PROFESSIONAL DESIGNATIONS AWARDED BY SAQA RECOGNISED PROFESSIONAL BODIES

Name of Professional Body	The Institute for Timber Construction Southern Africa (ITC-SA)
Designation Title	Certified Timber Roof Truss Designer (Cert. TRTD)

Short Description:

A Timber Roof Truss Designer (timber roof structure) is a practicing designer who will traditionally come from the built environment and who must have passed the prescribed ITC-SA examinations as well as the prescribed System Software courses. Prior experience in roof design and construction, as well as holding a National Certificate Wood Processing Truss Manufacturing Level 3 (49083) qualification.

The applicant designer shall provide a comprehensive CV and portfolio of evidence with regards to design work done to date and which the ITC-SA can evaluate in the substantiation of the application in a specified category. The CV and portfolio of work done (portfolio of evidence) must confirm under whose mentorship he/she received training to confirm competence in timber structure design and construction. The Timber Roof Truss Designer designation shall provide for registration in the following categories:

CATEGORY D:

The following competencies need to be demonstrated for this category:

The use of trigonometric applications in the roofing industry is key:

- Name, discuss and apply the trigonometric equations.
- Apply the relevant trigonometric equation to calculate the height and member lengths of a truss.

Apply fundamental knowledge and understanding of roof terminology in roof engineering:
Demonstrate an understanding of roofing terminology.

- Demonstrate an understanding of truss terminology and types.
- Demonstrate an understanding of roofing dimensions.
- Identify and describe roofing sundry terms.

Demonstrate an understanding of the characteristics and properties of material used for structural design in roofing:

- Name and describe the different materials used in roofing.
- Identify the structural properties and non-compliance of timber and steel.
- Identify the structural connectors and their application.
- Differentiate between the advantages and disadvantages of the different structural materials.
- Identify the specification criteria.

Define the design responsibilities of the various role-players within the organization involved in

the preparation, submittal, review and approval of each Truss Design Drawing and Estimate:

- Demonstrate an understanding of the internal responsibilities within the organisation.
- Apply knowledge and understanding of the impact of estimating correctly.
- Apply knowledge and understanding of contractual requirements.
- Demonstrate an understanding of the impact of design and manufacturing inefficiencies.
- Demonstrate understanding of the handling of trusses

CATEGORY C - (Low Risk - Simple roofs):

The following competencies need to be demonstrated for this category:

Construct or manufacture specialist timber formwork and trusses for roofing, in line with safety legislation, and National Building Regulations and requirements, and based on specification drawings. The role of safety is crucial, and understanding the implications of design modifications and industry convention to deal with practical challenges are important factors.

Define the design responsibilities of the various role-players within the organization involved in the preparation, submittal, review and approval of each Truss Design Drawing and Estimate:

Demonstrate an understanding of the internal responsibilities within the organisation.

- Apply knowledge and understanding of the impact of estimating correctly.
- Apply knowledge and understanding of contractual requirements.
- Demonstrate an understanding of the impact of design and manufacturing inefficiencies.
- Demonstrate understanding of the handling of trusses

CATEGORY B - (Medium Risk – Complex roofs):

The following competencies need to be demonstrated for this category:

Understanding of the various interacting factors in roof design in order to deliver estimates that do not compromise quality output and that a functional roof structure is based on the key considerations of the impact of forces and weight distribution that can be handled by the supporting structure.

An understanding of the theory of structures, to which roofs are designed and arranged, to be able to carry all the applied loads.

- Discuss triangulation and the transfer of the load to the foundations.
- Differentiate between load definitions, application and specification.
- Identify the difference between, and impact of the different types of structural forces.
- Identify the strength and impact of materials on a structure.
- Describe the methods of connections used in the design and manufacture of trusses.

Skills in the wood processing and construction fields in order to raise competence levels in the various industries served by informed and competent workers.

Accurate estimations to customers, roof designers and manufacturers of roof material. This

requires knowledge of the material to be used, the manufacturing and quality process.

<u>CATEGORY A</u> - (High Risk – Very complex roofs)

The following competencies need to be demonstrated for this category:

Manufacturer's responsibility for translating a roof and truss design into an actual roofing solution that is safe for the client and manufactured in a cost effective manner for the fabricator.

Recommend material options for roof design.

- Prepare material by demonstrating an understanding of organisational and sector requirements.
- Demonstrate understanding of manufacturing tolerances.
- Describe manufacturing limitations.
- Conduct quality control as demanded by context.

Promote skills in the wood processing and construction fields in order to raise competence levels in the various industries served by informed and competent workers.

