Telltale signs that you need a rewire

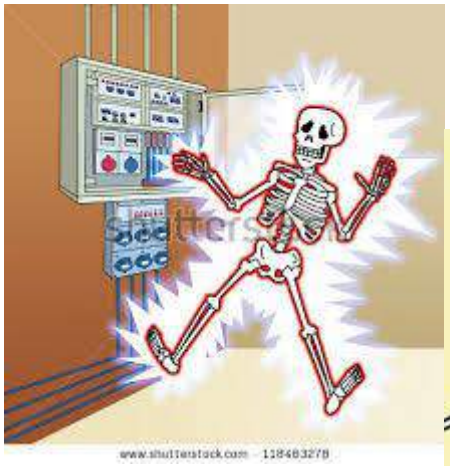
There are many things that you might be able to spot using this guide, but there are also many things that cannot be spotted visually too (but don't worry, we'll cover that here too!).

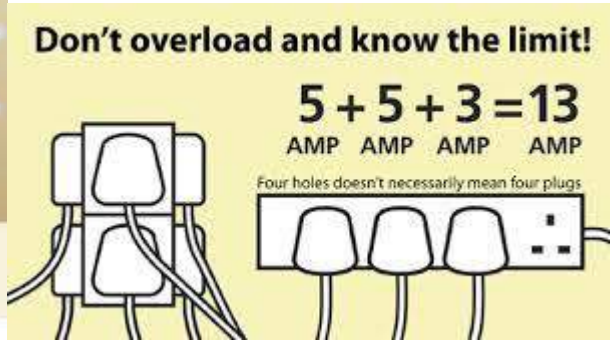
Most of the images here are those that I have taken from Electrical Inspection reports! So if this is what one person sees, there is still a lot to be found out there!! Help us to find danger before it finds you. But please do so from a distance – safely – without removing covers or touching anything that you think might not be safe.

What are the risks to me and my property/workplace?

Whether it is your home, rental property, shop, office, factory, caravan, hotel or anything else, electricity does not know the difference. Anything unsafe will have the same risk and this comes in 2 mains forms:

1. **SHOCK** risk from wiring that is old, damaged/neglected, inadequately protected, or has something faulty plugged in to it.
2. **FIRE** risk not only from the obvious faulty or neglected appliances and circuits, but more importantly (and more regularly!) from the not so obvious things such as loose connections, deteriorating cables, worn insulation, badly designed circuits, overloaded circuits and (especially!) hidden connections within walls and floors/ceilings.





The good news is that you can act NOW to reduce these risks from happening, and in the process will also increase the value of your home/workplace.

If that wasn’t good enough reason, you might also see a reduction in your electricity bills too!!

So, what things can you look out for?

Listed on the following pages are many things that can be easily fixed without the need for a full rewire. Even the more serious issues can be fully investigated with an Electrical Inspection Report, and as a result maybe only part of the wiring needs to be replaced. But some things are too serious (or past their sell by date) and cannot be salvaged.

Of course the list will give you a starting point, but always seek verification from a competent Electrician if you are not sure, or if you spot any of the warning signs listed.

Remember that this should be done frequently, not as a one off!

Metering Equipment

Is it damaged at all?

Does there appear to be a good, secure earthing point on the main cable coming in?

If not you should act quick and have this checked, as you will not be protected from Electric Shock.

The good news is that once identified (by a competent Electrician) you Electricity Supplier should then be able to repair this for you.


new (Commercial)

Older type

No earth provision!

Older Fuseboards

Is yours damaged in any way, with holes in the front, sides, or top? Blanks or covers missing from it?

Rewirable Fuses are not only more tricky to sort out when they blow, but also take longer to do so, which means they give less protection than what their modern equivalent (the Miniature Circuit Breaker, or MCB, does). Some even have asbestos in them? That white strip of stuff under where you replace the wire on the ceramic holders – yes **that** is asbestos!!

