EESS
Electrical Equipment Safety System

Check Testing Report

2021 - 2022

STANDING COMMITTEE OF OFFICIALS
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More information is available on the internet (www.eess.gov.au)

Introduction

This report presents the results of check tests on in-scope electrical equipment for the July 2021 to June 2022 program

Electrical safety legislation of participating EESS jurisdictions focuses on the prevention of death, injury and destruction of property caused by electricity. Within the legislation there are requirements on parties in the supply chain of equipment to ensure safe electrical equipment is supplied.

The supply chain includes manufacturers and importers of electrical equipment (responsible suppliers) being required to ensure they test the equipment they supply to show it is electrically safe. Jurisdictions that apply the EESS have legislative requirements for in-scope electrical equipment regulated under the EESS. The EESS is a system safeguarding the supply chain of in-scope electrical equipment (low voltage electrical equipment for household personal or similar use).

Responsible Suppliers (Australian or New Zealand based manufactures or importers) make a declaration that all equipment they supply is electrically safe and meets relevant safety standards. It is the duty of the Responsible Supplier to ensure this by having appropriate processes in place to ensure ongoing compliance of all equipment they manufacture or import.

Regulators have established an annual testing program to check compliance of in-scope electrical equipment with the relevant electrical safety standard. The objective of the check testing program is to identify and remove non-conforming electrical equipment from the marketplace.

Check Testing Objective

To improve consumer safety for household electrical equipment in Australia and New Zealand by:

- sourcing in-scope electrical equipment from the marketplace and testing it to the relevant standard.
- taking regulatory action on non-compliances.
- providing information about results to stakeholders; and
- stop sale of, remove, or rectify any identified non-compliant equipment.

Check Testing is conducted as part of the EESS activities where in-scope electrical equipment is purchased from the marketplace and subject to tests to the relevant standard by independent accredited test laboratories. Where non-compliances occur, the Regulator engages with the Responsible Supplier and will take appropriate enforcement actions based on the severity of risk the non-conformity presents. Irrespective of the resulting compliance action taken, all non-compliances are required to be rectified by the Responsible Supplier before supplying any further equipment.

The check testing program for 2021-2022 focused on Level 1-3 in-scope electrical equipment tested to selected safety clauses. Equipment types selected for testing were chosen using a risk assessment selection tool to identify the most appropriate equipment for testing.

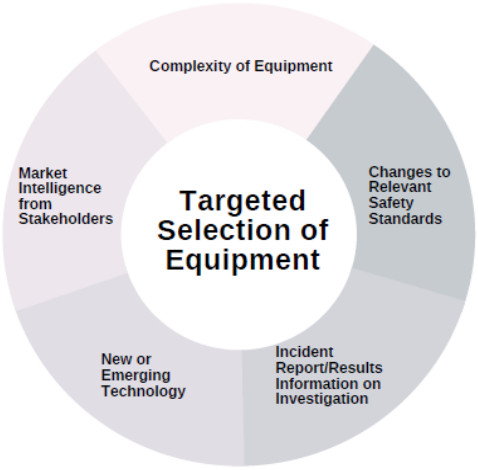
The 2021-2022 period faced significant challenges from multiple fronts, resulting in only two types of in-scope electrical equipment targeted being undertaken (dc isolators and submersible pumps) from the program. Progress was notably hindered by factors such as COVID-19, limited availability of test facilities, and floods in some States.

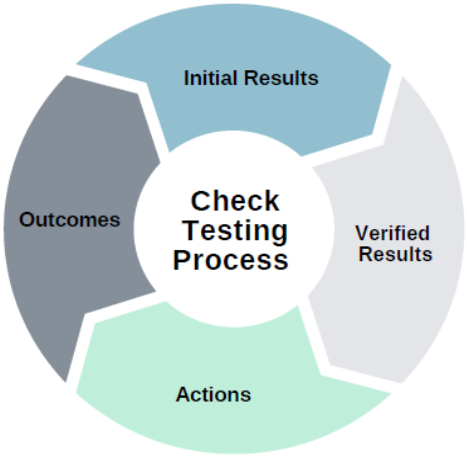
The selection tool included various factors such as incident data, recalls, previous equipment history, characteristics of the equipment type and previous check testing results. Testing on all equipment was conducted at accredited laboratories in Australia and New Zealand.

Equipment to be tested was purchased nationally from retailers, wholesalers and national online sellers, with brands and models chosen irrespective of price or brand name.

