment vendors shall be evaluated at least every three years, or when major changes occur.
- d. Evaluation shall be conducted before selecting new vendors.
- e. Suppliers shall audit their entrusted industrial waste handling vendors every year. The audit shall include reviewing compliance with relevant environmental protection regulations and vendors' licenses. If any environmental violations are found, the supplier shall:
 - a) Require vendors to formulate and implement preventive measures for improvement.
 - b) In accordance with local and national regulations, all written records related to the disposal of industrial waste and the disposal and treatment declaration form shall be preserved.

C4.1.5 Operations and Maintenance:

- a. Supplier's pollution-control technologies shall be operational prior to supplier generating any waste.
- b. Supplier shall plan and provide adequate time to implement controls and obtain approvals for any alteration that may change the identification, collection, storage, handling, and disposal of hazardous waste.
- c. Supplier shall maintain a waste-minimization plan to assess on-site hazardous waste generation and to identify opportunities to minimize hazardous waste.
- d. If the facility's environmental permit requires meeting hazardous waste-minimization goals, Supplier shall develop and implement a plan to meet the regulatory agency's waste-minimization goals.
- e. Removal, treatment, and reuse of waste shall be reported and tracked in accordance with the regulations of each batch, and the waste output, storage, and cleaning shall be reported monthly.

C4.1.6 Training and Communication:

- a. Supplier shall provide worker training for non-hazardous/ hazardous waste handling, storage, emergency response actions, and proper record keeping.

C4.1.7 Documentation: Supplier shall retain the documentation related to waste management per the following requirements:

- a. Employee training records shall be retained for the previous 5 years or the period specified by applicable regulatory requirements, whichever is longer.
- b. Employee medical records shall be retained for the length of employment plus 30 years or as required by applicable regulatory requirements, whichever is longer.
- c. Current and historical copies of permits and registrations as required by applicable regulations or this Standard.
- d. Current non-hazardous/hazardous waste inventory.
- e. Industrial waste (non-hazardous/hazardous) manifests and other shipping records shall be retained for 5 years.
- f. Current list of vendors performing reuse, recycle, transport, or disposal of non-hazardous/hazardous waste directly for the supplier.
- g. Incident records regarding all non-hazardous/hazardous Waste incidents at the facility shall be retained for 5 years.

C5 Air Emissions

C5.1 Air emissions and the performance of air emission control systems shall be monitored periodically. Supplier shall identify, manage, reduce, and responsibly control air emissions emanating from its operations, including volatile organic chemicals, aerosols, corrosives, particulates, ozone depleting substances and combustion by-products generated from operations that pose a hazard to the environment. Supplier shall conduct periodical monitoring of the performance of its air emission control systems. Ozone depleting substances are to be effectively managed in accordance with the Montreal Protocol and applicable regulations.

- C5.1.1 Regulatory Permits for air pollution emission: Supplier shall have all required environmental permits for its current operations. Supplier shall plan and provide adequate time to update current environmental permits for any alteration that may change the environmental impact of supplier's operations.
- C5.1.2 Directly Responsible Individual: Supplier shall identify a specific individual or individuals within each facility who will be responsible for all aspects of air-emissions management, including maintenance and inspection of air emissions–control devices, monitoring and reduction of air emissions, and emergency response.
- C5.1.3 Identification of Air Emission Sources: Supplier shall identify air emissions sources, including those from industrial activities, auxiliary devices, and dormitory and canteen areas. Processes that contribute to air emissions and corresponding air pollutants shall be identified.
 - a. The inventory shall include the composition and mass rate of emissions for each air emissions source.
 - b. Supplier shall revise the inventory after any changes to the production or process that are likely to affect air emissions.
 - c. Supplier shall review the inventory annually and shall maintain the inventory in electronic form and make it available for review.
- C5.1.4 Control of Regulated Air Emissions: Supplier shall report and/or register air emissions sources in accordance with applicable laws and regulations. Supplier shall install and maintain appropriate air emissions–control devices for regulated air emissions, and all control plans shall be approved or accepted by all applicable regulatory agencies.
- C5.1.5 Evaluation and Monitoring of Air Emissions:
 - a. Supplier shall develop a program to quantify and monitor the composition of air emissions including calculating the mass rate for each source identified in the air emissions inventory and shall perform annual analytical testing of air emissions to ensure compliance with applicable regulatory requirements and this Standard.
 - b. Air emissions samples shall be collected under typical operating conditions and tested for parameters identified as potential air pollutants. Air emissions shall be controlled below any regulated emission levels. Supplier shall submit air emissions monitoring reports as required by each applicable regulatory agency and shall obtain all required permits to maintain regulatory compliance. In addition, the monitoring reports shall be maintained in electronic form and made available to all applicable authorities for review upon its request.
- C5.1.6 Emergency Response:
 - a. The supplier shall implement contingency preparation and corresponding measures in the event of any air pollution control system failure or maintenance, and report to the local competent authority within the time prescribed by the regulations and propose improvement measures.
 - b. After receiving any community complaints, the supplier shall conduct exhaust emission monitoring as soon as possible to determine the exhaust emission status and implement improvement measures (if any).
 - c. After receiving any violation notice from the competent authority, the supplier shall communicate with the corresponding competent authority in a timely manner and take timely improvement measures or take action in accordance with the instructions of the competent authority.
- C5.1.7 Operations and Maintenance:
 - a. Supplier's pollution control technologies shall be implemented prior to Supplier generating any pollutants.
 - a) Air emission control technology, or air emissions monitoring requirements and shall plan and provide adequate time to implement changes and obtain approvals for any alteration.
 - b. Supplier shall develop operating and preventive maintenance programs for all air emissions–generating equipment, air emissions control devices, and air emissions monitoring equipment. The programs shall include the following:

