

# edilportale<sup>®</sup>

## TOUR 2017

Ristrutturazione, riqualificazione energetica, comfort abitativo, adeguamento antisismico, BIM



Roofingreen



Catania, 22 marzo 2017

**LANE MINERALI  
CON ECOSE<sup>®</sup> TECHNOLOGY PER PROGETTAZIONI  
ALTAMENTE SOSTENIBILI E PRESTAZIONALI**

**Ing. Francesco Cavicchioli**



***Progetto F.I.CO. (Fabbrica Italiana Contadina) Eatly World – area ex C.A.A.B. BOLOGNA***

***Committenza: Prelios SGR - Eatly***

***Impresa esecutrice: Consorzio Cooperative Costruzioni (CMB Carpi)***

***Prog. Architettonico: Tecnopolis - BO***



**Spazi interni area C.A.A.B. da riqualificare.**



- **FI.CO. (Fabbrica Italiana Contadina)**: area ex CAAB, si compone di 2 lotti >> mercato ortofrutticolo (NAM) e lotto A (Eataly).
- Impresa esecutrice: *CMB Carpi*
- Progetto definitivo e DL: *Tecnopolis\_Bologna*
- Progettisti impresa exec.: *Politecnica\_Modena*











**Target progetto:**

**- Riqualificare spazi, creando nuove partizioni da installare in tempi rapidi, con il minimo ingombro e le massime prestazioni di isolamento termico (contropareti su pannelli pref. Perimetrali), acustico e di sicurezza al fuoco.**



**Pareti/contropareti a secco**

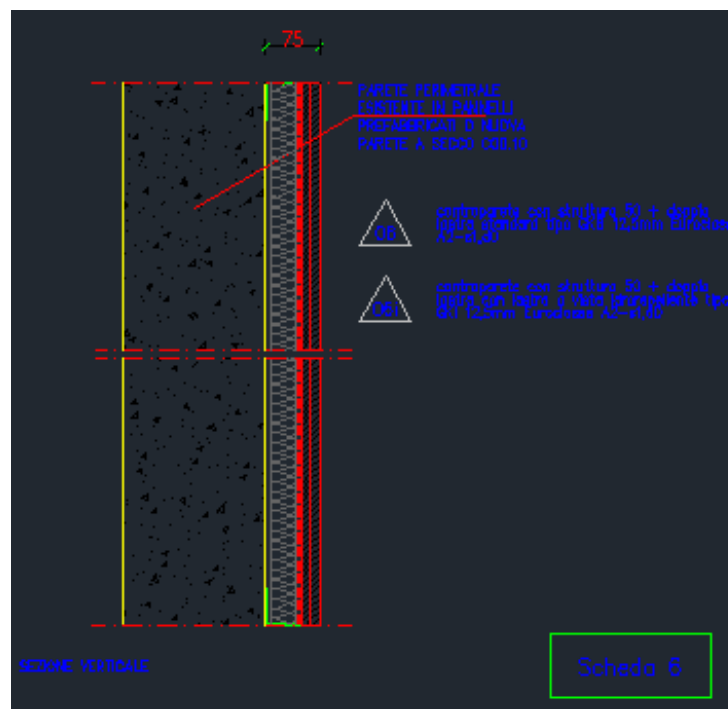
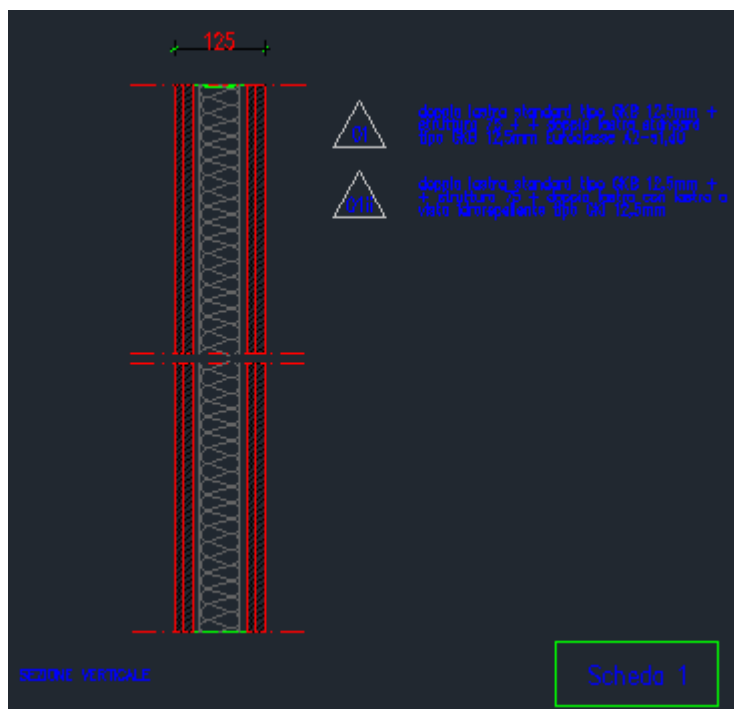


