Domestic wiring
Lighting and sockets
Using
BS 7671
And
On-Site Guide

Bonding

This includes:

Main protective bonding

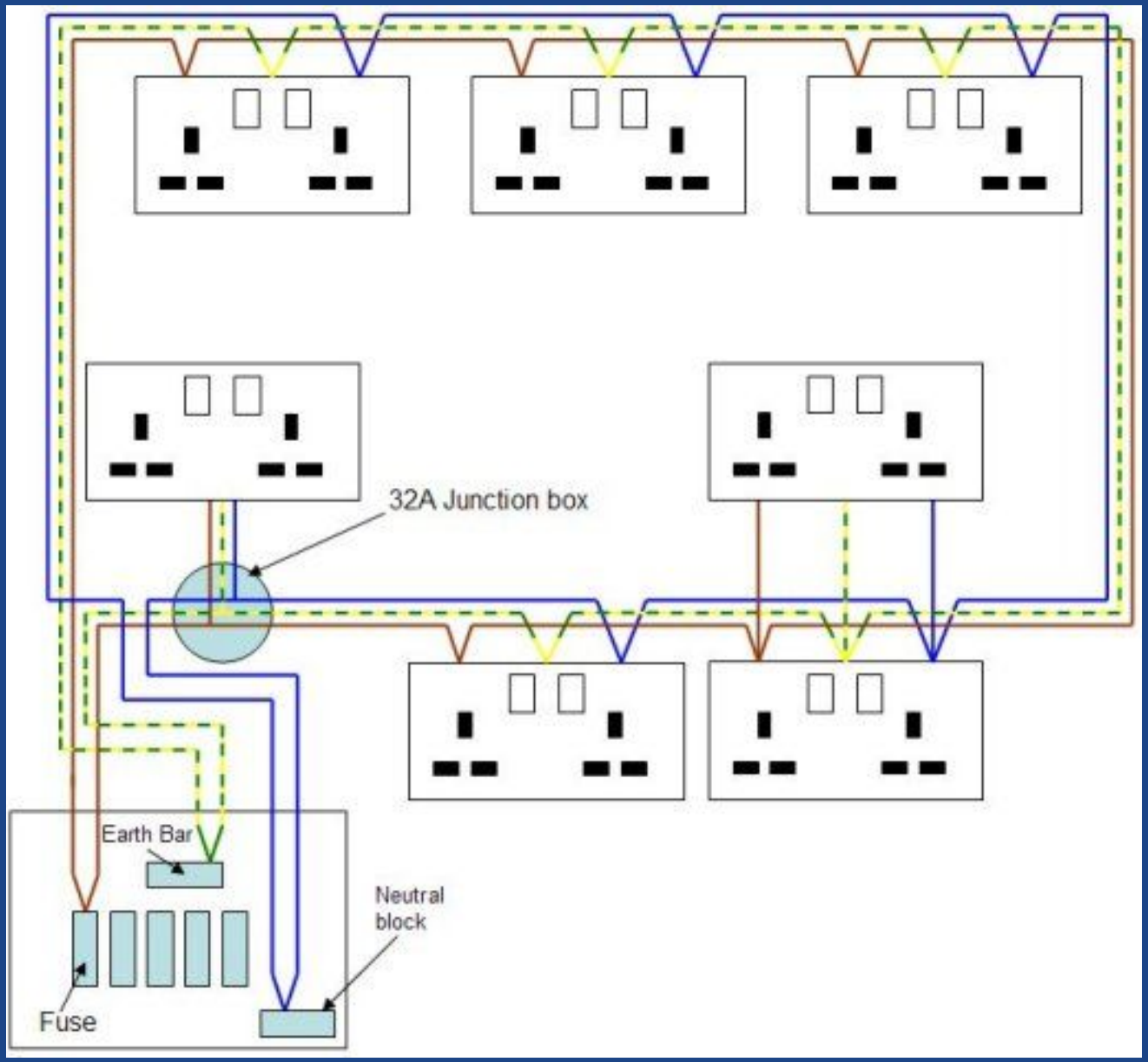
Supplementary bonding

Equipotential bonding

Earth electrodes

See Regulations and On Site Guide

Ring Main Circuit

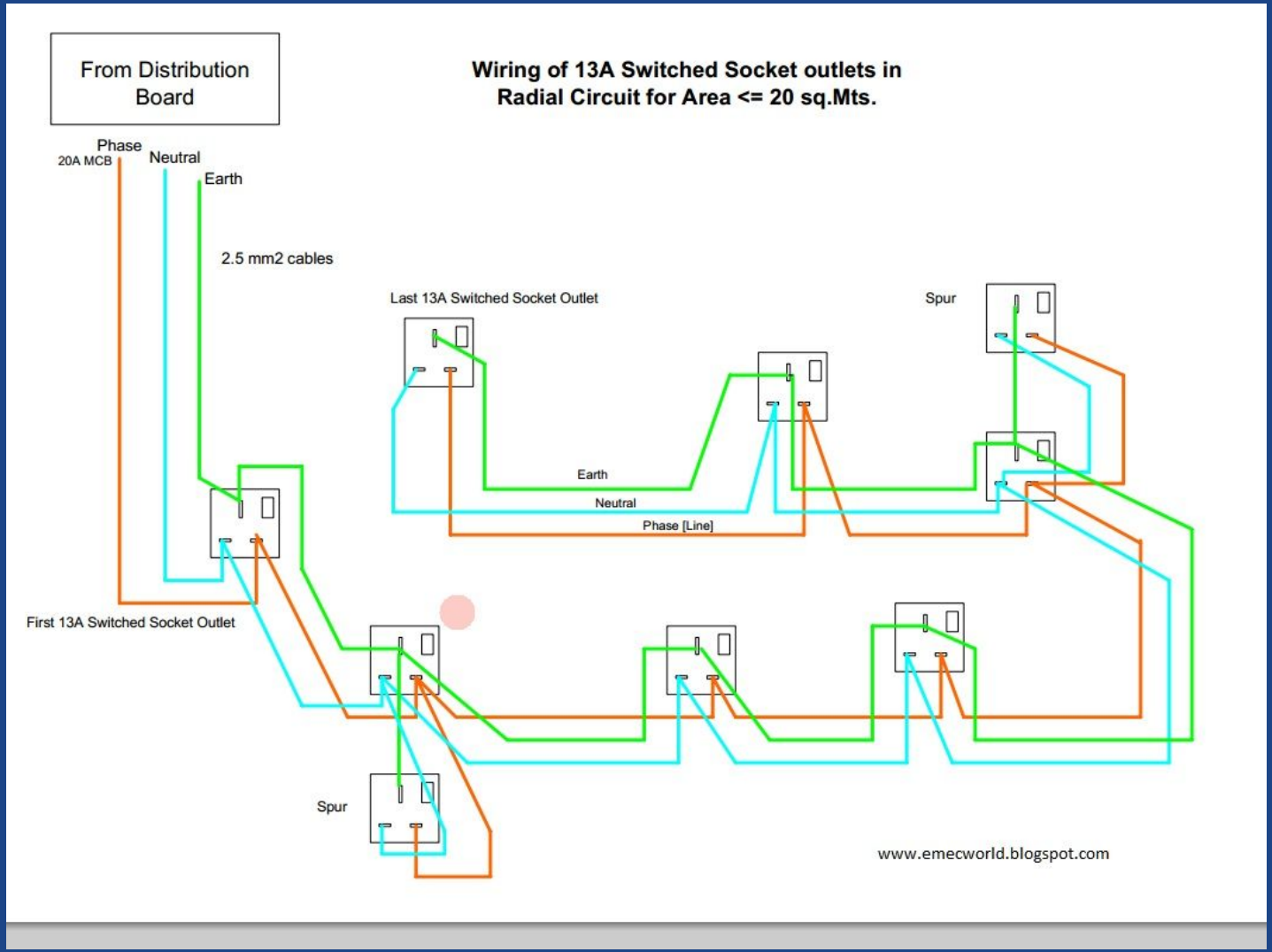


Spurs

The maximum number of non-fused spurs is one per socket on the ring circuit and must not exceed the number of sockets on the ring.

The maximum of fused spurs is unlimited but not exceeding 13A per fused spur or not exceeding the rating of the cable.

