THE BACKBONE OF A THATCHED ROOF

Numerous thatching companies enter the market annually due to the low capital outlay required only to disappear again after a short period of time leaving behind a trail of sub-standard roofs and bad debt. Only in recent years have certain municipalities made it a requirement that a structural engineer sign responsibility for the construction of thatch roofs, which is a misnomer in that all other structural elements of a building have always been subject to this requirement. Many roofs including thatch roofs are still constructed today without the approval of a specialist engineer which can result in major expenses to the consumer, sometimes many years after construction due to age destruction (tearing of fibres in the timber from overloading). Age destruction of the pole structure, if under-designed, can cause building walls to crack or collapse and in the worst case scenario the entire collapse of the roof. The rate of age destruction is dependent on the percentage overload to the structural element.

The level of competency of new incomers into the industry as well as the changing characteristics of the raw material, have an enormous effect on the quality of the end product.

The design and pole construction of a thatch roof are the backbone on which the 'meat' is hung and the carpenter is the one who has to make it successful.

As in the case of a thatcher, the Thatching Industry offers apprenticeship for carpenters starting as a regular *labourer* and working his way up with an experienced carpenter. This process takes at least five years and more and through experience of how construction problems are tackled and figured out, he learns for instance the complex stress factors to which poles are exposed. Rafters for thatch roofs are not assembled in a factory beforehand, but different thicknesses, lengths and classifications of poles are delivered on site.

A *labourer* carries, sand or paint or varnish poles. Learns what classifications, thicknesses and lengths of poles are being used for which purposes. He learns the names and to use the different tools. Learns the names of the different pole structures.

As the labourer gains more experience and knowledge, he gradually progresses to *learner carpenter* and *assistant carpenter* by learning for instance the following:

> The setting out of the pole structure, timber requirements, planting posts, upright columns, king posts. Rafter, truss and tie beam spacing and positioning of the ring beam. Connections, battens and laths, lath spacing and how to construct valleys and hips.
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> He must not be afraid of heights and learn to put scaffolding together and remove it again.

Most carpenters have a *'team leader' or senior carpenter* who has been working in the Industry for around 20 years and mentors and trains *junior carpenters*. It takes at least 5 years to train a *junior carpenter* up to a level that he can build small structures such as for rondawels or lapas 6 x 6 meters.

An experienced and trustworthy *senior carpenter* may be promoted to be a *supervisor*. He may also be able to interpret engineer's drawings and build under the supervision of the director or engineer more complicated and larger structures. He should identify and correct construction problems such as deflection with or without the help of the engineer or director.

The weight of a thatch layer is 60 kg per square meter, 80 kg with poles and with wind load 121 kg per square meter.

The design of a pole structure must include wind bracers and must be strong enough to withstand strong winds such as experienced for instance in the Cape Province. That is also why nails cannot only be used and the knowledge of how and where nuts and bolts must be used is very important.

The TASA has committed itself to offering training seminars for NHBRC technical professionals, insurance companies, banks and municipal building inspectors to inform them of specification requirements and what to look at during inspections. Publications such as "A Guide to Thatch Construction in South Africa" and "Pros and Cons in the Thatching Industry" can be ordered from the TASA office.

Knowledge is power. By providing insight and knowledge to the public, contractors, and professionals, the TASA hopes to raise the standard of the Thatching Industry and to prevent client damage and loss.