Our Check Testing Strategy

A targeted approach is used when selecting equipment for check testing. Equipment is identified using a selection tool. The selection tool aims to highlight equipment with a greater likelihood of non-compliance or has a significant consequence if non-compliant.





Targeted Choice of Tests

Tests chosen for the targeted equipment based on issues identified for the type of equipment, or if non-compliant would be a significant issue, such as:

- Heating
- Abnormal operation
- Clearance distances and creepages (distances from live parts to accessible parts)
- Resistance to fire (flammability)
- Weatherproof ratings (IP ratings)
- Markings
- Electric strength (high voltage tests)
- Resistance to heat (ball pressure on plastics)
- Strength of contacts /withdrawal forces (power boards/appliance connectors)
- Insulation thickness (and ageing on cables)
- Earthing
- Flexing
- Residual current/operation test/fault current ratings.

Severity Category

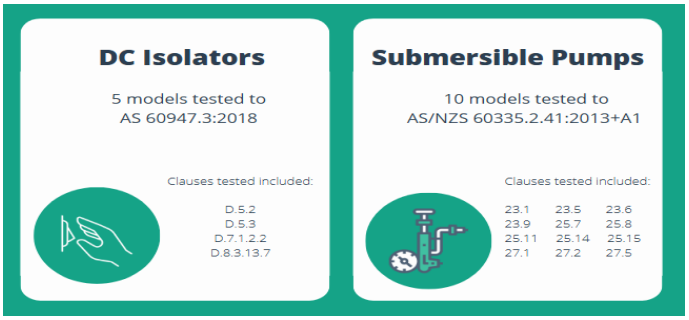
All non-compliances must be rectified by Responsible Suppliers irrespective of the level of severity. Below is a ratings classification that the Regulator may apply. The action the regulator may take increases, as the severity increases.

Passed	Minor non-compliance (e.g. failure of markings)	Medium non-compliance (e.g. failure of a safety related clause by a small margin that is within uncertainty /repeatability limits). Multiple minor non-compliances.	Mid-level non compliances. (e.g. clear failure to a safety related clause).	Major non-compliance (e.g. multiple failures to safety related clauses in a model or multiple samples fail a safety related clause).	Significant non-compliance. (e,g, failure of critical safety related clause or significant failures of safety related clauses - failure notably not within limits or many samples fail).

After the test results have been received from the testing laboratory, the results must be confirmed as legitimate and accurate results. Once the test report and results have been confirmed, the classification of severity category level can be determined.

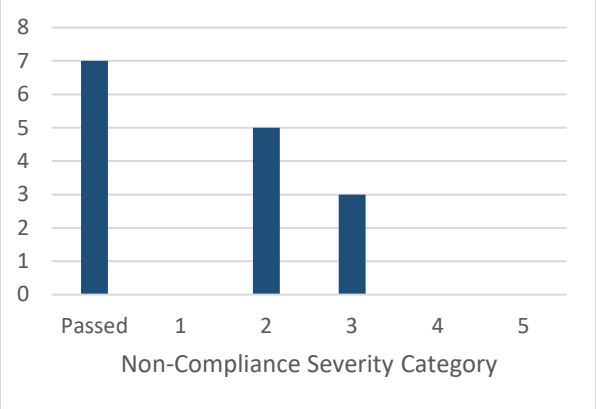
The severity should be taken on a case-by-case basis and there may be some overlap between categories (that is there is not a hard cut off between categories). Actions that may be taken by the Regulator are dependent on the severity and can range from a notice to stop sale, rectify, or modify equipment before further sale, cancellation of registrations or certification, recalls or infringement notices or other prosecution or prohibition activities.

2021-2022 Check Testing Program



Overall Results of Check Testing

After all results were classified for severity category level they were tabled in a graph for easy comparison of level as shown below. The more severe classifications were reviewed for any trend. A common link was identified as indicated by the statistics to the right of the graph.



7
Out of
15 models
passed

Of the 15 models tested, there was no significant non-compliance reported (Severity category 5)

Of the DC isolator test failures (Initial Severity category 4 – IP and glow wire fail) retest showed pass (final assessment as Severity category 2) – possible QA or test application issues

Highlights and Lowlights

Top Non-Compliance

100% failure for DC Isolators

None of the DC Isolator models passed due to non-compliances with marking and instruction criteria.

Top Compliance

70% pass for Submersible Pumps with three models recording a failure.