Many of the older boards will allow you to replace a rewireable fuse with a more modern MCB:

HOWEVER many of these then do not allow the fuse cover to be fitted back on, leaving gaps where the live terminals are (some boards have bigger gaps than other with the fuse cover removed). Not only should the correct **type** be fitted, but the correct **rating** for the circuit type (and cable sizes, etc) too, or you will add more problems, rather than solve them!

Newer Distribution Boards

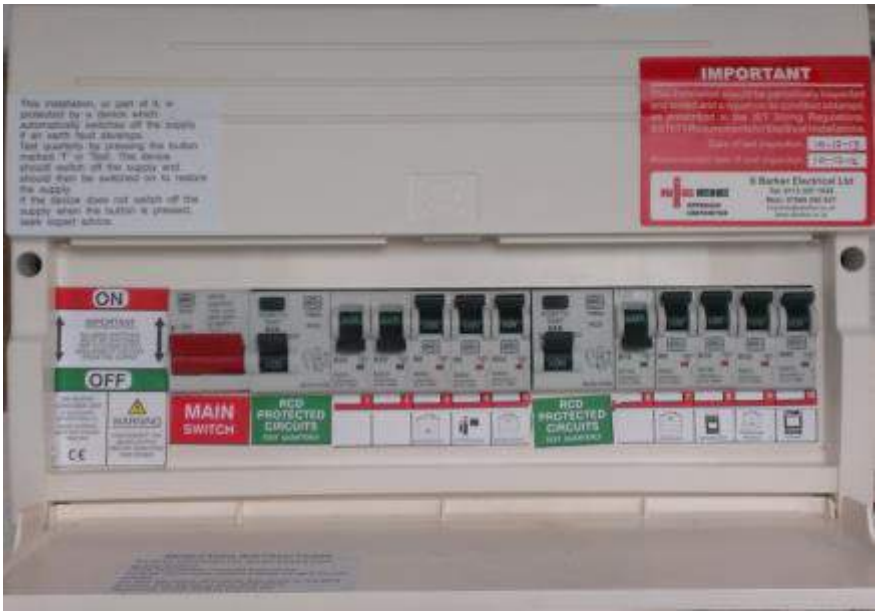
Modern boards should have RCD protection across ALL circuits (especially if installed 2008 or later). ANY Socket circuits (including cooker switch with socket) should ALWAYS be RCD protected in Domestic properties. These are identified by a device with a "Test" button:

Does you RCD device work when you press the Test button? If not then have this checked out by a competent Electrician as soon as possible. These also need to be retested every 3 months to ensure it still operates. In addition they should be tested to see if they are cutting out at the correct level.

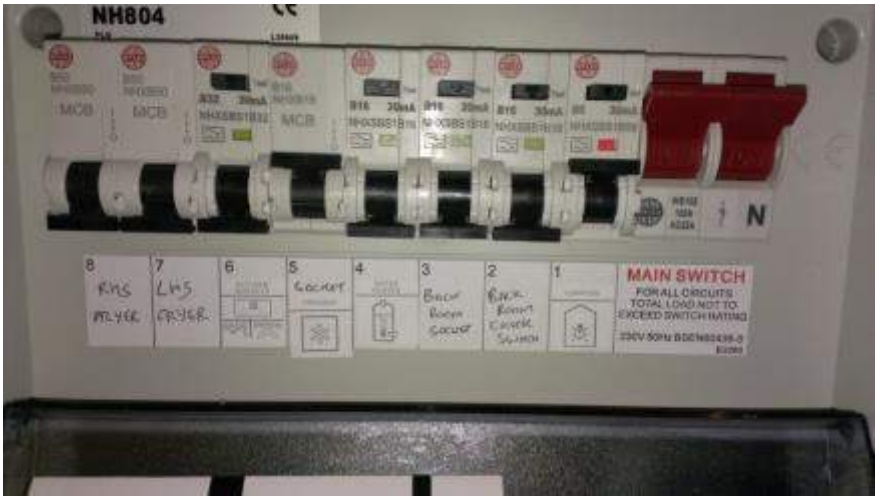
Do your fuses keep blowing (or your MCBs/RCDs) keep "tripping" even if you are just changing light bulbs? This may be a fault (even if just a design fault) and so a second opinion will be needed.

