



3.7 Plant/Equipment Safety Management

Information Sheet : Electrical Testing

Purpose

The purpose of this information sheet is to provide guidance to workers and supervisors on best practice options or questions which may arise from the changes to the WHS Regulations (SA) 2012.

Q1 What do you need to electrically test?

Please refer to [Appendix A](#) of this document when applying the categories below.

Electrical equipment needs to be tested when it is supplied through an electrical socket outlet (i.e. not hard wired) **and** it has one or more of the elements below:

- Is used in an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).
- Can be damaged by regular flexing (crushing or crimping) of the cables ([see Q8](#)).
- Can be damaged by abuse (rough handling).
- Is second-hand.
- Is hired/leased (Note that leasing does **not** include office equipment)
- Is medical electrical equipment; medical electrical systems and non-medical electrical equipment used in the patient environments (including dental clinics).
- Has been modified or repaired.
- Where your building/floor does not have fixed RCD protection (please speak to your [Faculty/Divisional HSW Manager](#))

Q2 What if my School/Branch Head wants to test all electrical items?

It is a Head of School/Branch (or delegate) decision. The decision trees in [Appendix A](#) and the testing frequencies in [Q6](#) gives the minimum testing requirements; however if you wish to conduct more testing then you can.

Q3 What if my School/Branch Head wants to test electrical items but at a reduced frequency?

If your School/Branch Head wishes to test less often than the testing frequencies outlined in [Table 1](#), then you will be required to conduct a risk assessment. The residual risk rating must be medium or low.

Please contact your [HSW Faculty/Divisional Manager](#) for assistance.

Q4 I have only a few items which require electrical testing and my electrical provider will not test them.

What can I do?

A contractor via Campus Services can be engaged to test these items for you at a cost to your School/Branch. You will need to have an account code and book this test using a Campus Services [request form](#). You will be responsible for all of the documentation and for follow up testing.

Q5 I have electrical items but according to [Appendix A](#) they do not require electrical testing.

Do I need an electrical plant register?

No you do not need to keep a register for electrical testing. If you have one off testing requirements (i.e. personal equipment) then the tag indicating the test date or keeping the testing results on file is sufficient.

Continued

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Information Sheet: Electrical Testing (Continued)

Q6 What are the electrical testing frequencies?

The University for the majority of items is following AS3760 (2010) In service safety inspection and testing of electrical equipment for all equipment identified in question 1 of this document. Please refer to table 1 and table 2 for electrical testing frequencies. **Please read the below tables in conjunction with the decision trees in Appendix A to ensure you are not over testing.**

Table 1 Electrical equipment

Environment or type of equipment	Frequency of testing
Workshops (places of manufacture, assembly, maintenance or fabrication)	6 months.
<ul style="list-style-type: none"> Flexing¹ of the cord in normal use. Exposure to abuse (rough handling). Hostile² environment. 	Every 12 months.
None of the environmental conditions below: <ul style="list-style-type: none"> Flexing¹ of the cord in normal use. Exposure to abuse (rough handling). Hostile² environment¹. 	None unless they are being repaired, serviced, hired or are second-hand (see below and <u>Appendix A</u>).
Medical electrical equipment; medical electrical systems and non-medical electrical equipment used in the patient environments (including dental clinics).	Electrical testing (and other testing) will be conducted in accordance with <u>AS3551 Technical management programmes for medical devices</u> . The frequency of testing will be determined at the time of acceptance and is determined by the supplier or manufacturer. Hired medical equipment will be tested before introducing into service and the ongoing frequency is decided by agreement with the hirer and hiree.
Hire ³ Equipment.	Before introducing into service.
Repaired and serviced equipment.	After the repair or service ⁴ refer to <u>AS 5762 In-service safety inspection and testing – repaired electrical equipment</u> .
Second-hand equipment.	Before introducing into service.
Item which has been involved in an incident/accident (exposed to water, damage, chemicals etc)	Before the item is returned to service If the item required regular testing (see <u>Appendix A</u>) then apply the frequency as stated above.

¹ Flexing is this circumstance means crushing/crimping not kinking/coiling/wrapping (see definitions section 3.7.17 for more details).

