

Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Description of Works:

The existing thatch is leaking, and sections have fallen off. This has resulted in much water ingress throughout the property. There is a pitched based membrane presently installed beneath the thatch. The present timber roof structure is a mixture of old original and new rafters/ceiling joists. Many of the old timbers are rotten, split and have extensive woodworm. There is also evidence of poor roof repair during the last re-thatch in the 1980's where the purlins and props are supported solely by the old ceiling joists which has made the roof structure unstable.

The proposal:

Install new timber roof structure over existing rafters to keep historic fabric intact, install fireboard and new thatch.

Schedule of Works:

- Removal of old wire, thatch & pitch-based membrane from the existing roof structure.
- Thorough assessment of fully exposed timbers and wall plates.
- Treat all existing timbers using Permethrin based woodworm treatment.
- Cut and pitch new roof rafters using 150mm x 50mm C24 modern sawn, treated timbers alongside existing rafters. Install collar ties between alternating rafter ties.
- Install mineral board/breather membrane and counter batten in preparation for new thatch.
- Replace thatch with new Norfolk reed to a depth of approximately 350mm with stainless steel wire and screw fixings.
- Install new ridge using quality straw in a block cut, ornamental & pattern style as existing roof design.
- Supply and fix ¾ inch galvanised wire mesh to ridge.
- Wood fibre board and lime plaster finish to underside of new collar-ties to leave old ceiling joists exposed within bedrooms.

See supporting documents:

- Photos - Thatch & Timber Roof Structure.
- Greenman Carpentry Co. – Method Statement & Sketch
- Phil Campbell Master Thatchers - Method Statement
- Material datasheets

Schedule of Materials:

- Norfolk reed thatch
- Best quality straw for block ridge
- TAS100 thatch fireboard
- C25 150mm x 50mm sawn treated timber
- Lime Green Solo plaster - www.ecomerchant.co.uk
- Steico Therm Wood Fibre Board - www.ecomerchant.co.uk

Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Photos - Thatch & Timber Roof Structure:

West elevation thatch:



Roadside elevation thatch:



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West elevation thatch:



North elevation thatch:



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South thatch elevation:



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Beetle infestation in rafter:



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Snapped rafter:



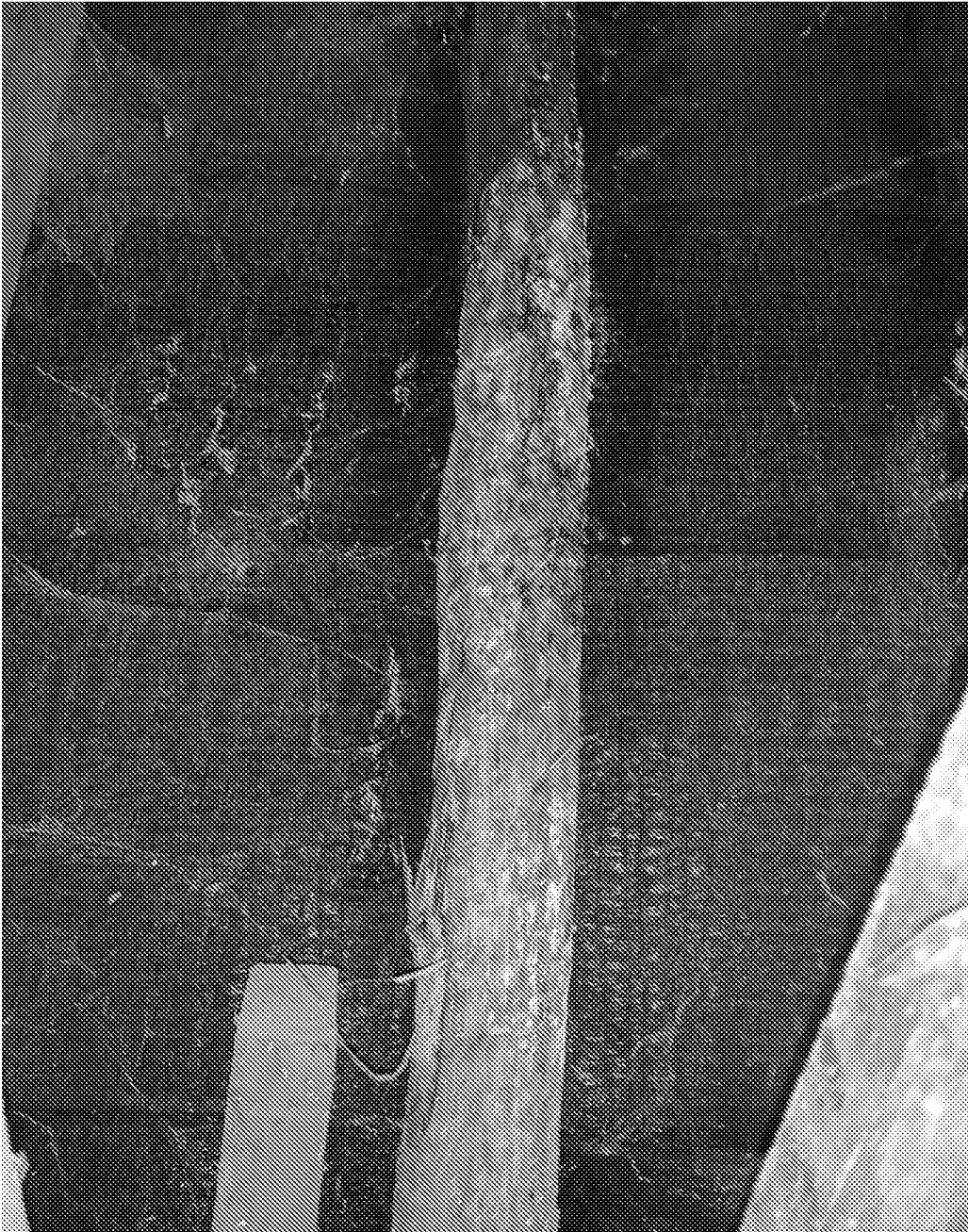
Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Modern ceiling joist cut short:



Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Mouldy rafters:



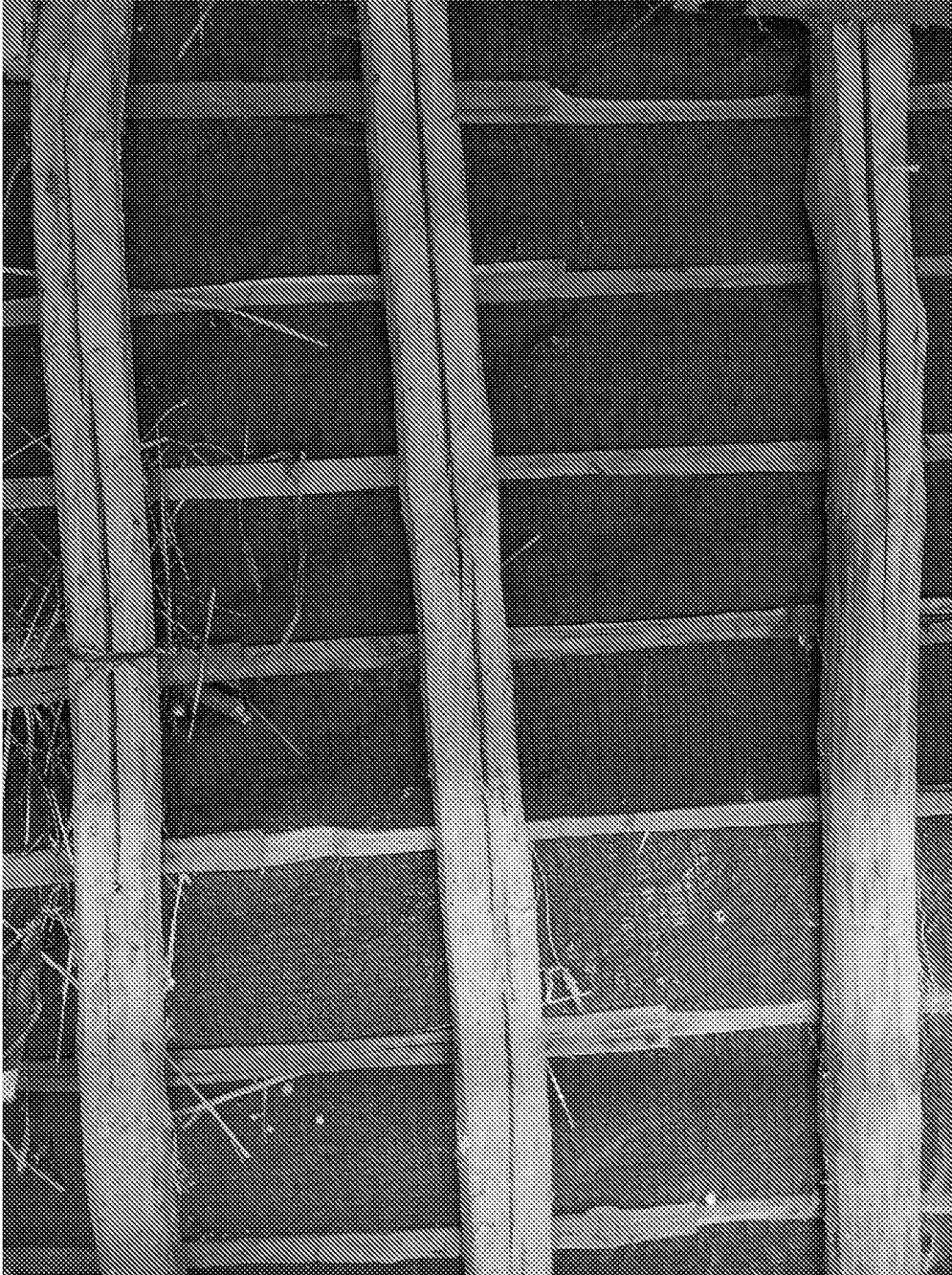
Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Rafter cut short:



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Split rafters:



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Roof structure bearing weight on to old/new ceiling joists:



Roof structure bearing weight on old ceiling joists:



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Old & new roof rafters:



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Thatch ridge detail:



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Greenman Carpentry Co - Method Statement:



Greenman
Carpentry Co.
Timberframe Specialists

Method Statement

About Greenman Carpentry:

We are a small company specialising in the repair and restoration of historic structures with a skill set covering the assessment, recording and repair of timber structures together with associated trades; masonry, lime plastering etc. Our small company of conservators have been trading for over twelve years throughout the south of England. We adhere to strict conservation principles whenever we take on a repair to a historic structure. We aim to use the correct materials and techniques for any repair to ensure the continuity of the structure. We always try to retain as much historic fabric as possible. We prefer to work closely with conservation, client, and architect to ensure all parties are involved with all stages of the restoration process. Many of our past projects can be viewed either on our website or on our Facebook and Instagram page.

Site Address:

Lisa and Andrew Brown
Wayside Cottage
Yapton
West Sussex

Description of works:

The property is a grade 2 listed building, 18th/19th Century flint cottage with full hipped thatch roof. The layout and presence of the two bread ovens on a back-to-back central chimney suggests that the building was originally two workers' cottages.

Assessment of the roof timbers following a site visit showed the rafters to be split pole type (species larch or similar) with signs of insect infestation. Unsure as to whether the beetle is live or has been treated in recent years. Attempts have been made to strengthen the roof structure by the introduction of purlins and collars. Most likely carried out when the roof was last re-thatched. The dimensions and conversion of new timbers points towards a 20th Century repair, no later than circa 1990.

