



ELECTRICAL CONTRACTOR NEWS AND UPDATES

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This newsletter is produced by Bruce Blacker of Insight Electrical Consulting & Training Pty Ltd to inform and aid the electrical contracting industry. All information contained in this newsletter to be taken as a guide only and should be verified prior to its implementation or use.

Welcome

Through this newsletter I will attempt to keep you all up to date with the major issues which affect you.

If you have any comment or suggestions in regards to this newsletter please pass them onto me so that the information contained in this publication remains both informative and suits your needs.

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Happy New Year

I would like to start this newsletter by wishing everyone a happy and prosperous new year. May the troubles of the previous 12 months be put aside and the next 12 months be a time of growth.

“AS/NZS 3000 Wiring Rules” Amendments

The first amendment of the 2007 edition of the Wiring Rules was released in July 2009. (Sorry for my slackness for not getting this information to you earlier.)

The amendment can be downloaded from the SAI Global Infostore website as a PDF file for no cost. The address of the website is: <http://www.saiglobal.com/shop>. You will need to register to obtain the amendments but the registration is free.

A hard copy is available for \$18.80 plus delivery charges and can be purchased from SAI Global by going to their website: <http://www.saiglobal.com/shop>.

The first amendment to AS/NZS 3000:2007 “Wiring Rules” is a 43 page document which sets out changes to over 120 pages of the mandatory requirements for the design, construction and verification of electrical installations. It includes significant new information regarding additional protection by residual current devices and earthing system parts.

I would like to note, at this stage, that no amendment was issued in regards to the requirements for protection of consumers mains but a frequently asked question (FAQ) was raised and this gave some advice. I will go through some of the FAQs in the next section.

A number of the changes are minor, these include adding / altering words, new figures and tables, etc and do not change the main principal of the rule but these should be checked and understood.

I will go over a number of the major changes as listed in the amendments. The opinions expressed here in regards to the amendment are those of Insight Electrical Consulting & Training Pty Ltd and should be verified prior to their implementation. I will not be attempting to go over all the changes therefore I strongly recommend you obtain a copy of the amendments and go over all the changes yourself and ensure you understand them.

Clause 2.2.1.2 now requires the use of a single isolating switch to a single appliance which uses a common neutral conductor but has alternate sources of supply such as a range, water heater, etc.

Clause 2.6.2.4 - The requirement for a maximum of 3 circuits to be protected by a single RCD is for residential installations only. For other types of installations a single RCD can protect an unlimited number of circuits.

Clause 2.6.3.1 - The note has been altered to include exhaust fans and ceiling sweep fans as lighting points.

Clause 2.6.3.1 – The allowance for an outlet for the connection of a stove not to be RCD protected has been returned but with added requirements such as marking and location.

Clause 2.6.3.2 – This clause has been altered to allow socket outlets to be installed without RCD protection on “Other electrical installations” provided certain criteria are met. These criteria include outlet use, location and marking.

Clause 2.6.3.4 – A requirement has been included for the fitment of RCDs on existing final subcircuits where the circuit protection on a switchboard has been completely replaced.

Table 3.7 – The heading to the third column of this table has been altered. This now shows that the requirement of separation of the earthing stake is only to conductive underground services such as water pipes, etc and not to all types of under services.

Clause 5.3.3.2 – The clause has been altered to state that the largest size main earthing conductor to an earth stake is not required to be any larger than 120mm².

Table 5.2 – This table now allows 25mm² bare copper conductor to be used as a strip electrode.

Clause 5.6.2.5 – This clause has been altered to state clearly that the requirement for the bonding of the concrete steel reinforcing needs only be to any part of the earthing system.

Clause 6.3.1 – This clause has been altered to bring areas of natural water to be treated the same as a swimming pool area.

Table 8.2 – This table has been revised. Some of the resistances have been lowered.

Tables C9, C10 and C11 – Tables for number of cables in conduits have been reviewed.

Appendix K – This appendix has been deleted as a separate standard for high voltage installations now exists.

