

2394-302 Level 3 Principles, Practices and Legislation for the Initial Verification of Electrical Installations.

Chief Examiner's report – **October 2014**



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City & Guilds

1 Giltspur Street

London EC1A 9DD

T +44 (0)844 543 0000

F +44 (0)20 7294 2413

www.cityandguilds.com

centresupport@cityandguilds.com

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1 Introduction

The purpose of this document is to provide centres with feedback on the performance of candidates in the **October 2014** examination for 2394-302 Principles, Practices and Legislation for the Initial Verification of Electrical Installations.

The Chief Examiner's Report has been reintroduced as a result of feedback from centres, to give them guidance in preparing candidates for the written examination.

2 Feedback on candidate performance

General feedback

The following comments are intended to help students prepare for the examination by having a better understanding of what is expected of them. The feedback within this report would also be valuable to tutors in understanding candidates' difficulties in answering questions and the areas where more guidance is required.

The October 2014 question paper was found to be in accordance with the scheme requirements.

The number of scripts received for this series was 682.

Candidates appeared to have no issues with the format of the paper. They need to be aware that the space left for their answer is intended to be generous and, in almost all cases, is more than enough to record their answer.

Candidates and centres should be mindful that this qualification relates to the initial verification of electrical installations. It was evident from answers provided by some candidates that they confused this process with that required during periodic inspection and testing.

Candidates should keep their responses within the allotted area and any additional sheets should be stapled to the back of the answer book. The number of additional attached sheets needs to be recorded in the box on the front cover of the examination paper/candidate response book. These additional sheets should be plain lined paper and not a second answer book. The blank pages at the back of the answer book should not be used for candidate responses as these are not allocated areas for the marking and so are not included in the scanning process in preparation for marking. Where it becomes necessary for centres to copy/print additional answer books these should be produced double sided to facilitate correct scanning into the marking software.

A small number of candidates used the back cover or the blank pages of their answer book rather than attaching additional sheets and did not record any additional sheets on the front cover.

The answers produced by candidates for this examination series were of a much higher standard than those offered in previous series.

There are still a significant number of candidates that do not read the questions carefully. A particular question related to the practical steps an inspector can take to ensure the safety of persons within a building, during an inspection and test of the installation. Some candidates listed "safe isolation" as a suitable action, but the question excluded this as an answer.

Another question asked the candidate why the result of an $R_1 + R_2$ test could **not** be used to confirm the correct polarity of a circuit when the insulation resistance test result between line and neutral was $0 \text{ M}\Omega$. Most answers given by candidates did not relate to polarity at all.

A further question asked about the inspection of the termination of an armoured cable. Some answers incorrectly related to fixing the cable along its length, while others included inspection of the enclosure.

Terminology

Candidates often identified test instruments using incorrect titles. The titles of Instruments must be in line with those given in GN3.

The use of "live" rather than "line" cost candidates marks due to the descriptions of testing procedures being unclear. Many candidates were unable to state what is meant by the terms I_{cn} , and I_{cs} and many answers gave statements which were vague and with some relating to earth fault disconnection times.

Knowledge of BS 7671 and Guidance Note 3

One question required the candidates to list the three documents that must be completed and handed to the client on completion of an initial verification of an installation. A number of candidates were unable to correctly identify the three documents.

When asked to state the three people responsible for signing the Electrical Installation Certificate, many answers were incorrect. Typical errors included "the client", "dutyholder" and "the insurance company".

When asked to state the three conditions, identified in BS 7671, which are to be confirmed during a polarity test, candidates often gave vague responses. Poor answers included comments such as "single-pole switches", without any explanation as to what was to be confirmed, "switches in the line conductor" without reference to single pole and "edison-screw lampholders" with no indication what was to be checked.

Inspection

Most candidates provided good answers when asked to identify five checks to be made during an inspection of the steel-wire armoured cable at the isolator. A "table format" has been introduced into the question paper to try to help candidates produce coherent answers. Generally this worked well, with only a small number of candidates completing the table incorrectly. These candidates were not penalised for this and their answers were considered.

Some of the terminology used by candidates was confusing, one example being "grommet". Other answers were vague such as "cable terminated correctly". Yes the cable must be terminated correctly, but what does the candidate understand by "correctly". Good answers included comments such as "cable terminations are tight", "gland nut tight holding all the armouring" and "little or no copper showing at each termination".

Testing

One question asked candidates about measuring the resistance of an earth electrode which was connected to a generator. Most candidates correctly identified the test instrument, but some instrument titles were not as identified in GN3. A small number of candidates incorrectly identified an earth fault loop impedance tester as the test instrument. A very small number wanted to use a low resistance ohmmeter!

Candidates found it much more difficult to identify the three electrodes involved in the test,

The final two questions on the paper required the candidate to describe an insulation resistance test and an earth fault loop impedance test. The test descriptions were the most

poorly answered questions on the whole paper. Considering the nature of this qualification, this is very disappointing.

Candidates were good at stating the instrument to be used and the checks to be made on the instrument prior to testing and the requirements of the test leads, but many of the test descriptions did not test the whole circuit. This is an initial verification and sampling is not acceptable.

Candidates need to read the questions carefully as failure to do so produces incorrect responses. A common error made by candidates was to describe the tests for a single phase circuit when a three phase circuit was under test.

The only calculation on the paper required the candidate to determine if the earth fault loop impedance test result was acceptable or not. Many candidates were unable to apply the "rule of thumb" to the value stated in BS 7671.

3 National pass rate

The national pass rate for the 2394-302 **October 2014** examination is as follows:

Exam series	Pass rate (%)	Fail rate (%)
October	60	40

Past examination series

Exam series	Pass rate (%)	Fail rate (%)
August	54	46
June	62	38
April	39	61
February	47	53

Forthcoming Exam Dates are:

Tues	2 December 2014	18:30 – 20:30
Tues	10 February 2015	18:30 – 20:30
Tues	21 April 2015	18:30 – 20:30
Tues	09 June 2015	18:30 – 20:30

Published by City & Guilds
1 Giltspur Street
London
EC1A 9DD
T +44 (0)844 543 0000
F +44 (0)20 7294 2413
www.cityandguilds.com

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