² A hostile environment is an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).

³ The test should be conducted by the person hiring the equipment to the University.

⁴ This test is required to be conducted by the company or individual who repaired/serviced the equipment.

Information Sheet: Electrical Testing (Continued)

Q6 What are the electrical testing frequencies? Continued

Table 2 is outlining the requirements for RCD testing, please note that RCDs are required to be tested regardless of the environment, however the environment does impact on frequency of testing.

Table 2 Residual Current devices (RCD)

Environment	Type of RCD	Frequency of testing
<ul style="list-style-type: none"> Flexing¹ of the cord in normal use. Exposure to abuse (rough handling). Hostile² environment. 	Portable RCDs <ul style="list-style-type: none"> Tested by the incorporated self-test function. Tested by the trip current and trip time test. 	Every 3 months. Every 12 months.
	Fixed RCDs (<i>Campus Services only</i>) <ul style="list-style-type: none"> Tested by the incorporated self-test function. Tested by the trip current and trip time test. 	Every 6 months. Every 12 months.
None of the environmental conditions below: <ul style="list-style-type: none"> Flexing¹ of the cord in normal use. Exposure to abuse (rough handling). Hostile² environment. 	Portable RCDs <ul style="list-style-type: none"> Tested by the incorporated self-test function. Tested by the trip current and trip time test. 	Every 3 months. Every 2 years.
	Fixed RCDs (<i>Campus Services only</i>) <ul style="list-style-type: none"> Tested by the incorporated self-test function. Tested by the trip current and trip time test. 	Every 6 months. Every 2 years.

1 Flexing in this circumstance means crushing/crimping not kinking/coiling/wrapping (see Q8 for more details)

2 A hostile environment is an environment which is likely to result in damage to the equipment or a reduction in its expected life span (e.g. exposure to moisture, heat, vibration, mechanical damage, corrosive chemicals or dust).

Q7 Do I need to test new equipment?

Brand new equipment that has never been put to use (i.e. other than second-hand equipment) does not have to be tested before first use.

New equipment must be inspected for any obvious damage from transport before it is put into services.

New Residual Current Devices should be tested by pressing the trip test button to ensure the RCD is effective.

NB - If equipment requires ongoing testing (refer to Appendix A) then add it to the next testing schedule.

Q8 I am not sure what the difference between kinking/coiling/wrapping and crushing/crimping a cord is?

Kinking, coiling and wrapping are words which describes the actions that a person uses when packing up a cord for a laptop computer or a portable projector; it is a folding or coiling action and does not normally result in internal damage to the cord.

Crushing and crimping are words which describes when physical damage is likely to occur to the cord e.g. when the cord is stuck in a door, exposed to traffic e.g. car or in a walkway; cut etc.

Information Sheet: Electrical Testing (Continued)

Q9 What if a worker brings in personal electrical items from home?

If it is for a one off event then these items will not require testing, however if your building does not have RCD protection then you will be required to use a portable RCD that has been tested.

If it is an item which will remain at work for any period of time, then it will be treated as second hand and therefore is to be tested before it is put into service. The only exceptions to this are personal mobile devices (e.g. lap tops, phone chargers, electronic chargers for IPADs, tablets etc) which will not require testing.

Q10 What do I need to look for during my workplace inspections?

You will need to check the tags of items which are required to be electrically tested to see if the test tag is in date.

Where damage is likely to occur to a cord, and it is accessible, you will need to check the cord during your workplace inspection. If there is damage to the cord then the item must be removed from service (tagged out) and either repaired or disposed of. These items must be electrically tested if they are brought back into service.

Do not be concerned about items which have old tags (unless the items are required to be tested). Leave any old tags on items which do not require testing.

Q11 We have just had an incident involving an electrical item, what do I do?

If it is a notifiable incident (i.e. an electric shock), then contact your Faculty/Divisional HSW manager and follow their instructions (see HSW Handbook Chapter Incident, Near Miss Reporting and Investigation).

