Tradical®
High-performance lime

Technical data sheet
v05 - May 2016

Tradical® THERMO
Formulated limes for Tradical® Hempcretes

Tradical® THERMO includes:

Tradical® Hempcretes
- Tradical® Thermo
- Tradical® PF 70
- Tradical® PF 80 M
- Tradical® Bâtir
- Chanvribat®
- Tradical® PF 80
- Tradical® Premium

Definition
Tradical® Thermo is mixed with Chanvribat® hurds (Granulat Chanvre Bâtiment certified) and water to produce Tradical® Hempcretes that can be manually or mechanically applied.

Identification
Tradical® Thermo is a Class FL A 3.5 formulated lime according to standard NF EN 459.

Areas of use
Tradical® Thermo is used to prepare hempcretes for insulating walls, insulating lining, insulating roofs and insulating screeds, for all kinds of new constructions or renovations concerning houses, apartment buildings, tertiary and public buildings and more.

→ POSSIBLE STRUCTURES

Insulating walls
Tradical® THERMO + Chanvribat®, enables you to cast an insulating wall with any kind of load bearing structure, including half-timbered walls.

Insulating lining
Tradical® THERMO + Chanvribat®, enables you to apply an insulating lining to interior walls and partitions on all kinds of mineral substrate (old, new, homogeneous, heterogeneous).

Insulating screed
Tradical® THERMO + Chanvribat®, enables you to cast insulating material for all types of ground or upper storey floor.

Insulating roofs
Tradical® THERMO + Chanvribat® enables you to thermally insulate your roof

Unused roof space
Tradical® THERMO + Chanvribat® enables you to thermally insulate the flooring of unused roof spaces

→ PREPARING THE STRUCTURES

- In compliance with the French Professional Rules and the Tradical® brochure.
- All conduit and pipework will be completed before any work on Tradical® Hempcrete structures commences.

→ PREPARING THE PRODUCT

Mixing can be performed in a concrete mixer. Add the following in this order:
1. All of the water
2. Tradical® Thermo: keep mixing until entirely homogeneous
3. and the Chanvribat® is broken up

Prepared in a machine: Refer to the machine manufacturer for instructions on preparing the right Tradical® Thermo + Chanvribat® mix

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Lime + aggregate blend approved by the Construire en Chanvre association
The Construire en Chanvre association has approved the Chanvribat®+Tradical® Thermo blend as meeting the threshold performances measured in certified external laboratories, as required by the French Professional Rules.
Test reference details *(p.4 values)*
CRDA test no. 2015-05-02 report: BCB Tradical® THERMO+Chanvribat® wall formula dated 02/06/2015
CRDA test no. 2013-18 report: BCB Tradical® THERMO+Chanvribat® screed formula dated 10/07/2014
CRDA test no. 2015-05-02 report: BCB Tradical® THERMO+Chanvribat® roof formula dated 02/06/2015

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→ APPLICATION

Insulating walls

In compliance with the French Professional Rules and the Tradical® brochure.

Depending on the walls to be created, hempcrete is manually or mechanically applied between two shuttering panels, against one shuttering panel or on lost shuttering panels.
Where the following points are concerned:
- Placing spacers to position the shuttering panel(s) in relation to the framing
- Placing of shuttering panels and checking their positions
- Applying Tradical® Hempcrete

please refer to the Tradical® Hempcretes brochure and the French Professional Rules.

Interior insulating lining

In compliance with the French Professional Rules and the Tradical® brochure
For insulating linings exceeding a thickness of 11 cm, a secondary framework needs to be installed taking into account the final desired thickness. Placing of guides (on the wall or secondary framing) to serve as a reference point for the final thickness.
- Depending on the selected application method, insulating lining is laid by trowelling, infilling between shuttering panels and walls, or projection.
- Please refer to the Tradical® Hempcrete brochure for information on sizing and placing the secondary framework, applying a base coat and applying the hempcrete (trowelling, infilling between shuttering and wall, mechanical projection).

Insulating screed

In compliance with the French Professional Rules and the Tradical® brochure
- Substrate prepared as per French Professional Rules
- Pour or spray Tradical® Hempcrete according to the selected application method, and:
- Spread and distribute the mixture using a rake
- Level it out
- Run a screed board across the surface

Insulating roof

In compliance with the French Professional Rules and the Tradical® brochure
- Substrate prepared as per French Professional Rules
- Pour or spray Tradical® Hempcrete according to the selected application method, onto the bottom of the lost formwork
- Spread evenly without compacting
- Adjust thickness making sure to remain at least two centimetres below the upper level of the rafters
- Float lightly

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Quantity required for one batch of Chanvribat®