The original rafter arrangement shows that no tie beams were used to stop wall spread. Instead, the strength of the masonry walls together with ceiling joists were used to achieve

The Greenman Carpentry Co. Ltd is a registered company of England and Wales. Company no.7353323. Vat no. 972 7385 77

Registered office, 4 Sudley Road, Bognor Regis, West Sussex, PO21 1EH

Directors Mr. Stephen Curtis, Mr. Antony Puffer

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structural strength.

The condition of the wall plates was difficult to assess, the assumption is that the plate timbers are similar in species/conversion to the other roof/framing timbers.

Some of the rafters on the north side have failed under the weight of the thatch.

The choice of roofing/framing timbers points towards either scarcity of oak/elm or simply a less expensive material at the time of building. These sorts of timber were more likely to have been used for agricultural purposes or scaffolding.

Repair Strategy

In line with conservation principles, it would be desirable to retain the roof structure in situ, any attempt to remove rafters for repair would most likely end with the permanent destruction of the historic timbers.

As the thatch needs replacing and upgrading with fire retardant mineral board, the best and most pragmatic solution would be to cut and pitch a new roof frame over the original. The advantages of this approach are: the historic fabric is retained in situ; the roof frame will be structurally fit for purpose; and the new rafters will provide a flat plane for the mineral board to be fitted well. The only other thing to consider is that some detailing around the eaves is needed to hide the roof's new position. Although this is easily achieved with thatched roofs compared to tiles/slatted roofs.

Order of works

1. Erection of access scaffolding, preferably all weather. The scaffold should be designed with the thatcher in mind and give a safe working platform around all points of the eaves. As the building is directly adjacent to a highway, permission will need to be sought.
2. Removal of thatch – ideally the thatcher awarded the contract to re-thatch should remove the existing thatch ensuring the waste material is disposed of properly.
3. Thorough assessment of timbers – Now that the timbers are fully exposed, a more detailed assessment can be made of the wall plates and their suitability for accepting new rafters.
4. Cut and pitch new rafters using 150 x 50 mm treated C24 grade softwood. Introduction of collar ties between alternating rafter pairs (see drawings.)
[*An engineer's calculations may be required for building regulations.]

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5. Application of mineral board/ breather membrane and counter baton ready for re-thatching.
6. Re-thatch

