

Electrical Note October 2022

Access Canberra Electrical Inspections team provide this guidance note to electricians in the ACT on some emerging issues affecting the electrical industry.

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Increased Non-Compliance Rate

The Access Canberra Electrical Inspectorate is concerned with an increasing trend in the number of defect notices issued for non-compliant electrical work in 2022.

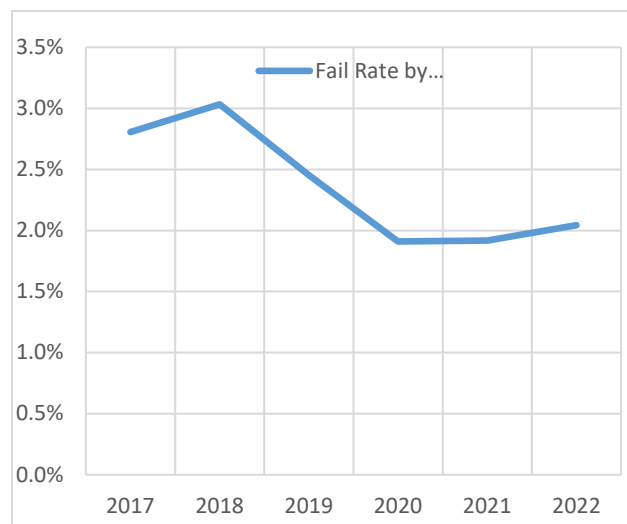
Electricians are reminded that by submitting a Certificate of Electrical Safety (CES) they are making a declaration that the electrical installation work has been tested in accordance with AS/NZS 3017 and that it complies with AS/NZS 3000.

The responsibility for compliance is that of the electrician submitting the CES form, who in accordance with the requirements of the relevant standard should have a testing regime that confirms the work is safe and compliant.

Where an Access Canberra Electrical Inspection reveals non-compliant electrical work, a defect notice will be issued, and this may carry a re-inspection fee of \$261.85 for the first notice. Defects with compliance issues can also incur demerit points and further occupational discipline.

Under the Construction Occupations (Licensing) Act 2004 occupational discipline may include loss of licence or 'directed training'.

Directed training is commonly used where an electrician, because of the number of demerit points accrued over a given period, might benefit from a course of training that would assist them to avoid a loss of licence and to improve safety outcomes.



The graph attached above shows the percentage of failed inspections in the ACT over the last 5 years. The fail rate shown in blue, has 3 years of decreasing fail rate, then in 2022 it is increasing.

Currently 98% of the electrical installation work is found to be compliant and with a good testing system in place the electrician should be able to achieve close to 100% compliance.

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Recall - Handheld Electric Concrete Cutting Saw



Total Tools (Importing) Pty Ltd — Handheld Electric Concrete Cutting Saw - Evolution (R300DCT+) 300mm (12") Electric Disc Cutter

Product description

Handheld electric concrete cutting saw

Evolution (R300DCT+) 300mm (12") Electric Disc Cutter

To identify the product, look for the rating label on the underside of the unit.



What are the defects?

If the saw is overloaded when cutting, the electric motor may overheat and either fail, or cause the plastic case to melt or the saw to catch fire.

What are the hazards?

Risk of fire or burns causing serious injury.

What should consumers do?

Immediately stop using the product and return it to the place of purchase for a full refund.

For more information, consumers can contact Total Tools (Importing) Pty Ltd by phone on 03 9261 1900 or their local Total Tools store via

<https://www.totaltools.com.au/storelocator/>

Additional Information

Supplier: [Total Tools \(Importing\) Pty Ltd](#)

Traders who sold this product:

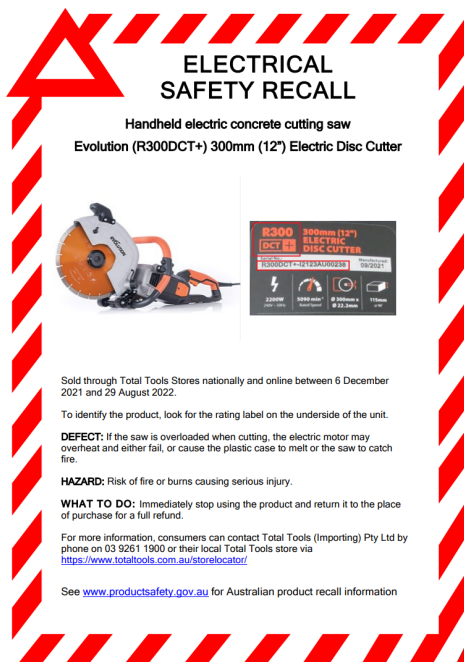
Total Tools, Nationally & Online

Dates available for sale: 6 Dec 2021 - 29 Aug 2022

ACCC Notice: [Total Tools \(Importing\) Pty Ltd — Handheld Electric Concrete Cutting Saw - Evolution \(R300DCT+\) 300mm \(12"\) Electric Disc Cutter | Product Safety Australia](#)

