



### **New Wiring Rules Courses – ( V2 – Nov 20)**

From late September 2020 Best Training will be running the following on-line training courses on the new National Rules For Electrical Installations I.S. 10101

- **WR1 - Understanding the New Wiring Rules** - Available September 2020 onwards
- **WR2 New Wiring Rules – Deep Dive – Chapter Five** - Available Q1- 2021 onwards
- **WR3 - New Wiring Rules – Chapter 7 Explored** - Available September 2020 onwards

The aims and learning objectives of these three courses are given below;

The entire Wiring Rules CPD courses comprise over 620 slides. A typical one-day course will cover in the order of 180- 190 slides.

<b>Course</b>	<b>Slides</b>
Course - WR1 - Understanding the New Wiring Rules	185
Course - WR2 - New Wiring Rules – Deep Dive – Chapter Five	185
Course - WR3 - New Wiring Rules – Chapter 7 Explored	185

I have also published a guidebook entitled *“The Wiring Rules in Ireland – An Illustrated Guide to IS 10101”*. This is discussed further at the end of this document

### **Understanding the New Wiring Rules – 1 Day Course - Ref WR1**

*Available September 2020 onwards*

#### **Course Aim**

This full day / 7 hour course is aimed at engineers and contractors involved in the design of electrical installations. Its principal aim is to give a good insight into the structure of the new 5<sup>th</sup> Edition of the National Rules for Electrical Installations – I.S. 10101. The course is presented using simplified diagrams and tables to explain the requirements of the standard with particular emphasis on Chapters 4, 5 and 6. It also covers the main changes that have occurred since the 4<sup>th</sup> Edition including the new Annex 8 (Energy Efficiency).

#### **Learning Objectives:**

On completion of this course attendees will have a good understanding of the structure of the new standard, the contents of each of the seven chapters and the new Annex 8. They will be aware of the main changes introduced since the 4<sup>th</sup> Edition. They will have a good understanding of Chapter 4 (Protection for Safety) and Chapter 5 (Selection and Erection of Electrical Equipment).

They will get an introduction to Chapter 6 - Verification and Certification. Attendees will have an awareness of the twenty Special Installations or Locations Covered in Chapter 7.

However it does not go into any of these installations or locations in any detail as they are covered by a separate one day course - WR3

### What is not Covered in the WR1 Course

The following give a brief summary of what is not covered in detail in the WR1 course with an indication of the approximate number of slides included from the main library for the Wiring Rules courses

What is not Covered in WR1 Course	Slides
Chapter 4 – Specialist methods of protection against electric shock such as IT / IPS systems , Annex 41C methods, thermal effects etc.	43 of 95
Chapter 5 – Generators, Selection of SPDs, Selectivity, Auxiliary circuits, Safety services. These topics are all covered in WR2	85 of 241
Chapter 6 - Verification – Testing etc.	9 of 33
Chapter 7 – Special Locations – other than introduction. This is covered in WR3	5 of 185
Annex 8 Energy Efficiency	4 of 8

### **New Wiring Rules – Deep Dive – Chapter Five - 1 Day Course – Ref WR2**

*Available Q1- 2021 onwards*

#### Course Aim

This full day course is aimed at engineers and contractors involved in the design of electrical installations. It is intended as a follow on course to WR1. It includes a more intensive review of chapter 5 – (Selection and Erection of Electrical Equipment). Chapter 5 accounts for 34% of the standard and is closely aligned to Chapter 4 (Protection for Safety) which will also be reviewed where necessary. The course is presented using simplified diagrams and tables to explain the requirements of Chapter 5

#### Learning Objectives:

On completion of this course attendees will have a good understanding of the six main parts of Chapter 5 and how these relate back to Chapter 4. These include Part 51 - Common rules; Part 52 - Wiring system; Part 53 - Switch gear and controlgear; Part 54 - Earthing arrangements and protective conductors; Part 55 - Other equipment and Part 56 - Safety Services. Each of these parts comprises between four and six sections. Part 52 “Wiring Systems” has 10 individual sections in it.

### **New Wiring Rules – chapter 7 Explored - 1 Day Course – Ref WR3**

**Available September 2020 onwards – Adaptable**

### **Course Aim**

This full day course covers the 20 Special Installations or Locations described in Chapter 7 which accounts for 25% of the overall standard. However it can be adapted to suit clients' particular training needs e.g. some clients may only wish to cover Part 712 – PV Systems and Part 722 - Supplies for Electric Vehicles

It is aimed at engineers and contractors involved in the design of electrical installations and is intended as a follow-on course to WR1. The special installations or locations in Chapter 7 involve increased risks compared with those covered in Chapters 4 &5. The requirements of Chapter 7 are intended to “supplement modify or replace” the requirements of Chapters 1-6. The course is presented using simplified diagrams and tables to explain the requirements of Chapter 7.