## Materiali isolanti:

- **Prestazioni acustiche**
- **Sicurezza al fuoco**
- **Praticità e velocità di posa**
- **Sostenibilità ambientale**
- **Economicità**



**Lane minerali Knauf Insulation  
con Ecosse<sup>®</sup> Technology**





with **ECOSE**<sup>™</sup>  
TECHNOLOGY



## #EceseNothingBeatsTheOriginal







***Ecosse<sup>®</sup> Technology: una nuova generazione di isolanti, che compie già 8 anni....***

with **ECOSE**<sup>™</sup>  
TECHNOLOGY

**LANA MINERALE  
SENZA FORMALDEIDE AGGIUNTA**  
#EcosseNothingBeatsTheOriginal



# Che cos'è **ECOSE**<sup>®</sup> Technology?

**... una tecnologia rivoluzionaria,  
che prevede l'utilizzo di una resina  
di origine vegetale priva di  
formaldeide, che non contiene  
fenoli e composti acrilici, prodotta  
con materiali facilmente rinnovabili  
e senza additivi coloranti**



**ECOSE<sup>®</sup> Technology è una tecnologia brevettata rivoluzionaria, applicabile ai processi industriali**

**ECOSE TECHNOLOGY: BENEFICI**

→ **Naturale – resina di origine vegetale senza formaldeide, che non contiene fenoli e composti acrilici**

→ Migliorata qualità dell'aria interna (minori emissioni di VOC)

→ **Certificato INDOOR AIR COMFORT GOLD – EUROFINS**

→ **Contiene fino a un 80% di vetro riciclato**

→ Ridotto impatto ambientale, grazie alla minore richiesta di energia durante la fase di produzione (-70%)

→ Minori investimenti per il trattamento dei fumi

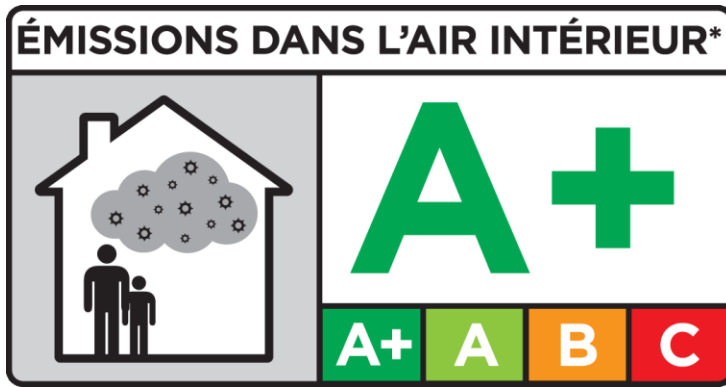


## I vantaggi di Ecose<sup>®</sup> Technology:

- ✓ Materiale **sostenibile**
- ✓ Elevate **performance di isolamento** termico e acustico
- ✓ **Incombustibile** (A1)
- ✓ Qualità dell'**aria** indoor
- ✓ Facilità di **posa**
- ✓ **Non spolvera**
- ✓ **Non pizzica**
- ✓ E' **inodore**







