

BRC

MARKETING & SOCIAL RESEARCH

**Energy Safety Service
Electrician survey**

28 June 2002

CONFIDENTIAL

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Electrician survey**

June 2002

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Executive Summary

Summarised in this section are key findings for the survey of electricians. Refer to subsequent sections for a full description of the survey background and information requirements, a methodology description, and detailed survey results.

Electrical safety in the home

Perceived domestic installation and appliance safety

- Forty six percent (46%) consider more than 80% of electrical appliances in peoples' homes are safe.
- Thirty percent (30%) consider more than 80% of electrical wiring in homes to be safe.
- Thirty seven percent (37%) consider more than 80% of electrical fittings in homes to be safe.

Maintenance and safety checks for domestic appliances and installations

- Sixty percent (60%) believe electrical safety checks should be made compulsory. Importantly, a significantly **higher** proportion of wage and salary earners (41%), compared to the self-employed (29%), believe electrical safety checks should **not** be made compulsory.
- Sixty five percent (65%) believe household wiring should be checked regularly. Importantly, a significantly **lower** proportion of wage and salary earners (61%), compared to the self-employed (70%), believe electrical household wiring should be checked regularly.
- Among those who believe household wiring should be checked regularly, ten percent (10%) believe they should be checked at least every one to two years.
- Sixty four percent (64%) believe household electrical appliances should be checked regularly.

- Among those who believe household appliances should be checked regularly, 62% believe they should be checked at least every one to two years.
- Sixty two percent (62%) believe household electrical fittings (old and new) should be checked regularly. Importantly, a significantly **lower** proportion of wage and salary earners (59%), compared to the self-employed (68%), believe household electrical fittings should be checked regularly.
- Among those who believe household electrical fittings should be checked regularly, 26% believe they should be checked at least every one to two years. Importantly, a significantly **higher** proportion of wage and salary earners (32%), compared to the self-employed (17%), believe household electrical fittings should be checked at least every one to two years.

New domestic appliances and installations

Level of safety compliance

- Eighteen percent (18%) consider **all** permanently connected electrical appliances new on the market meet the legal safety requirements.
- Seventeen percent (17%) consider **all** plug-in electrical appliances new on the market meet the legal safety requirements.
- Four percent (4%) consider **all** second-hand plug-in electrical appliances meet the legal safety requirements.
- Thirty three percent (33%) consider **all** electrical fittings new on the market meet the legal safety requirements.

Marking and installation instructions

- Fifteen percent (15%) consider **all** permanently connected electrical appliances new on the market meet the legal safety requirements for marking and installation instructions.
- Nine percent (9%) consider **all** plug-in electrical appliances new on the market marked with technical information that meet legal requirements.

Accident and hazard notification

Accident notification (Act 16 of the Electricity Act 1992)

- Fifty five percent (55%) identified the Department of Labour/OSH as an organisation to contact in the event of a serious electrical accident. Importantly, a significantly **higher** proportion of wage and salary earners (59%), compared to the self-employed (48%), identified the Department of Labour/OSH as an organisation to contact in the event of a serious electrical accident.
- Forty five percent (45%) identified the Electrical Workers Registration Board (EWRB) as an organisation to contact in the event of a serious electrical accident. Importantly, a significantly **lower** proportion of wage and salary earners (41%), compared to the self-employed (51%), identified the EWRB as an organisation to contact in the event of a serious electrical accident.
- Just six percent (6%) identified the Energy Safety Service (ESS)/Ministry of Consumer Affairs as an organisation to contact in the event of a serious electrical accident.
- Eighty eight percent (88%) have never contacted any organisation about a serious electrical accident.
- Eighty one percent (81%) of those who have previously contacted any organisation about a serious electrical accident agree that they were easy to get in touch with.

Hazard notification (Regulation 50 of the Electrical Regulations 1997)

- Forty one percent (41%) would contact the property/appliance owner if an electrical appliance, installation or fitting that was dangerous to people or property was discovered.
- Thirty nine percent (39%) would contact the EWRB if an electrical appliance, installation or fitting that was dangerous to people or property was discovered. Importantly, a significantly **lower** proportion of wage and salary earners (32%), compared to the self-employed (49%), would contact the EWRB if an electrical appliance, installation or fitting that was dangerous to people or property was discovered.
- Just four percent (4%) would contact ESS/Ministry of Consumer Affairs if an electrical appliance, installation or fitting that was dangerous to people or property was discovered. Importantly, a significantly **lower** proportion of wage and salary earners (2%), compared to the self-employed (6%), would contact ESS/Ministry of Consumer Affairs if an electrical appliance, installation or fitting that was dangerous to people or property was discovered.

- Sixty two percent (62%) have never contact any organisation about an electrical appliance, installation or fitting that was dangerous to people or property being discovered.
- Eighty four percent (84%) of those who have contacted any organisation about an electrical appliance, installation or fitting that was dangerous to people or property, agree that they were easy to get in touch with.

Non-conforming new appliances and installations

- Seventeen percent (17%) would do nothing if they were unsure the installation of a new appliance or fitting conformed to regulations. Importantly, a significantly **lower** proportion of wage and salary earners (13%), compared to the self-employed (22%), would do nothing.
- Forty seven percent (47%) would do nothing if they though a new appliance or fitting might be unsafe.

Worker practices

Certificates of compliance (CoCs) – own work

- Twenty one percent (21%) have issued no CoCs in the last 12 months. Importantly, a significantly **higher** proportion of wage and salary earners (29%), compared to the self-employed (6%), have issued no CoCs in the last 12 months.
- Sixteen percent (16%) believe that none of the work they were responsible for in the last 12 months was of the type that required a CoC to be issued. Importantly, a significantly **higher** proportion of wage and salary earners (22%), compared to the self-employed (6%), believe none of the work they were responsible for in the last 12 months was of the type that required a CoC.
- Conversely, ten percent (10%) believe all the work they were responsible for in the last 12 months was of the type that required a CoC to be issued.
- Four percent (4%) believe all electricians issue CoCs when they should.
- Conversely, five percent (5%) believe more than 80% of electricians do **not** issue CoCs when they should.

- Sixteen percent (16%) believe up to 10% of other electricians' work requires a CoC, but is not issued. Importantly, a significantly **higher** proportion of wage and salary earners (20%), compared to the self-employed (11%), believe up to 10% of other electricians' work requires a CoC, but is not issued.
- Conversely, six percent (6%) believe more than 80% of other electricians' work requires a CoC, but is not issued.

Awareness of the Certificate of Compliance issuing requirements (Regulation 39 of the Electricity Regulations 1997)

In terms of the overall number of "correct" responses to identifying work types in which a CoC should **not** be issued (i.e. not issuing CoCs when not required), we found the following:

- Just 6% of electricians did not correctly identify any of the above types of work as situations in which a COC does not need to be issued.
- 12% correctly identified one of the six.
- 23% correctly identified two of the six.
- 20% correctly identified three of the six.
- 21% correctly identified four of the six.
- 13% correctly identified five of the six.
- 6% correctly identified all six.

By way of comparison, in terms of the overall number of “incorrect” responses to identifying work types in which a CoC should not be issued (i.e. issuing CoCs when not required), we found the following:

- Just 5% of electricians incorrectly identified all four types of work that **do** in fact require a CoC, as a work type that does **not** require a CoC.
- 18% incorrectly identified three of the four.
- 15% incorrectly identified two of the four.
- 23% incorrectly identified one of the four.
- 41% incorrectly identified none of the four.

Electric shocks

- Sixty two percent (62%) have experienced no electric shocks in the last 12 months, and a further 27% have experienced one or two electric shocks in the last 12 months.
- Regarding the cause(s) of electric shocks sustained in the last 12 months, the following were most frequently reported:
 - Not turning off the power supply before starting work (39%).
 - Equipment failure (23%).
 - Not testing the line before working on it (21%).
- Consistent with the above summary, the following ideas for ensuring people would avoid getting an electric shock from the causes summarised above were reported:
 - Ensure power is turned off, Test your line/equipment (43%).
 - Concentrate more/be more careful (31%).
 - Be alert/you can get them at any time (13%); a significantly **lower** proportion of wage and salary earning electricians (8%), compared to self-employed electricians (19%), mentioned this as a way for others to avoid getting an electric shock).

Ownership and use of test equipment

- Ninety nine percent (99%) own or have access to an Insulation Resistance Tester; 65% own or have access to an RCD tester; and 58% own or have access to a Fault Loop Impedance Tester.

Use and ownership of installation standards and codes

- Ninety six percent (96%) use, and 85% own Electrical Codes of Practice (ECPs). Importantly, a significantly **higher** proportion of wage and salary earners (98%), compared to the self-employed (92%), follow ECPs in their work. Similarly, a significantly **higher** proportion of the self-employed (94%), compared to wage and salary earners (79%), actually own ECPs.
- Seventy two percent (72%) use, and 51% own Wiring Rules, AS/NZS3000: 2000. Importantly, a significantly **lower** proportion of wage and salary earners (46%), compared to the self-employed (58%), own this standard.¹
- Sixty eight percent (68%) use, and 48% own Electrical Installations, Buildings, Structures & Premises, NZS3000: 1997. Importantly, a significantly **lower** proportion of wage and salary earners (41%), compared to the self-employed (58%), own this standard.²
- In terms of following **any** of the three mandatory codes or standards (Electrical Codes of Practice, Electrical Installations: Buildings, Structures & Premises, NZS3000: 1997 or Wiring Rules, AS/NZS3000: 2000), we found that just two percent (2%) of electricians follow **none** of these, while the remaining 98% follow **at least one** of these codes or standards in their work.
- Seventy percent (70%) are using the installation standards and codes they prefer.
- Twenty one percent (21%) of those who prefer other installation standards and codes, want one combined Australia/New Zealand standard. Importantly, a significantly **lower** proportion of wage and salary earners (10%), compared to the self-employed (36%), prefer a combined Australia/New Zealand standard.
- Forty six percent (46%) of those who prefer other installation standards and codes, believe a combined Australia/New Zealand standard would be easier to use, to find information about, to carry around, and would be cheaper. Importantly, a significantly **higher** proportion of wage and salary earners (61%), compared to the self-employed (27%), believe this.