- a) Clearly defined and documented worker responsibilities and training requirements for the operation, inspection, and maintenance of the air emissions–control systems.
 - b) Standard operating procedures for preventive maintenance that incorporate the relevant manufacturers' specifications, recommendations, and standard accepted practices.
 - c) Identified and documented key parameters for monitoring effectiveness of the air emissions–control system and determining the frequency of routine inspections based on regulatory and/or permit requirements, preventive maintenance requirements, and other factors to ensure that the equipment is maintained in good working order. The inspection plan shall cover all shifts during typical facility operations.
 - d) Documented operating procedures for shutting down air emissions control systems. Before any air emissions control system is shut down for any planned reason (for example, maintenance breakdown) process equipment vented to the air emissions control system shall be suspended and put into a state that prevents air emissions from being released. Associated process equipment may resume operations only when the air emissions control system is operating properly.
- c. Supplier shall conduct periodic inspection of air emissions control devices to identify and fix any operational deficiencies. A log of inspection and maintenance issues identified and fixed shall be maintained.

C5.1.8 Training and Communication:

- a. Supplier shall provide training per local and national requirements for the workers involved in the maintenance and inspection of the related air emissions control systems. Workers shall receive the following training in addition to all other required training or instruction:
 - a) Identification and understanding of air emissions source locations, exhaust stacks, and applicable air emissions control technology.
 - b) Appropriate response procedures in case of ventilation or failure of air emissions control system.
 - c) Specific operating requirements and protocol training for maintenance of air emissions control devices deployed at the facility.

C5.1.9 Documentation:

- a. Supplier shall retain written copies of air emissions data and documentation for the previous 5 years. Required documents to be retained include but are not limited to:
 - a) Air emissions source inventories.
 - b) Air emissions source testing and monitoring results.
 - c) Licenses, permits, and other regulatory registration documents.
 - d) Expansion, renovation, or new air emissions control device records, permits or regulatory correspondence.
 - e) Written records of air emissions–related communications with external parties, including but not limited to community groups, regulatory agencies, and local authorities.
 - f) All inspection and maintenance records.
 - g) Reports of Unusual Environmental Events, and responsive corrective actions taken.
 - h) Records of any corrective actions, rectifications, or follow-up actions taken for any deficiencies, complaints, notices of violations, etc.
- b. Supplier shall retain training records for the previous 5 years for personnel assigned to the operation, inspection, and maintenance of the air emissions control systems or as per applicable regulations, whichever is longer.

C5.2 Facilities within noise control zones shall be controlled in accordance with the relevant laws.

- C5.2.1 An adequate and effective process shall be established and implemented to ensure sounds emitted in accordance with the relevant laws.

C6 Hazardous Materials Restrictions

C6.1 An adequate and effective program is in place for hazardous materials restrictions as a formal part of the procurement and manufacturing processes.

- C6.1.1 Adequate and effective procedures shall be established and implemented to measure and/or document the chemical composition of products including:
 - a. A documented review process for comparing customer requirements to own specifications.
 - b. A documented process to ensure materials, packaging and components procured are in conformance with customer requirements.
 - c. Documented requirements for conformance with the hazardous material restrictions required to its material /parts suppliers.
- C6.1.2 Statements and/or certificates of conformance and analytical data to its customers upon request are provided.
- C6.1.3 Hazardous Materials records shall be kept as follows:
 - a. Chemical composition of products is on record.
 - b. Specifications, statements and/or certificates of conformance from its suppliers.
 - c. Monitoring & reporting records from the past 3 years are available and ready for review.

C7 Water Management

C7.1 Adequate and effective procedures are in place to document, characterize, and monitor water sources, water discharge and control pollution.

- C7.1.1 Water pollution management:
 - a. Supplier shall implement a systematic approach to identify, control, and reduce wastewater produced by its operations. Supplier shall conduct periodical monitoring of the performance of its wastewater treatment systems.
 - b. Wastewater Permits: Supplier shall obtain, retain, and manage valid or current copies of all necessary wastewater permits, licenses, registrations, and regulatory approvals as required by applicable regulatory requirements, including but not limited to:
 - a) Acquire and maintain all wastewater discharge permit(s) per applicable laws and regulations.
 - b) Updated permits/registrations prior to any alterations.
 - c) Report and/or register wastewater discharges in accordance with applicable laws and regulations.
 - c. Directly Responsible Individual: Supplier shall identify a specific individual or individuals within the facility organization who will be responsible for all aspects of wastewater discharge treatment, including maintenance and inspection of wastewater treatment system, monitoring of wastewater discharge, and responding to emergencies.
 - d. Identification of wastewater sources: Supplier shall identify and characterize all wastewater streams and shall organize and maintain wastewater stream inventory:
 - a) The inventory shall include the composition and volume of each wastewater stream.
 - b) Supplier shall revise the inventory after any alteration likely to affect wastewater.
 - c) Supplier shall review the inventory annually.
 - e. Control of wastewater discharge: Supplier shall install and maintain appropriate wastewater treatment systems that reduce the pollutant contribution of each of its facilities to levels compliant with applicable laws and regulations.
 - f. Comply with all applicable laws, regulations, and requirements:
 - a) Comply with all applicable laws, regulations, and requirements related to wastewater discharge.

