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## Overview

This standard defines the competences you need to identify and follow clean room and/or clean work area protocols, in accordance with approved procedures. The clean rooms and clean work areas will include wafer processing or die assembly and test facilities. In particular, you will be expected to follow any prescribed preparatory activities for the clean work area, to use work methods that satisfy organisational and industry protocols, to wear and care for appropriate personal protective clothing and to follow requirements in relation to your own clothing and accessories.

Your responsibilities will require you to comply with organisational policy and procedures relating to working in clean rooms and clean work areas and to report any problems with the protocols that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work with a minimum of supervision, taking full responsibility for your own actions and ensuring that they comply with approved organisational procedures relating to the clean room and clean work areas.

Your underpinning knowledge will provide a good understanding of your work and will provide an informed approach to complying with approved clean room and clean work area procedures. You will understand the organisational protocols for clean room and clean work areas and their application, in adequate depth to provide a sound basis for carrying out the activities to the required specification.

You will understand the health, safety and cleanliness precautions required when working in a clean room or clean work area environment and with the associated equipment. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others in the workplace.

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## Performance criteria

### *You must be able to:*

- P1 work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- P2 identify and follow the relevant clean room/clean work area protocols, instructions and other specifics
- P3 follow protocols to identify any potential hazards in the workplace, and take appropriate action to minimise the risk from them
- P4 deal with problems within your control and report those that cannot be solved
- P5 complete and store all relevant documentation in accordance with organisational requirements
- P6 leave the work area in a safe condition on completion of the activities, as per organisational requirements

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## Knowledge and understanding

### *You need to know and understand:*

- K1 how to work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
- K2 the importance of wearing the appropriate personal protective equipment (PPE), and of keeping the work area clean and tidy
- K3 how to obtain the authority to enter the clean room or clean work area and any specific permit-to-work procedures that are required
- K4 the classification of the relevant clean room or clean work area and how this impacts upon staff
- K5 the industry standards/classifications for clean rooms and clean work areas
- K6 the procedures and methods for maintaining issued clothing and personal protective equipment
- K7 how to apply procedures for dealing with damaged or dirty clothing and personal protective equipment
- K8 the laundering/cleaning/maintenance procedures relating to the issued clothing and personal protective equipment
- K9 the policy and procedures relating to use of personal items in the workplace
- K10 how types of cosmetics can contaminate the manufacturing process and affect the quality of the finished product
- K11 the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve
- K12 how to access, use and maintain information to comply with organisational requirements and legislation

## Scope/range related to knowledge and understanding

1. Complete all of the following preparatory tasks prior to working in a clean room or clean work area:
  - 1.1 use the correct issue of job instructions and specifications
  - 1.2 adhere to health and safety regulations, systems and procedures to realise a safe system of work
  - 1.3 follow contamination protocols before entering the clean area
  - 1.4 carry out activities in line with organisational procedures
  - 1.5 store records of your activities, in accordance with appropriate procedures
2. Follow clean room/work area protocols for one of the following wafer processing or die assembly/test activities:
  - 2.1 photolithography
  - 2.2 final inspection/probe
  - 2.3 trim/form
  - 2.4 etching (wet/dry)
  - 2.5 wafer saw
  - 2.6 debled mark/plate
  - 2.7 diffusion
  - 2.8 die fix
  - 2.9 test
  - 2.10 deposition
  - 2.11 wire bond
  - 2.12 implantation
  - 2.13 mould
  - 2.14 other activity (specify
3. Identify and follow protocol methods and procedures that satisfy all of the following:
  - 3.1 the safety of people
  - 3.2 contamination/integrity of the clean room/work area
  - 3.3 contamination/integrity of the product
  - 3.4 appropriate industry standards and protocols
4. Comply with all of the following company clean room/clean work area methods and protocols:
  - 4.1 use appropriate clothing/personal protective equipment (PPE) (such as suits, gowns, coats, hoods, hats, caps, helmets, other headwear, boots, overshoes, other forms of footwear, safety goggles, visors, gloves)
  - 4.2 use hazard protection (such as breathing apparatus, gloves, apron/smock, other forms of PPE or clothing required, ESD equipment)
  - 4.3 deal appropriately with damaged or dirty clothing/PPE (such as reporting damage, replacement, safe removal and cleaning or disposal, subjected to acid/hazardous substance spills, damaged/dirty labelling)
  - 4.4 store specified clothing/PPE correctly when not in use
  - 4.5 ensure the proper cleaning/laundrying/maintenance of clothing/PPE
  - 4.6 report any breaches of hazard protocol

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5. Identify potential hazards and follow all company clean room/clean work area regulations/procedures relating to:

- 5.1 process contamination from cosmetics (such as make up, deodorants, perfumes, aftershaves)
- 5.2 loose clothing and jewellery (in proximity to machines, processes and sensitive materials)
- 5.3 process contamination from wearing your own clothing
- 5.4 the potential for losing contact lenses
- 5.5 introduction of dirt and contaminants from external footwear
- 5.6 electrostatic discharge (ESD)

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Identifying and following clean room/clean work area protocols



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