¹ We note here however that in terms of **known** ownership of Electrical Installations, Buildings, Structures & Premises, NZS3000:1997, and Wiring Rules, AS/NZS3000:2000, more consistent estimates of the rate of ownership would be around 80-90% and 15-20% respectively. After carefully investigating likely causes of this, we believe that the common term "NZS3000" to both standards has resulted in respondent reporting error, to the extent that ownership of the 1997 has been under-reported, and ownership of the 2000 standard over-reported.

² See Footnote 1.

Introduction and information requirements

Background

The Energy Safety Service (ESS) is responsible for developing and maintaining legislation relating to electrical and gas appliance safety and installation.³ However, currently little is known about actual tradesperson behaviours and attitudes as they relate to the relevant legislation, and more generally, safe installation of gas and electrical appliances in domestic (residential) settings. Consequently a need for research among licensed electricians and craftsman gasfitters (the trades most commonly engaged with work involving electrical and gas appliances and installations) has been identified.

On an ongoing basis, ESS is required, in general terms, to understand attitudes, opinions and behaviour as it relates to electrical and gas safety and compliance among the following three groups:

1. The consumer
2. The industry
3. The tradesperson

Over the last few years, research has already been conducted among consumers and the industry, however as mentioned there is no up-to-date information about relevant **tradespersons'** attitudes and behaviour in relation to electrical and gas safety, and compliance with the legislation. This report presents findings of a survey of licensed electricians and craftsman gasfitters, conducted to better understand existing attitudes, opinions and behaviour in relation to gas and electrical installations in domestic settings.

³ Although this report summarises results for only the survey of **electricians**, described in this section is the background and information requirements relating to both the survey of electricians and craftsman gasfitters.

Research and information requirements

Five broad research objectives were identified by ESS, as follows:

1. Electrical and gas safety in the home.
2. The extent to which new gas and electrical appliances comply with the legislation.
3. Tradespersons' work practices and use of correct codes/standards and equipment.
4. Tradespersons' knowledge of the legislative requirements in relation to accident reporting and notification of dangerous appliances or installations.
5. Use of Certificates of Compliance (COCs).

At the more detailed level of information requirements, the research addressed the following information objectives:

1. A **demographic profile of tradespeople** including a description of the work they normally undertake.
2. **General attitudes and opinions** toward the safety condition of existing gas and electrical appliances, installations and fittings in homes.
3. **Frequency of gas and electrical safety checks** (appliances and installations) done (actual) and supposed to be done (perceived) by qualified tradespeople.
4. Extent to which current legislative **safety requirements** are met by new permanent domestic appliance installations.
5. Extent to which current legislative **marking and installation instruction requirements** are met by new permanent domestic appliance installations.
6. Extent to which current legislative **safety requirements** are met by new portable ("plug & use") appliances.
7. In the last 12 months, **how often tradespeople found themselves in danger** by receiving an electric shock or working in a major gas leak area. Relatedly, the immediate cause (type of action/what went wrong), and how could others avoid a similar circumstance.

8. The **name(s) of the authorities to report serious electrical or gas injury** (requiring medical treatment, or absence from work for more than a few days), or significant damage to property. Relatedly, have the relevant authorities been contacted before, and how easy (or difficult) that was.
9. The **name(s) of the authorities to notify a hazardous appliance or installation**, that may present immediate danger to life or property.
10. **Under what circumstances electricians and gasfitters should issue Certificates of Compliance** (COCs), and the proportion of tradespeople not issuing COCs.
11. **Whether appropriate safety and compliance measuring equipment is owned** (for gasfitters: flue gas (carbon monoxide) analyser, smoke tube and manometer; for electricians: insulation resistance tester). And under what situations and how often they are used.
12. How appliances/fittings used in installation are confirmed **safe and complying with the relevant legislation** before certifying installation. Steps taken when there is uncertainty about compliance with the relevant legislation or suspect an appliance/fitting is unsafe.
13. Understanding there exist different gas/electrical safety standards, **which standard is used**, and perceptions toward these standard(s).

Method

Sample design

Respondents for this survey were randomly selected from the registering board's database of registered electricians, with ESS acting as an "intermediary" on BRC's behalf to achieve this.

A total population of N=8,855 registered electricians was initially delivered to BRC, and from these n=800 randomly selected, and sent a general letter of introduction, inviting participation and summarising the purpose of the survey.

Sample profile

Refer to the Section *Demographic profile* on p.63, for a full description of the final sample achieved.

Sampling error

For our total sample of n=200 interviews secured among the 800 electricians sent a letter of introduction, the maximum margin of error at the 95% confidence level is $\pm 6.8\%$, while the maximum margin of error at the 80% confidence level is $\pm 4.5\%$.

For **differences** between estimates for **self-employed** and **wage and salary earning** electricians, the maximum margin of error on the difference (at the 95% confidence level) is $\pm 14.1\%$. At the 80% confidence level, the maximum margin of error on the difference between two sub-group estimates is $\pm 9.2\%$.

In the main body of the report, significant differences at the 80% confidence level are flagged with a **single** asterisk ("*") while significant differences at the 95% confidence level are flagged with **two** asterisks ("**").⁴

⁴ We have not signalled statistical significance for "other", "don't know", or "refused" responses. Nor is statistical significance signalled for comparisons of estimates where there were no respondents in any one sub-group, because the difference between **any** percentage against zero percent, is by definition statistically significant.

Interviewing

A total of n=200 interviews were conducted by telephone between 27 March and 9 April, 2002, being identified as the most cost and time-effective method in light of our target population. Interviewing was conducted at BRC's purpose-built call centre in downtown Wellington, and conducted using a computer-assisted telephone interview (CATI) approach. Most interviews were conducted during the day (9am to 5pm), although some interviews and scheduled call backs were conducted during the evening (5 to 9pm). The average interview length was 21 minutes.

Unfortunately, due to a technical problem extracting the data from our CATI system, many of the "control" variables, e.g. telephone number, ID, and other contact details, were corrupted in the export. Also, because we did not ask a question about region, we lost the ability to accurately describe the geographic distribution of responses. However, by examining the initial mail-out database, the 800 electricians randomly selected and sent a letter of introduction, more-or-less reflect the overall population distribution, with the following STD codes represented:

- 09 prefix (Northland, Auckland) – 31%.
- 07 prefix (Waikato, Bay of Plenty) – 17%.
- 06 prefix (Gisborne, Hawke's Bay, Taranaki, Wanganui, Manawatu, Wairarapa) – 17%.
- 04 prefix (Wellington) – 10%.
- 03 prefix (Nelson & Bays, Marlborough, West Coast, Christchurch, Timaru/Oamaru, Otago, Southland) – 25%.

The overall response rate for this survey was 38%, derived from the following overall distribution of responses:

- 200 respondents.
- 149 eligible non-respondents.
- 195 ineligible non-respondents.
- 274 respondents of unknown eligibility.

Among the 274 respondents of unknown eligibility, we estimated 176 would have been eligible, resulting in a final response rate of $200 / (149 + 200 + 176) = \text{respondents} / (\text{eligible non-respondents} + \text{respondents} + \text{estimated eligible non-respondents among eligibility unknown}) = 38\%$.

Electrical safety in the home

Perceived domestic installation and appliance safety

Although there are no statistically significant differences in Table 1, it is evident that almost half (46%) of electricians consider more than 80% of electrical appliances in homes are safe.

Table 2 indicates that around one in three (30%) electricians consider more than 80% of electrical wiring in homes to be safe. Further, a significantly **lower** proportion (at the 80% confidence level) of salary or wage earning electricians, compared to self-employed electricians, estimate between 11 and 40% of homes are safe with respect to electrical wiring.

Table 3 indicates that around one in three (37%) electricians consider more than 80% of electrical fittings in homes are safe.

Table 1: Safety of electrical appliances in homes

Q4. Thinking about electrical appliances that people have in their homes, how many do you think are safe? Would you say...?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Up to 10%	3	3	2
11 to 40%	4	4	4
41 to 80%	43	42	43
More than 80%	46	47	46
Don't know	6	5	7
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 2: Safety of electrical wiring in homes*Q5. What about electrical wiring in homes, how many do you think are safe? Would you say?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Up to 10%	3	1	3
11 to 40%	7	9*	4*
41 to 80%	54	51	55
More than 80%	30	34	28
Don't know	8	5	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 3: Safety of electrical fittings in homes*Q6. And how about electrical fittings in homes, how many do you think are safe? Would you say?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Up to 10%	2	1	2
11 to 40%	5	6	4
41 to 80%	52	52	51
More than 80%	37	38	37
Don't know	6	4	7
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Maintenance and safety checks for domestic appliances and installations

Table 4 indicates that almost two thirds (60%) of electricians believe electrical safety checks should be made compulsory. Importantly, a significantly **higher** proportion of salary and wage earning electricians (41%) compared to self-employed electricians (29%), do not believe electrical safety checks should be made compulsory.

Table 5 indicates that almost two thirds (65%) of electricians believe household wiring should be checked regularly. Importantly, a significantly **lower** proportion of salary and wage earning electricians (61%), compared to self-employed electricians (70%), consider household wiring should be checked regularly. Conversely, a **higher** proportion of salary and wage earning electricians (37%), compared to self-employed electricians (27%), do **not** consider household wiring should be checked regularly.

Among those who believe household wiring should be checked regularly, Table 6 indicates that the overwhelming majority of electricians (90%) believe household wiring should be checked at least every 10 years. Just one in ten (10%) believe household wiring should be checked at least every one to two years.

Table 7 indicates that almost two thirds (64%) of electricians believe household (electrical) appliances should be checked regularly.