- b) The impact on wastewater treatment system shall be assessed before change occurs.
- c) Verify compliance with current wastewater discharge requirements.
- d) Not intentionally dilute wastewater to meet permit requirements and/or regulatory standards.
- e) Comply with the recycle and reuse requirements for wastewater as required by relevant regulatory agencies.
- f) Treat and/or discharge wastewater according to approved environmental permits and other applicable laws and regulations.
- g. Supplier shall evaluate and monitoring of wastewater discharge:
 - a) Monitor wastewater discharges in accordance with regulatory requirements. The parameters selected for monitoring shall be indicative of the pollutants of concern and shall include parameters that are included in the permit or in applicable regulations.
 - b) Monitor wastewater discharges (for both pollutant concentrations and volume generated) at the frequency required by local regulations, or in the absence of such regulations, at least once per month, to ensure compliance with applicable laws and regulations.
 - c) Monitor all wastewater discharges at the locations or in the manner specified in the permit or required by applicable laws and regulations.
 - d) Submit wastewater monitoring reports to the relevant regulatory agency as required for regulatory compliance.
- h. Emergency Response: Supplier shall prepare for emergencies and implement emergency response actions if the on-site wastewater treatment system exceeds its capacity or if it malfunctions. The emergency response actions are as follows:
 - a) In the event the capacity of the Wastewater Treatment Plant (“WWTP”) is exceeded:
 - a1 Supplier shall stop wastewater discharge from production areas into the WWTP.
 - a2 Supplier shall isolate stormwater drain inlets within its facility so there is no pollution from wastewater.
 - a3 Supplier shall discharge the excess wastewater into a backup collection system/container.
 - b) Handling of WWTP malfunction:
 - b1 Supplier shall stop wastewater discharge offsite from the WWTP immediately.
 - b2 Supplier shall stop wastewater discharge from production areas into the WWTP.
 - b3 Supplier shall replace or repair the WWTP equipment in a timely manner so the WWTP expeditiously resumes normal operations.
 - b4 Supplier shall report malfunctions to the local authorities per applicable laws and regulations.
 - b5 If contaminated wastewater in excess of permitted limits is discharged, Supplier shall notify and obtain a variance permit from the local authorities, if possible.
 - b6 If treatment system malfunctions, Supplier shall immediately implement any system upgrades, repairs, and/or monitoring programs to meet regulatory discharge standards.
 - c) Upon receipt of any community complaints, Supplier shall conduct wastewater discharge monitoring to verify the wastewater discharge status and promptly implement any necessary or advisable corrective actions.
 - d) Upon receipt of any Notice of Violation from local authorities, Supplier shall communicate with the authority in a timely manner, inform all relevant parties about the violations, and subsequently take any corrective actions in a timely manner or as specified by the authorities.
- i. Operations and Maintenance:
 - a) Supplier shall develop operating and preventive maintenance programs for on-site WWTP in accordance with the following:

- a1 Clearly defined and documented worker responsibilities and training requirements for the operation, inspection, and maintenance of the WWTP.
- a2 Standard operating procedures for preventive maintenance that incorporate manufacturers' specifications/recommendations and industry best practices.
- a3 Key parameters for monitoring WWTP effectiveness and the frequency of routine inspections based on regulatory and/or permit requirements, preventive maintenance requirements, and other factors. The inspection plan shall cover all shifts during typical facility operations.
- a4 Defined and documented operating procedures for shutting down the WWTP. Before shutting down the WWTP for any planned reason (for example, maintenance, exceeding capacity, or malfunction), wastewater discharge to the WWTP shall be suspended and wastewater discharge shall be prevented from being released without treatment. Associated production equipment may resume operation only when the WWTP is operating properly.
- j. Training and Communication:
 - a) Supplier shall provide training to operators of wastewater treatment facilities that cover operation and maintenance of equipment and other process units in the WWTP.
 - b) Operators shall hold WWTP operator certificates as required by local or national regulatory requirements.
 - c) If an abnormal environmental event occurs, notification shall include the probable cause of the abnormal environmental event and corrective or preventive actions.
- k. Documentation: Supplier shall retain both written and electronic copies of wastewater discharge data and documentation for at least 5 years or as per local regulatory requirements, whichever is longer. Required documents to be retained include but are not limited to:
 - a) Licenses, permits, and other regulatory registration documents.
 - b) Wastewater stream inventories.
 - c) Wastewater discharge monitoring results.
 - d) Expansion, renovation, or new WWTP records, permits, or regulatory correspondence.
 - e) Written records of wastewater-related communications with external parties, including but not limited to community groups and local authorities.
 - f) Routine inspection and maintenance records.
 - g) Reports of Unusual Environmental Events and corrective response actions undertaken.
 - h) Records of any corrective actions, rectifications, or follow-up actions taken for any deficiencies, complaints, or Notices of Violation.
 - i) Training records for personnel assigned to the operation, inspection, and maintenance of the WWTP and all documentation shall be made available to TSMC for review upon its request.