If it is not a notifiable incident then:

- Tag out the item.
- You need to decide to either (1) repair /service the item; or (2) dispose; or (3) check the item for electrical damage.
 - Repairing/servicing will require in-house or external expertise. Check with the person who repairs it that the item has been electrically tested before it is reintroduced back into service.
 - Disposal will require you to cut the cord and then dispose. (For more complex equipment contact your Faculty/Divisional HSW manager for advice).
 - Checking will require a qualified person to electrically test the item before it is put back into service.
 - Attach any electrical testing records to the RMSS incident.
 - When appropriate during this process remove the “tag-out” tag.

Q12 What electrical testing rules apply to leased electrical equipment?

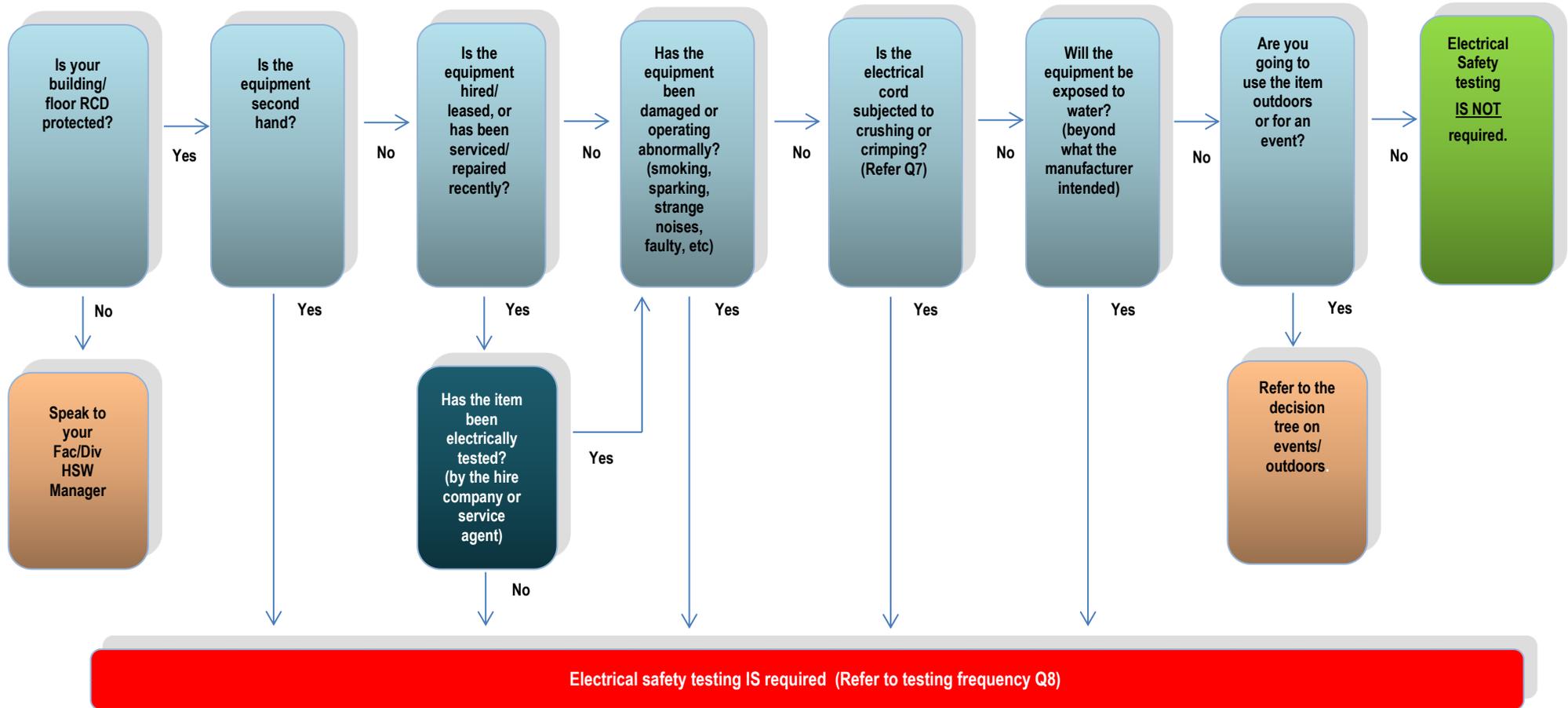
- Where leased electrical equipment is the chosen method for purchasing a new item of equipment, then use the electrical testing rules for new pieces of electrical equipment (see Q7).
- Where the leased electrical equipment has had a previous owner, then use the electrical testing rules for second-hand equipment (see Q6).
- Where the leased electrical equipment has had previous users, then use the electrical testing rules for hire equipment (see Q6).