Radial Socket Circuit



Selecting Correct Size Cable For Standard Ring Main and Radial Circuit

Appendix 15
Ring and Final Circuit Arrangements

The appendix also refers to
Regulation
433.1 - 433.1.204 - 411.3.3 - 522.6.202 and 203
Chapters 41, 42, 43
Part 5

Lighting Circuit

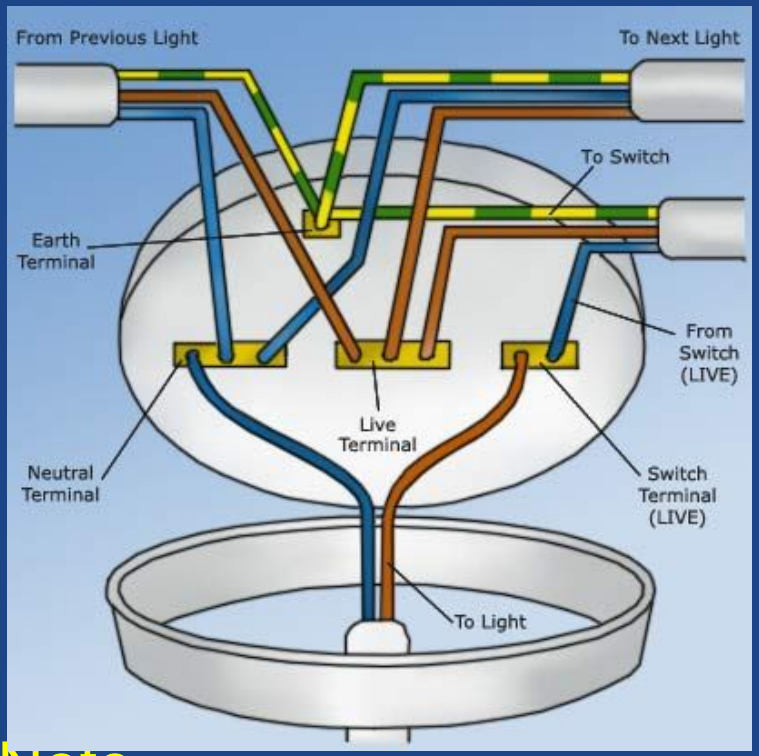
Loop In loop Out Circuit

The in and out cables are connected together. Earth and Neutral from the light are permanently connected to the supply.