“AS/NZS 3000 Wiring Rules” Frequently Asked Questions

Standards Australia have published a number of frequently asked questions in regards to AS/NZS 3000 Wiring Rules and their answers. These answers have been given by the committee in charge of the Wiring Rules and act, in the same way, as rulings given in previous additions of the Wiring Rules.

A copy of the frequently asked questions can be viewed and or downloaded from the following web address:

www.wiringrules.standards.org.au/Documents/Wiring_Rules_FAQs_September_2009.pdf

It is my recommendation that you take a look at these questions and answers as they can help to clarify a number of points.

Some of the items that have been covered by the frequently asked questions include:

- Clarification of requirements in regards to alterations, additions and repairs.
- Connecting aluminium conductors.
- Bonding of exposed conductive parts associated with unprotected consumers mains such as point of attachment supports, switchboard surrounds, etc. Figures have been included to demonstrate compliance.
- Equipotential bonding of pool fences, etc.
- RCD protection not required for emergency lighting and exit sign circuits.
- Addition of ceiling fans, exhaust fans, etc to an existing light circuit and the requirements for non-RCD protection.
- Requirements for installation of unprotected consumers mains without the requirements of short circuit protection or additional mechanical protection such as heavy duty conduit.

- Clarification of the requirements for mechanical protection.
 - Spacing of underground services.
 - Clarification on the requirements for equipotential bonding of steel reinforcing in showers and bathrooms.
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Revised and Updated Australian Standards

Australian Standards are constantly revising and reissuing Australian Standards. It is a part of your responsibility to ensure you are always using the current version of the Standards.

Two Standards have been recently revised and reissued which you should be aware of. They are:

1. AS/NZS 3008.1.1 Electrical installations – Selection of cables

This is the Standard which gives the true current carrying capacity of cables. Appendix C of the Wiring Rules supplies simplified protective device selection for cables up to and including 25mm². If you need to know the true current carrying capacity of cables or are using cables larger than 25mm² then AS/NZS 3008.1.1 is the Standard you will require.

2. AS 2067 Substations and high voltage installations exceeding 1kV a.c.

No longer does the Wiring contain the requirements for a high voltage installation. It now refers us to this revised Standard. Therefore if you have any work regarding high voltage installations you will require a copy of this Standard.

It is important to stay up to date with the various changes to Australian Standards and other documents such as the Service and Installation Rules of New South Wales, Occupational Health and Safety, etc.

Level 2 Service Provider Training Courses

In conjunction with the Hunter Institute of Technology, I am looking into the viability of conducting a Level 2 Service Provider training course in the Albury area. This would be conducted as a “company”. Therefore costing per student would be dependant on the number of students participating.

On completion of the training course participants would be able to authorised in the following areas: Category 1 “Disconnection and Reconnection at the Point of Attachment”, Category 2 “Installation, Disconnection and Reconnection of Underground Service Mains”, Category 4 “Metering and Energising New Services”.

The training would be conducted over 6 days. It would commence on Monday morning and finish Saturday afternoon. The total number of participants would be limited to 15.

To give an idea of cost, if a class size of 10 students were to participate costing would be approximately \$3,300.00 per student including GST. If we have 15 students the cost would decrease to approximately \$2,300.00 including GST.

If you are interested in attending a Level 2 Service Provider course in the Albury area please contact me with details, etc. If I can get enough people interested this course will be arranged.

Please note that there will be no obligation to attend just by supplying me with an expression of interest.

If you feel there is enough interest to run these courses in other areas please contact me to discuss further.

Final Comments

Insight Electrical Consulting & Training Pty Ltd is still available to help in many areas including; liaison with supply authorities, technical advice, interpretation of defects and Wiring Rules, switchboard specification and design, single line diagrams, electrical designs, etc. If you have any areas which you need assistance just give us a call and I will help you out.

Insight Electrical Consulting & Training Pty Ltd is able to specify switchboards and source prices from a number of switchboard manufacturers.

All comments in this newsletter are those of Insight Electrical Consulting & Training Pty Ltd and clarifications may be required before this information is used for general work.