C7.1.2 Stormwater Management:

- Supplier Code of Conduct Requirements: Supplier shall implement a systematic approach to prevent contamination of stormwater runoff. Supplier shall prevent illegal discharges and spills from entering storm drains, the public water supply, or public bodies of water.
- a. Regulatory Permits: Supplier shall comply with stormwater permitting and reporting requirements per applicable regulations.
 - b. Directly Responsible Individual(s) : Supplier shall identify a specific individual or individuals within the facility who will be responsible for development, implementation, revision, monitoring, and inspection, in accordance with the requirements of the stormwater management plan, and responding to emergencies.
 - c. Identification of Pollutant Sources:
 - a) Supplier should identify potential pollutant sources that might affect stormwater runoff. Supplier should implement the following measures to identify the potential pollutant sources:

- a1 Prepare a list of areas of industrial activities exposed to stormwater and its pollutant constituents.
- a2 Prepare a list and description of potential spills and leaks that could contribute pollutants to stormwater discharge, and specify which outlets are likely to be affected.
- b) Supplier shall prepare a facility map that includes the following information:
 - b1 Outlines of stormwater drainage areas within the facility, portions of the drainage area affected by run-on from surrounding areas, and direction of flow of each drainage area.
 - b2 Location of nearby bodies of water and municipal storm drain inlets where the facility's stormwater discharges and authorized non-stormwater discharges may be received.
 - b3 Location of stormwater collection and conveyance systems associated points of discharge, and direction of flow.
 - b4 Outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, and other roofed structures.
 - b5 Locations where materials are exposed to precipitation.
 - b6 Locations of areas of liquid chemical (include wastes) loading and unloading.
- d. Control of stormwater discharge:
 - a) Supplier shall select effective structural controls or non-structural controls to prevent stormwater pollution.
 - b) Supplier shall ensure there are no direct connections from industrial production areas into a stormwater drainage system.
- e. Evaluation and monitoring of stormwater discharge: Supplier shall conduct periodical monitoring of its stormwater discharges per applicable regulations. Supplier shall monitor stormwater discharges to evaluate the effectiveness of control measures at the facility to minimize or eliminate pollutants from stormwater runoff.
 - a) Assessments of discharges: Supplier shall periodically patrol storm water drainage. If there is any abnormal color, odor, foam, oil sheen, etc., further actions must be taken including investigation of the pollution sources and whether the pollutants have been discharged to external environment or not.
 - b) Sampling and measurement: If necessary, supplier shall conduct sampling and measurement of water samples in stormwater drainage to identify pollution sources.
- f. Stormwater Management Emergency Response:
 - a) Supplier shall ensure that there is at least one employee responsible for coordinating all facility stormwater-related emergency response and reporting activities.
 - b) Supplier shall have equipment or measures in place that can immediately stop pollutants discharging outside the facility boundary if there is a hazardous substance spill released to the stormwater drainage system.
 - c) Supplier shall have the necessary plans and procedures to notify internal management and local regulatory agencies and take immediate steps to fix a hazardous substance spill that has reached outside the facility boundary.
 - d) Supplier shall conduct an analysis to determine the cause of the emergency release incident and implement corrective actions.
- g. Operations and Maintenance: Supplier shall create, implement, and maintain a written stormwater management plan to support prevention of stormwater-runoff pollution.
 - a) Supplier shall revise the stormwater management plan as appropriate, and implement it prior to any changes in industrial activities at the facility in which any of the following apply:
 - a1 Significantly increase the quantities of pollutants in stormwater discharge.
 - a2 Cause new areas of industrial activity to be exposed to stormwater.
 - a3 Begin an industrial activity that would introduce a new pollutant source at the facility.

- h. Communication and Training: Supplier shall provide adequate stormwater management training for all workers whose work may affect the quality of stormwater as per applicable regulations.
- i. Documentation: Supplier shall retain the following stormwater management–related documentation:
 - a) Current copies of stormwater control and/or treatment system schematics.
 - b) Copies of employee training records for the previous 5 years or as per applicable laws and regulations, whichever is longer.
 - c) Records of internal incident investigation, management/regulatory notifications, and follow-up actions/closure for the previous 5 years.

C8 Energy Consumption and Greenhouse Gas Emissions

C8.1 Suppliers shall establish a corporate-wide greenhouse gas reduction goal and implement cost-effective methods to improve energy efficiency and to minimize their energy consumption and all relevant Scopes 1 and 2 Greenhouse gas (GHG) emissions.

C8.1.1 Greenhouse gas (GHG) emissions management:

- a. Energy consumption and all relevant Scopes 1 and 2 Greenhouse gas (GHG) emissions shall be tracked and documented.
 - a) Energy consumption
 - a1 The sources of electricity and other energy are clear.
 - a2 A baseline of energy use (by source), which shall be adjusted as appropriate.
 - a3 Energy use is reported to the corporate HQ (if applicable) or to customers at the customers' request.
 - b) Greenhouse Gas emissions
 - b1 Emissions statement includes value of Scope 1 and 2 emissions, with a description of its boundary and source (e.g. direct emissions, purchased electricity, etc)
 - b2 GHG emissions are reported to the corporate HQ (if applicable) or customers at the customers' request.
 - c) Scopes 1 and 2 GHG emission records shall be kept
 - c1 Records shall be available showing facility data submitted as contribution to corporate-level energy consumption and GHG emissions or at customers' request.
 - c2 Annual emission of all Scopes 1 and 2 GHG sources are tracked, documented, and publicly reported.

C8.1.2 Cost-effective methods shall be established for a corporate-wide greenhouse gas reduction goal shall be established and implemented to improve energy efficiency and to minimize energy consumption and all relevant Scopes 1 and 2 greenhouse gas (GHG) emissions.

- a. Reduction program
 - a) An adequate and effective reduction program with:
 - a1 Annual objectives.
 - a2 Periodical objective tracking.
 - a3 Progress monitoring.
 - a4 Adjustments made if off track.
 - b) The programs shall be structured with roles and responsibilities, written procedures, targets, monitoring and reporting.
- b. Energy and GHG emissions inventory records:
 - a) Accurate energy and GHG emissions inventory records are maintained and available for review.
 - b) Inspection records for energy and GHG emissions and their points of use are maintained and available for review.