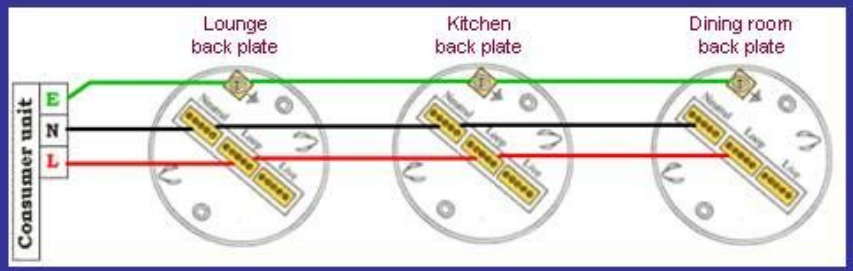
Only the live and switched live connect to the switch. Remember that the switch simply connects two terminals together - when connected, the light is on.

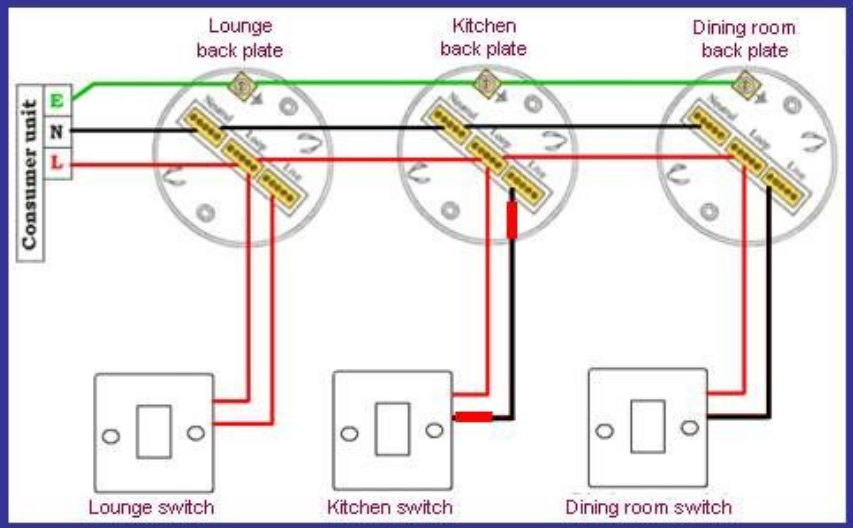
As with all of the other examples. the neutral wires do NOT connect to the switch at all. They connect together in a separate terminal block.

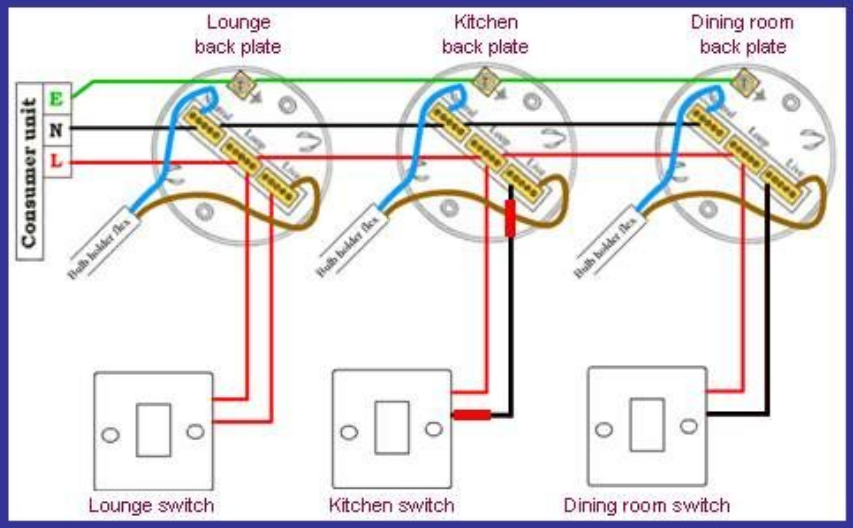
Lighting circuit using Loop in - out method With ceiling rose Lamp holders Switches