Recall Notice:

https://www.productsafety.gov.au/system/files/recall/Recall%20advertisement_2885.pdf



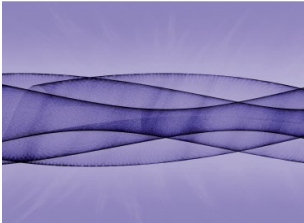
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7% Voltage Drop



AS/NZS 3000:2018
(Incorporating Amendment No 1 and 2)

Electrical installations
"Wiring Rules"



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Electricians that wish to use exemption 3 in AS/NZS 3000:2018 clause 3.6.2 to design and install an electrical installation running at 7% Voltage Drop, are requested to consult with the Access Canberra Electrical Inspections team at the design stage.

Recently a few major projects have been completed to 7% Voltage Drop, that did not meet the requirements of the exemption. To have a substation supplied and maintained by the distributor that is dedicated to the installation is difficult in the urban environment, and care needs to be taken when placing your order with them. The distributor typically reserves LV terminals on the substation for, streetlights, traffic lights and other installations.

The exception to allow 7% Voltage Drop works well for High Voltage customers where they own and maintain the substations.

If the Access Canberra Electrical Inspections team believe you will have compliance issues achieving the documentary evidence, we will let you know before you start the project. This free advice has the potential to save you from a costly mistake by having to rewire an installation.

[Contact Us](#) for more information and assistance.

Economic Optimization Considerations For Cable Size

Australian/New Zealand
Standard™
**Electrical installations—
Selection of
cables
Part 1.1: Cables for
alternating voltages
up to and including 0.6/1
kV—Typical
Australian installation
conditions**

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**AS/NZS 3008.1.1:2017 Clause 2.6 DETERMINATION OF CABLE SIZE
BASED ON THE ECONOMIC OPTIMIZATION CONSIDERATIONS
(OPTIONAL)**

Electricians, engineers, and designers of electrical installations should consider the economic cost that losses in wiring systems have, when designing an electrical installation.

This clause provides additional reading on the concept of designing the electrical installation wiring system to reduce losses in the wiring system. Effectively the opposite principle of reducing the installation cost by having higher voltage drop in cables.

It looks at the savings over time the electrical installation will achieve if larger cables were used.

National Construction Code (NCC) – 2022

Electricians are encouraged to review changes in the National Construction Code 2022 that will impact your electrical work in new building constructions. A 2022 version has now been released.

Below is an example of two (2) new requirements that come into effect from 1 October 2023 for Class 2 to Class 9 buildings

- J9D4 – Facilities for electric vehicle charging equipment
- J9D5 – Facilities for solar photovoltaic and battery systems

For how these changes will affect your projects from 1/10/2023 you will need to consult with the project's building certifier, as they are responsible for ensuring this work is done in compliance with the NCC.

The Access Canberra electrical inspections team cannot provide advice on NCC requirements, the role of the electrical inspections team is to ensure compliance to AS/NZS 3000.

J9D4 Facilities for electric vehicle charging equipment

[New for 2022]

- (1) Subject to (2), a *carpark* associated with a Class 2, 3, 5, 6, 7b, 8 or 9 building must be provided with electrical distribution boards dedicated to electric vehicle charging—
 - (a) in accordance with Table J9D4 in each *storey* of the *carpark*; and
 - (b) labelled to indicate use for electric vehicle charging equipment.
- (2) Electrical distribution boards dedicated to serving electric vehicle charging in a *carpark* must—
 - (a) be fitted with a charging control system with the ability to manage and schedule charging of electric vehicles in response to total building demand; and
 - (b) when associated with a Class 2 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 11:00 pm to 7:00 am daily; and

NCC 2022 Volume One - Building Code of Australia

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- (c) when associated with a Class 5 to 9 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 12 kWh from 9:00 am to 5:00 pm daily; and
- (d) when associated with a Class 3 building, have capacity for each circuit to support an electric vehicle charger able to deliver a minimum of 48 kWh from 11:00 pm to 7:00 am daily; and
- (e) be sized to support the future installation of a 7 kW (32 A) type 2 electric vehicle charger in—
 - (i) 100% of the car parking spaces associated with a Class 2 building; or
 - (ii) 10% of car parking spaces associated with a Class 5 or 6 building; or
 - (iii) 20% of car parking spaces associated with a Class 3, 7b, 8 or 9 building; and
- (f) contain space of at least 36 mm width of DIN rail per outgoing circuit for individual sub-circuit electricity metering to record electricity use of electric vehicle charging equipment; and
- (g) be labelled to indicate the use of the space *required* by (f) is for the future installation of metering equipment.