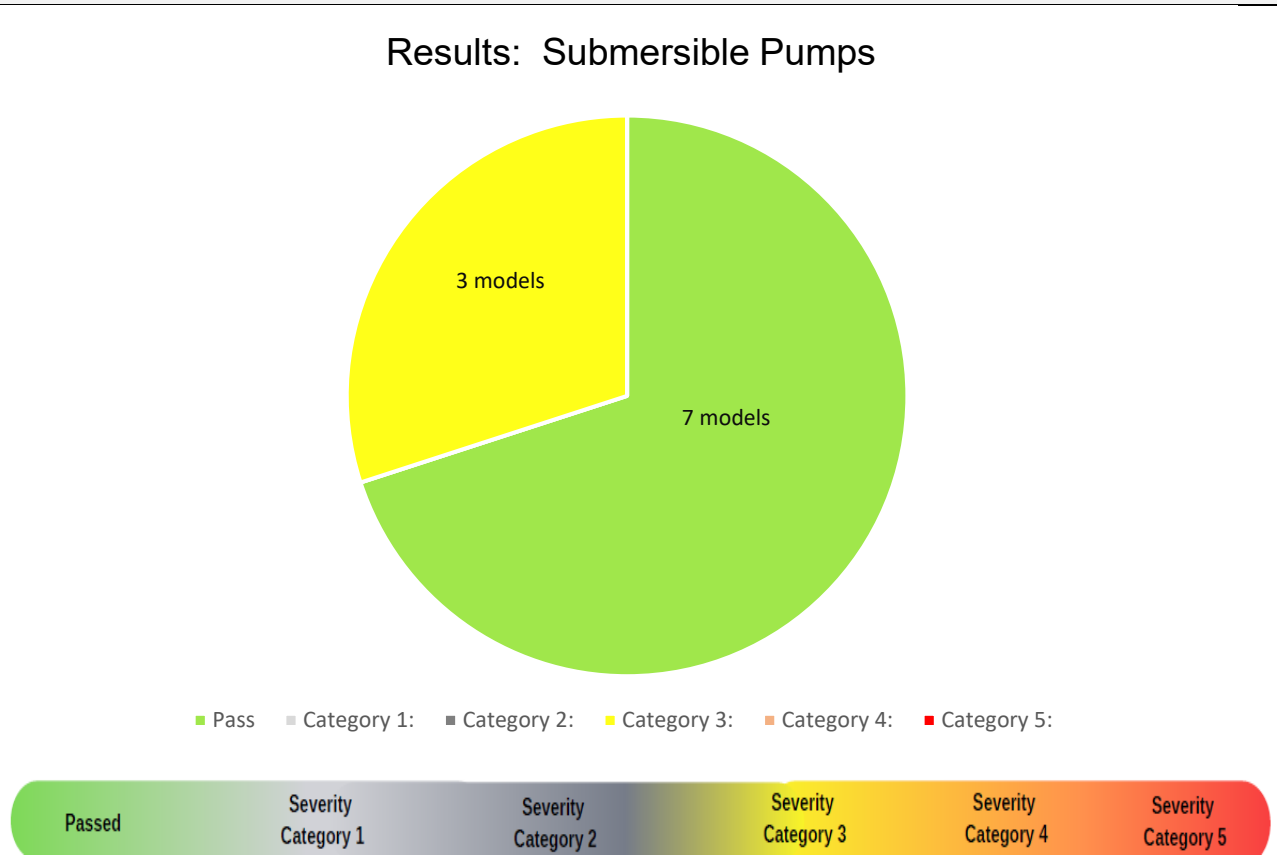
All failures were due to the inadequate length of the supply cord for the marked maximum depth of submersion.

Submersible Pumps

Equipment Type:	Submersible Pumps	
Number Assessed:	**Standard:**	**Clauses:**
10	AS/NZS 60335.2.41:2013	23.1 Wireways 23.5 Internal wiring insulation - Electric strength 23.6 Internal wiring - Supplementary insulation 23.9 Internal wiring - Stranded cord 25.7 Type of supply cord 25.8 Supply cord - Cross sectional area 25.11 Supply cord - Soldered connection 25.14 Supply cord - Flexing 25.15 Supply cord - Cord anchorage 27.1 Earthing 27.2 Clamping for earth 27.5 Earth resistance

Non-Compliances:

Cord flexing test failure
Conductor of supply cord nominal cross-section area failure
Length of supply cord is inadequate for marked depth