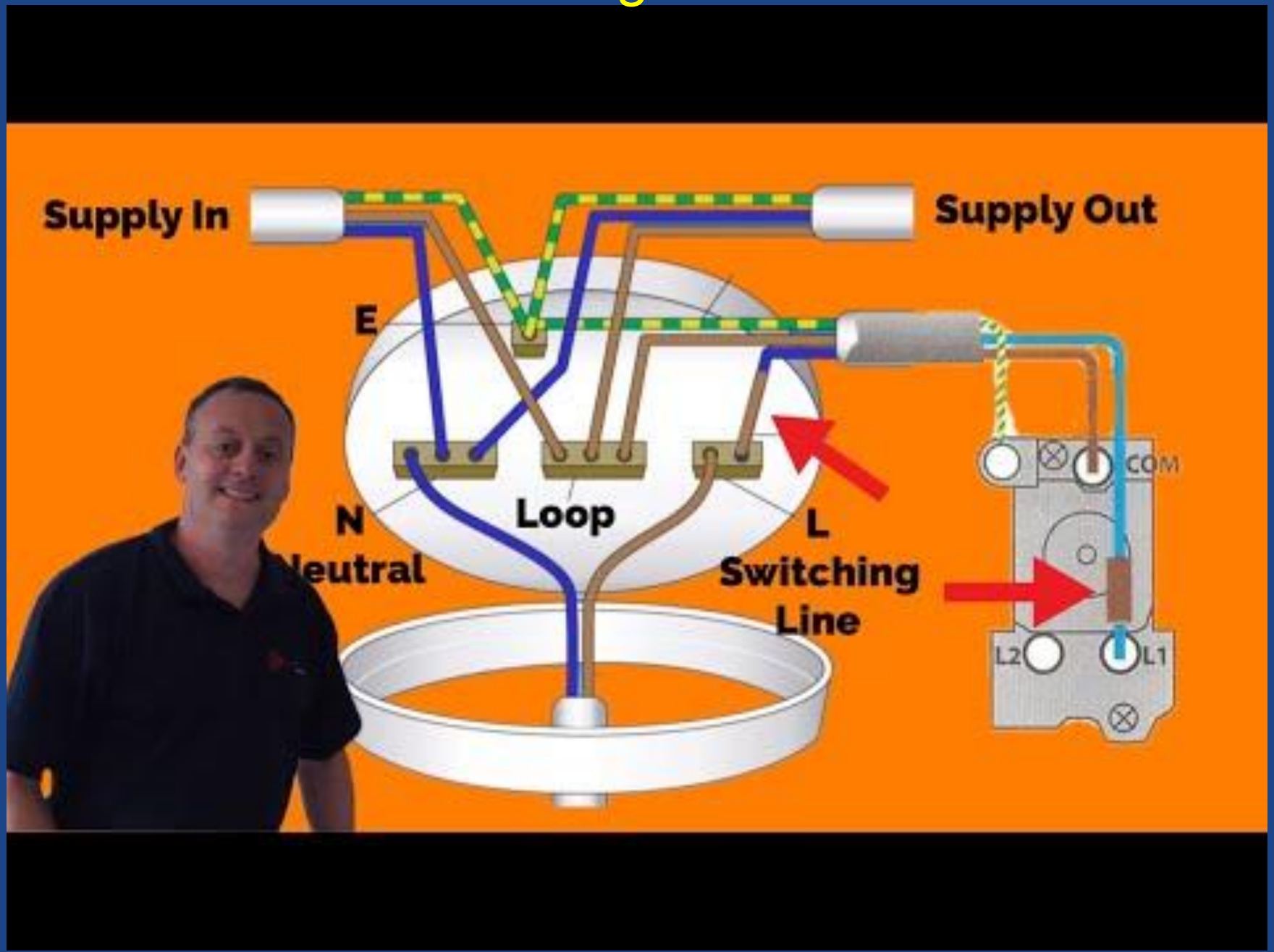
Note
The red sleeving to indicate the live switch wire