Among those who believe household (electrical) appliances should be checked regularly, Table 8 indicates that almost two thirds (62%) of electricians believe they should be checked at least every one to two years. Importantly, a significantly higher proportion of salary and wage earning electricians (97%), compared to self-employed electricians (85%), believe household appliances should be checked at most every two years, but at least every five years.

Table 9 indicates that almost two thirds (62%) of electricians believe household (electrical) fittings should be checked regularly. Importantly, a significantly **lower** proportion of salary and wage earning electricians (59%), compared to self-employed electricians (68%), believe household fittings should be checked regularly.

Among those who believe household (electrical) fittings should be checked regularly, Table 10 indicates that only a quarter (26%) of electricians believe they should be checked at least every one to two years, and a further quarter (26%) believe they should be checked at most every five years. Importantly, a significantly higher proportion of salary and wage earning electricians (32%), compared to self-employed electricians (17%), believe household appliances should be checked at least every one to two years.

Table 4: Compulsory electrical safety checks*Q11. Do you think that electrical safety checks should be made compulsory?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Yes	60	64	57
No	36	29*	41*
Don't know	5	8	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 5: Should household wiring be checked regularly?*Q7a. Do you think that household wiring should be checked regularly?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Yes	65	70*	61*
No	33	27*	37*
Don't know	3	3	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 6: Frequency of checking household wiring.

Q8. Thinking generally about all household wiring, whether old or new. How often do you think household wiring should be checked? Would that be?

	Sub Sample n=129* %	Self-employed Tradesperson n=54 %	Salary or wage earner n=75 %
At least every 1 to 2 years	10	11	9
At least every 5 years	40	35	44
At least every 10 years	40	44	37
Less often than every 10 years	5	7	3
Don't know	5	2	7
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Note: Includes only those electricians who mentioned "yes" that household wiring should be checked regularly in Q7a.

Table 7: Should household appliances be checked regularly?

Q7b. Do you think that household appliances should be checked regularly?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Yes	64	64	63
No	35	35	34
Don't know	2	1	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 8: Frequency of checking household appliances

Q9. Thinking generally about all household appliances, whether old or new. How often do you think household appliances should be checked? Would that be?

	Sub Sample n=127* %	Self-employed Tradesperson n=49 %	Salary or wage earner n=78 %
At least every 1 to 2 years	62	63	62
At least every 5 years	30	22*	35*
At least every 10 years	6	10	4
Less often than every 10 years	1	2	-
Don't know	1	2	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Note: Includes only those electricians who mentioned "yes" that household appliances should be checked regularly in Q7b.

Table 9: Should household fittings be checked regularly?

Q7c. Do you think that household fittings should be checked regularly?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Yes	62	68*	59*
No	37	32	39
Don't know	2	-	2
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 10: Frequent checking of household fittings

Q10. Thinking generally about all household fittings whether old or new. How often do you think household fittings should be checked?
Would that be?

	Sub Sample n=124* %	Self-employed Tradesperson n=52 %	Salary or wage earner n=72 %
At least every 1 to 2 years	26	17**	32**
At least every 5 years	48	52	44
At least every 10 years	21	23	19
Less often than every 10 years	5	6	4
Don't know	1	2	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Note: Includes only those electricians who mentioned "yes" that household fittings should be checked regularly in Q7c.

New domestic appliances and installations

Level of safety compliance

Table 11 indicates that almost two thirds (63%) of electricians believe “most” new permanently connected electrical appliances meet the legal safety requirements. In fact, around one in five (18%) believe “all” new permanently connected electrical appliances meet the legal safety requirements.

Considering new plug-in electrical appliances, Table 12 indicates that almost two thirds (64%) of electricians believe “most” meet the legal safety requirements. In fact, around one in five (17%) believe “all” new plug-in electrical appliances meet the legal safety requirements.

Considering second-hand plug-in electrical appliances, Table 13 indicates that only a quarter (25%) of electricians believe “most” or “all” meet the legal safety requirements. Conversely, over a half (58%) believe “only a few” or “some” second-hand plug-in electrical appliances meet the legal safety requirements.

Considering new electrical fittings for houses, Table 14 indicates that the overwhelming majority (91%) of electricians believe “most” or “all” meet the legal safety requirements. Conversely, just five percent (5%) believe “only a few” or “some” new electrical fittings meet the legal safety requirements.

Table 11: Legal safety of new electrical appliances (permanently connected) on market

Q12a. Thinking about the types of electrical appliances that are permanently connected, how many of the new ones on the market do you think meet the legal safety requirements? Would that be only a Few, Some, Most or All?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	4	3	4
Some	4	5	2
Most	63	65	62
All	18	18	18
Don't know	12	9	14
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 12: Plug-in electrical appliances on the market

Q13a. What about the types of new plug-in electrical appliances, how many of the new ones on the market do you think meet the legal safety requirements? Would that be only a Few, Some, Most or All?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	3	1	3
Some	5	3	6
Most	64	61	65
All	17	17	16
Don't know	13	18	10
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 13: Second-hand electrical plug-in appliances on the market

Q14a. And what about second-hand plug-in electrical appliances, how many of the new ones on the market do you think meet the legal safety requirements? Would that be only a Few, Some, Most or All?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	28	26	28
Some	30	32	28
Most	21	19	21
All	4	3	4
Don't know	19	19	18
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 14: Legal safety of new electrical fittings for houses on market

Q15a. How about new electrical fittings for houses, how many of the new ones on the market do you think meet the legal safety requirements?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	2	3	1
Some	3	1	3
Most	58	58	57
All	33	34	32
Don't know	6	4	7
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Marking and installation instructions

Table 15 indicates that almost three quarters (72%) of electricians believe “most” or “all” new permanently connected electrical appliances meet the legal safety requirements for marking and installation instructions. Conversely, just 14% believe “only a few” or “some” new permanently connected electrical appliances meet the legal safety requirements for marking and installation instructions.

Considering new plug-in electrical appliances, Table 16 indicates that three in five (60%) of electricians believe “most” or “all” are marked with technical information that meets the legal safety requirements. Conversely, around one in five (21%) believe “only a few” or “some” new plug-in electrical appliances are marked with technical information that meets the legal safety requirements.

Table 15: Marking and installation instructions for permanently connected electrical appliances

Q12b. Thinking about the types of electrical appliances that are permanently connected, how many of the new ones on the market do you think... meet the legal safety requirements for marking and installation instructions? Would that be only a Few, Some, Most or All?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	5	4	5
Some	9	8	10
Most	57	58	55
All	15	17	14
Don't know	15	13	16
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 16: Marking and technical information for new plug-in electrical appliances

Q13b. What about the types of new plug-in electrical appliances, how many of the new ones on the market do you think are marked with technical information (i.e. writing on the unit itself) that meets legal requirements.

Would that be only a Few, Some, Most or All?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Only a few	4	3	5
Some	17	17	16
Most	51	48	53
All	9	10	8
Don't know	20	22	18
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Accident and hazard notification

Accident notification (Act 16 of the Electricity Act 1992)

Respondents were asked to identify who, apart from the normal emergency services, they would contact in the event of a serious electrical accident, e.g. an accident in which someone is killed or injured to the extent that they required medical attention or more than a few days off work.

Table 18 indicates that the majority of electricians (55%) mentioned OSH/Department of Labour as an organisation they would contact. Importantly, a significantly **higher** proportion of wage and salary earning electricians (59%), compared to self-employed electricians (48%), would contact OSH/Department of Labour. Further, 45% of electricians mentioned the Electrical Workers Registration Board (EWRB) as an organisation they would contact. Importantly, a significantly **lower** proportion of wage and salary earning electricians (41%), compared to self-employed electricians (51%), would contact the EWRB.

There was relatively low recall of the Energy Safety Service/Ministry of Consumer Affairs (6%), Ministry of Economic Development/Ministry of Commerce (10%), and Office of the Chief Electrical Engineer (5%), as an organisation to contact in the event of a serious electrical accident.

Considering the three “key” organisations collectively – Office of the Chief Electrical Engineer, Energy Safety Service, and the Ministry of Economic Development/Ministry of Commerce, just one in five (19%) mentioned one or more of these three organisations as a point of contact in the event of a serious electrical accident. Adding the Electrical Workers Registration Board and OSH/Department of Labour to this list, we found that four in five (81%) mentioned one or more of these five organisations. Importantly, a significantly **lower** proportion of wage and salary earning electricians (77%), compared to self-employed electricians (87%), could recall one or more of these five organisations.

Among those who could recall any organisation to contact in the event of a serious electrical accident, Table 19 indicates that the majority (88%) have not actually had to contact any organisation. The most frequently mentioned organisations among those who have contacted an organisation about a serious electrical accident, were:

- Electrical Workers Registration Board (3%).
- OSH/Department of Labour (3%). Importantly, significantly **more** wage and salary-earning electricians (4%), compared to self-employed electricians (1%), have contacted OSH/Department of Labour about a serious electrical accident.
- Electrical supply authority (3%). Again, significantly **more** wage and salary-earning electricians (4%), compared to self-employed electricians (1%), have contacted an electrical supply authority Department of Labour about a serious electrical accident.

Table 20 indicates that four in five (81%) electricians agreed that it was easy to contact the relevant organisation(s) about a serious electrical accident. However, there were still 18% of electricians who did not agree that the relevant organisation(s) were easy to contact. The single reason reported by the three respondents who did not agree that it was easy to contact the relevant organisation(s) was simply that they were hard to get hold of (Table 21).