### **Learning Objectives:**

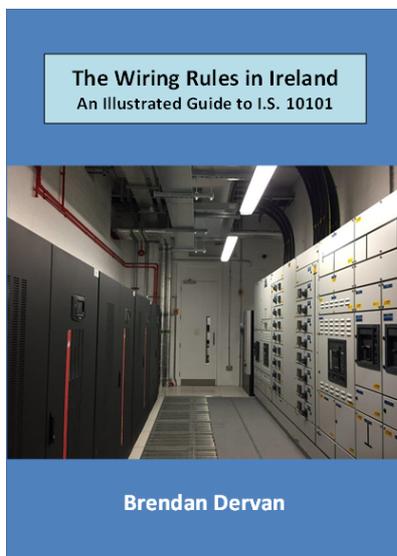
On completion of this course attendees will have a good understanding of the particular risks in these special locations and the additional protective measures required to comply with the standard. The main emphasis will be on the more commonly encountered installations or locations e.g. Part 701 - Locations containing a bath or shower; Part 702 - Swimming pools and fountains; Part 704 - Construction Sites; Part 705 - Agricultural and horticultural premises; Part 710 - Medical Locations; Part 712 – PV Systems and Part 722 - Supplies for Electric Vehicles

### **Guidebook**

Over the years many engineers including myself relied on the various guidebooks to the IEE “Wiring Regs” which subsequently became BS7671 – now in its eighteenth edition. While the ETCI did publish a guidebook to their own Wiring Rules it was no way as comprehensive as some of the illustrated guidebooks produced in the UK for example those produced by the Association of Supervisory and Executive Engineers (ASEE). This association later became the IIEExE and is now part of the IET (Institution of Engineering Technology)

I am delighted to announce that in October 2020 I published a guidebook entitled **“The Wiring Rules in Ireland – An Illustrated Guide to IS 10101”**. This is intended as a guidance document for the three one day courses WR1, WR2 and WR3 referred to above.

This guidebook was produced for the purpose of providing guidance to the new Wiring Rules. The guidebook uses simplified diagrams and tables to explain the requirements of the new standard. Some of these diagrams are included above.



The guidebook mainly focuses on design aspects of electrical installations and is therefore aimed at engineers involved in the design of electrical services for large or complex buildings or others responsible for design of more standardized installations such as domestic, commercial or industrial installations.

The first thing to note is that it is not intended as a substitute for the standard but rather a companion guide book.

The primary focus is on normal buildings, such as residential, commercial, industrial, educational, health care, hospitality including the twenty special locations covered in Chapter 7. Specialist building types such as data centres, pharmaceutical plants and other specialist manufacturing processes are outside the scope.

While it covers all earthing arrangements i.e. TN, TT, IT systems the main focus is on the TN-CS system which is the most common earthing arrangement in Ireland. Likewise the focus is predominantly on a.c. installations as opposed to d.c.

The guidebook follows the standard on a chapter by chapter basis and discusses the main points raised. It simplifies the narrative in the standard and aims to demystify the rules in using simplified diagrams, images, tables and worked examples

Most users of the Wiring Rules would agree that it is a difficult book to navigate at times due to the level of cross referencing between the different sections. To assist in this aspect, the chapter, part, section and clause reference number are generally used throughout the guidebook so that they can be easily cross referenced with the actual standard

The guidance on Chapter 6 dealing “Verification and Certification” is covered in detail but it is not intended as a hands on training course for electricians involved in testing.

Some of the language in the standard is cumbersome at times. The guidebook aims to paraphrase the rules into simpler electro-technical language used by engineers and electricians. Take for example the following rule (701.415.1) *“In rooms containing a bath or shower, one or more residual current protective devices (RCDs) with a rated residual current not exceeding 30 mA shall provide protection of all circuits”*. That type of clause will simply be replaced by *“In rooms containing a bath or shower all circuits shall be provided with 30 mA RCD protection”*

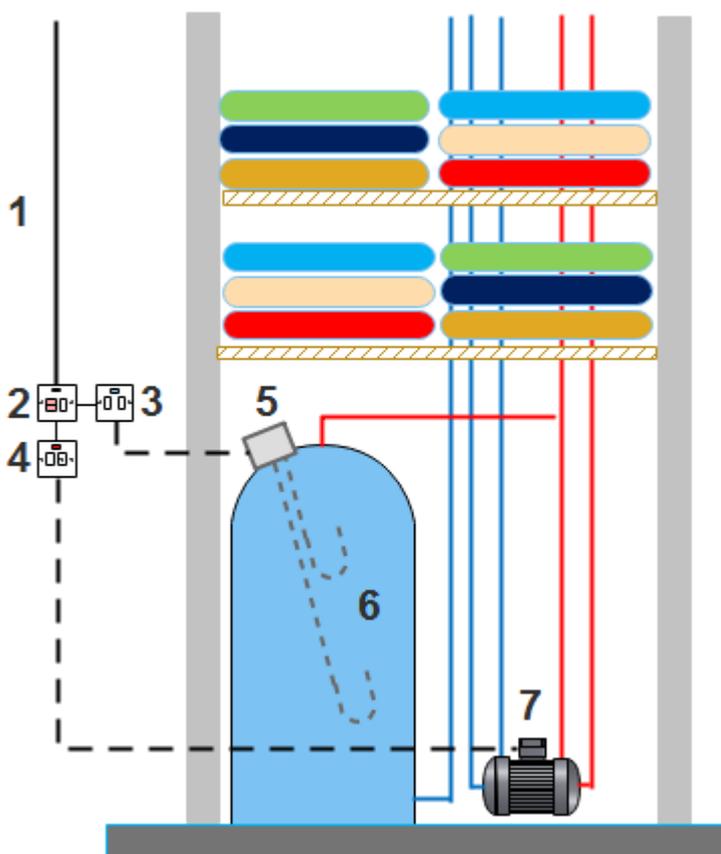
The guidebook comprises 57 individual “units” covering the eight chapters in the Standard.