Stephen Curtis
Managing Director
Greenman Carpentry Co Limited
Date: 1 July 2021

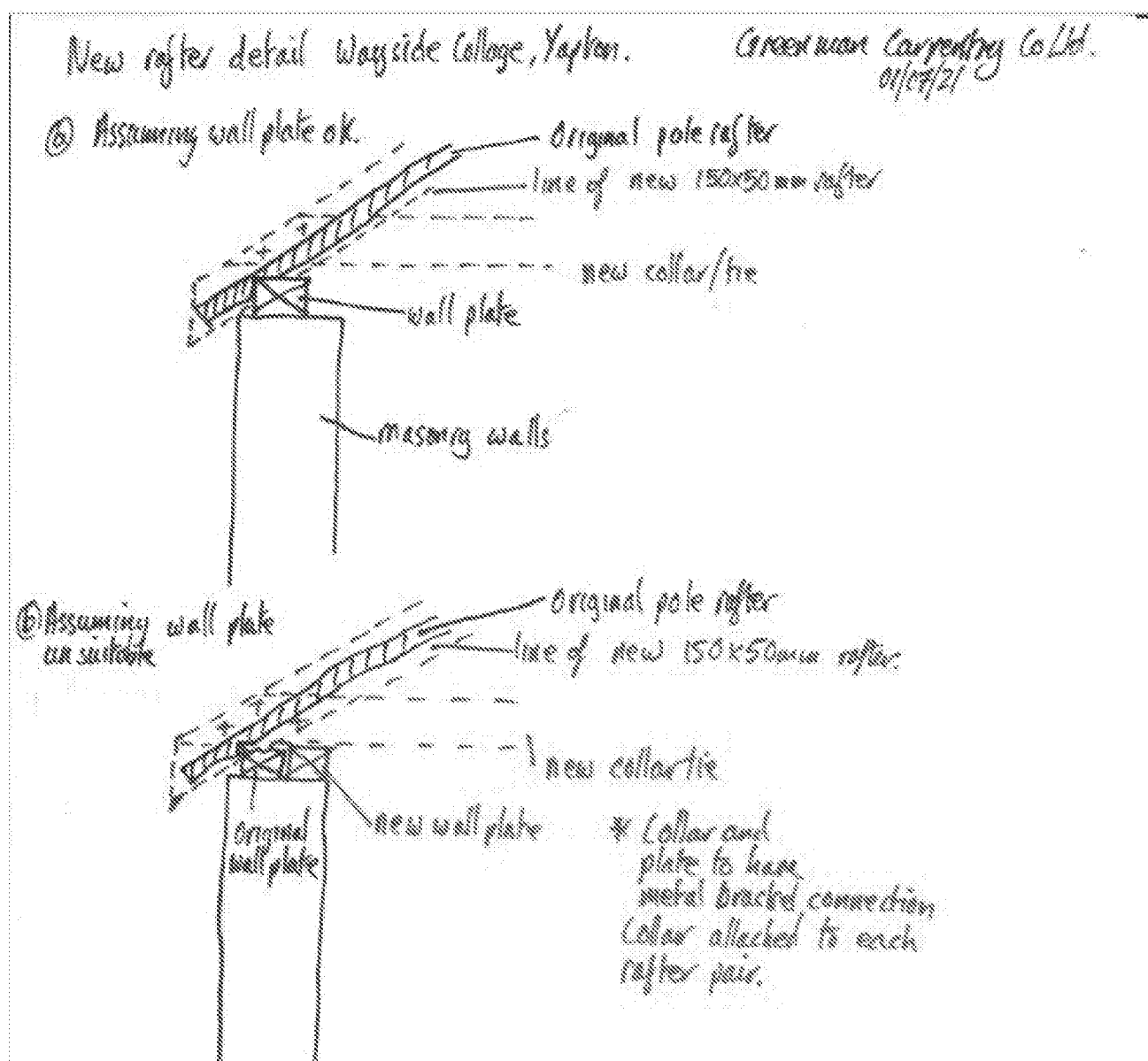
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Directors Mr. Stephen Curtis, Mr. Ashley Pether

Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Greenman Carpentry Co – Sketch:



Thatch & Timber Structure – Wayside Cottage, Burndell Road, Yapton.

Phil Campbell Master Thatchers - Method Statement:

Phil Campbell Master Thatchers

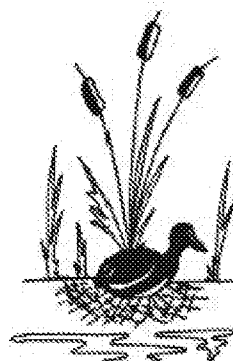


QUOTATION

07710 762266
phil@200@aol.com

The Old Post Office
20 The Green.
Rowlands Castle
Hants
PO9 6BN

Lisa and Andy Brown
Manor Cottage
Saltham Lane
Runcton
Chichester
PO20 1PU
3rd October, 2020



Quotation Number 20093

Re: Wayside, Brundell Road, Yapton BH18 0HP

- To
- Strip off all old wire and thatch and dispose,
 - Allow for timber repairs and treatment, fire barrier and battens installation,
 - Re thatch the prepared roof with best quality water reed, to an approximate thickness of 350mm secured with stainless steel wire and screw fixings,
 - Build up the height of the ridge using ridge rolls in order to maintain the pitch of the reed and to give a firm base into which the ridge spars can be driven,
 - Install new ridge using best quality straw in a block out, ornamental and patterned style,
 - Supply and fix 3/4 inch galvanised wire mesh to the ridge only,
 - Leave site reasonably tidy,

NB: The price does not include the cost of scaffolding that will be needed to comply with current Health and Safety Regulations, nor any leadwork, timber repairs or installation of fire barriers. These can be priced separately.