Do you know what everything does?

Is everything clearly labelled? (And are those labels accurate or mixed up)?



2 RCDS fitted, each controlling several circuits



Individual RCBOs fitted (with the little black test button – usually yellow!) so each circuit has it's own individual RCD protection – Perfect for minimising disruption to other circuits on Commercial and Industrial Installations.

Wiring (Including Trunking and Conduit Systems)

FACT It is not necessarily a faulty appliance or fitting that causes metalwork to become "live", but can commonly be caused by badly installed, old/deteriorated, loose or damaged wiring – which is usually hidden from view. This is **ALSO** a common cause for sudden electrical fires. **BOTH** of these can be prevented

Does it look like Spaghetti Junction at the Fuseboard/Distribution Board, or anywhere else around the premises for that matter (in cupboards, up a height, along roofs and walls, behind kitchen units)??

Are any of the cables just "taped up" with no way of knowing if what lies below is tightened or burning out?

Do you still have the old “lead sheath” cables installed? (Generally VERY old wiring in Domestic properties, although still manufactured to this day for other applications).

Are there any of the old style “rubber” cables still in use? (Not installed since 1960s)

Is there any old “Pyro” (Mineral Insulated Copper Clad/MICC) cables anywhere? Where these are used at mains voltage (not Fire Alarms – These are 24V dc), these should ideally be replaced with a modern equivalent such as SWA (Steel Wire Armoured) cable or similar.

Are any cables not secured at all, flapping around waiting to get caught, pulled etc?

Any cables not protected (running along the surfaces – inside or outside) – what if these get caught with furniture, tools, etc (especially metal objects!)?

Are any plain (unprotected) cables running along the outside walls, fences, rooftops, or across a piece of wire “washing line” style??

Is the wiring “thrown together” or ran near water pipes, gas pipes, around structural steelworks (factories), or mixed with data (or other low voltage) cables?

General Condition

Is there anything loose, cracked, bashed, smashed, stiff, burnt out or starting to smell a bit funny (A "fishy" smell from anything electrical means that this should be looked at without delay!!). If you happen to have a trout taped around your mouth, then there may be a chance that it is not the wiring that you are smelling!

No mains voltage should be going into the garden unless adequately protected AND buried at least 2 feet deep, with electrical warning taped above that. If you have mains powered fittings and cables are running around hedges, rockeries, etc – These should be removed! Best method of keeping safe in the garden is to use low voltage fittings, and have the transformers mounted somewhere easily accessible in the nearby house/garage/shed, etc.

Nothing should be installed outside unless it is specifically designed to be used in that environment (weather proof, heat, cold and UV conditions). Similarly the wiring into it should be designed for the environment.

Do lights flicker or switches “crackle” when used? Do they sometime not work, other times do? Do your 2 way switches only work a certain way, with a “bit of a knack” to it?

Do you have old style switches, or old style pendants?

There should be no metal fittings if these older fitting are in use, as this is almost certain to still have original wiring, which is not likely to be earthed. If ALL fitting are plastic (or ceramic/Bakelite) then this is not an issue.

Are there any wall mounted switches in the bathroom? (or any room containing a bath or shower)

Is the bathroom light (or spotlights) open or sealed? All fitting should be suitable for bathroom use according to the manufacturer (not necessarily by a shop sales staff!!).

Sockets (5A or 13Amp)

Are any of the sockets mounted in or on the surface of skirting boards, or in hard to reach places?

Do the sockets have switches on them where any other means of switching is not provided? (i.e. separately controlled by Kitchen Appliance Grid Switches, or in case of 5A sockets, from the Light Switch)

Do the switches actually work? And are not stiff or excessively loose when operated?

