



## **THATCHERS ASSOCIATION OF SOUTH AFRICA DEKKERSVERENIGING VAN SUID-AFRIKA**

### **INFORMATION BULLETIN**

#### **CAN EXISTING THATCHED ROOFS BE COVERED BY ANY OTHER ROOFING MATERIAL AND WHAT ARE THE CONCERNS?**

The information contained in this document is not technical but based on questions, concerns and complaints received by the Association. Correct technical information can always be obtained from the Association as thatch roofs are technical and if constructed correctly the owner will enjoy the sustainability and benefits associated with a thatched roof.

#### **GENERAL INFORMATION REGARDING THE COVERING OF A THATCHED ROOF WITH TILES, CORRUGATED IRON SHEETS OR ANY OTHER COVERING**

Thatch is a natural product and should always be exposed to the environment to weather naturally as an insulated roof system. Natural human moist and heat from the inside get trapped in the layer during habitation resulting from the outside environmental conditions which may vary. Any interference with this natural breathing ability can result in the degradation of the thatch layer over time and even more so for specific climatic conditions. This phenomenon is also very dependent on the quality of the thatching medium. Even orientation and shadowing of trees will affect the deterioration of the roof. This is also applicable to any covering over a thatched roof with an alternative material or roof system.

Fitting alternative materials over thatch may improve the structure aesthetically while at the same time maintaining a rustic interior. Covering a thatched roof with tiles (such as Marley concrete tiles) or corrugated sheeting, a practice known as over-sheeting or over-cladding, However, over-cladding presents several significant technical and safety risks.

The risk is definitely not in the material as over-cladding or steel sheeting is inherently safe from a fire point of view, but the effect on the roof; it is rather in the application, and the installation methodology and the other pre-requisites can only which may be identified by thorough or comprehensive research

#### **WHAT IS THE EFFECT OF SISALATION AND FIRE BLANKETS ON SPRAY LAYER?**

Many Thatchers recommend the use of sisalation just above the thin spray layer on the inside of the roof, especially in the interior, are covered with sisalation on the spray layer as a precaution against fire. In the Cape province in particular with the use of thatching reed, they use fire blankets and drencher systems to wet the roofs on the outside for protection against radiation and small ignition sources. The use of a successfully evaluated fire retardant changes the fire behaviour of the thatch layer and ease of ignition to both the inside and exterior. Resulting from the fire behaviour during the test, the roof system is classified as A, B or C and these classifications are used for the determination of safety distances as depicted in the Fire Regulations, SABS 10400-T are installed in thatched roofs.

When tiles or another roof covering is installed, all thatch must first be removed. But if only the spray layer is left (to maintain the thatched roof appearance), insurers still consider it a thatched roof.

#### **WHAT ARE THE OTHER ISSUES WITH REGARD TO OVER-COVERING?**

The use of any roof covering over thatch require prior testing of the system from a fire point of view, because should the thatch be ignited from the outside or inside the covering must be removed to allow extinguishment.



From an insurance point of view, a roof with any covering still remains a combustible roof even if only the spray layer remains as an aesthetic feature on the inside.

### **VOIDS BETWEEN THE THATCH AND ALTERNATIVE TWO LAYERS**

Placing any covering on the thatch layer creates a void between the two layers similar to that of an incorrect ridge construction. If a fire starts inside the building or roof space, this void supplies oxygen and traps heat, which can significantly fuel the fire.

Complaints are received about birds and especially bats nesting if access can be gained.

### **ACCELERATED DECAY AND ROT**

Trapped moisture: Over-sheeting or covering create a new dew line in the roof construction with resulting condensation trapped in the thatch layer which slow down evaporation of moist as it can prevent the thatch from "breathing." If the thatch is damp or in poor condition before covering, it will continue to rot and degrade rapidly.

Ongoing dust issues: Because of decay and rot of the thatch layer, problems like falling dust or weathered debris from aging thatch will persist and increase. The problem can become harder to address because the underlying material is no longer accessible.