Signed.....

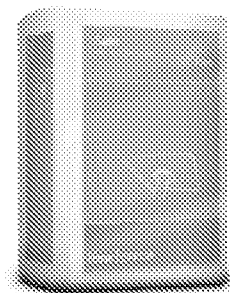
This price is inclusive of all materials, labour, transport and travelling costs. Please read the terms and conditions overleaf and return one signed copy as acceptance.

Product Data Sheet: Solo

9/09/2014

Lime Green Solo is an internal lime plaster made to an historic recipe.

Suitable for a wide range of backgrounds including boards, masonry and wood fibre insulation boards.



General Information

Lime green Solo is a labour saving product which promotes a healthy indoor climate, it is highly vapour permeable and can be finished in one coat to a smooth surface. The constituents are Selenetic Lime; sand and chalk. Other additives <0.1% for set control and workability. Does not contain cement.

Packaging

Available in 25kg bags.

Coverage

One bag will cover approximately 5m² at 3mm thick or 1.3m² at 12mm thickness. 1.6kg of powder per mm of thickness over 1m².

Surface Preparation

Sample trials should always be carried out to assess compatibility with substrate.

- Porous backgrounds should be dampened before application.
- Do not allow Lime green Solo plaster to dry rapidly; dampen very dry backgrounds and do not force dry.
- Do not prime walls with PVA
- Not suitable for excessively wet or continuously damp backgrounds
- Lime green plaster should be applied to uniformly flat walls. Uneven walls should be rubbed out using lime green Duro first

How to Mix

Mix with clean water only for 3 to 5 mins. Add approx 5-7 litres of water to a 25kg sack, do not use below 5°C or above 30°C.

Re-working is not possible.

Required thicknesses:

Insulation boards typically 8 to 12mm. Plaster boards typically 3 to 5mm.

Masonry typically 10-12mm.

How to Apply

For masonry and plasterboard:

Apply the plaster in one pass, levelling off with a straight edge. Leave for at least 1 ½ hours before sponge floating to give a light texture to the surface. If required, leave for another few minutes before closing in with a steel trowel to produce a smooth finish.

Do not over-work the surface as this may lead to fine cracking.

Allow at least 2 weeks drying time, during which time it should be protected from rapid or forced drying.

On Insulation Boards:

Apply Lime Green Solo in two passes of approximate equal thickness, the second to be applied within 24 hours of the first.

Lime Green 454 reinforcing mesh is pushed into the first pass immediately while the plaster is still tacky. Overlap joints in the mesh by 100mm.

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Product Data Sheet: Solo

The mesh should be doubled up at the stress points around windows and doors with diagonal pieces of at least 200mm x 400mm in size. The second pass is applied over the top to completely embed the mesh in the plaster. Finish as for masonry.

Curing and Why

The prevention of drying out too quickly is the key to the success of the application. Lightly spray the base coat if it is too hot or drying out too quickly. EN 13914-2 states in paragraph 5.3.1 that during cold weather, supplementary heating will be needed to keep the room temperatures above the minimum of 5°C if plastering is to continue.

Maintenance

The system is a vapour open and functions by allowing moisture vapour to pass freely. It is therefore important that only vapour permeable paints are used to decorate it. The following paints types and manufactures offer suitable paints: Aglaia natural paints, Traditional limewash and Beeck Insil.