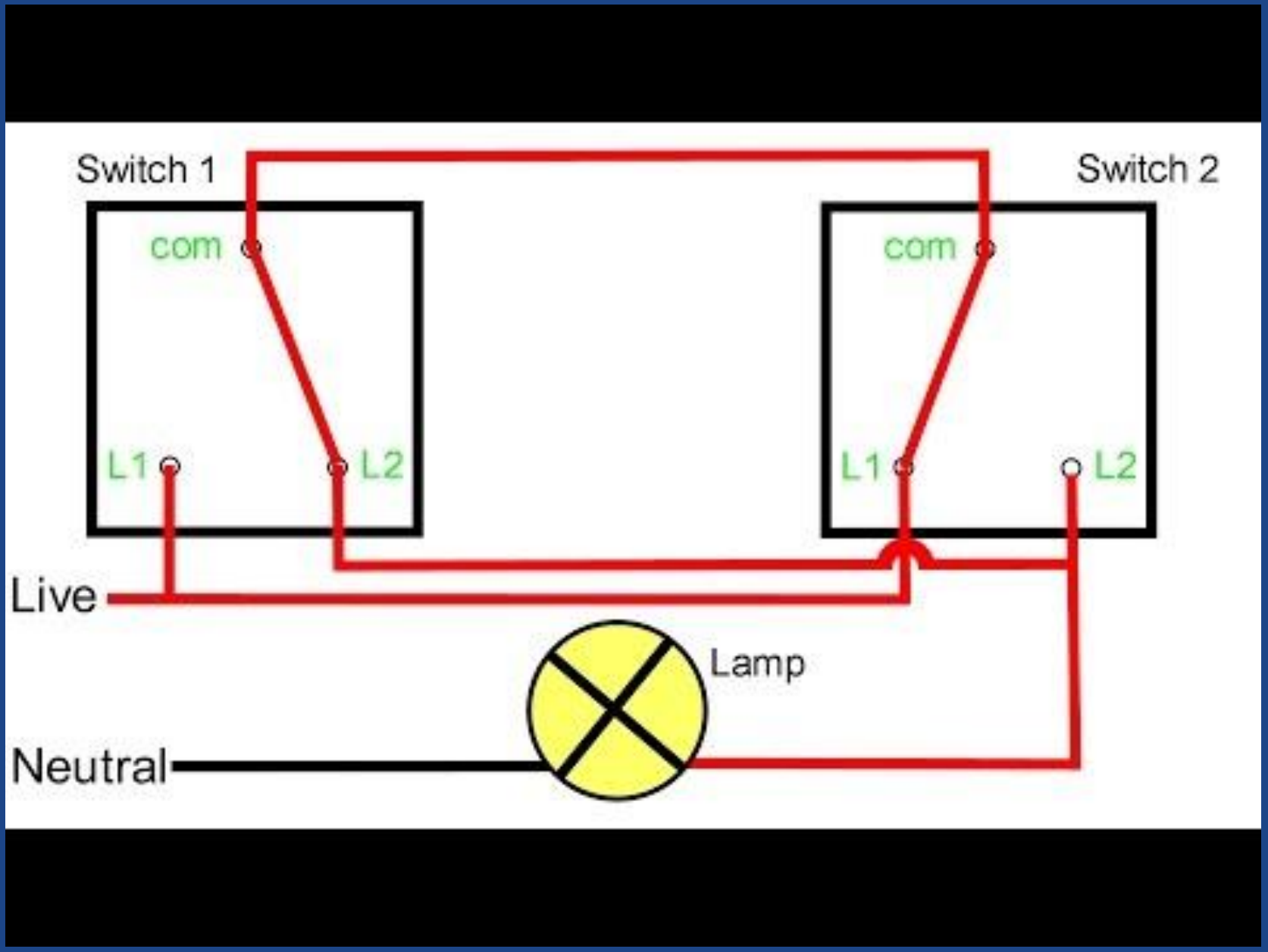




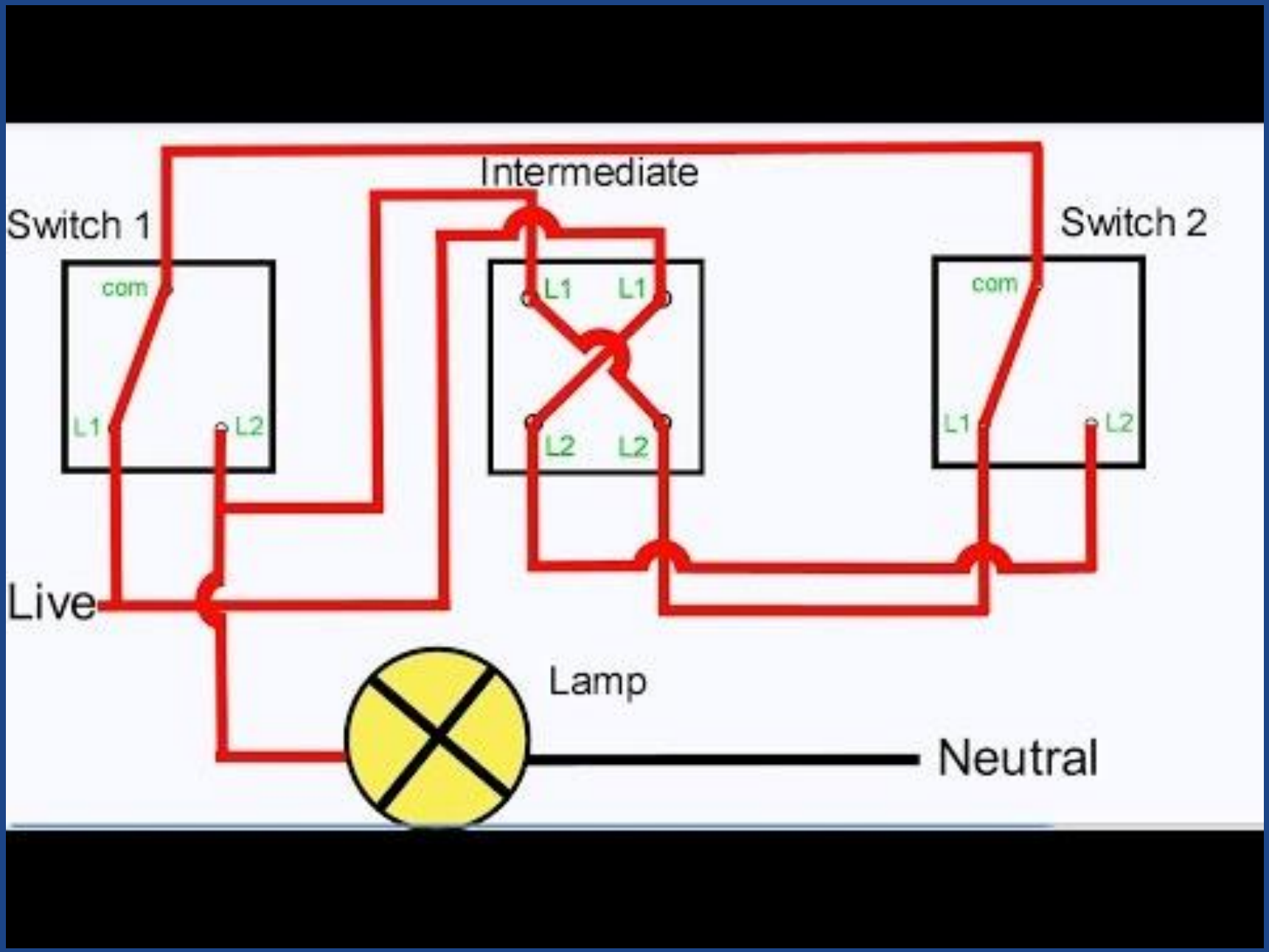
Ceiling Rose



Two Way Switch



Intermediate Switch



Patress Boxes

Ceiling Rose and Pendant