Table 17: Organisation for accident reporting – First mentioned

Q16. These questions are about any serious electrical accidents. By this, I mean ones where someone is killed, or someone is injured enough to need medical treatment, or to be off work for a few days, or where there is serious damage to a property. If you were there, you might contact the emergency services. What other organisation would you contact?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
ACC	1	-	2
Building Industry Authority Office of the Chief Electrical Engineer (energy inspection)	2	3	2
Electrical Workers Registration Board (EWRB)	26	27	25
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	2	3	1
Economic Development (Ministry of Commerce)	7	6	7
Labour (Department of)/OSH	34	38	32
Property/appliance owner	2	3	2
Electrical supply authority	5	4	6
Company/Boss	9	-	15
Emergency Services	3	4	2
Electrical Inspector	2	5	-
Other	1	1	1
Don't know	2	4	-
None	6	3	7
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 18: Organisation for accident reporting – All mentioned
Q17. Any others?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
ACC	3	1	3
Building Industry Authority	-	-	-
Office of the Chief Electrical Engineer (energy inspection)	5	5	4
Electrical Workers Registration Board (EWRB)	45	51*	41*
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	6	8	4
Economic Development (Ministry of Commerce)	10	10	10
Labour (Department of)/OSH	55	48*	59*
Property/appliance owner	7	5	7
Electrical supply authority	12	9	14
Company/Boss	12	-	20
Emergency Services	10	12	8
Electrical Inspector	5	8*	3*
Other	1	1	1
Don't know	2	4	-
None	6	3	7
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 19: Organisation(s) previously contacted

Q18. Of those you mentioned, which have you contacted before about an accident?

	Sub Sample n=186* %	Self-employed Tradesperson n=72 %	Salary or wage earner n=114 %
ACC	1	-	1
Building Industry Authority	-	-	-
Office of the Chief Electrical Engineer (energy inspection)	-	-	-
Electrical Workers Registration Board (EWRB)	3	4	2
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	-	-	-
Economic Development (Ministry of Commerce)	1	-	2
Labour (Department of)/OSH	3	1*	4*
Property/appliance owner	1	1	-
Electrical supply authority	3	1*	4*
Company/Boss	-	-	-
Emergency Services	-	-	-
Electrical Inspector	-	-	-
Other	-	-	-
Don't know	-	-	-
None	88	90	87
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Excludes those that mentioned "Don't know" or "None" to which organisation they had contacted before about an accident in Q16.

Table 20: Ease of contacting organisation(s) about accidents

Q19. Of the organisations you have contacted about an accident, do you agree or disagree that it was easy to get in touch with them?

	Sub Sample n=22* %	Self-employed Tradesperson n=7 %	Salary or wage earner n=15 %
Strongly agree	36	43	33
Agree	45	29	53
Neither agree nor disagree	-	-	-
Disagree	9	14	7
Strongly disagree	9	14	7
Total	100	100	100

Note: Total may exceed 100% because of multiple response.

*Note: Excludes those electricians that mentioned they hadn't contacted any organisations before about an accident in Q18.

Table 21: Difficulties experienced

Q20. For what reasons wasn't it easy to get in touch with them? Which specific organisations were difficult to get in touch with?

	Sub Sample n=3* %	Self-employed Tradesperson n=2 %	Salary or wage earner n=1 %
Hard to get hold of	100	100	100
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians that "Strongly Disagreed" or "Disagreed" that specific organisations were easy to get in touch with in Q19.

Hazard notification (Regulation 50 of the Electricity Regulations 1997)

Similar to the previous section, respondents were also asked to identify who they would contact if they discovered an electrical appliance, installation or fitting that was dangerous to people or property.

Table 23 indicates that the most frequently reported point of contact is the property or appliance owner in the first instance (41%), with a similar proportion mentioning the EWRB (39%). Importantly, a significantly **lower** proportion of wage and salary earning electricians (32%), compared to self-employed electricians (49%), would contact the EWRB.

As for notification in regard to a serious electrical accident, there was again relatively low recall of the Energy Safety Service/Ministry of Consumer Affairs (4%), and Ministry of Economic Development/Ministry of Commerce (11%), as an organisation to contact if an electrical appliance, installation or fitting that was dangerous to people or property was discovered. Irrespective of low recall of these organisations, a significantly **higher** proportion of self-employed electricians (6%), compared to wage and salary earning electricians (2%), mentioned ESS/Ministry of Consumer Affairs.

Considering the three “key” organisations collectively – Office of the Chief Electrical Engineer, Energy Safety Service, and the Ministry of Economic Development/Ministry of Commerce, just one in five (21%) mentioned one or more of these three organisations as a point of contact if an electrical appliance, installation or fitting that was dangerous to people or property was discovered. Adding the Electrical Workers Registration Board and OSH/Department of Labour to this list, we found that three in five (58%) mentioned one or more of these five organisations. Importantly, a significantly **lower** proportion of wage and salary earning electricians (50%), compared to self-employed electricians (70%), could recall one or more of these five organisations.

Among those who could recall any organisation to contact if an electrical appliance, installation or fitting that was dangerous to people or property was discovered, Table 24 indicates that the majority (62%) have not actually had to contact any organisation. The most frequently mentioned organisations among those who have contacted an organisation about an electrical appliance, installation or fitting that was dangerous to people or property, were:

- Property/appliance owner (12%).
- Electrical supply authority (5%).
- Electrical Workers Registration Board (5%). Importantly, a significantly **lower** proportion of wage and salary earning electricians (3%), compared to self-employed electricians (9%), have contacted EWRB about an electrical appliance, installation or fitting that was dangerous to people or property.

Table 25 indicates that four in five (84%) electricians agreed that it was easy to contact the relevant organisation(s) about an electrical appliance, installation or fitting that was dangerous to people or property. There were, however 9% of electricians who did not agree that the relevant organisation(s) were easy to contact. As for the ease of contacting an organisation about a serious electrical accident, the single reason reported by the three respondents who did not agree that it was easy to contact the relevant organisation(s) was simply that they were hard to get hold of (Table 26).

Table 22: Organisation for hazard reporting – First mentioned

Q21. If you came across a situation where an electrical appliance, installation or fitting was dangerous to people or property, what organisation would you report it to?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
ACC	-	-	-
Building Industry Authority	1	-	1
Office of the Chief Electrical Engineer (energy inspection)	5	5	4
Electrical Workers Registration Board (EWRB)	22	22	22
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	3	5*	1*
Economic Development (Ministry of Commerce)	6	5	6
Labour (Department of)/OSH	7	6	7
Property/appliance owner	31	26	34
Electrical supply authority	5	3	7
Electrical Inspector	4	6*	2*
Other	5	6	4
Don't know	4	4	4
None	10	10	9
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 23: Organisation for hazard reporting – All mentioned
Q22. Any others?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
ACC	-	-	-
Building Industry Authority	1	-	2
Office of the Chief Electrical Engineer (energy inspection)	8	10	6
Electrical Workers Registration Board (EWRB)	39	49*	32*
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	4	6*	2*
Economic Development (Ministry of Commerce)	11	10	11
Labour (Department of)/OSH	14	14	14
Property/appliance owner	41	36	43
Electrical supply authority	15	12	16
My boss/employer/company	14	14	13
Emergency Services	1	-	1
Electrical Inspector/Auditor	6	8	4
Insurance company	-	-	-
ECANZ/Safe power	1	1	1
Manufacturer/Supplier	1	-	2
Disable/Disconnect it myself	4	5	3
Other	5	6	4
Don't know	4	4	4
None	10	10	9
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 24 Organisation(s) previously contacted*Q23. Of those you mentioned, which have you contacted before about a dangerous situation?*

	Sub Sample n=173* %	Self-employed Tradesperson n=66 %	Salary or wage earner n=107 %
ACC	-	-	-
Building Industry Authority	-	-	-
Office of the Chief Electrical Engineer (energy inspection)	2	5	-
Electrical Workers Registration Board (EWRB)	5	9*	3*
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	1	-	1
Economic Development (Ministry of Commerce)	-	-	-
Labour (Department of)/OSH	2	2	2
Property/appliance owner	12	11	12
Electrical supply authority	5	5	5
Other	-	-	-
Don't know	-	-	-
None	62	59	64
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Excludes those that mentioned "Don't know" to which organisation they had contacted before about a dangerous accident in Q21.

Table 25 Ease of contacting organisation(s) about hazards

Q24. Of the organisations you have contacted about a dangerous situation, do you agree or disagree that it was easy to get in touch with them?

	Sub Sample n=73* %	Self-employed Tradesperson n=30 %	Salary or wage earner n=43 %
Strongly agree	59	53	63
Agree	25	30	21
Neither agree or disagree	1	3	-
Disagree	5	7	5
Strongly disagree	4	3	5
Don't know	5	3	7
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 26: Difficulties

Q25. For what reasons wasn't it easy to get in touch with them? Which specific organisations were difficult to get in touch with?

	Sub Sample n=6* %	Self-employed Tradesperson n=2 %	Salary or wage earner n=4 %
Hard to get hold of	100	100	100
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians who mentioned "Strongly disagree/disagree" that it was easy to get in touch with the organisation in relation to a dangerous situation in Q24.

Non-conforming new appliances and installations

Respondents were asked to identify what they would do if they were not sure the installation of a new appliance or fitting conformed to regulations. Table 27 indicates a wide range of responses, and a number of significant differences between wage and salary earning and self-employed electricians. Specifically:

- Get more information from colleagues (20%; significantly **more** wage and salary earning electricians (28%), compared to self-employed electricians (6%).
- Check the regulation book (20%; significantly **more** wage and salary earners (24%), compared to self-employed (12%).
- Get information from/consult an inspector (19%; significantly **more** self-employed (26%), compared to wage and salary earners (15%).
- Do nothing (17%; significantly **more** self-employed (22%), compared to wage and salary earners (13%).
- Get more information from Electrical Workers Registration Board (16%; significantly **more** self-employed (22%), compared to wage and salary earners (12%).

Respondents were also asked what they would do if they thought a new appliance or fitting might be unsafe. Table 28 indicates a reasonably wide range of responses, however we specifically note that the most frequently reported response was “do nothing”, reported by 47% of electricians. The next most frequently reported responses were:

- Get more information from the manufacturer (14%; a significantly **higher** proportion of wage and salary earning electricians (17%), compared to self-employed electricians (8%).
- Fix/replace test the appliance/fitting (11%).
- Notify the owner (11%).
- Notify the EWRB (11%).

