

FACT FILE 4: Electrical Safety

Electrical Safety

Steel house frames can actually be safer than alternatives.

Safety switches. It is a requirement that any new dwelling must be fitted with a safety switch, also known as an RCD (Residual Current Device) or an ELCN (Earth Leakage Circuit Breaker). These devices are designed to prevent death by accidental electrocution in a majority of cases.

Earthing. Steel house frames must be permanently earthed in accordance with the requirements of the local electricity authorities. A temporary earth should be established until the permanent earth is installed.

An electric current will follow the path of least resistance, the amount of current being in inverse proportion to the resistances involved. In other words if there are two paths the current can follow, it will split into two, the stronger current being conducted through the lower resistance. If that resistance is very low relative to the other, nearly all the current will flow through it. This is how the process of "earthing" works. Steel is an excellent conductor of electricity so it is improbable that any electric current would actually pass through a human body (high resistance) instead of the frame to earth system (low resistance). Non-conducting building materials with higher electrical resistances than steel actually increase the chance that more current will pass through the person.

Leaking current. A broken or pierced wire in a timber frame can remain live, and leaking current can cause troublesome faults and fire risk. Also, a timber frame can get wet in a storm or heavy rain and can become live if there is an electrical short. Specifically designed flared service holes or plastic electrical grommets are inserted into the pre-punched service holes in steel framing to prevent damage to the insulation. In the unlikely event of any shorting, current will be carried straight to earth.

Lightning. Lightning has less effect on steel as the energy is conducted straight to ground and not released destructively within the frame. There have been reports of lightning igniting timber frames.

Further information contact:-

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