Are you having to use a multi-plug adaptor, or extension leads due to not having enough sockets where you need them?

Are your Hot Tub, Sauna, or other Commercial or Industrial equipment Sockets capable of being isolated and locked in the off position? Either at the socket or via a nearby isolator?

Appliances

Bathroom Heaters

Should only be those suitable for bathrooms (and very few are!). If you have an old open type of heater, this should not be there.

Showers

These should ideally be RCD protected. The correct size cable MUST be installed. DO NOT fit a larger power of shower than your original shower, without first checking that this is ok.

Switches should be high current (45A upwards) and only pullcord type can be installed inside that room, wall mounted switches should stay outside of the room.

Overheating is common on shower switch cables, so this is always checked during an Electrical Condition Report. Spotting this BEFORE it burns out is vital!

Electric Hobs

These run at similar power to showers which is why the switch is the same rating (the wall mounted version). Again these have the same issue that they need to be checked during an Electrical Condition Report due to the nature of them overheating more frequently than socket and light circuits (due to the higher power).

And again, replacing a Hob should always be done by a competent person, as the cable must be able to take the load of the replacement model.

Ovens, Hood Extractors and Gas Hobs (Electric Ignition)

These are generally under 13 Amps and will plug in to a spare socket, although a dedicated socket is best).

HOWEVER some ovens, especially double ovens or fan ovens are rated higher than 13A and so must connect to a higher rated connection. This is the domain of the competent person to decide what is best.

DO NOT connect a hob to the same Cooker Connection Unit as the Hob!! This MCB is too large for the smaller cable of the oven, and will not give adequate protection in the event of a fault! This is a very common occurrence, especially if the Kitchen installer was allowed to connect it up instead of an Electrician!

Finally, it should be possible to reach the switch for the oven, without having to touch the casing to get to it! This may be a switch on the socket, or a switch on a Fused Spur/Kitchen Appliance Switch Grid (which feeds the socket near or behind it).

Bathroom Extractors

If really close to the bath or shower these should ALWAYS be low voltage and NOT mains version.

There should ideally be a means of isolation (should be outside of the area, usually above the door outside)

Fire Alarms and Security Alarms

Does yours have a Fused Spur so that this can be serviced easily without having to disconnect the power at the Fuseboard or Distribution Board?

Speaking of services, when was yours last done? Batteries should be changed every 2 to 3 years, as on some models a flat battery (or leaking battery!) can damage the unit or the electronics.

Of course the other reason for servicing is to ensure that these still actually work, but do so effectively and operate at the correct sensitivity (not overly sensitive, but certainly not slow to react either!!).

Emergency Lights

These should have a “secret key” test switch to allow these to be tested without turning off the power

When the power goes off, the emergency light in that area should operate, if the light operates in an area not affected by the power loss, then this is not correctly wired.

Cables and Extension Leads

These should not be damaged, taped up or just carelessly ran along the floor (being a tripping hazard is only part of the problem!).

Power cables should be separate from mains cables, and the correct trunking, conduit systems or rubber matting can help achieve this.

All other plug in appliances

These should be checked for obvious physical damage on casing, switches and cables.

More importantly, these should be regularly PAT tested (usually yearly) to ensure that they are not an accident waiting to happen. For example, an appliance may be running perfectly well, but if the earth connection has come loose (loose in plug, damaged due to being routed tightly on a corner, etc) then you are at risk of electric shock if the casing then becomes live at any point!

PAT testing is the easiest way to achieve this, and you should always use a reputable company to do this. This is very competitive and there are a lot of people that do not do this correctly. We will be releasing a guide in future to explain what to look out for when choosing a company to do this.

So …

- Do you need a rewire?
- Do you need an Electrical Inspection test to give you a second opinion?
- Do you need your appliances PAT Testing?

www.sbarker.co.uk

Call us on 01133971938

Or email simon@sbarker.co.uk with any questions

OTHER eBooks:

The secret to finding GREAT Electricians

Simon Barker