Limitations

J9D4 does not apply to a stand-alone Class 7a building.

Table J9D4: Electric vehicle distribution board requirement for each storey of a carpark

Carpark spaces per storey for electric vehicles	Electrical distribution boards for electric vehicle charging per storey
0 - 9	0
10 - 24	1
25 - 48	2
49 - 72	3
73 - 96	4
97 - 120	5
121 - 144	6
145 - 168	7

Table Notes

Where there are more than 168 *carpark* spaces per *storey*, one additional distribution board must be provided for each additional 24 spaces or part thereof.

J9D5 Facilities for solar photovoltaic and battery systems

[New for 2022]

- (1) The main electrical switchboard of a building must—
 - (a) contain at least two empty three-phase circuit breaker slots and four DIN rail spaces labelled to indicate the use of each space for—
 - (i) a solar photovoltaic system; and
 - (ii) a *battery system*; and
 - (b) be sized to accommodate the installation of solar photovoltaic panels producing their maximum electrical output on at least 20% of the building roof area.
- (2) At least 20% of the roof area of a building must be left clear for the installation of solar photovoltaic panels, except for buildings—
 - (a) with installed solar photovoltaic panels on—
 - (i) at least 20% of the roof area; or
 - (ii) an equivalent generation capacity elsewhere on-site; or
 - (b) where 100% of the roof area is shaded for more than 70% of daylight hours; or

J9D5**Energy efficiency**

- (c) with a roof area of not more than 55 m²; or
- (d) where more than 50% of the roof area is used as a terrace, *carpark*, roof garden, *roof light* or the like.

Limitations

- (1) The requirements of J9D5(1)(a)(i) and (b) do not apply to a building with solar photovoltaic panels installed on at least 20% of the roof area.
- (2) The requirements of J9D5(1)(a)(ii) and (b) do not apply to a building with *battery systems* installed.

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Frequently Asked Questions (FAQ)



The Access Canberra electrical inspections team have published Frequently Asked Questions (FAQ) and fact sheets on several subjects that are either a concern for compliance, or where the electrical industry can benefit from our assistance.

The FAQs can be found on our web site at: [Construction industry information \(act.gov.au\)](https://www.accesscanberra.act.gov.au/construction-information)

If you think additional content is required, send us an [email](#).

The FAQs will be updated as new questions come in and Australian Standards are updated.

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Email Address and Contact Information



All licensed construction professionals in the ACT are required to keep their details up-to-date, and to notify Access Canberra within seven (7) days of any change. Use this [link](#) to access the change of address form.

Not only do we use your email address to keep you up to date with emerging issues affecting the electrical industry, the

- Licensing team need it to send out your licence reminders.
- Electrical inspections team need it to send out inspections reminders and results.



Where you use a work email address, consider to also use a personal email address, for those times you are on leave or change employers and we need to let you know of an important issue.

Did you know Access Canberra provides a list of construction professionals on their website? Visit [Construction Professionals \(act.gov.au\)](https://www.accesscanberra.act.gov.au/s/construction-professionals)
<https://www.accesscanberra.act.gov.au/s/construction-professionals>

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Electrical Inspector Advice, Interpretations & Defect Reviews



Advice

Electricians requiring advice on Wiring Rules interpretations should check out our FAQ page [Construction industry information \(act.gov.au\)](https://www.accesscanberra.act.gov.au/construction-industry-information) and should additional information be required they can contact the electrical inspections team by email; Electrical.Inspections@act.gov.au.

To aid in providing consistent advice to the electrical industry, only the electrical inspections team managers will respond to your enquiry. If you pose a question on site to an electrical inspector, this must not be considered as binding advice but as the personal opinion of that inspector.

Defect Questions

If you receive a defect notice from an electrical inspector and you have questions relating to it, please call the inspector who issued the defect notice in the first instance, their mobile number will be on the report.

Should you then have further questions that require a more complex response than the electrical inspector could provide, please email the inspections manager at Electrical.Inspections@act.gov.au.

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Contact Us



Access Canberra Electrical Inspections Team

Phone: 02 6207 7775 (8:30am to 4:30pm) Business Days

Email: Electrical.Inspections@act.gov.au

Web: <https://www.accesscanberra.act.gov.au>

Previous electrical notices are available at: [Construction industry information \(act.gov.au\)](https://www.accesscanberra.act.gov.au/construction-industry-information)

<https://www.accesscanberra.act.gov.au/s/article/construction-industry-information-tab-electrician-notes>

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