Table 27: Organisation/person to contact

Q36. When you are certifying the installation of a new appliance or fitting, if you were not sure whether it conformed to regulations, what would you do?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Do nothing	17	22*	13*
Get more information from colleagues	20	6**	28**
Get more information from energy suppliers	4	6*	2*
Get more information from manufacturer	15	14	15
Get more information from Energy Safety Service	3	3	3
Get more information from Electrical Workers Registration Board	16	22*	12*
Get information from/consult an inspector	19	26*	15*
Check the regulation book	20	12**	24**
Check with Ministry of Commerce/Consumer Affairs	3	3	2
Other	8	8	8
Don't know	4	1	5
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 28: Act in response to possible unsafe new appliances and fittings

Q37. If you thought a new appliance or fitting might be unsafe, what would you usually do?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Do nothing	47	47	46
Get more information from colleagues	5	3*	7*
Get more information from energy suppliers	3	4	2
Get more information from manufacturer	14	8**	17**
Get more information from suppliers	16	13	18
Notify the Energy Safety Service	2	1	2
Notify the Electrical Workers Registration Board (EWRB)	11	13	10
Fix it/Replace it/Test it	11	10	11
Notify owner	11	13	9
Contact inspectors	3	5	2
Other	10	12	8
Don't know	1	-	1
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Worker practices

Certificates of Compliance (CoC)

Own Work

Around one in five electricians (21%) have issued no Certificates of Compliance (COCs) at all in the last 12 months (Table 29), and significantly **more** wage and salary-earning electricians have issued no COCs (29%), compared to self-employed electricians (6%). Conversely, around one in ten (8%) have issued more than 50 COCs in the last 12 months.

Considering next the domestic work electricians were responsible for in the last 12 months, we found that half (50%) of electricians consider none or less than a quarter of their work the type that required a COC. Importantly, a significantly **higher** proportion of wage and salary earning electricians (22%), compared to self-employed electricians (6%), considered none of their work the type that required a COC.

Consistent with this finding, a significantly **lower** proportion of wage and salary earning electricians (6%), compared to self-employed electricians (17%), issued a COC for three quarters or more, but not all, their work.

Table 29: Issuing of Certificates of Compliance in 12 months

Q3. About how many Certificates of Compliance have you issued for your own work and for others. In total, over the last 12 months, would you have issued...

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
None	21	6**	29**
1 - 5	29	14**	37**
6 - 10	13	17*	10*
11 - 25	18	26**	12**
26 - 50	12	19**	7**
51 - 100	5	6	3
More than 100	3	6*	1*
Don't know	2	4	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 30: Work you were responsible for that required a Certificate of Compliance

Q27. In the last 12 months, how much of the work you were responsible for was the type that required a Certificate of Compliance to be issued? Would that be...

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
None	16	6**	22**
Less than a quarter	34	35	33
More than a quarter but less than half	15	16	14
More than a half but less than three quarters	16	18	14
More than three quarters but less than all installations	10	17**	6**
All installations	10	8	11
Don't know	1	-	1
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Perception of others' issuing behaviour

Respondents were asked to indicate what proportion of other electricians do not issue COCs for work they should have. Table 31 indicates that around one in five (19%) consider at most 10% of electricians do not issue COCs when they should have. In contrast, around one in four (28%) consider more than 40% of electricians do not issue COCs when they should have. Indeed, 5% of electricians consider more than 80% of others' do not issue COCs when they should. Importantly, a significantly **higher** proportion of self-employed electricians (31%), compared to wage and salary earning electricians (18%), consider 41-80% of electricians do not issue COCs when they should have.

Next, respondents were asked to report what proportion of other electricians' **work** for which a COC was not issued when it should have been (Table 32). Results are consistent with those in Table 31, with around one in five (16%) considering at most 10% of electricians' work required a COC, but did not have one issued for. Importantly, a significantly **higher** proportion of wage and salary earning electricians (20%), compared to self-employed electricians (11%), consider at most 10% of electricians' work required a COC, but did not have one issued for.

Again, around one in four (26%) of electricians consider more than 40% of electricians' work required a COC, but did not have one issued for; and 6% of electricians consider more than 80% of others' work required a COC, but did not have one issued for.

In general, there was consistency in response to the questions relating to other electricians per se, and other electricians' **work**, in relation to issuing COCs when they should have. Specifically, we found that at least half of all electricians estimated the same proportion of other electricians do not issue COCs when they should, as do not issue COCs for their work.

Table 31: Proportion of other electricians not issuing Certificates of Compliance

Q28. Now thinking about other electricians, approximately what proportion of them do you think do not issue Certificates of Compliance for work they should have?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
None	4	3	4
Up to 10%	15	10	16
11 to 40%	23	14**	28**
41 to 80%	23	31**	18**
More than 80%	5	5	5
Don't know	32	36	29
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 32: Perceived proportion of work where Certificates of Compliance not issued

Q29. Again thinking about other electricians, approximately what proportion of their work do you think they do not issue Certificates of Compliance for, when they should? Would that be...?

	Sub Sample n=193* %	Self-employed Tradesperson n=75 %	Salary or wage earner n=118 %
Up to 10%	16	11*	20*
11 to 40%	26	20*	31*
41 to 80%	20	23	18
More than 80%	6	8	4
Don't know	32	39	27
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

*Note: Excludes those that mentioned "None" in Q28.

Awareness of the Certificate of Compliance issuing requirements (Regulation 39 of the Electricity Regulations 1997)

Respondents were asked to indicate the types of electrical work for which a COC should **not** be issued. In terms of “correct” responses from the range of options in Table 33 (i.e. correctly identifying work types for which a COC should **not** be issued), we found the following:

- Replacement of fuse wire (86%).
- Replacement of similar capacity electrical appliances (72%).
- Repair of faulty conductors (47%).
- Installation of revenue meters (40%).
- Replacement of faulty conductors (35%).
- Installing load control fittings of mains (20%).

There were no significant differences in response when results for wage and salary earning and self-employed electricians are compared.

In terms of **incorrect** responses (i.e. incorrectly identifying work types for which a CoC should not be issued when in fact one **is** required), we found the following:

- Repositioning fittings (41%).
- Repositioning conductors (38%).
- Replacing existing conductors (35%).
- New installation of conductors (10%).

Finally, the work type “replacement of fittings with fittings of a different size of type does or does not require a CoC depending on the circumstances. Forty three percent (43%) of electricians reported that a CoC was not required for this type of work.

In terms of the overall number of “correct” responses to identifying work types in which a CoC should **not** be issued (i.e. not issuing CoCs when not required), we found the following:

- Just 6% of electricians did not correctly identify any of the above types of work as situations in which a CoC does not need to be issued.
- 12% correctly identified one of the six.
- 23% correctly identified two of the six.
- 20% correctly identified three of the six.
- 21% correctly identified four of the six.
- 13% correctly identified five of the six.
- 6% correctly identified all six.

By way of comparison, in terms of the overall number of “incorrect” responses to identifying work types in which a CoC should not be issued (i.e. issuing CoCs when not required), we found the following:

- Just 5% of electricians incorrectly identified all four types of work that **do** in fact require a CoC, as a work type that does **not** require a CoC.
- 18% incorrectly identified three of the four.
- 15% incorrectly identified two of the four.
- 23% incorrectly identified one of the four.
- 41% incorrectly identified none of the four.

Table 33: Work that does not require the issuing of a Certificate of Compliance

Q26. For which of the following types of work do you think a Certificate of Compliance should not be issued?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Installation of revenue meters	40	42	38
Installing load control fittings of mains	20	16	22
New installation of conductors	10	12	8
Repair of faulty conductors	47	49	46
Replacement of faulty conductors	35	38	33
Replacing existing conductors	35	34	35
Replacement of fuse wire	86	83	87
Replacement of similar capacity electrical appliances	72	71	72
Replacement of fittings with fittings of a different size or type	43	44	42
Repositioning conductors	38	36	39
Repositioning fittings	41	39	41
Should be issued for all jobs	3	3	3
Minor repairs/appliances	5	6	3
Other	4	5	2
Don't know	4	4	3
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Electric shocks

Table 34 indicates that around two thirds (62%) of electricians have not had an electric shock in the last 12 months. In contrast, 4% have received ten or more electric shocks in the last 12 months. Importantly, a significantly **higher** proportion of salary and wage earning electricians (68%), compared to self-employed electricians (52%), experienced no electric shocks in the last 12 months.

Regarding the cause(s) of electric shocks sustained in the last 12 months (Table 35), the following were most frequently reported:

- Not turning off the power supply before starting work (39%).
- Equipment failure (23%).
- Not testing the line before working on it (21%).

There were no significant differences in responses when self-employed and wage and salary earning electricians are compared.

Consistent with the above summary, Table 36 indicates the following ideas for ensuring people would avoid getting an electric shock in the way reported in Table 35:

- Ensure power is turned off, Test your line/equipment (43%).
- Concentrate more/be more careful (31%).
- Be alert/you can get them at any time (13%; a significantly **lower** proportion of wage and salary earning electricians (8%), compared to self-employed electricians (19%), mentioned this as a way for others to avoid getting an electric shock).

Table 34: Endangering themselves and others

Q30. The next questions are about electric shocks. About how many times in the last 12 months have you had an electric shock?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Never	62	52**	68**
1 or 2 times	27	35**	21**
3 or 4 times	3	3	3
5 to 9 times	5	5	4
10 to 19 times	2	3	2
20 to 29 times	2	3	1
30 to 49 times	-	-	-
50 or more times	-	-	-
Don't know	1	-	1
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 35: Perceived cause of electric shocks*Q31. In the last 12 months, what caused this/these electric shock(s)?*

	Sub Sample n=75*	Self- employed Tradesperson n=37	Salary or wage earner n=38
	%	%	%
Equipment failure	23	24	21
Not testing the line before working on it	21	24	18
Not turning off the power supply before starting work	39	43	34
Not covering exposed parts	17	14	21
Not following a safe work practice	12	11	13
Not receiving adequate training or not familiar with the work	1	-	3
Unintentionally making a wire live	16	19	13
Other	15	8*	21*
Don't know	-	-	-
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians who mentioned the number of times they have had an electric shock in the last 12 months in Q30.