Promote and design green roofs:

- Design principles to optimize green roof's performance and align with client objectives
- Determine major functions and components of a green roof;
- Describe characteristics and assess various advantages of different green roof systems;
- Utilize an integrated design process in a project for maximum benefit;

The applicant designer shall provide a comprehensive CV and portfolio of evidence with regards to design work done to date and which the ITC-SA can evaluate in the substantiation of the application in a specified category. The CV and portfolio of work done (portfolio of evidence) must confirm under whose mentorship he/she received training to confirm competence in timber structure design and construction. The successful completion of the ITC-SA examinations and System training modules, as well as experience and proven competence to design within one of the categories above will determine the category of registration with the ITC-SA..

CRITERIA FOR OBTAINING THE TIMBER ROOF TRUSS DESIGNER DESIGNATION

For the TIMBER ROOF TRUSS DESIGNER designation in the various categories to be awarded, designers must comply with the following minimum requirements:

- **Academic Component**

Persons applying for recognition by the ITC-SA must be able to provide a portfolio of evidence on work done within the category the application is submitted for and hold a National Certificate Wood Processing Truss Manufacturing Level 3 (49083) qualification.

- **Board Examination/Competency Assessment**

Persons applying may go through a peer review at ITC-SA Timber Engineering Advisory Committee to demonstrate competence in timber design.

- **Practical/Workplace Experience**

A minimum of **1 (One) year** proven experience in timber roof structure design will be a requirement for Category C & D

A minimum of **2 (Two) years** proven experience in timber roof structure design will be a requirement for Category A & B

CRITERIA FOR RETAINING THE PROFESSIONAL DESIGNATION

In order to ensure the currency of professional knowledge and to retain the categorised Timber Roof Truss Designer Designation, the designer must comply with the following minimum requirements:

- **Continuing Professional Development (CPD**)

Members are required to provide proof to ITC-SA of their CPD activities. The ITC-SA decides on the points each activity is worth. The ITC-SA Timber Engineering Advisory Committee ensures that CPD activities and certification requirements are coordinated. Members are required to accumulate 4 CPD points annually by completing a range of accredited activities such as:

  - Attendance at workshops, seminars and information sessions, (**2 points** per workshop)
  - Giving presentations to inside and outside groups, (**2 points** per presentation)
  - Yearly subscription to Industry publication (**1 point**)
  - Completion of Online skill programs (**4 points** per program)
  - Running workshops, (**2 points** per workshop)
  - Attendance at Think tank sessions (**2 points** per workshop)
  - Industry Best Practice sharing (**2 points** per workshop)
  - Writing articles for in-house and general publications. (**3 points** per article)
  - Attendance at the ITC-SA AGM (**1 points** per meeting)
  - Attendance of ITC Branch General Meetings (**1 point** per meeting)
  - Attendance of external forums, lectures, practical workshops such as Architectural sessions, engineering practices andvarious product demonstrations and Software Training workshops.(**2 points** per activity)

The above activities offered by the ITC-SA are determined on an Industry need basis to ensure maximum benefit to members. The activities are designed to ensure the members stay both current and continuously improve and add value to both themselves and the industry by means of aligning activities to individual development plans.

  - **Verifiable activities**:

The following methods may be used to ensure member's understanding of verifiable activities attended:

    - Knowledge/practical assessment
    - Survey

  - **Non-verifiable activities**:

The following aspects will be considered as evidence of participation by members for non-verifiable activities attended:

    - Certificate of attendance
    - Signed attendance register

- **Recognition of Prior Learning**

  The RPL process entails providing support to a candidate to ensure that knowledge is displayed in terms of the relevant qualification National Certificate Wood Processing Truss Manufacturing Level 3 (49083) registered on the National Qualifications Framework (NQF) A rigorous process whereby candidates must be found competent against the outcomes and competencies of the registered qualification and designation.

- **Code of Conduct**

  All ITC-SA professional members must abide by the ITC-SA Code of Conduct.

- **Membership Fees**

  All members shall ensure that the ITC-SA annual membership fees are paid.
  A lapse of membership for longer than two years will require a completely new application to rejoin.

DESIGNATION PROGRESSION PATHWAY

The Timber Truss Designation progression pathway is: Alternative sugestions for Categories.

- Timber Truss Designer – Category D (Timber Roof Structures – Gable to Gable)
- Timber Truss Designer – Category C (Timber Roof Structures – Low Risk)
- Timber Truss Designer – Category B (Timber Roof Structures – Medium Risk)
- Timber Truss Designer – Category A (Timber Roof Structures – High Risk)

For more information on this Professional Designation, please visit www.itc-sa.org