D. ETHICS

D1 Business Integrity

D1.1 Adequate and effective policy and procedures to uphold the highest standards of integrity in all business interactions with zero tolerance for any forms of bribery, corruption, extortion, and embezzlement.

- D1.1.1 Adequate and effective policy and procedures shall be established and implemented to uphold the highest standards of integrity in all business interactions with zero tolerance for any forms of bribery, corruption, extortion, and embezzlement.
- D1.1.2 Investigation and disciplinary:
 - a. Adequate and effective monitoring program to regularly monitor its business and ensure:
 - a) Workers or agents shall not make or accept improper offers, bribes, or undue/improper advantage.
 - b) records verifying is not falsified and accurate.
 - c) protection of identity and against retaliation.
 - d) protection of personal information.
 - b. Appropriate investigation process when there is an alleged violation, including misrepresentation by workers, managers, and their agents.
 - c. Appropriate disciplinary when a violation is confirmed/proven, and preventive action plan.
- D1.1.3 Adequate and effective procedures shall be established and implemented to protect workers/employees from retribution for refusing to do anything in Non-conformance with the “highest standard of integrity” policy and communicate/volunteer their decision.
- D1.1.4 The following records shall be kept:
 - a. Investigation reports on alleged violations.
 - b. Disciplinary in personnel files for proven/confirmed violations and preventive action plan.
 - c. Personnel files, leave records, or disclosure records confirm no negative consequence for any worker/employee refusing to do anything in Non-conformance with the “highest standard of integrity” policy.
 - d. Confirmation in records that the policy was communicated in an understandable form.

D2 No Improper Advantage

D2.1 No bribery or undue or improper advantage is promised, offered, authorized, given, or accepted.

- D2.1.1 Adequate and effective policies and procedures shall be established and implemented to ensure:
 - a. Gifts: Gifts to or from suppliers and customers are appropriate and are clearly defined in both cost and frequency.
 - b. Bribes or other methods of obtaining undue or improper advantage are not being promised, offered, authorized, given, or accepted.
 - c. Conflict of interest policy encourages workers/employees to declare conflicts of interest.
 - d. Workers/employees are aware of TSMC’s gift policy, including gift value, cost and frequency standards.
- D2.1.2 Ensure compliance with anti-corruption laws.
- D2.1.3 Declarations of conflict of interest records shall be recorded and kept.

D3 Disclosure of Information

D3.1 No misreporting, record falsification, misrepresentation, or communicating inaccurate information to the public.

- D3.1.1 Adequate and effective disclosure of Information policies and procedures shall be established and implemented.
- a. Public information shall not be false or misleading statements.
 - b. Formal program to ensure public information is true and not misleading.
 - c. Adequate and effective procedures shall be established and implemented to:
 - a) Record: Ensure that all business dealings shall be transparently performed and accurately reflected on the business books and records.
 - b) Inspect: Inspect/assess/audit records verifying they are true and accurate.
 - c) Investigate: investigate misrepresentation by workers, managers, and their agents.
- D3.1.2 If publicly communicated company information is posted then it shall be accurate.
- D3.1.3 Financial and annual reports on business operations shall be available and ready for review.
- D3.1.4 Records regarding inspections and investigations on violations of disclosure of information shall be kept and available for review.

D4 Intellectual Property

D4.1 No Intellectual Property or business information is leaked or disclosed without authorization (both the supplier's own and that of their customers/suppliers).

- D4.1.1 Adequate and effective policy shall be established and implemented.
- a. Adequate and effective policy and program shall be established and implemented to review and protect:
 - b. The information received from suppliers and customers.
 - c. Intellectual Property ownership and ensure protection of Intellectual Property.
- D4.1.2 Adequate and effective guidelines (or procedures) on the management of the information provided by customers or suppliers shall be established and implemented to protect information and intellectual property from suppliers and customers.
- D4.1.3 Non-disclosure agreements (separate or part of employment contract) with workers and management shall be signed.

D5 Fair Business, Advertising and Competition

D5.1 Compliance with fair business, advertising, and competition standards.

- D5.1.1 Adequate and effective policy and procedures ensuring fair business, advertising and competition standards shall be upheld including:
- a. Safeguards shall be established and implemented to prevent collusion with other companies on product pricing or other factors that could reduce competition.
 - b. Monitoring procedures related to fair business, advertising and competition shall be established and implemented.

D6 Protection of Identity and Non-Retaliation

D6.1 No retaliation or reduced protection of identity for whistleblowers.

- D6.1.1 Adequate and effective policy and procedures ensuring protection of identity and non-retaliation shall be established and implemented including:
- a. Monitoring procedures related to protection of identity and no retaliation shall be established and implemented.

- D6.1.2 Adequate and effective policy and procedures shall be established and implemented to ensure protection of whistleblowers and/or users of the grievance mechanism(s) (internal and external).
- D6.1.3 TSMC's reporting channel shall be communicated to workers /employees, and the communication records shall be kept.

D7 Responsible Sourcing of Minerals

D7.1 Adequate and effective Conflict Minerals Policy and Management Program to adopt and exercise due diligence on the source and chain of custody of the tantalum, tin, tungsten and gold in products suppliers manufacture to reasonably assure that they are sourced in a way consistent with the Organization for Economic Cooperation and Development (OECD) guidance for responsible supply chains of minerals from conflict-affected and high risk areas or an equivalent and recognized due diligence framework.