Table 36: Lessons learnt

Q32. Can you tell me any ideas about how other people could avoid getting an electrical shock the way you did?

	Sub Sample n=75*	Self- employed Tradesperson n=37	Salary or wage earner n=38
	%	%	%
Be alert, you can get them at any time	13	19*	8*
Ensure power is turned off, Test your line/equipment	43	41	45
Concentrate more/Be more careful	31	27	34
Isolate what is being worked on	8	8	8
Other	5	5	5
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians who mentioned the number of times they have had an electric shock in the last 12 months in Q30.

Ownership and use of test equipment

Table 37 indicates that nearly all electricians own an insulation resistance tester (99%). Further, the majority also own an RCD tester (65%), and a fault loop impedance tester (58%).

Insulation resistance testers are clearly a tool integral to the daily work of an electrician. Table 38 indicates that almost half (42%) used their insulation resistance tester more than 100 times in the last 12 months. Conversely, just 14% used one at most ten times in the last year, and 2% reported never using one in the last 12 months.

Among those who made at least some use of an insulation resistance tester in the last year, a wide range of circumstances for using it were reported (Table 39):

- After new installation, before connecting to existing power supply (45%).
- To check an appliance after repair (37%).
- For a safety check of an existing installation (31%).
- After additions/modifications to wiring (29%).

Table 37: Test equipment ownership

Q35. Can you tell me which of the following equipment you personally own or have access to in your work kit?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
An Insulation Resistance Tester	99	99	98
A Fault Loop Impedance Tester	58	53	60
An RCD Tester	65	57	69
None	1	-	1
Don't know	-	-	-
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 38: Level of use of an Insulation Resistance Tester*Q33. In the last 12 months, about how many times did you use an Insulation Resistance Tester?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
1-5 times	7	4	9
6-10 times	7	8	7
11-25 times	13	18*	10*
26-50 times	11	8	13
51-100 times	19	17	20
More than 100 times	42	43	41
Never	2	1	2
Don't know	1	1	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 39: Circumstances in which an Insulation resistance tester is used*Q34. Under what circumstances do you use an insulation resistance tester?*

	Sub Sample n=196* %	Self-employed Tradesperson n=75 %	Salary or wage earner n=121 %
After additions/modifications to wiring	29	28	30
After modifications to wiring	20	21	19
After new installation, before connecting to existing power supply	45	51	41
To check an appliance after repair	37	35	39
For earth continuity testing	14	16	13
For polarity testing	10	11	10
For a safety check of existing installation	31	27	33
General Testing/checking	22	20	24
Checking for faults	11	15	8
Other	10	8	11
Don't know	-	-	-
Total	100	100	100

Note: Total may exceed 100% because of multiple response.

Use and ownership of installation standards and codes

Table 40 indicates that a wide range of electrical installation codes or standards are used, while Table 41 indicates that similar proportions actually own the stated installation code(s) or standard(s). The most frequently reported responses were:

- Electrical Codes of Practice (ECPs) (96% use and 85% own; a significantly **higher** proportion of wage and salary earning electricians (98%), compared to self-employed electricians (92%), follow ECPs in their work. Similarly, a significantly **higher** proportion of self-employed electricians (94%), compared to wage and salary earning electricians (79%), actually own ECPs).
- Wiring Rules, AS/NZS3000:2000 (72% use and 51% own this standard; a significantly **lower** proportion of wage and salary earning electricians (46%), compared to self-employed electricians (58%), own this standard).⁵
- Electrical Installations, Buildings, Structures & Premises, NZS3000:1997 (68% use and 48% own; a significantly **lower** proportion of wage and salary earning electricians (41%), compared to self-employed electricians (58%), own this standard).⁶
- Electrical Wiring Regulations 1976 (53% use and 56% own; a significantly **lower** proportion of wage and salary earning electricians (52%), compared to self-employed electricians (61%), own this standard).

In terms of following **any** of the three mandatory codes or standards (Electrical Codes of Practice, Electrical Installations: Buildings, Structures & Premises, NZS3000:1997 or Wiring Rules, AS/NZS3000:2000), we found that just two percent (2%) of electricians follow **none** of these, while the remaining 98% follow **at least one** of these codes or standards in their work.

Regarding preferred codes or standards, around three quarters (70%) are using the one(s) they prefer (Table 42). Fifteen percent (15%) would prefer to use others, while 12% have no specific preference. These results were also examined by age, however we did not measure any significant differences between different age groups.

⁵ We note here however that in terms of **known** ownership of Electrical Installations, Buildings, Structures & Premises, NZS3000:1997, and Wiring Rules, AS/NZS3000:2000, more consistent estimates of the rate of ownership would be around 80-90% and 15-20% respectively. After carefully investigating likely causes of this, we believe that the common term "NZS3000" to both standards has resulted in respondent reporting error, to the extent that ownership of the 1997 has been under-reported, and ownership of the 2000 standard over-reported.

⁶ See Footnote 5.

The most frequent response to the question of which code(s) or standard(s) were preferred was “one standard/a combined Australia/New Zealand standard” (21% of those who would prefer to use other code(s) or standard(s); a significantly **lower** proportion of wage and salary earning electricians (10%), compared to self-employed electricians (36%), would prefer a combined Australia/New Zealand standard) (Table 43). Other preferences were:

- Electrical Codes of Practice (ECPs) (15%).
- Electrical Installations: Buildings, Structures & Premises, NZS3000:1997 (13%).
- Electrical Wiring Regulations (13%).

These results were also examined by age, however again we did not measure any significant differences between different age groups.

Among those who prefer alternative codes or standards, the most frequently mentioned reason was “easiest – to use/to find info. about/carry around/cheaper” (46%). Importantly, a significantly **higher** proportion of wage and salary earning electricians (61%), compared to self-employed electricians (27%), mentioned this (Table 44). Other reasons for preferring alternatives were:

- We have to use them for our work (22%; a significantly **lower** proportion of wage and salary earning electricians (11%), compared to self-employed electricians (36%), mentioned this).
- More up-to-date (14%).

Table 40: Use of installation codes*Q38. Which electrical installation codes or standards do you follow in your work?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Electrical codes of Practice (ECPs)	96	92*	98*
Electrical Installations: Buildings, Structures & Premises, NZS3000: 1997	68	69	67
Wiring Rules, AS/NZS3000:2000	72	69	74
Electrical Wiring Regulations 1935	23	25	21
Electrical Wiring Regulations 1961	27	31*	24*
Electrical Wiring Regulations 1976	53	51	54
Electrical Wiring Regulations 1990+	12	14	11
Other	7	5	7
Don't know	1	-	1
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 41 Ownership of installation codes*Q42. And which electrical installation codes or standards do you actually own?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Electrical Codes of Practice (ECPs)	85	94**	79**
Electrical Installations: Buildings, Structures & Premises, NZS3000:1997	48	58**	41**
Wiring Rules, AS/NZS3000:2000	51	58*	46*
Electrical Wiring Regulations 1935	18	27**	12**
Electrical Wiring Regulations 1961	26	35**	20**
Electrical Wiring Regulations 1976	56	61*	52*
EWP:1987 (onwards)	9	10	8
Don't own any, work owns them	6	3*	8*
Other	3	3	2
Don't know	5	-	7
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Table 42 Preference for other installation code(s)*Q39. Are you using the ones you prefer to use, or would you prefer to use another?*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
Using one(s) I prefer	70	69	71
Prefer others	15	14	15
Have no choice	12	14	10
Don't know	4	3	4
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 43: Preferred installation code*Q40. Which would you prefer to use?*

	Sub Sample n=53* %	Self-employed Tradesperson n=22 %	Salary or wage earner n=31 %
Electrical Codes of Practice (ECPs)	15	9	19
Electrical Installations: Buildings, Structures & Premises, NZS3000:1997	13	9	16
Wiring Rules, AS/NZS3000:2000	11	9	13
Electrical Wiring Regulations 1935	4	-	6
Electrical Wiring Regulations 1961	4	-	6
Electrical Wiring Regulations 1976	13	-	23
Any other electrical installation codes or standards	11	9	13
One standard/Combined Aus & NZ one	21	36**	10**
The latest regulations/most updated one	11	23**	3**
Don't know	13	18	10
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians who mentioned "Prefer others" or "Have no choice" to whether they were using preferred electrical installation codes in their work (Q43).

Table 44: Reason other installation code(s) preferred

Q41. Why do you say that?

	Sub Sample n=50* %	Self-employed Tradesperson n=22 %	Salary or wage earner n=28 %
More up-to-date	14	14	14
We have to use them for our work	22	36**	11**
Easiest – to use/to find info about/carry around/Cheaper	46	27**	61**
Other	18	23	14
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

*Note: Includes only those electricians who mentioned "Prefer others" or "Have no choice" to whether they were using preferred electrical installation codes in their work (Q43).

Demographic profile

Work characteristics

Table 45: Type of work done in last 12 months

Q2. In the last 12 months, which of these types of work have you done regularly (at least once a month)?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
New installations	56	65**	50**
Additions to existing installations	67	71	63
Alterations to existing installations	67	70	64
Repairs of installations	77	81	75
Repair of appliances	62	56	65
Certification of others work	13	12	13
Other inspections	13	14	12
Other types of electrical work	3	3	3
Don't know	1	1	-
Total	**	**	**

Note: Total may exceed 100% because of multiple response.

Respondent characteristics

Table 46: Age

Q43. I would now like to ask a few background questions to ensure we have interviewed a good cross-section of electricians. Firstly, which of the following age groups do you come into?