Inside appearance of the sagging roof: As the thatch deteriorates the thatch on the inside is sliding down and sinks under the over-covering changing the aesthetic appearance on the inside. This cannot easily be rectified as the weight of the new cover restricts maintenance. Over time, causing the tiles to no longer have a solid base and as a result causing the tile roof to sag.

### **INCREASED FIRE AND SAFETY RISKS**

Hidden fire spread: If a fire starts in the thatch, the external covering makes it nearly impossible to determine the fire's origin or reach the seat of the fire to extinguish it. Should a fire start inside the building or these roof spaces, the void space supply oxygen for combustion and heat build-up to support fire growth which cannot be extinguished because of the over-cover.

Any over-covering conceals the combustible roof and makes it in-accessible for the fire-fighters to extinguish the thatch. The heat of an internal fire, including the thatch, is trapped inside without ventilation resulting in a rapid spread of fire inside the building with a resulting loss.

To mitigate or extinguish a fire of such a constructed roof, the roof covering needs to be removed which also impose additional risk to the fire fighters.

Gas and smoke trapping: The covering traps toxic gases and smoke inside the building, creating a life-threatening environment for occupants and a high-risk situation for firefighters.

Ineffective detection: Internal fire detectors may not activate quickly enough because the fire can smoulder underneath the outer shell without breaking through.

The tiles also create an "oven effect", raising temperatures within the thatch and making any fire far more aggressive and difficult to control. Fire operations experience has shown that fires beneath tiled or sheeted thatch are especially dangerous and challenging to extinguish.

This method cannot be recommended as a solution from a fire safety or engineering point of view.

### **STRUCTURAL AND MAINTENANCE ISSUES**

Weight constraints: The new imposed load of the proposed over-covering may have an impact on the structure if it is not a light roof construction. The use of heavy roofing materials such as concrete tiles could result in



structural failure of the roof support structure. Concrete tiles (like Marley) are significantly heavier than thatch. Most thatch pole structures are not designed to support the weight of heavy tiles and may require extensive reinforcement or a complete rebuild of the rafters.

### **RESTRICTED ACCESS**

Future maintenance becomes difficult and expensive, as the over-sheeting must be removed to fix leaks or structural issues in the original thatch layer.

### **SUSCEPTIBILITY TO DAMAGE**

Lightweight corrugated sheeting can be easily damaged if walked upon during maintenance or by extreme weather like hail.

### **INSURANCE CONCERNS**

Many insurers will still classify the roof as a "thatched" roof because of the combustible material remains. This result in no reduction in premiums, or even a denial of coverage if the over-sheeting was done without approval.

They are also of the opinion that the fire damage is more intense not only to the contents but also the structure of the building.

### **REGULATORY NON-COMPLIANCE**

The most important aspect to be considered by the insurance industry is Statutory Building Compliance. Regulatory compliance is depicted in approved drawings and documentation; therefore, all such modifications often require professional fire-safety assessments and updated building plans. Failure to comply with SANS 10400 (National Building Regulations) can lead to rejected insurance claims.

The SANS 10407 (Thatched Roof Construction) specification that is part of the National Building Regulations SANS 10400 covers thatch roofs that are kept in its natural shape. The TASA, which is responsible for the protection and promotion of the Thatching Industry in South Africa, distances itself from any practice of over-cover to any that occurs with a thatch roof after a thatch roof has been erected in accordance with SANS 10407 and signed off by an engineer.

Should the guidance given in the relevant documents listed above be followed, using the fire safety technology that is available in the market, we can enjoy the pleasure and safety offered by the only GREEN roof constructed from renewable resources.

Should the fire-retardant treatment be a requirement, ensure that only suitably tested products be used meeting the requirements as depicted in SANS 10400-T, Clause 4.12.2 Thatched roofs.

Fire safety of a thatched building is not only related to the roof, but also the environment. Rural areas require management of vegetation around the buildings and urban areas safety distances to boundaries and distances between buildings.

Correct construction of chimneys and fireplaces and the installation of electrical cabling and other conductors not in contact with the thatch layer.