Batten Lamp Holder

Consumer Unit

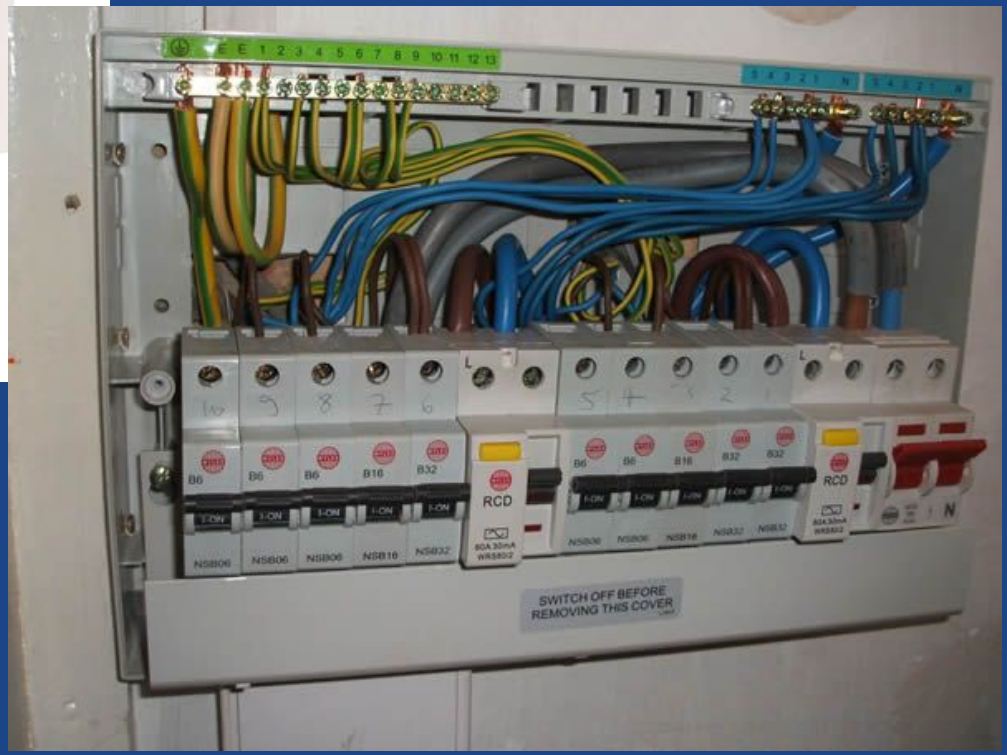
A standard consumer unit will consist of

Double Pole Isolator, RCD,MCBs
Neutral Bar, Earth Bar.