Further Information

If you require further information, please contact a member of the [HSW Team](#).

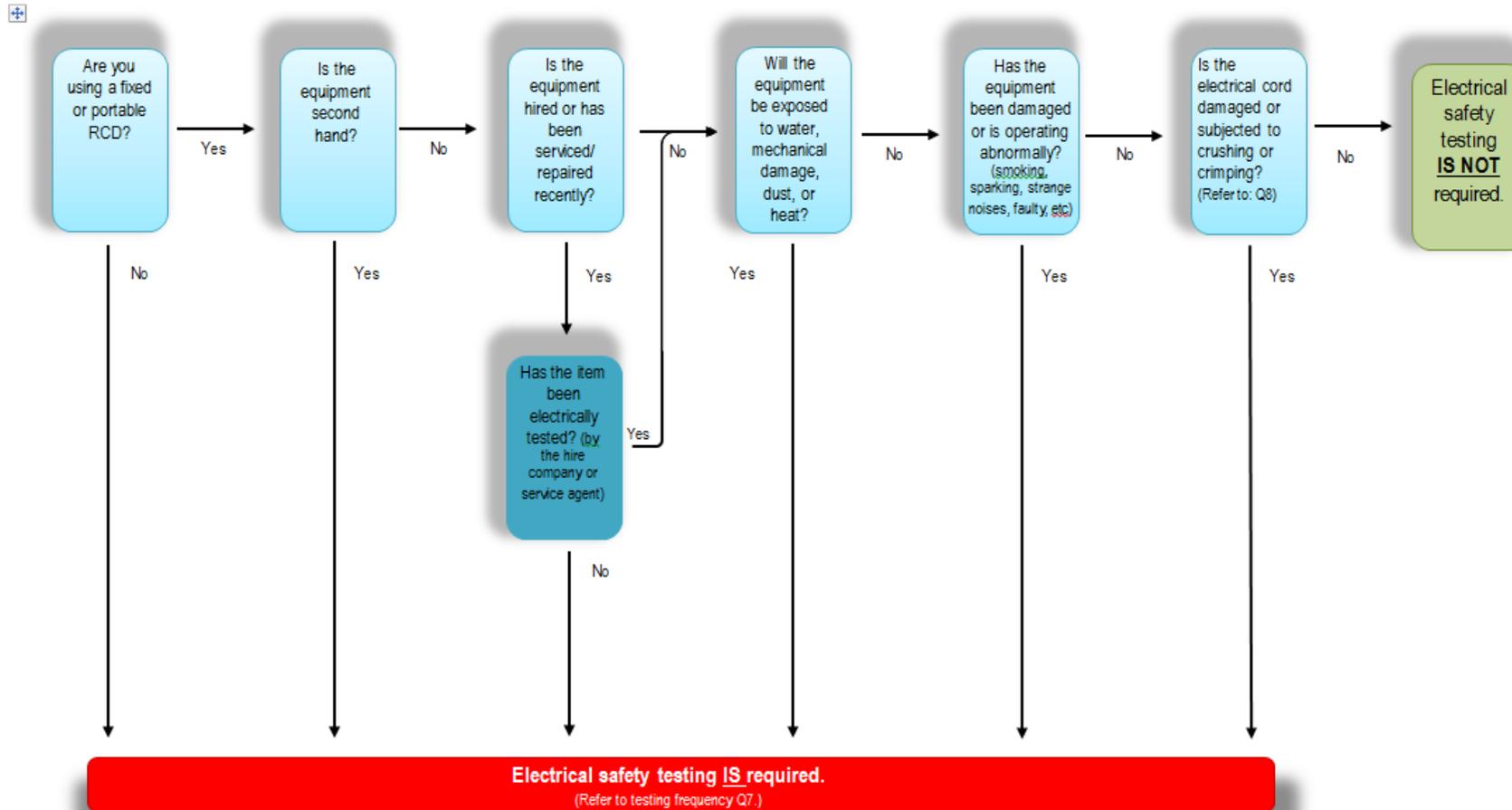
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Electrical Safety Testing Decision Tree – Office/Kitchen/Common Spaces