**ENVIRONMENTAL PRODUCT DECLARATION**

as per ISO 14025 and EN 15804

Owner of the Declaration	<b>Knauf Insulation</b>
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-KNI-20160050-CBB1-EN
Issue date	4/12/2018
Valid to	4/11/2021

**Mineral Wool 034-035 Slabs**

MW 35, Mineral Wool 35, Mineral Wool KP 035, Mineral Wool KP 034

with **ECOSE<sup>®</sup> Technology**

**Knauf Insulation**

[www.bau-umwelt.com](http://www.bau-umwelt.com) / <https://epd-online.com>



**LCA: Results**

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE NOT DECLARED)**

PRODUCT STAGE					CONSTRUCTION PROCESS STAGE	USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential	
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	MND	X	X	

**RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m³ Mineral Wool 034-035**

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
Global warming potential	[kg CO <sub>2</sub> -Eq.]	15.70	1.06	3.73	0.06	0.31	-1.69
Depletion potential of the stratospheric ozone layer	[kg CFC11-Eq.]	2.27E-8	4.86E-12	1.94E-9	2.95E-13	3.45E-12	-4.66E-10
Acidification potential of land and water	[kg SO <sub>2</sub> -Eq.]	1.91E-1	2.80E-3	4.25E-3	1.81E-4	1.88E-3	-2.40E-3
Eutrophication potential	[kg (PO <sub>4</sub> ) <sup>3</sup> -Eq.]	3.97E-2	6.56E-4	8.85E-4	4.26E-5	2.55E-4	-2.51E-4
Formation potential of tropospheric ozone photochemical oxidants	[kg ethene-Eq.]	9.68E-3	-8.36E-4	2.08E-4	-5.60E-5	1.80E-4	-2.79E-4
Abiotic depletion potential for non-fossil resources	[kg Sb-Eq.]	1.11E-3	7.05E-8	2.24E-5	4.28E-9	1.08E-7	-2.51E-7
Abiotic depletion potential for fossil resources	[MJ]	327.00	14.60	7.26	0.88	4.07	-23.90

**RESULTS OF THE LCA - RESOURCE USE: 1 m³ Mineral Wool 034-035**

Parameter	Unit	A1-A3	A4	A5	C2	C4	D
Renewable primary energy as energy carrier	[MJ]	55.70	-	-	-	-	-
Renewable primary energy resources as material utilization	[MJ]	37.30	-	-	-	-	-
Total use of renewable primary energy resources	[MJ]	93.00	0.83	1.94	0.05	0.48	-3.21
Non-renewable primary energy as energy carrier	[MJ]	453.00	-	-	-	-	-
Non-renewable primary energy as material utilization	[MJ]	0.00	-	-	-	-	-
Total use of non-renewable primary energy resources	[MJ]	453.00	14.60	9.94	0.89	4.22	-28.30
Use of secondary material	[kg]	15.20	-	0.31	-	-	-
Use of renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00
Use of non-renewable secondary fuels	[MJ]	0.00	0.00	0.00	0.00	0.00	0.00
Use of net fresh water	[m³]	1.41E-1	2.07E-3	8.31E-3	1.26E-4	8.60E-4	-5.00E-3





# CONTRIBUTING TO GREEN BUILDING RATINGS SYSTEMS

*Our contribution to Green Building Rating Systems such as BREEAM and LEED were deciding factors in the choice of our products. Here are two examples of how Knauf Insulation products contribute to greener, more sustainable buildings.*

*"Blowing wool in building projects had good experience. It was the obvious choice."*

## OFFICE BUILDING, NORWAY

**Certification achieved**  
BREEAM - Very Good with energy class B in line with the BREEAM NOR (Norway) environmental standard.

**Product used**  
SUPAFIL Framo into 2,200m<sup>2</sup> of wall space.

**Project**  
25,000m<sup>2</sup> Norwegian office development by construction giant Skanska. The new four-story building for oil company Aibel in the city of Bergen features 900 office spaces, a gym, cycle parking and a naturally illuminated atrium at the heart of the building.

**Challenge**  
To fill a very "hook and cranny" in the wall.

**Solution**  
Isomax Energi AS installed SUPAFIL ensuring a smooth and efficient installation process in timber frame construction to fill the voids.