- D7.1.1 Adequate and effective Conflict Minerals Policy and Management Program shall be designed and implemented to reasonably assure that purchasing of the 3TG_Co (Au, Co, Ta, Sn and W) minerals does not finance or benefit armed groups that are perpetrators of serious human rights abuses in the Democratic Republic of the Congo or an adjoining country, which includes:
 - a. Public communication of the program.
 - b. Covers all 3TG_Co (Tantalum, Ta), (Tin, Sn), (Tungsten, W), (Gold, Au) and (Cobalt, Co) included in the company's products.
 - c. Commits the company to exercise due diligence on the origin and chain of custody of minerals in accordance with the "OECD Due Diligence Guidance".
 - d. Commitment not to source 3TG_Co that directly or indirectly benefits armed groups that are perpetrators of serious human rights abuses in the Democratic Republic of the Congo or an adjoining country.
- D7.1.2 The facility shall implement the conflict minerals management program within its own operation(s), including:
 - a. Identifying a senior management person responsible for implementation of the due diligence program.
 - b. Including sourcing requirements in written agreements and/or contracts with suppliers.
 - c. Mitigate any risks identified in accordance with the "OECD Due Diligence Guidance" including suspension or termination of the business relationship with the supplier when the risk mitigation is unsuccessful.
 - d. Reviewing the procedures, on an annual basis, to ensure conformance and improve where process improvements have been identified.
- D7.1.3 The following records shall be kept.
 - a. Maintaining records related to conflict minerals due diligence for a minimum of five (5) years.
 - b. Annual review and improvement plan (if applicable).
 - c. Mitigation plans with suppliers if any risk is identified.
 - d. Additional actions taken to ensure completion at due date if mitigation actions are not on track.

D8 Privacy

D8.1 No unauthorized collection or use of personal information without permission, including suppliers, customers, and employees.

- D8.1.1 Adequate and effective policy and procedures ensuring protection of personal information shall be established and implemented including:
 - a. Safeguards shall be in place to prevent unauthorized collection or use of personal information.
 - b. Monitoring procedures related to protection of personal information shall be in place.

D9 Conflict of Interest Avoidance

D9.1 Business transactions between suppliers and TSMC shall avoid any possible conflicts of interest.

D9.1.1 Conflicts of interest, such as situations where a TSMC employee or a close relative (parent, child, spouse or sibling) is a significant investor or shareholder in suppliers' company (as non-publicly traded stock), shall be avoided to prevent misconduct. Excessive or overly frequent socializing between suppliers and TSMC business contacts may also create a potential conflict of interest. Social contact shall be within accepted cultural business norms, and relationships that become conflicts of interest shall be reported. If a potential conflict is discovered, suppliers shall report such incident immediately to TSMC and take corrective actions to ensure that no inappropriate actions result from the conflict and relationships that become conflicts of interest shall be reported and suspended or resolved.

D10 Direct Designation of Subcontractors or Tier-2 Suppliers

D10.1 Suppliers are prohibited from direct designation subcontracting without authorization.

D10.1.1 If suppliers receive a request from a TSMC employee to procure from or subcontract from a specific third party, please report it immediately to TSMC through https://www.tsmc.com/english/contact_us.htm#business_conduct (Irregular Business Conduct Reporting) or TSMC purchasing staff responsible for suppliers' business.

D11 Performing Services as Authorized

D11.1 Suppliers shall fulfill obligations in person (including contracts or purchase orders).

D11.1.1 Suppliers shall fulfill obligations in person (including contracts or purchase orders). Without the consent of TSMC, supplier shall not pass on obligations under a contract or purchase order for products or services to another party that TSMC expects suppliers to perform in person. Providing products or services without a properly executed purchase order, supply contract or service contract is prohibited.

D12 Shipping and Transportation

D12.1 Suppliers shall know and follow all laws related to the shipping, handling, and transportation of products to or on behalf of TSMC.

D12.1.1 Know and follow all laws related to the shipping, handling, and transportation of products to or on behalf of TSMC. This includes source country export and customs laws, destination country import and customs laws, paying all necessary duties and taxes and following local transportation laws. Procedures and training will be provided to employees and contracted service providers to ensure safe handling of products to and from TSMC.

D13 TSMC Sole Business Contact Window for Sales

D13.1 Suppliers shall acknowledge that TSMC procurement personnel are the sole business contact windows.

D13.1.1 TSMC procurement personnel are the sole business contact windows for suppliers' sales personnel when interacting with TSMC. Without TSMC procurement personnel's consent, arrangement or participation, suppliers' sales personnel shall not make any business contacts nor discuss any commercial terms and conditions, including but not limited to price, payment terms, delivery date, incentives, compensation, free items, testing or services, technical specification, or engineering improvement, with TSMC's non-procurement personnel.

E. MANAGEMENT SYSTEM

E0 Management System

- E0.1 Suppliers with factories and more than 30 production line workers, and the contractors engaged in TSMC's high risk operations shall obtain and maintain valid ISO 45001 certification.**
- E0.2 Suppliers with factories or chemical analysis laboratory that require environmental permits in accordance with local regulations shall obtain and maintain valid ISO 14001 certification.**

E1 Company Commitment

- E1.1 Adequate and effective policies/code(s) that shall be endorsed by executive management, covering "4 Sections": A) Labor B) Health & Safety C) Environment and D) Ethics. (Hereinafter referred to as "4 Sections")**
 - E1.1.1 Corporate social and environmental responsibility policy statements in a language understood by each worker shall be visible to all workers.
 - E1.1.2 Statement/Code signed/endorsed by the highest-level manager at the facility or company with a stated commitment to regulatory compliance and other requirements and commitment to continuous improvement.
 - E1.1.3 The policy statement is appropriate for the nature and scope of the facility's operations.