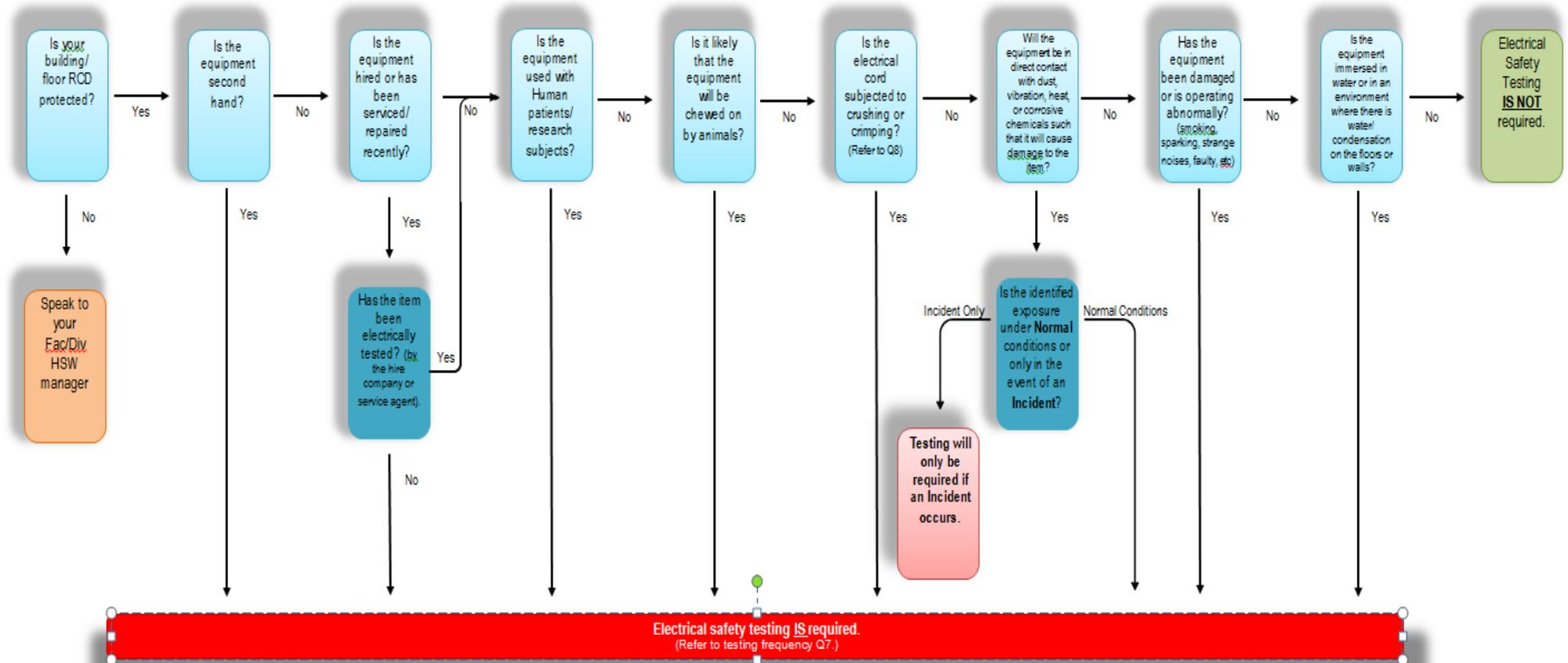
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Electrical Safety Testing Decision Tree - Events/Outdoor



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Electrical Safety Testing Decision Tree - Laboratory/ Workshop/ Medical/ Dental



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