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TECHNICAL DATA SHEET

FED-THATCH FP1 & FP2

Fed-Thatch FP1 & FP2 comprises of a co-polymer emulsion combined with a fire retardant component. The co-polymer emulsion acts as a binding mechanism for the retardant component to migrate into the thatch helm.

This process takes 21 days on average. A white, powdery, non-toxic by-product will form as evidence of the product being fully cured. It will wash out with the first rain.

Fed-Thatch FP1 & FP2 has the same base formula but FP1 (intended for the outside of the thatch) has additional UV stabilisers for longevity in the sun, whereas FP2 (for the inside of the thatch roof) has non-white colouring components that won't leave a powdery white residue after application.

A fire retardant's efficacy is very dependent on how the product is applied to the roof.

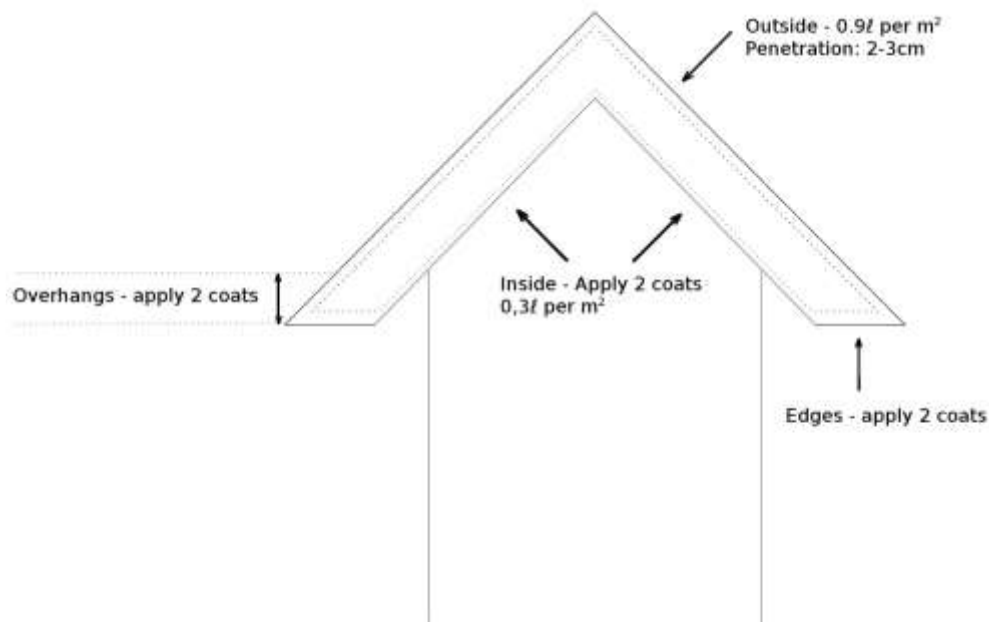
In South Africa the ASTM E-108 test is used to verify the effectiveness of the fire retardant based on the manufacturer's specified application system.

The following system is prescribed for Fed-Thatch FP1 & FP2:

- On the outside (FP1) - 0.9 l per m² is applied with an airless sprayer at a pressure of 3000 PSI to obtain a penetration of 2-3 cm
- On the inside - 0.3 l per m² is applied at a pressure of 200 PSI – 300 PSI.

In order to use the required amount of product (inside & out), two coats are recommended on high risk areas.

All high risk areas like chimneys, gas appliance areas, braais and parts of thatch bordering open veld must be treated with 2 coats.



Note: If any part of the process is not carried out as per the application instructions, the system will be incomplete and the fire retardant function may not be the same as the test results obtained of our ASTM E-108 tests done in 2010.

Fed-Thatch has been not been designed to be used on timber poles.

The fire retardant component's migration into the thatch helm takes on average 21 days.

If you do testing before then, results will not be optimal.

APPLICATION PROCEDURE TO TREAT THATCH ROOFS

1. Determine how much Fed-Thatch FP1to use

First determine the roof area - do this by multiplying the floor area by the gradient of the roof (usually 45 degrees) Next multiply the roof area by 1.2 - this gives you the amount of Fed-Thatch FP1needed in total in litres. Now determine how much of formula 1 (FP1) you need by taking the total and multiplying it by 75%. To get the amount of formula 2 (FP2) needed, take the total and multiply it by 25%.

Example: The Thatch roof is a rectangle of 3m by 4m and the gradient is 45°.

Calculation:

Step 1: $3 \times 4 = 12\text{m}^2$ (this is floor area)

Step 2: $12\text{m}^2 \times 1.45 = 17.4\text{m}^2$ (this is roof area)

Step 3: $17.4\text{m}^2 \times 1.2 = 20.88 \ell$ (total amount Fed-Thatch FP1 & FP2 needed)

Step 4: $20.88 \times 75\% = 15.66 \ell$ (Fed-Thatch FP1 - Formula 1 needed)

Step 5: $20.88 \times 25\% = 5.22 \ell$ (Fed-Thatch FP2 - Formula 2 needed)

NB: if the roof is older, use 10 - 15% more product in your calculations

2. Equipment

- Airless roof sprayer
- Safety masks: use 3M face piece 6300 and filter 6059 (type ABEK1)
- Plastic drop sheets
- Ladders (1 x 12 m extension ladder and 1 step ladder)
- Drip trays: (geyser trays work well)
- Rags: use a damp cloth to wipe up spillages
- Overalls

3. Important safety measures

Never spray without the correct respirator!

