

N-Thermon® System

Innovative, thin thermal insulation system

Description

Innovative, thin thermal insulation system. Significantly contributes to energy savings, without occupying valuable space of interior areas.

Fields of application

- Interior surfaces, such as cold and moist walls, ceilings, basements, closets, as well as behind heating sources and furniture
- Ideal system - due to its small thickness - for repairs and renovation in existing buildings, e.g. houses, apartments, cottages, preservable buildings, hotels, public buildings, etc.
- Suitable also for exterior thermal insulation installations



Properties - Advantages

- Minimizes the thermal losses and the expenses for heating and cooling
- Minimal total thickness (between 9 and 12mm), without taking up valuable space
- Offers energy savings up to 28,3%* with negligible VOC emissions
- Prevents the formation of humidity and fungal growth
- Provides quicker heating of cold rooms
- Easy and fast installation without demolitions and bureaucratic procedures
- High impact resistance, thanks to the specially designed plaster **Deplast®**
- Exceptionally low water absorption, thanks to the density and the closed-cell structure of **N-Thermon®** boards, which retain their thermal insulating properties
- Certified as a system (**N-Thermon® 6mm - Deplast®**) for its performance in terms of Reaction to fire (Classification **B-s1, d0** acc. to **EN 13501-1**)

**According to the energy study by the University of Athens – Please consult the table of page 3 for more information*

Certificates – Test reports

- Energy studies conducted by the National and Kapodistrian University of Athens - Physics Dept.
 - Calculation of the energy saving achieved in residencies with the use of **N-Thermon® 6mm of NEOTEX®**
 - Calculation of the energy saving achieved in residencies with the use of **N-Thermon® 9mm of NEOTEX®**
 - Calculation of the energy saving achieved in residencies with the combined use of **Neorooft®, Silatex® Reflect and N-Thermon® 9mm of NEOTEX®**
- Certified as a system (**N-Thermon® 6mm – Deplast®**) for its performance in terms of reaction to fire
System classification B-s1,d0 acc. to EN 13501-1 based on the classification report No. 0143\DC\REA\13_3 and individual test reports acc. to EN 13823 and EN ISO 11925-2 (No. 0143\DC\REA\13_1 & 2) by the independent accredited laboratory CSI S.p.A.
- CE certification for the individual products of the system **N-Thermon®** and **Deplast®**
- Complies with the V.O.C. content requirements acc. to the E.U. Directive 2004/42/CE (for the individual products of the system that are classified into relevant subcategories)



Certified by:



UNIVERSITY
OF ATHENS



Technical characteristics

N-Thermon®	6mm	9mm
Density (EN ISO 845)	33kg/m ³	35kg/m ³
Thermal conductivity value (λ) (DIN 52612)	0,0306W/mK	0,0307W/mK
Thermal resistance value (R or 1/λ)	0,1961 m ² k/W	0,293 m ² k/W
Heat penetration value (b)	2,4 KJ/m ² h ^{1/2} K	2,4 KJ/m ² h ^{1/2} K
Water absorption (DIN 53434)	<0,1% vol.	<0,1% vol.
Water vapour permeability resistance factor (μ) (DIN 52615)	450	300
Water vapour diffusions – equivalents of air-layer thickness (Sd = μ*s/1000) (DIN 52615)	2,7m	2,7m
Energy saving*	17,7%	28,3%
Board dimensions	1,25 x 0,80m	1,25 x 0,80m
*According to the energy study by the University of Athens – Please consult the table of page 3 for more information		

Annual consumption of primary energy / percentage change after the application of N-Thermon® 6mm and 9mm (According to study by the University of Athens)

	Climate zone A		Climate zone B		Climate zone C		Climate zone D	
	Primary energy kWh/m ²	% change	Primary energy kWh/m ²	% change	Primary energy kWh/m ²	% change	Primary energy kWh/m ²	% change
Reference building	213,6		340,4		362,5		572,3	
N-Thermon® 6mm	181,2	-15,2%	292,1	-14,2%	298,2	-17,7%	491,0	-14,2%
N-Thermon® 9mm	160,2	-25,0%	262,9	-22,8%	260,0	-28,3%	447,4	-21,8%

Instructions for use

Substrate preparation

The surface must be stable, clean, dry, protected from rising moisture and free of dust, grease, oil and loose materials. Any poorly adhering materials and older coatings should be removed, and the surface should be thoroughly cleaned mechanically or chemically. In case the surface has been infected with mould, it is necessary to initially clean it with a proper mould remover or bleach diluted with water and thoroughly rinse with clean water. Depending on the substrate, appropriate mechanical preparation may be required, to smooth the irregularities, open the pores and create the optimum conditions for adhesion. The surfaces should be sufficiently flat, smooth, and continuous (i.e., without holes, cracks, bays, etc.). In the opposite case, they should be treated accordingly (e.g. by proper puttying). Depending on the condition of the existing substrate and for further stabilization of the surface, appropriate priming is recommended, e.g. by **Revinex®** diluted with water in a ratio **Revinex®**: water - 1:3-4.