- Units 1-3 - Provide an overview of the standard including Chapters 0, 1,2 & 3
- Units 4-10 - Cover Chapter 4 - Protection for Safety
- Units 11-32 - Cover Chapter 5 - Selection and Erection of Electrical Equipment
- Units 33-35 - Cover Chapter 6 - Verification and Certification
- Units 36-56 - Cover Chapter 7 - Special Installations or Locations
- Unit 57 - Cover Part 8 - Energy Efficiency

The guidebook has taken a no-stone-unturned approach to the Wiring Rules. In other words any subject matter covered in the IS 10101 is referred to in the guidebook. However certain practices that are not widely used in Ireland for example IT power supply arrangements, non-conducting locations, earth free local bonding etc. are discussed but not given the same level of detail as the more common practices.

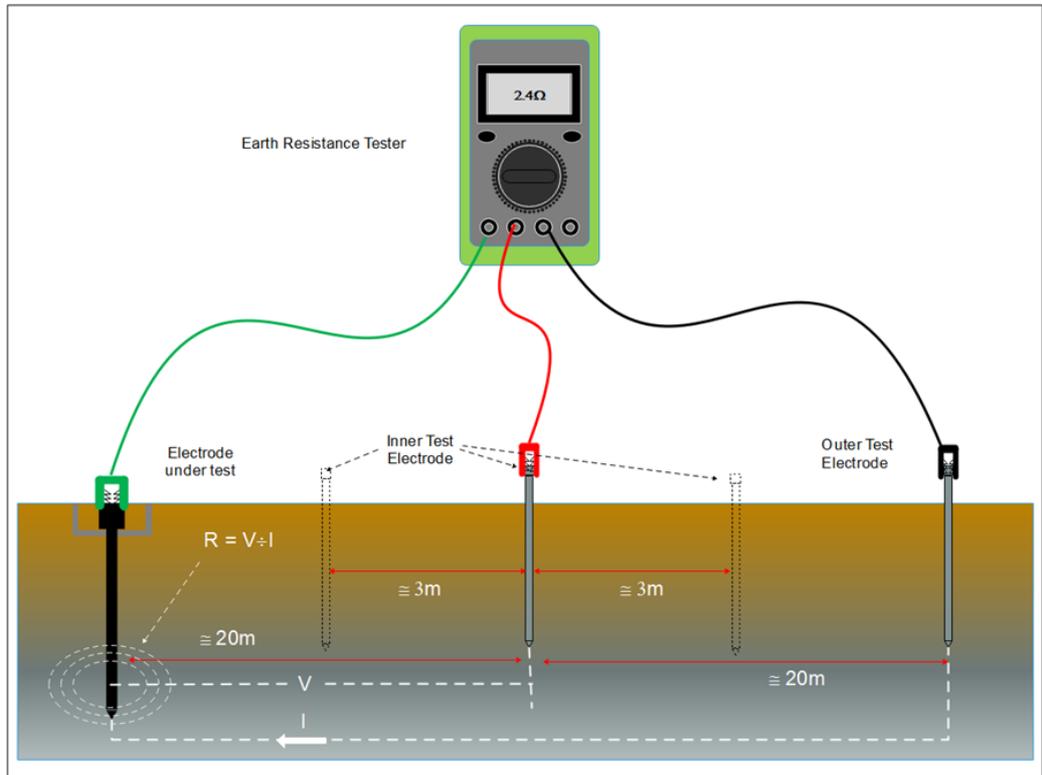
It contains over 130 illustrations, mainly original, over 100 tables, 70 images and various worked examples. Many of the original tables in the standard have been adopted and presented in a clearer or more succinct format

Some sample illustration from the Guidebook are indicated below:



1. 20A x 30mA RCD supply from consumer unit
2. Immersion heater – timer / booster control
3. Immersion heater – Sink – Bath selector and on-off switches
4. Shower booster pump – Switched fused spur unit
5. Dual immersion heater connection
6. Domestic hot water cylinder / tank with sink and bath immersions shown dashed
7. Shower booster Pump

***Wiring in airing cupboards as per Clause 555.6***



**Measurement of the earth electrode resistance using earth resistance tester – based on Figure 6C.1 (Sample illustration from Guidebook)**