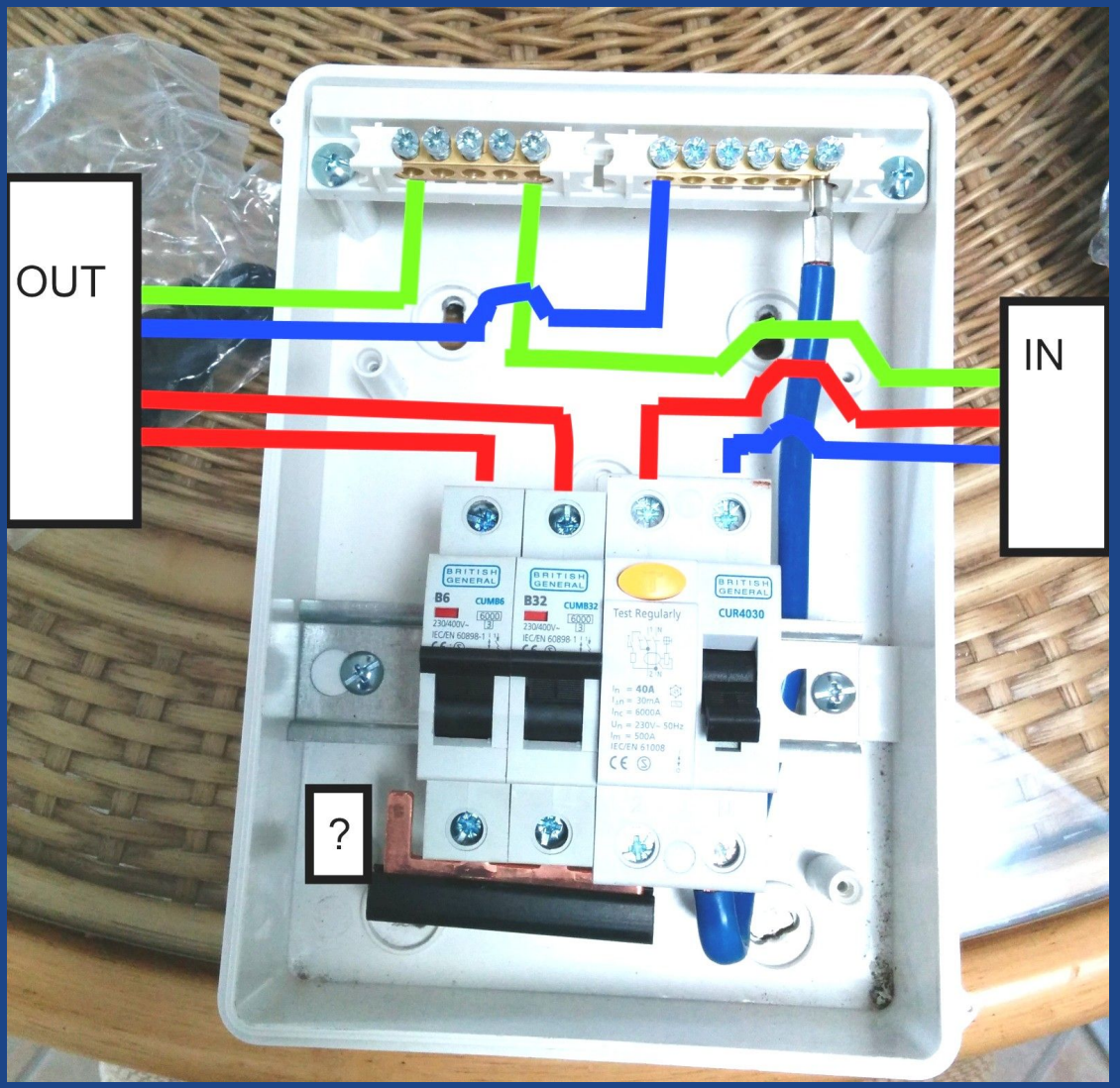
A dual RCD consumer unit can be fitted. This unit has one main switch, two RCDs and each circuit has it's own MCB.

This allows the circuit to be divided into two, usually one upstairs, one down.
This protects all areas including showers and cookers, but if one trips the other will ensure at least some lights and some sockets still work.

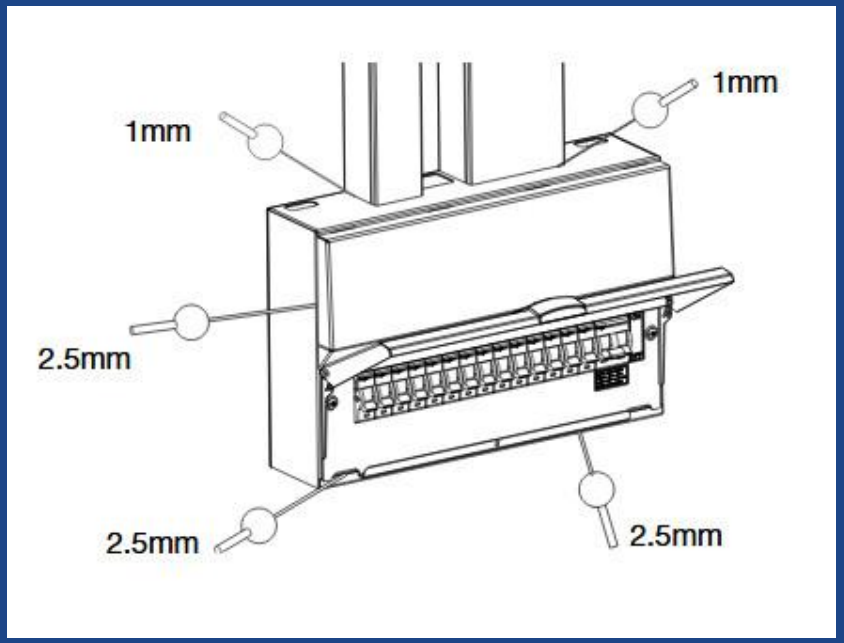
Consumer Unit



2 Way Consumer Unit



It is important that any holes made for cable
entry are no larger than they need be. The cable installation entry method shall, as far as is reasonably practicable, maintain the fire containment of the enclosure.

