

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

Chief Examiner's report – **December 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](http://www.cityandguilds.com)**

**[centresupport@cityandguilds.com](mailto: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 **December 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 December 2014 question paper was found to be in accordance with the scheme requirements.

The number of scripts received for this series was 980.

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.

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.

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

This series was characterised by the sizeable number of candidates that appeared not to have read the questions or the scenario carefully enough and this appears to have had a major impact on the results. Two questions involved providing descriptions of work on three-phase circuits and this information was either contained in the question or in the scenario but many candidates provided descriptions appropriate to single phase circuits and thus lost a significant number of marks.

Candidates should note that questions 4 to 6 on the paper relate to the scenario and answers given must be relevant to the scenario. Providing a generic description of how to carry out a specific test, will result in marks being lost due to omissions or inappropriate actions being described. For one question, which asked for candidates to list in the correct sequence the tests to be carried out on a radial circuit feeding a water heater, candidates provided a generic list including the testing of protective bonding conductors.

This paper contained several questions, or parts of questions, that required candidates to explain why an action is taken, state the purpose of a test or to state the role or responsibility of a person involved in inspection and testing. This type of question was poorly answered by many candidates indicating that they have not moved beyond the fundamental principles of inspection and testing.

## Terminology

Candidates need to ensure that terminology, symbols and abbreviations used are technically accurate and industry recognised. One question asked what results would be recorded after the successful completion of a test of ring final circuit conductors;  $R_1$  is not the same as  $r_1$ .

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

The names of tests within the test sequence are as given in both BS 7671 and GN3.

## Knowledge of BS 7671 and Guidance Note 3

Centres should ensure that candidates being entered for this qualification must have a working knowledge of BS 7671 and not just those aspects that directly relate to testing.

One question relating to the minimum IP code for equipment installed in various zones of a location containing a shower was surprisingly poorly answered.

Another question related to an RCD installed for additional protection; whilst most candidates could state the maximum residual operating current, most could state the test current required to be applied or the maximum permitted disconnection time. Many candidates gave the range of tests applied to a RCD and gave disconnection time of 300 ms. Candidates either failed to read the question carefully enough or do not possess adequate knowledge of the different reasons for installing RCDs. A number of candidates gave an answer of 0.4 s rather than 40 ms, they are not the same.

## Inspection

Candidates should be aware that generally questions relating to inspection require practical rather than technical answers.

One question related to the inspection of the termination of main protective bonding conductors to a metal installation pipe. Some candidates gave answers that related to connection at the distribution board even though the question was specific to the connection at the pipe.

Another question asked what would be verified when inspecting for basic protection provided by insulation of live parts. A significant number of candidates gave answers relating to barriers or enclosures or to measures used for fault protection.

## Testing

One question asked for candidates to describe the isolation procedure for a three-phase installation prior to conducting a test of external earth fault loop impedance. A significant number of candidates described the single phase sequence whilst others described a test of external earth fault loop impedance.

Another question asked candidates to describe how the protective conductor continuity test would be carried out to determine the  $R_1 + R_2$  value. Again many candidates failed to read that this was a three-phase circuit and therefore to determine the highest  $R_1 + R_2$  value would involve carrying out the test on each of the line conductors.

The final question involved the testing of earth fault loop impedance of a distribution circuit feeding a new distribution board. A large number of candidates described a test of external earth fault loop impedance and described disconnecting earth conductors even though this test was not at the origin of the installation. Once again many candidates missed the fact that this was a three-phase circuit.

Part of this question also asked what live test would be carried out at the new distribution board. Many candidates gave answers such as RCD, there was no mention of RCDs in the scenario, and polarity even though this was not the source of the installation. Most did not mention the need to check phase sequence.

### 3 National pass rate

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

<b>Exam series</b>	<b>Pass rate (%)</b>	<b>Fail rate (%)</b>
<b>December</b>	<b>41</b>	<b>59</b>

#### Past examination series

<b>Exam series</b>	<b>Pass rate (%)</b>	<b>Fail rate (%)</b>
<b>October</b>	<b>60</b>	<b>40</b>
<b>August</b>	<b>54</b>	<b>46</b>
<b>June</b>	<b>62</b>	<b>38</b>
<b>April</b>	<b>39</b>	<b>61</b>

#### Forthcoming Exam Dates are:

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



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**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](http://www.cityandguilds.com)**

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