



## External Assessment Report 2012

Subject(s)	Electrical Installation Fundamentals
Level(s)	Intermediate 2

The statistics used in this report are pre-appeal.

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the examination.

# Comments on candidate performance

## General comments

There were 63 projects submitted for the summer diet of the Electrical Installation Fundamentals Intermediate 2 Course, compared with 67 in 2011 and 43 in 2010.

Five further education colleges submitted entries for the 2012 summer diet, compared with six in 2011. The five colleges included one that had not submitted entries previously.

No grade boundary setting meeting was held in 2012 as it was held in 2010 and only occurs every three years. As such there were no changes to the grade boundaries in 2012.

The pass rate for the 2012 summer diet of candidates was 54%, compared with 91% in 2011, 86% in 2010, and 54.5% in 2009. The mean mark in 2012 was 95.8, compared with 125.4 in 2011 (the total mark for the project is out of 200), 119 in 2010 and 89.4 in 2009. The pass rate and mean mark in 2012 have been significantly lowered by the projects submitted by one centre, where only one of the candidates passed the project. This is similar to the situation that occurred in 2009.

In 2012, 9.5% of candidates achieved a Grade A, 17.5% of candidates achieved a Grade B and 27% achieved a Grade C. By comparison in 2011, 22.4% of candidates achieved a Grade A, 40.3% Grade B, and 28.3% Grade C. The figures for 2010 were 18.6% Grade A, 23.3% Grade B, and 44.1 % Grade C. A comparison of the 2012 and 2011 figures indicates a significant drop in candidates achieving Grade A or B, and a small drop in candidates achieving a Grade C. This is disappointing as it indicates a reduction in the standard of candidate submissions, which reverses the previous three year trend of a steady improvement year on year.

The average scores in each of the three stages of the project in 2012 were: Planning – 17.6/40, Development – 62.3/120 and Evaluation – 15.9/40. The average scores in 2011 were: Planning – 27.6/40, Development – 78.4/120 and Evaluation – 19.4/40. This means the average mark has dropped significantly in all three stages of the project. Perhaps the most surprising drop in average mark is in the development stage, where candidates traditionally perform at their best. This drop in mark may be due to poor planning at the initial stages of the project – reflected in a 25% drop in the average mark for the Planning Stage. The drop in average mark for the Evaluation Stage (corresponding to 9%) is particularly worrying as there had been a steady improvement in candidate performance in this component for the last few years.

## Areas in which candidates performed well

As noted previously, Development tends to be the stage candidates perform best in. Candidates continue to identify the key hazards involved in undertaking the garage or workshop projects and take steps to minimise these hazards. However, some candidates continue to fail to make an effective assessment of the relative risks of the hazards. Most candidates provide a comprehensive stock list. It is pleasing to report that many candidates continue to identify a good range of electrical installation good practice points.

The testing part of the project is normally detailed, with candidates normally giving accurate information on the expected results from the various tests. However, some candidates do miss a test

and/or get the sequence of tests in the wrong order. Most candidates provide detailed diagrams of earthing arrangements for their project.

In the Planning Stage, most candidates explained why they preferred to do the workshop project rather than the garage project and vice versa. It was good this year to read some positive reasons why candidates chose one project over the other (eg 'Because I want to learn more about ...'). It is also apparent that candidates are being encouraged to use different sources of information, including the internet, when undertaking their projects.

In the Evaluation Stage some candidates identify a good range of technical skills they have developed while undertaking their project.

## **Areas which candidates found demanding**

As in previous years the project markers have identified various areas that candidates continue to find difficult. Some of these areas are shown below:

### **Planning Stage**

- ◆ Many candidates do not define the aims and objectives of their project clearly.
- ◆ Some candidates continue not to detail all the stages of the project (eg inspection and testing).
- ◆ Most candidates fail to include the mechanism they are going to use to monitor progress in the project (eg some kind of log book).

### **Development Stage**

- ◆ Some candidates continue not to make an effective risk assessment of the hazards they identify for the garage or workshop project.
- ◆ Most candidates continue not to provide circuit diagrams for lighting and power circuits.
- ◆ Many candidates fail to detail the source(s) for earthing information.

### **Evaluation Stage**

As in previous years, evaluations tend to be quite narrowly focused, with candidates often repeating at some length what they have done in the project. Candidates do not question the project planning sufficiently. For example, it appears that many projects go exactly according to plan. Candidates frequently fail to mention if the project was completed in the timescales they set for it.

There is little comment on how project planning and development can be improved. Most candidates focus heavily on how their technical skills have improved as a result of undertaking the project, but fail to mention how other skills such as communication, health and safety, investigation, information technology, problem solving and working with others skills have developed.

## **Advice to centres for preparation of future candidates**

It is good to report that centres continue to employ their own marking schemes when assessing candidate work. However, some centres should consider reviewing these marking schemes with a view to clarifying more precisely how they allocate marks to each stage of the project. Centres are referred to the Course Arrangements Documentation to get further guidance on how to make their own marking schemes more precise and robust.

Centres should ensure that candidates include the aims and objectives of the workshop or garage project in the Planning Stage. This should help in writing up the report in the Evaluation Stage. Centres should also get candidates to record progress throughout the project as this will also help when writing the evaluation report. In the past a few centres have used a simple log book to record progress throughout the project.

As highlighted in previous years, centres should also get candidates not only to identify the nature of hazards associated with their projects but also to assess the level of risks associated with these hazards. This is important as it is the view of the Principal Assessor and his fellow external assessor that full Risk Assessment is not currently taking place in some centres. Candidates should also produce circuit diagrams, as well as wiring diagrams, for the lighting and power circuits.

Candidate weakness in writing evaluation reports has been identified in a number of External Assessment Reports. Evaluative writing is not something that comes naturally to candidates (or others for that matter). The Principal Assessor believes it is a skill that must be taught and practised. In terms of writing their evaluation reports, candidates may be asked to think about the following questions:

- ◆ How well has the project gone?
- ◆ How were any problems dealt with?
- ◆ Was the work carried out to schedule?
- ◆ Did any changes have to be made to the original work plan?
- ◆ How could the planning process be improved?
- ◆ What additional knowledge and skills have you gained from doing the project (not just technical skills but personal skills as well)?
- ◆ What other questions could have been asked at the planning stage?

The standard of English in reports has shown signs of improvement, but there is still considerable scope for more. Lecturers are encouraged to identify spelling and grammatical errors in candidate work and ask for these to be corrected.

## Statistical information: update on Courses

### Intermediate 2

Number of resulted entries in 2011	90
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Number of resulted entries in 2012	83
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## Statistical information: Performance of candidates

### Distribution of Course awards including grade boundaries

Distribution of Course awards				
	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark 200				
A	13.3%	13.3%	11	140
B	26.5%	39.8%	22	120
C	22.9%	62.7%	19	100
D	1.2%	63.9%	1	90
No award	36.1%	100.0%	30	-

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in say Higher Chemistry this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.