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Registration No.: 2016/325579/07

Frequently Asked Questions: -

General

Q: Do BUILDTEC homes look & feel the same as conventional houses?
A: Yes & No.
A steel frame home, looks similar to a conventionally built house of the same design, but the corners and edges are sharp and crisp unlike plaster of brick walls. The thermal performance of a steel framed home is far superior of that of a conventional home. No heating or cooling required.

Q: Am I able to put fixing rails and hooks up and where are the metal studs located?
A: There is no problem with putting up fixings and hooks in BUILDTEC homes. There are a range of proprietary fixing readily available from DIY stores for attaching household objects to plasterboard, which will easily support normal loads. Particularly heavy loads should be screwed to the frame, which can be found using a metal detector often used by plumbers.

Q: Will I be able to get a mortgage and insurance?
A: Yes. We have gained acceptance of the BUILDTEC system from the major mortgage lenders and insurers to avoid any problems in this area.

Q: Can I resell my home?
A: With the numerous benefits offered by a BUILDTEC home, this type of construction will not cause you any problems when it comes to reselling your home.

Q: Will my radio, mobile phone and TV work normally?
A: Certainly. You should not experience any problems, as the BUILDTEC system does not interfere with the signals in any way.

Q: Are BUILDTEC homes as durable as traditionally built homes?
A: Absolutely. The BUILDTEC system uses warm frame technology in conjunction with galvanized steel frames. In addition, BUILDTEC has a Mittal Warrantee for a minimum of 50 years life and it has been calculated that the frames will have a structural life of up to 1,000 years.

Q: What about DIY work?
A: No problem, but as with all homes, care must be taken when using certain decorating and DIY equipment, e.g. hot air paint strippers or blow lamps. Steel, of course, will not burn and the insulation used on the outside of the frame meets all of the requirements of the Building Regulations. But care must always be taken when performing alterations, whatever the construction used to build the home.

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Whilst electric cables are located further away from the wall face than they are with traditional construction, you should always be careful when performing DIY work. If you have tradesmen working in the house, always ensure that they are aware that they are working in a steel frame home.

Q: What about structural alterations and extensions?
A: The steel frame within the walls and partitions provide the main support for the home and must not be removed (similar to the blockwork of traditionally built homes). As with all forms of construction, professional advice must be sought before considering any alteration or extension work. The steel frame for the external wall is also protected with fire cladding systems. It is therefore important that holes are not cut in these boards as this may reduce the fire protection to the steelwork.

Q: What approvals apply to the BUILDTEC Steel home System?
A: The BUILDTEC frame is Certified by a structural Engineer under rational design, and carries NHBRC and Local Authority Type Approval. The frames and floors are also manufactured under a rigorous Lloyds Registry approved ISO 9001 Quality Assurance programme.

Q: What about Durability?
A: Steel house frames have in-built durability. Corrosion protection is built in.
Protective coatings of either Zincalume 45% zinc/55 % aluminium alloy, or zinc, defend the steel against corrosion. A natural phenomenon known as sacrificial protection prevents corrosion of any steel exposed at cut edges and penetrations.

- **The protective coatings.**

The coatings are tough, continuous, of uniform thickness, tightly adherent, and strongly resistant to corrosion. They are applied to both sides of the steel by the hot-dip process. In this process the steel strip is passed through a bath of molten metal, the amount of coating applied being closely controlled. The coating mass must meet the requirements of Mittal South Africa. Steel framing is the only framing material for which any kind of structural durability warranty is offered.
Forming and fabrication does not impair the coatings. Because the protective coatings are tough, and their bending properties understood, the forming processes involved in shaping the building frame components do not impair the effectiveness of the protective coatings. The coatings are also tough and resist damage during fabrication and handling on site.

- **Sacrificial Protection.**

Frame sections are usually produced from narrow coils of steel strip slit from wider coils. Service holes are punched into the studs during manufacture to enable plumbers and electricians to install piping and wiring. During fabrication of the frame a variety of joining methods are used that usually penetrate the steel.

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At the slit edges of the plates and studs, at fixing points where the steel is penetrated and where components have been punched or cut, the steel base is exposed, but will not rust. It is protected against corrosion by sacrificial protection.
Sacrificial protection refers to the process initiated when dissimilar metals are in contact in the presence of moisture. The more active or noble metal (in this case the zinc or zinc/aluminium coating) will sacrifice itself in preference to the steel, thus protecting the steel base and its structural properties.

The effect is well known. It is evident at the ends of sheets of corrugated steel roofing where they have been cut to length, or at the cut edges of steel rainwater guttering. These articles do not corrode away from cut edges even though they are exposed to more severe conditions than house frames. It is worth noting also that galvanized steel strips with cut edges are commonly used as bracing on timber frames.