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
15-19	-	-	-
20-29	5	-	7
30-39	29	17**	37**
40-49	31	31	31
50-59	25	31*	21*
60+	11	21**	4**
Refused	-	-	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Table 47: Countries where training received*Q45. In which country were you trained in electrical work...*

	Total Sample n=200 %	Self-employed Tradesperson n=77 %	Salary or wage earner n=123 %
New Zealand	95	92	96
Australia	1	1	-
USA	-	-	-
UK (Scotland, Wales)	5	4	5
Other European countries	-	-	-
Fiji	-	-	-
Other Pacific countries	-	-	-
Asian countries	-	-	-
Other	3	4	2
Refused	-	-	-
Total	100	100	100

Note: Components may not always add to 100% exactly because of rounding.

Appendix A: Questionnaire

ID_NUMBER:_____

ENERGY SAFETY SERVICE – SURVEY OF ELECTRICIANS

BRC Marketing & Social Research, PN2442

March 2002

Good morning/afternoon/evening, my name is [INTERVIEWER NAME] from BRC Marketing & Social Research. Could I please talk to [NAME ON CATI SCREEN]?

REINTRODUCE AS NECESSARY

Good morning/afternoon/evening, my name is [INTERVIEWER NAME] from BRC Marketing & Social Research. As described in the letter we recently sent you, we are conducting a survey to explore opinions and attitudes among electricians, in relation to electrical installations and appliances. The interview should take around 15 minutes.

IF PERSON NOT AVAILABLE, ASK:

When would be a good time for me to call back to speak to him/her?

MAKE APPOINTMENT, REINTRODUCE YOURSELF AS NECESSARY.

IF NOT APPROPRIATE TIME: When would be a more convenient time?

MAKE APPOINTMENT.

IF LETTER NOT RECEIVED, ASK:

If it's OK with you do you mind if we continue with the interview now?

IF NO: When would be a more convenient time?

MAKE APPOINTMENT.

START TIME: _____

BACKGROUND INFORMATION ONLY IF NEEDED:

- This is genuine research. We are not selling anything.
- Information provided is strictly confidential. We report summary results about groups; and do not identify which individuals have said what.
- Your name was selected at random from registers of licensed electricians.
- To avoid compromising survey results, I can't tell you who the client is until the end of our interview, just as I can't identify you or your answers to the client.

As part of our ongoing quality improvement process, my Supervisor may listen to this call.

1 First of all, can I just confirm that you are currently working as an Electrician, and hold a current practising license?

Yes 1
 No 2 **TERMINATE**

TERMINATION STATEMENT: Thank you. For this survey we need to speak to registered Electricians, currently working. If you have any questions, please ring the Project Manager, Pete McMillen, on our toll-free number: 0800 500 168. (Wellington respondents 499 3088).

2 In the last 12 months, which of these types of work have you done regularly (at least once a month)? **READ. CODE MANY**

New installations 1,
 Additions to existing installations 2,
 Alterations to existing installations 3,
 Repairs of installations 4,
 Repair of appliances 5,
 Certification of others work..... 6,
 Other inspections 7,
 Other types of electrical work (**SPECIFY**)..... 8,

Don't know..... 9

3 About how many Certificates of Compliance have you issued for your own work and for others. In total, over the last 12 months, would you have issued...? **READ**

None 1
 1 - 5 2
 6 - 10 3
 11 - 25 4
 26 - 50 5
 51 - 100 6
 More than 100 7
Don't know 8

4 Thinking about electrical appliances that people have in their homes, how many do you think are safe? Would you say...**READ**

Up to 5% 1
 6 to 10% 2
 11 to 20% 3
 21 to 40% 4
 41% to 80% 5
 More than 80% 6
Don't know 7

5 What about electrical wiring in homes, how many do you think are safe? Would you say...**READ**

- Up to 5% 1
- 6 to 10%..... 2
- 11 to 20%..... 3
- 21 to 40%..... 4
- 41% to 80%..... 5
- More than 80%..... 6
- Don't know* 7

6 And how about electrical fittings in homes, how many do you think are safe? Would you say...**READ**

- Up to 5% 1
- 6 to 10%..... 2
- 11 to 20%..... 3
- 21 to 40%..... 4
- 41% to 80%..... 5
- More than 80%..... 6
- Don't know* 7

7 Do you think that...**READ?**

	Yes	No	Don't know
a) Household wiring should be checked regularly	1	2	3
b) Household appliances should be checked regularly	1	2	3
c) Household fittings should be checked regularly	1	2	3

8 **IF 1 IN Q7A, ASK Q8, ELSE GO Q9.** Now, thinking generally about all household wiring, whether old or new. How often do you think household wiring should be checked? Would that be...**READ**

- At least every 1 to 2 years..... 1
- At least every 5 years..... 2
- At least every 10 years..... 3
- Less often than every 10 years 4
- Don't know*..... 5

9 **IF 1 IN Q7B ASK Q9, ELSE GO Q10.** Thinking generally about all household appliances, whether old or new. How often do you think household appliances should be checked? Would that be... **READ**

- At least every 1 to 2 years..... 1
- At least every 5 years..... 2
- At least every 10 years..... 3
- Less often than every 10 years 4
- Don't know*..... 5

10 **IF 1 IN Q7C ASK Q10, ELSE GO Q11.** Thinking generally about all household fittings, whether old or new. How often do you think household fittings should be checked? Would that be... **READ**

- At least every 1 to 2 years..... 1
- At least every 5 years..... 2
- At least every 10 years..... 3
- Less often than every 10 years..... 4
- Don't know*..... 5

11 Do you think that electrical safety checks should be made compulsory? **DO NOT READ.**

- Yes..... 1
- No 2
- Don't know* 3

12 Thinking about the types of electrical appliances that are permanently connected, how many of the new ones on the market do you think.... **READ.** Would that be Only a few, Some, Most or All?

	Only a few	Some	Most	All	DK
a. Meet the legal <u>safety</u> requirements	1	2	3	4	5
b. Meet the legal requirements for <u>marking and installation instructions</u>	1	2	3	4	5

13 What about the types of new plug-in electrical appliances, how many of the new ones on the market do you think.... **READ.** Would that be Only a few, Some, Most or All?

	Only a few	Some	Most	All	DK
a. Meet the legal <u>safety</u> requirements	1	2	3	4	5
b. Are marked with technical information (i.e. writing on the unit itself) that meets legal requirements	1	2	3	4	5

14 And what about second-hand plug-in electrical appliances, how many of the new ones on the market do you think.... **READ.** Would that be Only a few, Some, Most or All?

	Only a few	Some	Most	All	DK
a. Meet the legal <u>safety</u> requirements	1	2	3	4	5

15 How about new electrical fittings for houses, how many of the new ones on the market do you think.... **READ.** Would that be Only a few, Some, Most or All?

	Only a few	Some	Most	All	DK
a. Meet the legal <u>safety</u> requirements	1	2	3	4	5

- 16 These questions are about any serious electrical accidents. By this, I mean ones where someone is killed, or someone is injured enough to need medical treatment, or to be off work for a few days, or where there is serious damage to a property. If you were there, you might contact the emergency services. What other organisation would you contact?. **DO NOT READ.**
CODE FIRST MENTIONED IN COLUMN A.
- 17 Any others? **DO NOT READ. CODE ALL OTHERS MENTIONED IN COLUMN B.**
- 18 Of those you mentioned, which have you contacted before about an accident?
DO NOT READ. CODE ALL MENTIONED IN COLUMN C.

	A First mentioned CODE ONE	B Others mentioned CODE MANY	C Used before CODE MANY
ACC	1	1,	1,
Building Industry Authority	2	2,	2,
Office of the Chief Electrical Engineer (energy inspection)	3	3,	3,
Electrical Workers Registration Board (EWRB)	4	4,	4,
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	5	5,	5,
Economic Development (Ministry of, Ministry of Commerce)	6	6,	6,
Labour (Department of)/OSH	7	7,	7,
Property/appliance owner	8	8,	8,
Electrical supply authority	9	9,	9,
Other 1 (SPECIFY)	10	///	10,
Other 2 (SPECIFY)	///	11,	11,
<i>Don't know</i>	12 → Q21	///	///
<i>None</i>	13 → Q21	13	13, → Q21

- 19 Of the organisations you have contacted about an accident, do you agree or disagree that it was easy to get in touch with them? **PROMPT:** Is that strongly agree/disagree or just agree/disagree?

Strongly disagree 1
 Disagree 2
 Neither agree nor disagree..... 3
 Agree 4
 Strongly agree 5
Don't know..... 6

] **GO Q21**

- 20 For what reasons wasn't it easy to get in touch with them? **PROMPT:** Which specific organisations were difficult to get in touch with? **PROBE FULLY AND RECORD IN DETAIL.**

- 21 If you came across a situation where an electrical appliance, installation or fitting was dangerous to people or property, what organisation would you report it to? **DO NOT READ**
CODE FIRST MENTIONED IN COLUMN A.
- 22 Any others? **DO NOT READ. CODE ALL OTHERS MENTIONED IN COLUMN B.**
- 23 Of those you mentioned, which have you contacted before about a dangerous situation? **DO NOT READ. CODE IN COLUMN C.**

	A First mentioned CODE ONE	B Others mentioned CODE MANY	C Ever contacted CODE MANY
ACC	1	1,	1,
Building Industry Authority	2	2,	2,
Office of the Chief Electrical Engineer	3	3,	3,
Electrical Workers Registration Board (EWRB)	4	4,	4,
Energy Safety Service (ESS)/Consumer Affairs (Ministry of)	5	5,	5,
Economic Development (Ministry of, Ministry of Commerce)	6	6,	6,
Labour (Department of)/OSH	7	7,	7,
Property/appliance owner	8	8,	8,
Electrical supply authority	9	9,	9,
Other 1 (SPECIFY)	10	///	10,
Other 2 (SPECIFY)	///	11,	11,
<i>Don't know</i>	12 → Q26	///	///
<i>None</i>	///	13,	13, → Q26

- 24 Of the organisations you have contacted about a dangerous situation, do you agree or disagree that it was easy to get in touch with them? **PROMPT:** Is that strongly agree/disagree or just agree/disagree?