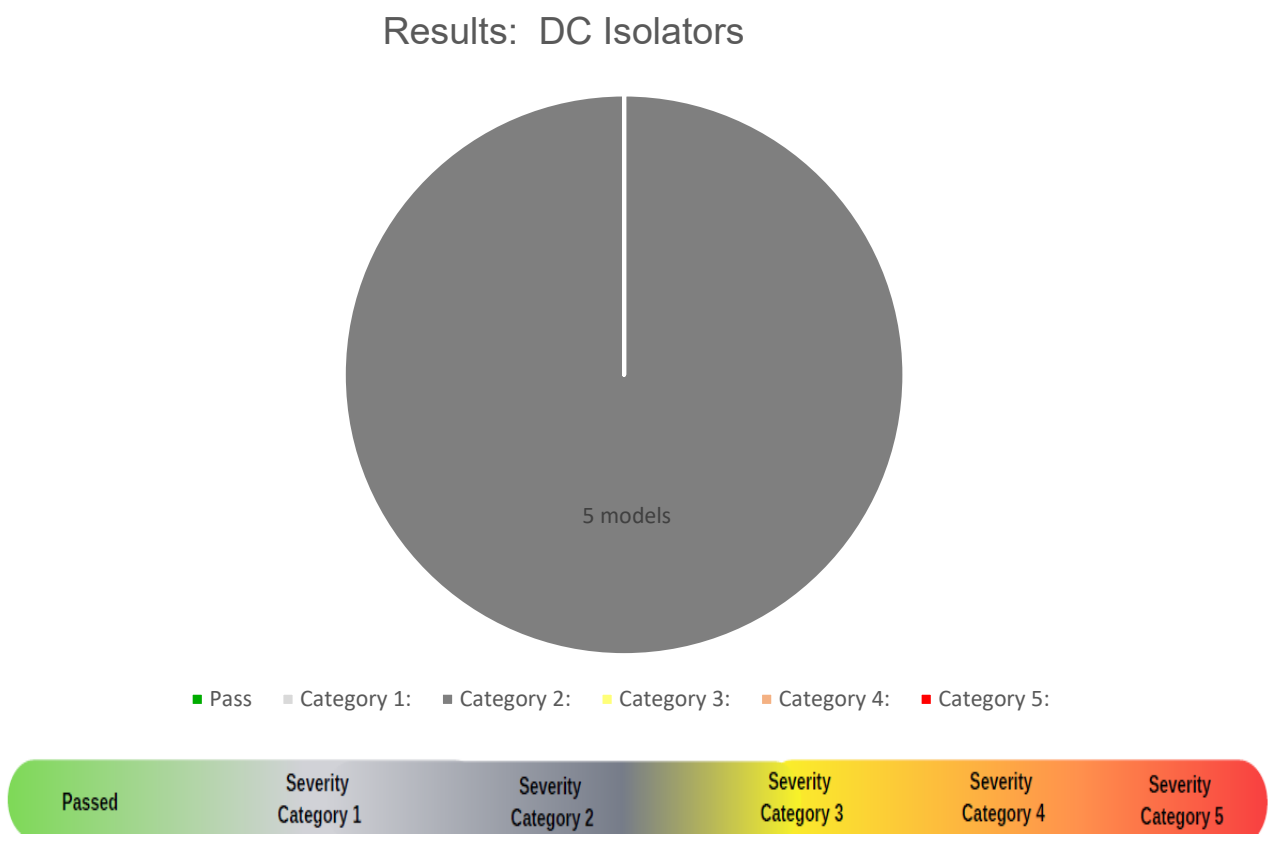


Regulator Actions

Stop sale issued
Responsible Supplier informed to rectify

DC Isolators

Equipment Type:	DC Isolators	
Number Assessed:	**Standard:**	**Clauses:**
5	AS/NZS 60947.3:2018	D5 5.2 Marking D5 5.3 Instructions D7 7.1.2.2 Glow wire D8 8.3.13.7 IPNW test
Non-Compliances:		
Marking failure Instructions failure (incomplete information)		



Regulator Actions
Stop sale issued Responsible supplier informed to rectify Investigate with Responsible Supplier - retest show compliance Responsible Supplier to monitor compliance Regulator to investigate improved QA education (noting: some IP56 and Glow wire test had initial marginal failures but not consistently repeatable) and products from those Responsible Suppliers to be included in future check testing