Application

Application of N-Thermon® Glue

N-Thermon® Glue is spread evenly on the surface with a notched trowel in a thin uniform thickness. The amount of glue used each time should be sufficient just for the surface of one **N-Thermon®** board.

Installation of N-Thermon® board

The thermal insulation **N-Thermon®** board is placed on top of the liquid glue, pressed against the wall with the aid of a pressure roller. The air should come out entirely by pressing to the sides. The boards should be cut in proper dimensions so that they fit the height of the wall. The boards may be adjusted in two ways: either by hitting when placed next to each other, without leaving gaps, or by overlapping, i.e. by double cutting and removing the strips. The joints between the boards may be sanded, if required, by fine sandpaper and they may be puttied using **N-Thermon® Glue**. The glue sufficiently hardens ~24 hours after its application.

Application of quartz primer N-Thermon® Primer

The quartz primer **N-Thermon® Primer** is then applied onto the smooth **N-Thermon®** boards, in order to create a sufficient bridge of adhesion. The primer is applied in a single layer by roller, slightly diluted with water (up to 3%), if needed.

Application of plaster **Deplast**[®]

After 24 hours, the first layer of plaster **Deplast**[®] is applied by notched trowel and, at the same time, the alkali-resistant fiberglass mesh **N-Thermon**[®] **Mesh 90gr** is incorporated by smooth trowel. After 12 hours (depending on the atmospheric conditions), the second layer of **Deplast**[®] is applied. Finishing may be done by smoothing the surface with a plastering trowel, as soon as the mortar begins to set.

Final coating with the anti-condensation paint **Neotherm**[®] **AC**

After 24 hours, the surface is ready to be puttied and painted. It is recommended to use the innovative anti-condensation paint **Neotherm**[®] **AC**, following the priming of the surface with **Revinex**[®] diluted with water in a ratio **Revinex**[®]: water - 1:3-4.

Build-up of N-Thermon[®] System



N-Thermon[®] System

Indicative thickness: 9-12mm

- 1 **N-Thermon[®] Glue:** Specially designed glue
- 2 **N-Thermon[®] 6mm/9mm:** Boards made of extruded polystyrene (XPS)
- 3 **N-Thermon[®] Primer:** Quartz primer
- 4 **Deplast[®]:** High-strength resinous elastic plaster
- 5 **N-Thermon[®] Mesh 90gr:** Alkali-resistant fiberglass mesh 90gr/m²
- 6 **Neotherm[®] AC:** Anti-condensation paint

Alternative system with woven glass fiber fabric **Gavatex**[®]

After the installation of the **N-Thermon**[®] boards as described above, the woven glass fiber fabric **Gavatex**[®] is cut to the appropriate dimensions, in order to fit the dimensions of the wall. **N-Thermon**[®] **Glue** is applied on the surface of the boards by roller or brush, diluted ~10% with water and after thorough stirring. Then, **Gavatex**[®] is spread on the wall surface from top to bottom and attached using a smooth trowel or construction spatula, moving the tool from the center towards the edges, in order to avoid air entrapments and bubbles, while ensuring perfect adhesion. The fiberglass rolls must not be overlapped at their contact points. For the application in the corners, edges and finishes, it is recommended that the fabric protrudes by 5-10cm during the application and the surplus fabric is cut

once the glue has dried. After ~12 hours (depending on the atmospheric conditions), a second layer of **N-Thermon® Glue** may be applied on the adhered glass fiber fabric **Gavatex®**, for its full impregnation.

After drying, **Gavatex®** may be painted with the anti-condensation paint **Neotherm® AC**.

Packing

N-Thermon® Glue: 15kg, 5kg and 1kg in plastic pails

N-Thermon® 6mm: 30 boards (=30m²) in cartons

N-Thermon® 9mm: 20 boards (=20m²) in cartons

N-Thermon® Primer: 15kg, 5kg and 1kg in plastic pails

Deplast®: 25kg in bags

N-Thermon® Mesh 90gr: 50m x 1m in rolls

Neotherm® AC: 10L, 3L and 1L in plastic pails

Gavatex® V2-180-A5: 50m x 1m in rolls

The information supplied in this datasheet, concerning the uses and the applications of the product, is based on the experience and knowledge of NEOTEX® SA. It is offered as a service to designers and contractors to help them find potential solutions. However, as a supplier, NEOTEX® SA does not control the actual use of the product and therefore cannot be held responsible for the results of its use. As a result of continual technical evolution, it is up to our clients to check with our technical department that this present data sheet has not been modified by a more recent edition.

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