**Benefits**  
SUPAFIL reduces the environmental impact of the building and is manufactured with up to 60% recycled glass.

*"Isomax Energi AS in Norway is a nationwide blowing wool insulation contractor that only uses SUPAFIL. As a result of the high quality of the solutions we provide, we have enjoyed a strong working relationship with the international construction company Skanska since 2011. This continuing collaboration between our companies has led to many prestigious projects in Norway, including the Aibel building in Bergen." **Tore J. Barstad, CEO, Isomax Energi AS.***







July 2016

**LEED version 4**  
**PRODUCT DATA FOR CERTIFICATION**  
**GLASS MINERAL WOOL WITH ECOSE TECHNOLOGY**

LEEDv4 (Leadership in Energy and Environmental Design) is a voluntary standard that defines high performance green buildings which are healthier, more environmentally responsible, and more profitable structures. Credits for certification can be earned in various categories, each with a unique focus on sustainable design: sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality, innovation and design process.

**KNAUF INSULATION** products can put you on the right track for the highest result for certification!

LEED Credit Category code	Definition	Knauf Insulation Products contribution	Contributes towards
<b>Energy and Atmosphere (EA)</b> Optimize Energy Performance 	To achieve increasing levels of performance beyond the prerequisite standard to reduce environmental and economic harms associated with excessive energy use.	ECOSE Technology products help reducing energy demand through very high insulation efficiency.	<b>20 points</b>
<b>Materials and Resources ( MR)</b> Building Product Disclosure and Optimization – Environmental Product Declarations 	To encourage the use of products where Life Cycle Assessment (LCA) is available and have environmentally, economically and socially preferable LCA. To reward project including products with verified LCA.	Third party verified Environmental Product Declarations (EDPs) are available on line for ECOSE Technology products <sup>1</sup> .	<b>2 points</b>



**LEED**

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN

with **ECOSE**<sup>™</sup> TECHNOLOGY





July 2016

**BREEAM INTERNATIONAL NEW CONSTRUCTION 2016**  
**PRODUCT DATA FOR CERTIFICATION**  
**GLASS MINERAL WOOL ECOSE**

BREEAM (Building Research Establishment Environmental Assessment Methodology) International New Construction<sup>1</sup> is a voluntary standard that defines high performance green buildings which are healthier, more environmentally responsible and more profitable structures. Using independent assessors, BREEAM examines criteria covering a range of issues in sections that evaluate: management processes, health and wellbeing, energy, transport, water, materials, waste, land use and ecology, pollution and innovation.

KNAUF INSULATION products can put you on the right track to get the highest result for BREEAM certification.

BREEAM Credit Category code	Assessment criteria and definition	Knauf Insulation Products contribution	Contributes towards
<b>Hea 02</b> <b>Indoor air quality</b>	<i>Emissions from building products:</i> the insulation materials are one of the 5 product types that needs to meet the emission limits. The following requirements are of application for insulation products: Formaldehyde ≤ 0.06 mg/m <sup>3</sup> ; Total volatile Organic Compounds ≤ 1.0 mg/m <sup>3</sup> ; Carcinogens category 1A and B ≤ 0.001 mg/m <sup>3</sup>	Glass Mineral Wool ECOSE products are in compliance with the requirements as without added formaldehyde and certified Eurofins Gold <sup>2</sup> for Indoor Air Comfort, see annexe 1. 	<b>1 credit</b>
	<i>Post-construction indoor air quality measurement:</i> the total volatile organic compound and formaldehyde are measured and reported (thresholds for averaged formaldehyde concentration level ≤ 100µg/m <sup>3</sup> over 30 minutes and for averaged TVOC ≤ 300µg/m <sup>3</sup> over 8 hours).	Glass Mineral Wool ECOSE products without added formaldehyde and certified Eurofins Gold <sup>3</sup> for Indoor Air Comfort are helping to stay at a very low concentration level. 	<b>1 credit</b>



