Case studies

Unsafe / sub-standard electrical equipment at HKUST
Case #1

• Aspirator

Direct purchase from PRC
Case #1

• Aspirator

Body made of plastic
Case #1

• Aspirator

Incorrect type of power plug
Case #1

• Aspirator

Exposed metal parts
Case #1

• Aspirator

Exposed metal parts accessible by operator
Case #1

- Aspirator

Internal wirings
Case #1

• Aspirator

No earth connection
Case #1

- Aspirator

Insecure wires connection
Case #1

- Aspirator

Dislocated live wires may touch the metal parts and cause electric shock.
Case #2

• Mini Centrifuge
Case #2

- Mini Centrifuge

Body mainly plastic
Case #2

- Mini Centrifuge

Power plug incorrect
Case #2

• Mini Centrifuge

Power plug incorrect

Metal parts accessible
Case #2

- Mini Centrifuge
  - Power plug incorrect
  - Metal parts accessible
  - No earth connection
Case #2

- Mini Centrifuge

- Power plug incorrect
- Metal parts accessible
- No earth connection
- Transformer insecure
Case #2

- Mini Centrifuge

- Power plug incorrect
- Metal parts accessible
- No earth connection
- Transformer insecure
- No fixture for the rotor
Case #2

• Mini Centrifuge

Wire insulation damaged
Case #2

- Mini Centrifuge

User may get electrical shock during operation.
Case #3

- Shaking Water Bath

Made in PRC
Case #3

• Shaking Water Bath

No earth connection to the case.
Case #3

• Shaking Water Bath

Sharp edges
Case #3

• Shaking Water Bath

Moving parts exposed, accessible during operation.
Case #3

• Shaking Water Bath

Having potential hazards during operation.
Case #4

- Bottle Washer

Made in Japan
Case #4

- Bottle Washer

Made in Japan

Power plug modified by supplier.
Case #4

- Bottle Washer

2-wires cable, no earth connection.
Case #4

- Bottle Washer

No earth connection to the case.
Case #4

• Bottle Washer

Improper / insecure earth connection
Case #4

- Bottle Washer

Insecure earth connection
More examples of no earth connection
Pressure Heater

Tailor-made from PRC

Live wires connect directly
No earth connection
No earth connection
Heating Mantle
Patching Machine
Sub-standard / poor quality parts
Shaker with temp. control

From PRC

Tripped RCD when plugged in the power outlet.
Sub-standard parts cause short-circuit to the earth.
Insecure wire connection may cause fire hazard.
UPS

220V 13A
High Temp. Furnace

220V 13A
Copper eyelets
Multi-adapters

Insecure contact

Incorrect voltage
Equipment modified by user
Heating stirrer

Tripped RCD when plugged in the power outlet.
Heating stirrer

All wires were wrongly connected.
Can IMR modify this equipment to ensure safety?
Technically … YES

- Approval & guidelines from HSEO.
- User clearly knows what they want.
- Detailed specification of the equipment provided by the manufacturer.
- Certificate or test report issued by a recognized certificate body.
Cheaper
Quicker