E2 Management Accountability and Responsibility

- E2.1 Responsibilities and authorities shall be adequately and effectively defined and assigned for all employees/workers (senior managers to workers) for implementation of management systems, and for compliance with laws, regulations and TSMC Supplier Sustainability Standards and Code of Conduct pertaining to "4 Sections".**
 - E2.1.1 A senior representative shall be assigned to take responsibility for implementing programs.
 - a. To ensure compliance with requirements of laws, regulations, and TSMC Supplier Sustainability Standards and Code of Conduct.
 - b. To implement programs, procedures and corrective actions as needed for regulatory compliance and TSMC Supplier Sustainability Standards and Code of Conduct.
 - E2.1.2 Assignment of responsibilities and authority for each organizational level are documented in position plans, job descriptions and/or the facility's management system documentation.
 - a. For normal situations.
 - b. For emergency situations.
- E2.2 An adequate and effective management review and continuous improvement process shall be established and implemented for "4 Sections" and E) management systems.**
 - E2.2.1 Adequate and effective annual management system review process shall be established and implemented.
 - E2.2.2 The following records shall be kept:
 - a. Management review meetings.
 - b. Preventive corrective action plan following the review.
 - c. Management review meeting presentation materials/analysis/data.

E3 Legal and Customer Requirements

E3.1 An adequate and effective compliance process shall be established and implemented to monitor, identify, understand, and ensure compliance with applicable laws and regulations and customer requirements pertaining to “4 Sections”.

E3.1.1 Adequate and effective quarterly compliance process shall be established and implemented to maintain a current understanding of applicable legal and customer requirements, including i) Identify, ii) Track, iii) Assess, iv) Integrate, v) Implement, vi) Record.

E3.1.2 The following records shall be kept.

- a. Registration of accurate and up-to-date standards compliance.
- b. Electronic tracking system shall be used to remind, monitor, identify and understand the status of compliance.
- c. Requirements lists of applicable laws and regulations and the key customers that impact the operations.
- d. Documented information of the compliance evaluation results, including new/changed operations/policies/procedures.

E4 Risk Assessment and Risk Management

E4.1 An adequate and effective risk management process shall be established and implemented to identify, assess, and minimize/mitigate/control risks in the areas of the “4 Sections”.

E4.1.1 Adequate and effective procedures shall be established and implemented.

- a. Adequate and effective risk assessment process using the hierarchy of controls or equivalent process shall be established and implemented to identify the most significant risks (including applicable legal requirements and applicable customer requirements).
- b. The risk assessment is updated when there is a significant change.
- c. Any identified risk has an action plan to minimize such risk and procedural controls and/or improvement objective.
- d. Effectiveness of controls is evaluated on a regular annual basis.

E4.1.2 The following records shall be kept.

- a. Formal risk assessment reports.
- b. Corrective/preventive action plan for identified risks.
- c. Procedural controls are documented.
- d. Where controls are not yet in place an implementation plan (with owners and due date) is in place and on track.

E5 Improvement Objectives

E5.1 An adequate and effective performance management process shall be established and implemented for the “4 Sections”, including setting performance (improvement) objectives and targets, developing and implementing improvement plans, regularly reviewing progress toward achieving targets, and making appropriate adjustments if needed.

E5.1.1 Adequate and effective procedures shall be established and implemented.

- a. Adequate and effective annual performance management process within formal and communicated indicators, objectives, and targets.
- b. Additional action plans if indicator, objective, or target is off track.

E5.1.2 The following records shall be kept.

- a. Formal target, indicator, and objective tracking.
- b. Regular progress reporting.
- c. Annual system review meetings.
- d. Preventive corrective action plan following the review.
- e. Management review meeting presentation materials/analysis/data.

E6 Training

E6.1 An adequate and effective training process shall be established for all managers/workers on all policy/procedures/job related aspects and performance targets related to the “4 Sections”.

- E6.1.1 Adequate and effective procedures shall be established and implemented.
 - a. adequate and effective training to workers/managers shall be conducted in a language that workers/managers can understand:
 - a) New employee orientation plan.
 - b) Training needs analysis.
 - c) Training plan.
 - d) Training material.
 - e) Training records.
 - f) Training frequency.
 - g) Training efficiency verification.
 - b. Minimum training topics are covered.
- E6.1.2 Evaluation: Training programs shall be evaluated on a regular basis not exceeding 3 years if there is a significant change.
- E6.1.3 The following records shall be kept:
 - a. Training records include a verification of training effectiveness.
 - b. Training evaluation reports and corrective action if required.
 - c. Training materials shall be made in a language that workers can understand.

E7 Communication

E7.1 An adequate and effective worker/manager, supplier and customer communication/ reporting process shall be established and implemented for “4 Sections” policies, practices, and performance.

- E7.1.1 Following procedures shall be established and implemented.
 - a. Adequate and effective employee, supplier, and customer communication
- E7.1.2 Evaluation: Communication programs will be evaluated on a regular basis not exceeding 3 years if there is a significant change.
- E7.1.3 The following records shall be kept:
 - a. Communications records include a verification of communication effectiveness.
 - b. Training materials shall be made in a language that workers can understand.
 - c. Presentations to suppliers.

E8 Worker Feedback, Participation and Grievance

E8.1 An adequate and effective grievance/complaint process where work-related and code-related grievances or complaints can be confidentially communicated without fear of reprisal or intimidation shall be established.