**BREEAM**<sup>®</sup>

with **ECOSE**<sup>™</sup> TECHNOLOGY



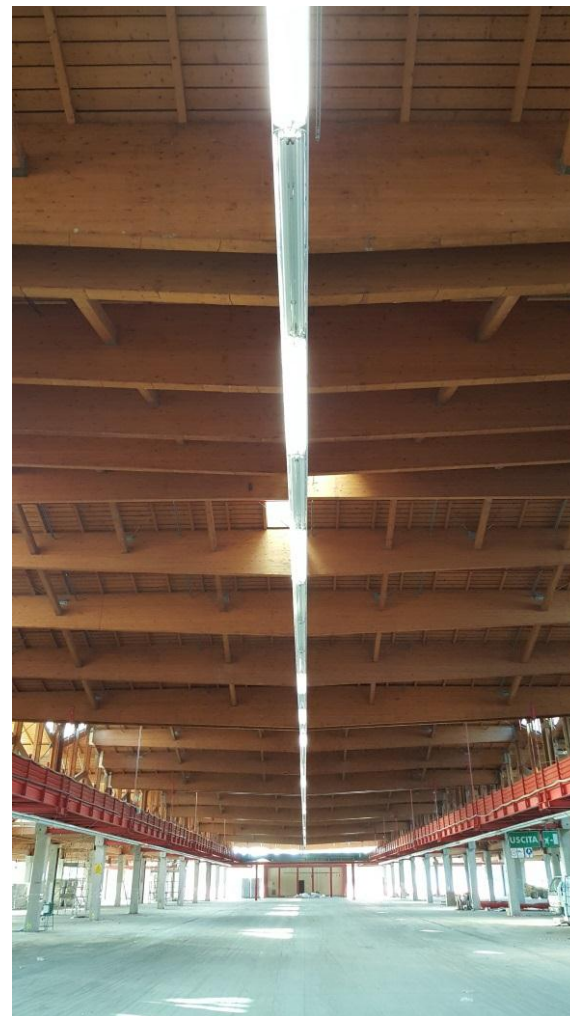
- **F.I.CO. (Fabbrica Italiana Contadina)**: mercato ortofrutticolo già ultimato, lavori a secco realizzati con isolanti Knauf Insulation.



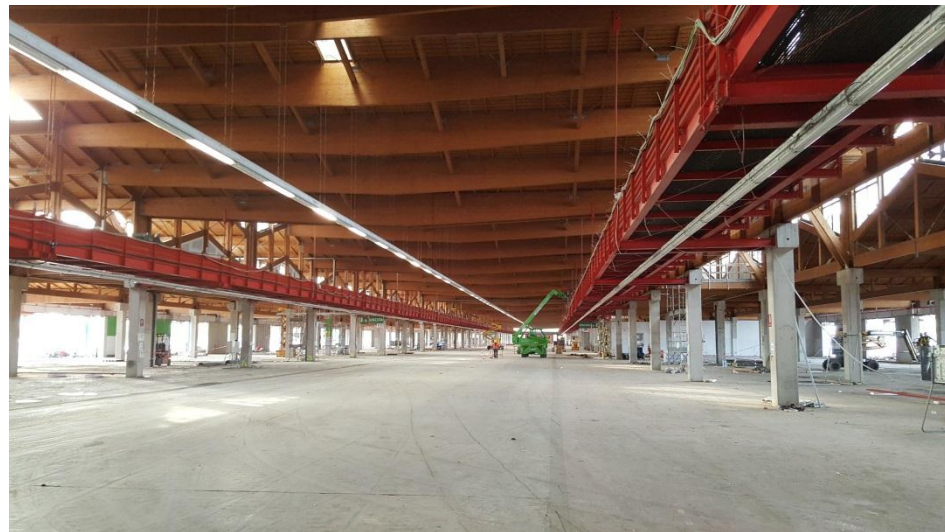
➤ **F.I.CO. (Fabbrica Italiana Contadina)**: Lotto A (Eataly), in corso i i lavori. Le lavorazioni a secco sono realizzate anche per questo lotto con lane minerali Knauf Insulation.