Strongly disagree 1
 Disagree 2
 Neither agree nor disagree..... 3
 Agree 4
 Strongly agree 5
 Don't know..... 6

} **GO Q26**

- 25 For what reasons wasn't it easy to get in touch with them? **PROMPT:** Which specific organisations were difficult to get in touch with? **PROBE FULLY AND RECORD IN DETAIL.**

26 For which of the following types of work do you think a Certificate of Compliance should not be issued? **READ. CODE MANY. PROBE:** Any others?

- Installation of revenue meters 1,
- Installing load control fittings of mains 2,
- New installation of conductors 3,
- Repair of faulty conductors 4,
- Replacement of faulty conductors..... 5,
- Replacing existing conductors 6,
- Replacement of fuse wire..... 7,
- Replacement of similar capacity electrical appliances..... 8,
- Replacement of fittings with fittings of a different size or type 9,
- Repositioning conductors 10,
- Repositioning fittings 11,
- Other (**SPECIFY**)..... 12,

Don't know..... 13

27 In the last 12 months, how much of the work you were responsible for was the type that required a Certificate of Compliance to be issued? Would that be... **READ.**

- None 1
- Less than a quarter 2
- More than a quarter but less than half 3
- More than half but less than three quarters 4
- More than three quarters but less than all installations 5
- All installations..... 6
- Don't know*..... 7

28 Now thinking about other electricians, approximately what proportion of them do you think do not issue Certificates of Compliance for work they should have? **READ AND CODE ONE ONLY.**

- None 1 **Go Q30**
- Up to 5% 2
- 6 to 10% 3
- 11 to 20% 4
- 21 to 40% 5
- 41% to 80% 6
- More than 80% 7
- Don't know* 8

29 Again thinking about other electricians, approximately what proportion of their work do you think they do not issue Certificates of Compliance for, when they should? Would that be...? **READ AND CODE ONE ONLY.**

- Up to 5% 1
- 6 to 10% 2
- 11 to 20% 3
- 21 to 40% 4
- 41% to 80% 5
- More than 80% 6
- Don't know* 7

30 The next questions are about electric shocks. About how many times in the last 12 months have you had an electric shock? **DO NOT READ.**

- Never 1 **GO Q33**
- 1 or 2 times 2
- 3 or 4 times 3
- 5 to 9 times 4
- 10 to 19 times 5
- 20 to 29 times 6
- 30 to 49 times 7
- 50 or more times 8
- Don't know* 9 **GO Q33**

31 In the last 12 months, what caused this/these electric shock(s)? **READ. CODE MANY.**

- Equipment failure 1,
 - Not testing the line before working on it 2,
 - Not turning off the power supply before starting work 3,
 - Not covering exposed parts 4,
 - Not following a safe work practice 5,
 - Not receiving adequate training or not familiar with the work 6,
 - Unintentionally making a wire live 7,
 - Other (**SPECIFY**) 8,
- _____
- _____
- Don't know* 9

32 Can you tell me any ideas about how other people could avoid getting an electrical shock the way you did? **PROBE FULLY AND RECORD IN DETAIL.**

33 In the last 12 months, about how many times did you use an Insulation Resistance Tester?

- 1 – 5 times 1
- 6 - 10 times 2
- 11 - 25 times 3
- 26 - 50 times 4
- 51 - 100 times 5
- More than 100 times 6
- Never 7] **GO Q35**
- Don't know 8]

34 Under what circumstances do you use an insulation resistance tester? **READ. CODE MANY.**

- After additions/modifications to wiring..... 1,
 - After modifications to wiring..... 2,
 - After new installation, before connecting to existing power supply..... 3,
 - To check an appliance after repair 4,
 - For earth continuity testing..... 5,
 - For polarity testing..... 6,
 - For a safety check of existing installation 7,
 - Other (**SPECIFY**) 8,
-
-
- Don't know..... 9

35 Can you tell me which of the following equipment you personally own or have access to in your work kit? **READ. CODE MANY.**

- An Insulation Resistance Tester 1,
- A Fault Loop Impedance Tester 2,
- An RCD Tester 3,
- None 4
- Don't know 5

36 When you are certifying the installation of a new appliance or fitting, if you were not sure whether it conformed to regulations, what would you do? **DO NOT READ. CODE MANY.**

- Do nothing 1,
- Get more information from colleagues 2,
- Get more information from energy suppliers 3,
- Get more information from manufacturer 4,
- Get more information from Energy Safety Service 5,
- Get more information from Electrical Workers Registration Board (EWRB) 6,
- Other (**SPECIFY**) 7,

Don't know 8

37 If you thought a new appliance or fitting might be unsafe, what would you usually do? **DO NOT READ. CODE MANY.**

- Do nothing 1,
- Get more information from colleagues 2,
- Get more information from energy suppliers 3,
- Get more information from manufacturer 4,
- Get more information from suppliers 5,
- Notify the Energy Safety Service 6,
- Notify the Electrical Workers Registration Board (EWRB) 7,
- Other (**SPECIFY**) 8,

Don't know 9

38 Which electrical installation codes or standards do you follow in your work? **READ AND CODE MANY.**

- Electrical Codes of Practice (ECPs) 1,
- Electrical Installations: Buildings, Structures & Premises, NZS3000:1997 2,
- Wiring Rules, AS/NZS3000:2000 3,
- Electrical Wiring Regulations 1935 4,
- Electrical Wiring Regulations 1961 5,
- Electrical Wiring Regulations 1976 6,
- Other (**SPECIFY**) 7,

Don't know 8

39 Are you using the ones you prefer to use, or would you prefer to use another?

- Using one(s) I prefer 1 → **Go Q42**
- Prefer others 2
- Have no choice 3
- Don't know 4 → **Go Q42**

40 Which would you prefer to use?

- Electrical Codes of Practice (ECPs) 1,
- Electrical Installations: Buildings, Structures & Premises,
NZS3000:1997 2,
- Wiring Rules, AS/NZS3000:2000 3,
- Electrical Wiring Regulations 1935 4,
- Electrical Wiring Regulations 1961 5,
- Electrical Wiring Regulations 1976 6,
- Any other electrical installation codes or standards (**SPECIFY**) 7,

Don't know..... 8

41 Why do you say that?

42 And which electrical installation codes or standards do you actually own?
READ AND CODE MANY.

- Electrical Codes of Practice (ECP's)..... 1,
- Electrical Installations: Buildings, Structures & Premises,
NZS3000:1997 2,
- Wiring Rules, AS/NZS3000:2000 3,
- Electrical Wiring Regulations 1935 4,
- Electrical Wiring Regulations 1961 5,
- Electrical Wiring Regulations 1976 6,
- Other (**SPECIFY**) 7,

Don't know..... 8

DEMOGRAPHICS

43 I would now like to ask a few background questions to ensure we have interviewed a good cross-section of electricians.

Firstly, which of the following age groups do you come into? **READ AND CODE ONE ONLY.**

- 15–19 1
- 20–29 2
- 30–39 3
- 40–49 4
- 50–59 5
- 60+ 6
- Refused*..... 7

44 At present, are you a...? **READ AND CODE ONE ONLY.**

- Self-employed tradesperson 1
- Salary or wage earner (working for others)..... 2

45 In which country were you trained in electrical work...

- New Zealand 1,
- Australia 2,
- USA..... 3,
- UK (Scotland, Wales) 4,
- Other European countries..... 5,
- Fiji 6,
- Other Pacific countries..... 7,
- Asian countries 8,
- Other (**SPECIFY**) 9,

- _____
- Refused*..... 10,

46 Those are all the questions I have. Do you have any other comments you'd like to make about the subject of this interview?

No additional comments 1

47 May I please have your first name in case my supervisor needs to check on the quality of this interview?

RESPONDENT FIRST NAME: _____

Thank you very much for your help. If you have enquiries about this survey, please ring the project manager, Pete McMillen, on our toll-free number: 0800 500 168. (Wellington respondents 499-3088).

STOP TIME: _____

DURATION: _____ minutes **USE "STOP TIME" ABOVE & "START TIME" ON FRONT PAGE**

DATE: ___/___/02

INTERVIEWER INITIALS: _____ **PRINT NEATLY SO THAT DATA ENTRY CAN READ EASILY.**

INTERVIEWER NUMBER: _____ **PRINT NEATLY SO THAT DATA ENTRY CAN READ EASILY.**

PHONE NUMBER:(0____) _____

ID NUMBER: _____ Yes ID Number matches front Page

(CHECK BOX IF ID NUMBER ABOVE IS IDENTICAL TO ID NUMBER ON FRONT PAGE)

HAVE YOU REMEMBERED TO CODE CATEGORIES ON FRONT PAGE? Yes

"I certify that this is a true and accurate record of the interview conducted by me in full accordance with the Market Research Code of Practice."

INTERVIEWER SIGNATURE: _____

SUPERVISOR CHECK INITIALS: __ **PRINT NEATLY SO THAT DATA ENTRY CAN READ EASILY**

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26 July 2002

Appendix B: Introductory letter

28 June 2002

«First_name» «Surname»
«Address_1»
«Address_2»
«Address_3»
«ADDRESS_4»

Dear «First_name» «Surname»

SURVEY OF ELECTRICIANS IN RELATION TO DOMESTIC INSTALLATIONS & APPLIANCES

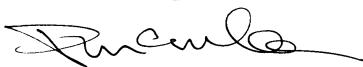
A government agency has commissioned BRC Marketing & Social Research, an independent research company, to conduct a survey among Electricians on their opinions and attitudes to safety in relation to domestic electrical installations and appliances.

Your name has been randomly selected from the government agency's database, as representative of the people in your trade. We would like to invite you to participate in a short survey.

One of our interviewers may be in touch in the next week or so by telephone. The survey will only take about 15 minutes, at a time most convenient to you.

If you have any questions at all about our survey, please contact either myself or Mati Fryer on free-phone 0800 500 168 (or 499 3088 in the Wellington area).

Yours sincerely



Pete McMillen
Senior Project Manager
BRC Marketing & Social Research

Ref: «IDNO»