Hazard and Safety	
Risk Phrases	Safety Phrases
R36/38 Irritating to eyes, respiratory system and skin	S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
R66 Repeated exposure may cause skin dryness or cracking	S24/25 Avoid contact with skin and eyes
	S36 Wear suitable protective clothing



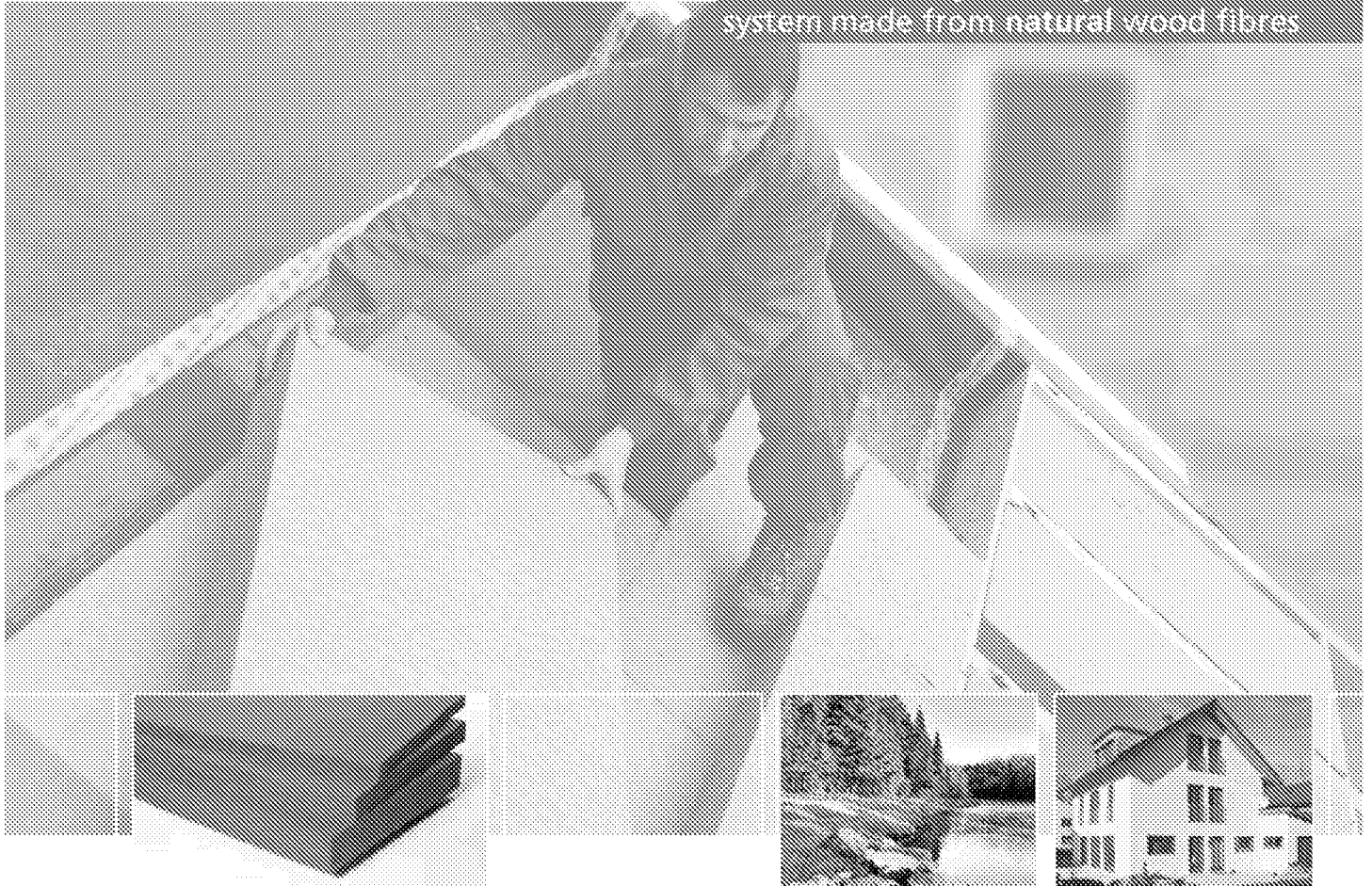
This is not a specification. Trials should be undertaken on old surfaces & backgrounds to ensure compatibility. Lime plasters do not set or perform like gypsum or cement based materials