Application	Qty of water	No. of bags of Tradical® Thermo	No. of bags of Chanvribat®	Concrete mixed at	Mass density
Wall	60 litres	**2** bags (= 36 kg)	1	180 kg/m³	280 kg/m³
Lining *Between shuttering & wall or by projection*	60 litres	**2** bags (= 36 kg)	1	180 kg/m³	280 kg/m³
Lining *Trowelling*	80 litres	**3** bags (= 54 kg)	1	270 kg/m³	370 kg/m³
Screed	80 litres	**2,5** bags (= 45 kg)	1	225 kg/m³	325 kg/m³
Roof	43 litres	**1** bag (= 18 kg)	1	90 kg/m³	190 kg/m³
Floor in unused roof space	43 litres	**1** bag (= 18 kg)	1	90 kg/m³	190 kg/m³

Base coat mix proportions before applying insulating lining

Lime		Mix proportion
Base coat	Tradical® Thermo (1 bag)	+ 50 to 60 l of 0/4 sand, for manual application

→ FINISHES

Finish for insulating walls
1 - EXTERIOR: The wall is protected using a three-coat traditional Tradical® lime render.

Lime		Mix proportion
Base coat	Tradical® Bâtir (1 bag)	+ 60 to 70 l of 0/4 sand, for manual application*
Brown coat	Tradical® Bâtir (1 bag)	+ 70 to 80 l of 0/4 sand, for manual application*
Finishing	Tradical® PF 80 (1 bag)	+ 90 to 100 l of 0/4 sand, for manual application
or	Tradical® PF 80 (1 bag)	+ 60 to 70 l of 0/4 sand, for mechanical application
or	Tradical® PF 80 M (1 bag)	+ 50 to 70 l of 0/2 or 0/4 sand

*(*For info on mix proportions for mechanical application, see Tradical® documentation)*

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2 - INTERIOR: Protect the structure by applying:

Lime		Mix proportion
Tradical® Bâtir	(4 bags)	+ 1 bag of Chanvribat®
Tradical® PF 80 M	(5.5 bags)	+ 1 bag of Chanvribat®
Tradical® PF 80 M	(1 bag)	+ 50 to 70 l of 0/2 or 0/4 sand
Tradical® PF 80	(1 bag)	+ 90 to 100 l of 0/4 sand, for manual application
Tradical® PF 80	(1 bag)	+ 60 to 70 l of 0/4 sand, for mechanical application
Tradical® Décor		
Tradical® Lait de Chaux		applied 'a secco'.

Finish for insulating linings: See section 2

Finish for insulating screed
- Only perform once the insulating screed has completely dried and in accordance with the French Professional Rules
- Do not apply any layer that is impermeable to water vapour under the insulating screed made of Tradical® Hempcrete
- Once completed, maintain substrate at room temperature for 3 to 4 days

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→ IMPORTANT

When saltpetre is present, before applying INSULATING LINING, apply Tradical® PZ for masonry as well as brown coats as required (see corresponding Tradical® documentation). *Please note that although Tradical® PZ is used to prepare mortars resistant to salts, nitrates, etc. present in capillary rises, the source of these rises also needs to be treated appropriately.*

Atmospheric conditions
Apply at a temperature of between +8°C and +30°C.

→ GENERAL INFORMATION

Qualifications
Only qualified persons with sound knowledge of hempcretes, or persons who have passed the BETONS DE CHANVRE module in the BCB training programme, may use Tradical®Thermo.

See also

- Tradical® brochures and technical data sheets
- French Professional Rules for the Construction of Hempcrete Structures

Packaging and storage: Tradical® Thermo comes in a 18 kg bag and can be stored for one year away from moisture.

Testing: under the conditions prescribed by standard NF EN 459.

Guarantee: within the scope of the company's civil liability insurance. Manufacturer's civil liability, SMABTP contract: ALPHA-BAT Fabricants no. 512806 E 1004.000

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Characteristics	WALL/LINING*	ROOF and UNUSED ROOF SPACE	SCREED
Mass density	280 kg/m³	190 kg/m³	325 kg/m³
Thermal conductivity	λ = 0.076 W/m.k	λ = 0.056 W/m.k	λ = 0.087 W/m.k
Compression strength	0.65 MPa (after 60 days) 0.69 MPa (after 90 days)	0.11 MPa (after 60 days) 0.11 MPa (after 90 days)	0.44 MPa (after 60 days) 0.47 MPa (after 90 days)
Elastic modulus	27.3 MPa (after 60 days) 38.5 MPa (after 90 days)	3.1 MPa (after 60 days) 3.3 MPa (after 90 days)	49.3 MPa (after 60 days) 39.6 MPa (after 90 days)

**Lining: applied between shuttering and wall using mechanical projection*

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