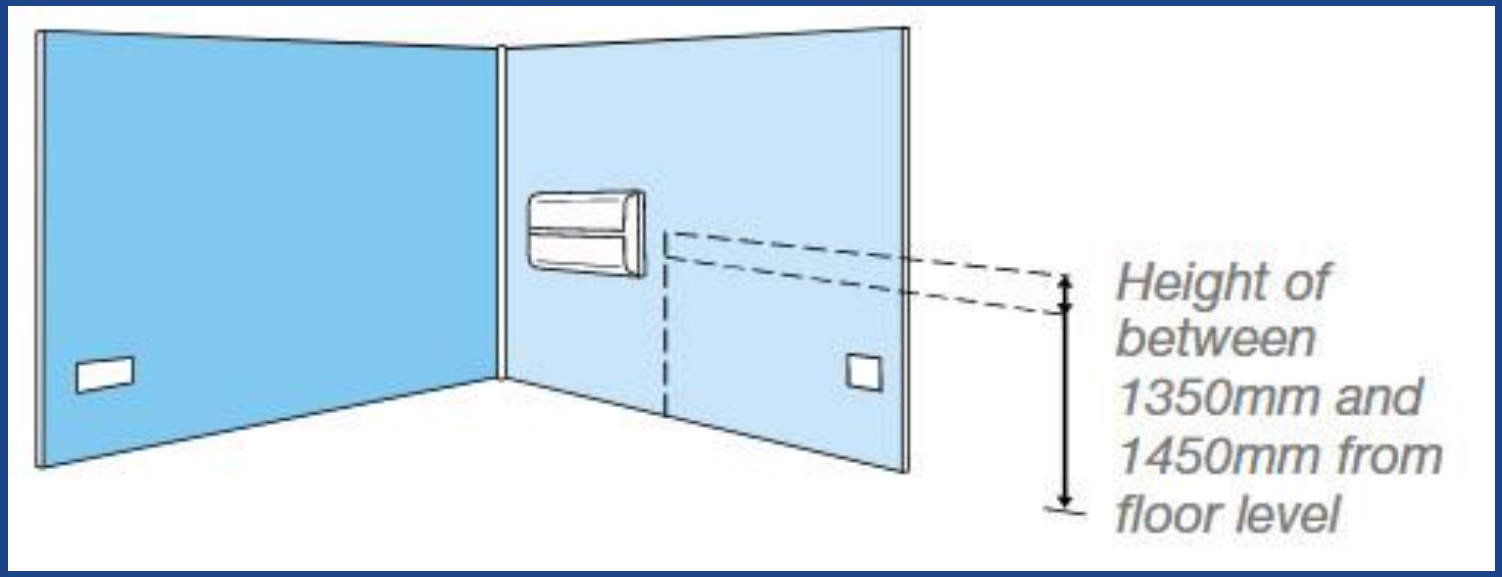


1.0 mm for the horizontal top surface and

2.5 mm for all other surfaces of the enclosure that are accessible after installation.

Consumer Units
Need to be easily Reachable and be mounted with the devices at a height of between 1350mm & 1450mm above floor level

The consumer unit enclosure should be made of Non-combustible material



Inspection & Testing Part 6

All tests to be done when circuit is Isolated and Dead Always check for Dead Using the approved test equipment and method.

Inspection & Testing
Part 6
Chapter 64

Inspection & Testing Part 6
Initial Inspection (OSG 9.2)

Connection of conductors

Identification of conductors

Cable sizes

Connection of accessories (including polarity)

Routing of cables (clip distance bends radius)

Inspection & Testing Part 6
Initial Inspection (OSG 9.2)

Earth Bonding and Cable sizes

Protective devices and ratings are correct for the circuit being protected.

Additional protection RCD’s

Isolation devices are correct size in correct position and working correctly.

Inspection & Testing Part 6 Test Sequence

Part 6 BS 7671 (On Site Guide 10.2)

Continuity

Insulation Resistance

Polarity

Earth Fault Loop Impedance

All circuits should be isolated and equipment unplugged from the circuits under test

Inspection & Testing Part 6 Continuity

Continuity (On Site Guide 10.3)

Two test methods can be used
Which test method should we use based on a house?

Ring Final Circuit 10.3.2

Polarity 10.3.4

Inspection & Testing Part 6 Continuity

Check Continuity using a meter set on Ohms between-

R1 Live and R2 Earth

Neutral and earth

Live and Neutral

Ring Circuit 10.3.2 (On Site Guide)

Inspection & Testing Part 6
Insulation Resistance
O.S.G 10.3.3

Use insulation resistance tester (Megger)

What voltage should the tester be set on?
500v

What is the minimum insulation resistance?
1m ohm

Test between all combinations
L1 to L2, L1 to L3, L2 to L3
L1 L2 L3 to Neutral
L1 L2 L3 & Neutral to Earth


Insulation Resistance
Line and Neutral
Together to Earth

Inspection & Testing Part 6
Functional Testing
O.S.G 9 & 10

Testing of RCD’s

Operation of all switchgear

Testing For Dead

All relevant paperwork must be filled in before and after test

Use a voltage indicator
Test the tester

Testing circuits for 3 phase and single phase
Test between

L1 + L2 + L3	400v
All Lives to earth	230v
All Lives to Neutral	230v
Neutral and Earth	0v

All test points should be 0v when testing for dead

After completing test **Test the tester**

EARTH FAULT PATH