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STEICO therm

rigid insulation

Environmentally-friendly insulation system made from natural wood fibres



AREAS OF APPLICATION

Rigid insulation from natural wood fibre for **wall and roof** applications

Sub screed insulation



Store flat, level and under cover. Protect edges from damage

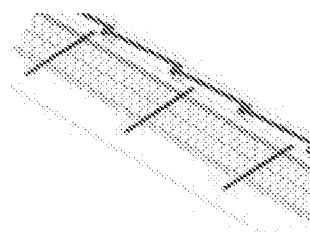
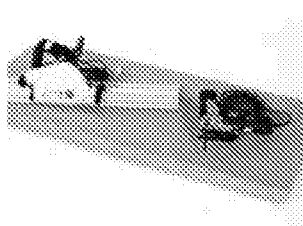
Remove plastic foil packing only when the pallet is on hard, dry and even ground

Max. stacking height: 2 paletts

- ✦ Easy and fast fixing
- ✦ Excellent insulation properties in winter and summer
- ✦ Product made from wood fibres, independently certified by the FSC®
- ✦ High compression strength
- ✦ Water vapour open
- ✦ Enhanced vapour transfer. Helps to regulate the indoor climate
- ✦ Ecological and environmentally friendly
- ✦ Recyclable
- ✦ Fire-resistant and economic construction



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MATERIAL

Wood fibre insulation board produced
in accordance with EN 13171 and with
ongoing quality supervision

Wood for STEICO^{therm} comes from sustainable forestry and is independently certified by the FSC®

For dust extraction please refer to national requirements

PACKAGING

Thickness [mm]	Size [mm]	Weight [kg / m²]	Pieces / Pallet	m² / Pallet	Weight / Pal. [kg]
20	1350 * 600	3.20	108	87.5	ca. 300
40	1350 * 600	6.40	56	45.4	ca. 310
60	1350 * 600	9.60	36	29.2	ca. 300
80	1350 * 600	12.80	28	22.7	ca. 310
100	1350 * 600	16.00	22	17.8	ca. 300
120	1350 * 600	19.20	18	14.6	ca. 300
140	1350 * 600	22.40	16	13.0	ca. 300
160	1350 * 600	25.60	14	11.3	ca. 300

ADDITIONAL AREAS OF APPLICATION

(according to national regulations)

External insulation for roofs or floors with discontinuously laid coverings or under sarking felt
Interior insulation for floors or roofs, insulation between rafters
Insulation under a screed
External insulation for walls behind a rain screen
Insulation for timber structures

CHARACTERISTIC VALUES STEICOtherm

Produced and supervised according to EN 13171	
Board designation	WF – EN 13171 – T3 – CS(10\Y)40 – TR2,5 – AF 100
Edge profile	square edged
Fire class according to EN 13501-1	E
Declared thermal conductivity λ_D [W/(m*K)]	0.039
Declared thermal resistance R_D [(m²*K)/W]	0.5/1.0/1.5/2.0/2.5/3.0/3.5/4.0
Density [kg/m³]	ca. 160
Water vapour diffusion resistance factor μ	5
Sd value [m]	0.1/0.2/0.3/0.4/0.5/0.6/0.7/0.8
Specific heat capacity c [J/(kg*K)]	2100
Minimum compression strength at 10% deformation σ_{10} [N/mm²]	0.05
Minimum compression strength [kPa]	50
Tensile strength perpendicular to face $\perp$ [kPa]	≥ 2.5
Declared level of airflow resistance [(kPa*s)/m²]	≥ 100
Raw material	wood fibre, bond between layers
Waste code (EAK)	030105/170201

Printed on FSC® certified paper | Date 02/2010. Valid to subsequent revisions.



Abstract

Production
certified accor. to
ISO 9001:2000

Member of
WWF
Wood Group



Your STEICO Agent

Journal of Management Inquiry