

Institute for Timber Construction South Africa (ITC-SA)

FACTS about roof trusses:

Don't be Tempted!



Site-made roof trusses



Prefabricated roof trusses

VS

Definition

Handmade Timber Roof Trusses connected with bolts and nails OR Site application nail plates at the joints. BEWARE OF THESE!

Prefabricated Timber Roof Trusses based on SANS 10160, 10163 & 10243 and connected with an accredited Engineering System's nail plates as per their design & supplied by an accredited ITC-SA Fabricator.

Design

Has to comply with the tables in SANS 10400 or the details in the National Home Builders Registration Council's (NHBRC) "Home Builders Manual". These details limit the truss shape, roof slope and are for a maximum span of 8 meters. If these details are not complied with in any way, then the roof structure is ILLEGAL and the design must be checked by a Professional Engineer. All structures with hips and valleys MUST be designed by an Engineer!

Designed using the Engineering Software from one of the four Accredited System Members of the ITC-SA; Alpine Automation South Africa (Pty) Ltd, International Truss Systems (Pty) Ltd, MiTek Industries S.A. (Pty) Ltd and Multinail Africa (Pty) Ltd.

Manufacturing

Handmade and cut on site with manual carpentry tools. Assembled on site using nails and bolts. Timber member sizes, number of bolts and bolt sizes as well as number of nails and sizes are contained in SANS 10400 and the NHBRC's Home Builders Manual. NON COMPLIANCE WITH STATUTORY REQUIREMENTS IS VERY COMMON AND LEADS TO EXTENSIVE REMEDIAL WORK.

Cut to precision with Specialized Automated Machinery, Manufactured and assembled in a controlled environment with specialized equipment in jigs for specific purpose using Engineered nail plates in accordance with SANS 10163, 10243 and all relevant specifications and regulations. The ITC-SA accredited Fabricator will issue you with a Manufacturing Certificate to confirm that your structure was manufactured in accordance with all the relevant specifications and regulations. Your structure is also covered by the accredited Fabricator's Product Liability Insurance.

Erection

Has to be done strictly in accordance with;

1. The Design intent
2. NHBRC's Home Builders Manual and SANS 10243

The erection of site-made roof trusses are generally done by persons that are NOT accredited by ITC-SA and may be incompetent! In terms of the National Building Regulations NO HIPS AND VALLEYS ALLOWED.

Has to be done strictly in accordance with;

1. The Design intent
2. SANS 10243,

By a professionally competent company and / or person accredited by ITC-SA

Inspection and Signing-off of Timber Roof Structure, as per National Building Regulations to obtain an Occupation Certificate from the Local Municipality

Has to be inspected for compliance with Regulation A19 of the National Building Regulations, the Design intent and specific regulations and specifications related to Timber Roof Trusses, where a Registered Professional Person (registered with the Engineering Council of South Africa - ECSA) will take responsibility for the said structure. Once the roof is completed to the satisfaction of the Engineer, a Completion Certificate will be issued that will allow the owner to obtain an Occupancy Certificate from the Local Municipality. COMPLIANCE WITH THE REQUIREMENTS IS OFTEN PROBLEMATIC.

Has to be inspected for compliance with Regulation A19 of the National Building Regulations, the Design intent and specific regulations and specifications related to Timber Roof Trusses, where a Registered Professional Person registered with ECSA will take responsibility for the said structure. Once the roof is completed to the satisfaction of the Engineer, a Completion Certificate will be issued that will allow the owner to obtain an Occupancy Certificate from the Local Municipality. By issuing an A19 Completion Certificate the Engineer takes responsibility for the structure and therefore the structure is covered by the Engineer's Professional Indemnity Insurance!

Conclusion

Statistics obtained by ITC-SA show that 90% of these structures do not comply with relevant regulations and specifications as required by the National Building Regulations. They are found to be around $\pm 20 - 40\%$ more expensive than Prefabricated Timber Roof Trusses. Should there be any problems, you will generally have no recourse for remedy and will end up in tedious and costly Civil Litigation! Any savings that your builder may have wrongly advised you of will be negated many times over!!

If these structures are erected by an accredited ITC-SA Roof Erector, you are guaranteed a Roof Structure that complies 100% and you have the peace of mind that, should you have any problems, there is recourse for remedy via the ITC-SA's Disciplinary Procedures for all its accredited members.

CERTIFICATION BY A SUITABLY EXPERIENCED ITC-SA APPROVED PROFESSIONAL ENGINEER WILL GIVE YOU PEACE OF MIND FOR MANY YEARS.

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Institute for Timber Construction South Africa (ITC-SA) A SAFE AND LEGAL ROOF FROM DESIGN TO CERTIFICATION



AIM AND COMPOSITION



The ITC-SA was established 38 years ago and is Registered under section 21 of the Companies Act (Registration No.72/09631/08).

The ITC-SA's primary aim is to regulate the design, manufacture and erection of prefabricated nail plated trusses in structural applications, and continuously research, develop and maintain the standards for the Industry. The ITC-SA works very closely with SABS, SATAS, ECSA and NHBC and the four systems viz. Alpine Automation, International Truss Systems, MiTek Industries S.A., and Multinail Africa who each provide the software, which enables fabricators to design timber structures.



FABRICATORS & ERECTORS



In South Africa there are fabricators and erectors who are members of the ITC-SA. These Fabricators and Erectors are audited regularly by the ITC-SA and earn a "Certificate of Competence". This audit includes timber quality control, design knowledge, manufacturing quality procedures, site documentation, and for erectors the understanding of and adherence to, drawings and erection details.



APPROVED ENGINEERS & INSPECTORS



The ITC-SA gives recognition to **Professional Engineers** with substantial experience and proven competence in timber engineering through the accolade of **ITC-SA Approved Engineer**. In order to ensure compliance with the Building Standards Act [Section 14(A)] and the National Building Regulations [Regulation A19], these engineers may appoint, train and regularly re-train **ITC-SA Certified Inspectors** to inspect timber roof structures on their behalf.

REGULATION A19

Regulation A19 of SANS10400 states that for a **Rational Design**, the owner must appoint and retain a **Professional Engineer** to undertake responsibility for the design and also the inspection of the completed structure. This rule also applies to site made trusses using metal connector plates or bolted trusses exceeding 8 meters in span. When an order is placed with one of the **ITC-SA Fabricators** for a roof structure it is for the design, manufacture and delivery to site. In compliance with the National Building Regulations the appointed Professional Engineer should issue the **Engineer's Completion Certificate**

To ensure a **Safe and Legal** roof, employ only ITC-SA's Audited Fabricators and Erectors and ensure that you appoint a Professional Engineer to inspect and sign off your roof structure.

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