- E8.1.1 The organization shall have documented information on policies and the rights and responsibilities of the members of the organization safety and health operations.
 - a. Top management shall personally participate in and lead the occupational safety and health operations.
 - b. Top management shall recognize that they shall take responsibility for all safety and health in the facility.
- E8.1.2 Top management shall proactively/actively communicate with on-site supervisors, promote the roles and management responsibilities in the management system, encourage employees to report accidents, hazards, risks and opportunities, and ensure employees reporting such incidents are free from retaliation or punishment.
 - a. The content of the organization’s safety and health policy shall follow laws and regulations and promise that effective measures to control the safety and health risks shall be signed by the top management.
 - b. Grievance and complaint channels are clearly communicated.
 - c. Internal communication of the grievance mechanism shall be in workers’ native language(s) and visible.

- E8.1.3 Adequate and effective procedures shall be established and implemented.
 - a. Adequate and effective process to anonymously report grievances and complaints without fear of reprisal, both internal (for workers and staff) and external (for workers of suppliers, local community or interested actors and whistleblowers).
 - b. Clear grievance channels so anyone is comfortable reporting grievances and so that reporting is encouraged.
- E8.1.4 Investigation and actions:
 - a. Supplier shall promptly investigate the validity of the any grievance or complaint and take prompt remedial action if the claim is valid.
 - b. All who file a grievance or complaint shall have their identity protected and Supplier will ensure a no reprisal or intimation approach.
- E8.1.5 The following records shall be kept:
 - a. Grievance/complaint records are in place for a period of at least 12 months.
 - b. Workers are provided with written information on how to report grievances and complaints.

E8.2 An adequate and effective process shall be established to solicit and encourage worker participation, input and feedback for improvement and shall provide workers a safe environment to provide grievance and feedback without fear of reprisal or retaliation.

- E8.2.1 Feedback channels shall be clearly communicated and visible (such as suggestion box) and shall provide workers a safe environment to provide grievance and feedback without fear of reprisal or retaliation.
- E8.2.2 Adequate and effective process shall be established and implemented to obtain worker input and feedback such as:
 - a. Worker surveys.
 - b. Suggestions boxes.
 - c. Labor Task Force.
 - d. Management committees of labor organizations (e.g. labor unions, labor conferences, safety committees or welfare committees, etc.)
 - e. Worker/union representatives.
 - f. Process improvement teams.
- E8.2.3 Evaluation and actions:
 - a. The facility shall promptly evaluate the validity of the any input of feedback and take prompt action if the input/feedback is valid.
- E8.2.4 The following records shall be kept:
 - a. Input/feedback records are in place for a period of at least 12 months.
 - b. Workers are provided with written information on how to provide input/feedback for improvement.
 - c. Action plans are available, implemented or on track.

E9 Audits and Assessments

E9.1 An adequate and effective self-audit process shall be established to regularly assess conformance with the TSMC Supplier Sustainability Standards and Code of Conduct pertaining to “4 Sections”.

- E9.1.1 Adequate and effective self-audit process shall be established and implemented to regularly assess conformance with:
 - a. Applicable regulatory requirements
 - b. The requirements of TSMC Supplier Sustainability Standards and Code of Conduct.
 - c. The facility policies, standards, and management system.
 - d. Other requirements to which the facility subscribes.
- E9.1.2 Audit findings are reviewed by senior management.
- E9.1.3 The following records shall be kept:
 - a. Self-audit Reports
 - b. Corrective action plans as a result of the self audit, additional actions if the corrective action plan is off track.

- E9.1.4 The internal audit plan shall include:
- a. Frequency, methods, responsibilities, consultation, planning requirements and reporting mechanisms, and consideration shall be given to issues of concern and previous audit results.
 - b. Define the criteria and scope of each audit.
 - c. It shall be performed by qualified auditors.
 - d. The audit report shall report to the relevant management, employees (representatives) and relevant interested party.
 - e. Actions to respond to non-conformance and continuously improve safety and health performance.
 - f. Documented information supporting information.

E10 Corrective Action Process

E10.1 An adequate and effective corrective action process shall be established to rectify and close non-conformances for the “4 Sections”.

- E10.1.1 Adequate and effective corrective action process shall be established and implemented which contains the following:
- a. Corrective action reports/plans and tracking tables.
 - b. Additional actions are taken when a corrective action is off track.
 - c. A demonstrated link between the CAP and the performance management objectives and targets.
 - d. Closure of action items is confirmed by a management representative after verification by the appropriate person.

- E10.1.2 The following records shall be kept:
- a. Records documenting the non-conformance.
 - b. Corrective action plan for each non-conformance.
 - c. Progress reports on the corrective action plan.
 - d. Closure verification reports (with management representative confirmation).
 - e. Copies of any regulatory citations/violation notices received in the past three years, including any communications with the agencies are available for review.

E11 Documentation and Records

E11.1 Documentation and records control process shall be established with appropriate levels of access to ensure privacy for the “4 Sections”.

- E11.1.1 Adequate and effective documentation and records process with appropriate retention and appropriate levels of access to ensure privacy.
- E11.1.2 Documents shall be securely stored with authorized access only.
- E11.1.3 Compliance of regulations and other requirements shall be reviewed regularly.
- E11.1.4 The following records shall be kept:
- a. Lists/forms of documents and records with legal requirements.
 - b. Records that meet legal and other necessary requirements.

E12 Supplier Responsibility

E12.1 The requirements of TSMC Code of Conduct shall be communicated to the next tier of major suppliers.

E12.2 An adequate and effective process shall be established and implemented to ensure that next-tier suppliers implement the TSMC Code of Conduct.

- E12.1.1 An implementation process for the TSMC Code of Conduct for next-tier suppliers' compliance shall be established and implemented.
- E12.1.2 Monitoring of next-tier suppliers' compliance with TSMC's Supplier Code of Conduct shall be implemented and documented.