- **Materiali previsti:**

- - *Divisori a secco: Ultracoustic R sp. 70 mm, circa **16000 mq***
- - *Divisori a secco: Ultracoustic R sp. 60 mm, circa **1600 mq***
- - *Divisori a secco: Ultracoustic R sp. 45 mm, circa **6000 mq***
- - *Divisori a secco: DP7 sp. 80 mm, circa **1600 mq***
- - *Divisori a secco: TP 138 sp. 40 mm, circa **1600 mq***
- **Da definire quantità isolanti per controsoffitti a secco**





















# Mineral Wool 35

**LANE MINERALI  
PER SISTEMI A  
SECCO INDOOR**



New  
**REVOLUTIONARY**  
Product

- ✓ Lana minerale per divisori interni
- ✓ Elevate performance
- ✓ Facilità di utilizzo
- ✓ Facile da maneggiare
- ✓ Flessibile e robusta
- ✓ Piacevole al tatto



## Imballo compatto

- ✓ Ampia copertura della superficie per confezione
- ✓ Meno spazio per lo stoccaggio
- ✓ Meno problemi in cantiere







**CARATTERISTICHE  
TECNICHE**

## PERFORMANCE ACUSTICHE

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Le soluzioni di parete a secco illustrate sono state testate presso l'Istituto Giordano, i certificati sono disponibili al sito [www.knaufinsulation.it](http://www.knaufinsulation.it)

✓ **Isolamento acustico**  
**R<sub>w</sub> 54 dB**

(Certificato Ist. Giordano N° 329508)

- n. 2 lastre cartongesso GKB Knauf per lato
- n. 1 pannello Mineral Wool 35 sp.40 mm



✓ **Isolamento acustico**  
**R<sub>w</sub> 56 dB**

(Certificato Ist. Giordano N° 329509)

- n. 2 lastre cartongesso Diamant Knauf per lato
- n. 1 pannello Mineral Wool 35 sp.60 mm  
(Con 2 lastre cartongesso GKB Knauf R<sub>w</sub> 55 dB  
Certificato Ist. Giordano N° 330226)





## PERFORMANCE ACUSTICHE

Le soluzioni di parete a secco illustrate sono state testate presso l'Istituto Giordano, i certificati sono disponibili al sito [www.knaufinsulation.it](http://www.knaufinsulation.it)



✓ **Isolamento acustico**  
**R<sub>w</sub> 62 dB**

(Certificato Ist. Giordano N° 329510)

- n. 2 lastre cartongesso GKB Knauf per lato
- n. 2 pannelli Mineral Wool 35 sp.40 mm



✓ **Isolamento acustico**  
**R<sub>w</sub> 63 dB**

(Certificato Ist. Giordano N° 329511)

- n. 2 lastre cartongesso GKB Knauf per lato
- n. 1 lastra GKB Knauf interna
- n. 2 pannelli Mineral Wool 35 sp.60 mm





MINERAL WOOL 35		
Caratteristiche	Valore	Unità di misura
Dimensioni dei pannelli	600 x 1200	mm
Spessori disponibili	40, 50, 60, 70, 80, 100, 120	mm
✓ Conducibilità termica dichiarata $\lambda_D$	0,035	W/mK
Reazione al fuoco	A1	Euroclasse
Calore specifico (Cp)	1.030	J/kgK
Resistenza al passaggio del vapore acqueo	1	$\mu$

- Legante di origine vegetale
- Senza Formaldeide
- Senza Acrilici
- Senza Fenoli

with **ECOSE** TECHNOLOGY

## Mineral Wool 35

1 pacco = **12,96 m<sup>2</sup>**

1 bancale = 24 pacchi = **311,04 m<sup>2</sup>**

Spessore (mm) 60: 241,92 m<sup>2</sup> pallet

## DP4

1 pacco = **7,2 m<sup>2</sup>**

1 bancale = 10 pacchi = **72 m<sup>2</sup>**



# Mineral Wool 35

Mineral Wool 35



Lana tradizionale





# Mineral Wool 35

Mineral Wool 35



Lana tradizionale





*Francesco*

[www.knaufinsulation.it](http://www.knaufinsulation.it)



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