Always ensure someone is holding the ladder while a person is spraying the roof.

Always wear suitable protective clothing – eye protection and gloves.

4. Condition of the roof

Before you consider treating a thatch roof, check the following and advise the client if any remedial work must be done prior to the treatment:

- the specified quality of the thatch grass: ensure that no repairs are necessary and that the outer surface does not require combing
- the compaction of the thatch layer is adequate and that the sisal binding twine is adequately tensioned
- the thatch is not less than 175 mm in thickness
- the rafter spacing is not more than 900 mm apart
- the lath spacing is not more than 250 mm apart
- the roof structure is of sound construction without defects and within deflection limitations (excessive movement of the roof structure may impact on the effectiveness of the fire-retardant treatment of the thatch layer over time)
- the ridge cap is according to specification and aesthetically acceptable

5. Treating the roof

NB: Before you start

- Check the weather: if it is cloudy and you think it is going to rain later, rather postpone the treatment to a sunny day. If it rains before the chemicals are completely dry, you'll have to retreat that portion.
- Check the thatch: the thatch must be 100% dry. If it is wet/damp leave it to dry before you start.

Outside:

- Always start with the outside treatment, because there is a chance it can rain in the afternoon. This way the chemicals have longer to dry. Always stop spraying at 16:00 – the treatment won't dry properly once the sun goes down.
- Mask everything in and around the thatch: paving, rock art, braais, hand rails, windows etc. This is important because once Fed-Thatch FP1 dries, it won't come off.
- Set the airless roof sprayer's pressure to 2500 – 3000 psi. Use spray gun tip type 517
- For the outside treatment use only Fed-Thatch FP1 - Formula 1
- Start at the fibreglass / cement ridge and work your way down to the overhang. Be careful not to spray the ridge. Try to get some in underneath the fibreglass ridge.
- Keep the gun at a 90° in relation to the thatch. Keep the gun as close as possible, almost touching the thatch. Working from top to bottom (vertical strokes) apply 3 strokes per section. Spray any chemicals that run off into the thatch as you go along.
- Move the ladder • } 1 m from previous point. Start spraying as described above, overlapping the previous just sprayed area by applying a surface coating to the join (keep the gun at about 15 cm from the grass and apply a coating)
- It is important to ensure that high risk areas, such as chimneys, braais and thatch that is adjacent to open veld, be treated with an extra coating. Apply 2 to 3 surface coatings to these areas. Check that the thatch is hard.

- To treat the edge, keep the gun at the same gradient as the roof and spray into the end of the thatch roof. Make sure the thatch is glued together.
- On the overhang (the bottom 1,5 m from the edge) spray a surface coating (keep the gun 15 cm away from the thatch)

Inside:

- Set the airless roof sprayer's pressure down.
- Use only Fed-Thatch FP2 - formula 2 on the inside.
- Take all small pieces of furniture etc. out. Mask everything that you can't remove.
- Start at the bottom & overlap the edge. Move upwards toward the peak of the roof.
- Check for spillages constantly & wipe up any immediately with a damp cloth. Give special attention to the rafter poles, but you can leave battens / laths.
- Wait until the dripping stops. Now wipe the plastic drop sheets with a damp cloth (to remove any excess material)
- Clean your airless roof sprayer immediately. Get 4 drums filled half way with clean water and set the machine to the recycle setting. Circulate the water in each drum for 40 seconds or longer.
- Spray the last Fed-Thatch FP1/2 left in the pipe out onto the roof.
- Spray clean water through the pipes until the water runs clear.
- Brush the gun's tip with a steel brush to remove clogged up chemicals.

6. Afterwards – certification & re-treatment

- After the treatment is finished, issue the client with a completion certificate.
- Inform the client when the outside treatment has to be re-applied. If the thatch is new, the certificate is valid for 5 years. If the roof is old, the certificate is valid for 4 years. If the roof is brushed after the treatment, then the certificate is void and the treatment has to be redone.
- Advise clients to keep a fire extinguisher within easy reach in case of a fire. It is also a good idea to keep a ladder, hosepipe and rake (for pulling down smouldering thatch from the roof) close by.

7. Other important notes

- Clearly state on all documentation that this is a 'fire retardant' not a 'fire proof' chemical
- Keep proper records of all quotes, invoices, completion certificates and other relevant documents for at least 5 years

8. References

1. Thatch Guide: Published by the Division Of Building and Construction Technology, c 1998, CSIR, Pretoria