- **Good Building Practice.**

In certain conditions steel coatings can be corroded by galvanic action through contact with dissimilar metals. In particular, contact with copper or brass in the presence of moisture will lead to the rapid removal of the coating of the steel, followed in due course by corrosion of the underlying steel. Plumbers must therefore take care to isolate copper piping from steel framing by inserting specialized plastic plumbing grommets into the pre-punched service holes in the studs. For the same reasons CCA treated timbers (which contain soluble copper-based chemicals) used in some external claddings must not come into contact with steel frames. They must be isolated by an approved building membrane.
Masonry wall ties must be installed in a way that prevents moisture travelling along the tie to the inner surface of masonry or frame.
When installing elevated steel sub-floor systems, it is important to follow the manufacturers' instructions. The thickness of the galvanizing depends on the coating process, and for certain exposure conditions some manufacturers may recommend additional protective measures.

Q: ELECTRICAL SAFETY Is a steel frame electrically safe?
A: Steel house frames can actually be safer than alternatives. Several facts are important.

- **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.

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… **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. Rubber 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.

Termites

Q. Is it necessary to install chemical or physical termite barriers if a steel frame is used?
A. No.
Generally, available research suggests that the risk of termite damage w here homes are at risk is greater if you choose a termite barrier system rather than a termite resistant frame. Also remember that barrier systems do not protect against borers or fungal decay.

Approval

Q. How is a steel framing system handled by Councils and lending bodies?
A. BUILDTEC provides a compliance documentation and assistance for Council approval.

Design

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Q. How much design freedom is possible with steel framing?
A. Almost unlimited. Steel frame fabricators are capable of producing virtually any of the single or two storey home designs seen in the Australian domestic housing market today. Steel framing is especially suitable for difficult or sloping sites.
Q. Is steel framing suitable for cyclonic areas?
A. Yes. Steel framing is used extensively in these areas because of its inherent strength. Consult with a local fabricator to obtain details.

Construction

Q. Can steel-framed homes be built on piers or concrete slabs?
A. Either. Steel frames can be direct fixed to a concrete slab, which are widely used or fixed to lightweight, cost effective steel floor systems on brick, concrete or steel piers. It is worth noting that an elevated steel sub-floor system works as an excellent first line of defence against termite invasion.

Q. Is steel framing safe electrically?
A. Yes. Steel frames are safe because frames are earthed and all new housing is required to be fitted with "safety switches" to protect against earth leakage in the wiring.

Q. Should lead flashing and copper pipes be isolated from the steel frame?
A. Yes - these materials should be isolated. In the presence of water they will develop galvanic cells that will result in damage to the protective metallic coating by a process called "bi-metallic corrosion". Isolation is simple: lead flashing can be isolated from the frame using an underlay of plastic membrane, while copper pipes can be isolated from the frame by the incorporation of nylon grommets, or by face-fixing to the studs using plastic clips. Both of these systems also resist water hammer noise.

Q. Are the frames treated for rust prevention at cut edges and drill holes?
A. Yes. Zinc coated ("galvanized") and zinc/aluminium alloy coated steels are protected from cut-edge corrosion by galvanic action - the coating adjacent to the edge or hole protects the cut area.

Q. How should architraves and skirtings be installed to steel frames?
A. The use of light gauge materials in steel frames allow s the use of inexpensive needle point self-drilling screws in most cases. This may take a little extra effort but they will never spring out. Nailing, or a combination of nails, screws and adhesive, may also be used to reduce costs, depending on the application and framing system.

Q. How is electrical and data cabling installed with steel framing?
A. The studs and plates normally have pre-punched holes to facilitate easy cable installation, and grommets are fitted to protect the cable insulation.

Q. Is more trade skill required to work with steel framing?

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A. No. Constructing and finishing building frames is about geometry, accuracy and familiarity with tools and procedures. Most trade operations with steel framing are the same as with timber. Some trade operations require specific information provided by manufacturers, while others need less information and
are simpler.

Q. How does steel perform as a support for wall lining materials and plaster cornices?
A. It's superior, because there is no frame shrinkage to cause cracking and nail popping. Lining materials in steel framed houses can be expected to perform better and look better than in houses built from alternative framing materials.

Q. Can alterations be made to the frame on site?
A. Yes. Most new connection systems allow quick and easy disassembly and reconstruction.

Q. Can I extend a steel-framed home at a later date?
A. Of course. Additions are made in the same w ay as any other building. Furthermore, you can expect that the original steel structure will be straight and true regardless of its age, making the job of matching up the addition easy.

Q. Do steel framed houses look different?
A. How a home looks over time depends a lot on the stability and durability of the materials from which it is made. The typical steel-framed home or low -rise building keeps its shape indefinitely. Walls and ceilings made with steel framing tend not to have ripples or bumps in them, there are no "nail pops" in plasterboard walls, no shrinkage in intermediate floor joists and no sagging roofs.

Q. Why do people decide to build with steel?
A. Steel is a superior product for long term investment, w ith added advantages. Steel is light and strong does not burn, is termite and borer proof and is dimensionally stable - it will not shrink or warp. Steel framing durability will ensure the structural integrity and high standard of finish of the building long into the future. Using steel is environmentally responsible.

Q. Should steel framed homes cost more?
A. No. Steel frames are widely available from competing suppliers. Competitive pricing should generally be available for standard house designs from progressive builders who are utilising innovative steel building frame technology. Construction costs are similar for all homes that use durable framing materials.