

ATMOSPHERE

A HEALTHIER SERIES OF AIR HANDLING PRODUCTS FOR IMPROVED INDOOR AIR QUALITY.



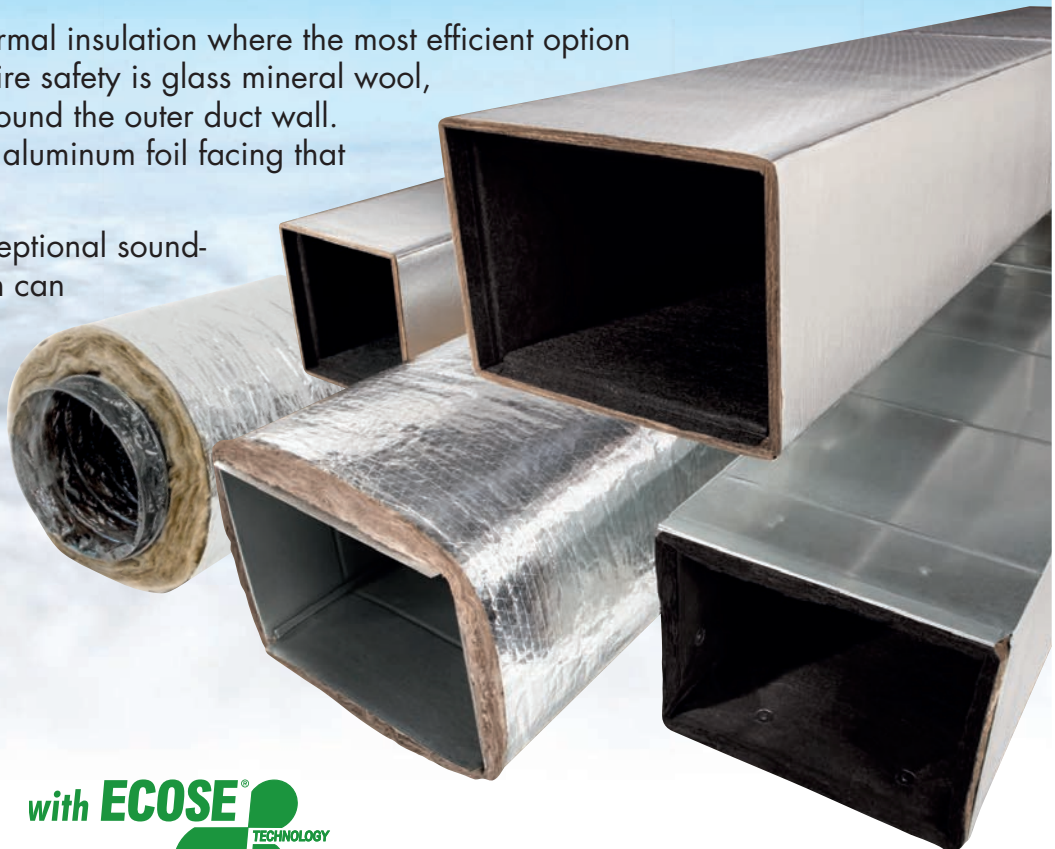
Using ECOSE technology, it is the only such insulation available that's free of both formaldehyde and Decabromodiphenyl ether (decaBDE) and the only insulation to receive the coveted Eurofins Indoor Air Quality Gold Standard.



Products in the Atmosphere line are highly resistant to mold and meet the USA benchmark UL Greenguard Gold Indoor Air Quality Standard.

HVAC Duct systems require thermal insulation where the most efficient option and the option with maximum fire safety is glass mineral wool, usually in roll form wrapped around the outer duct wall. The Duct wrap incorporates an aluminum foil facing that acts as a vapour barrier.

Due to glass mineral wools exceptional sound-absorbing properties, insulation can also be installed on the inner wall of the duct where the insulation acts as an acoustic absorber, reducing duct transmitted noise such as crosstalk and sound energy from air movement and mechanical equipment.



with **ECOSE**[®]
TECHNOLOGY

challenge.
create.
care.

ATMOSPHERE DUCT WRAP



EXTERIOR OF RECTANGULAR OR ROUND SHEET METAL DUCTS

- Suitable for the exterior of rectangular or round sheet metal ducts and spaces or surfaces where temperature and condensation must be controlled.
- Provides a high degree of thermal insulation, enabling a greater degree of energy efficiency in the ducting system
- FSK facing has a water vapor permeance of .02 perms
- Aluglass facing has a maximum water vapor permeance of 0 perms, eliminating the need for additional vapor barriers.

BENEFITS

- Using ECOSE technology, that's free of both formaldehyde and Decabromodiphenyl ether (decaBDE)
- Flame Spread 25 and Smoke Developed 50 when tested in accordance with UL 723, ASTM E 84
- Meets the USA benchmark ULe Greenguard Gold Indoor Air Quality Standard.
- Eurofins Indoor Air Quality Gold Standard
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)

PERFORMANCE

Thermal

Duct Wrap Roll with Thermal Conductivity of 0.035 w/mK and Thermal Resistance of 0.71 w²/mK.

Duct Wrap Roll Ultimate with Thermal Conductivity of 0.033 and Thermal Resistance of either 1.51 w²/mK and 0.79 w²/mK.

Duct Wrap Slab with Thermal Conductivity of 0.031 w/mK and Thermal Resistance of 1.61 w²/mK and 0.81 w²/mK.

Fire

Duct Wrap is tested and listed UL 723, ASTM E84

Classification (UL723)	FSK	Aluglass
Flame spread	not over 25	not over 25
Smoke developed	not over 50	not over 50



Stretch outs

Insulation thickness (mm)	Installed compressed thickness (mm)	Round (mm)	Square (mm)	Rectangular (mm)
38	29	P+241	P+203	P+178
51	38	P+305	P+254	P+203
56	42	P+330	P+279	P+216
64	48	P+368	P+318	P+241
76	57	P+432	P+368	P=292

P = Perimeter of duct to be installed

ATMOSPHERE DUCT LINER



INTERIOR INSULATION MATERIAL FOR SHEET METAL DUCTS

- Sound absorption options ranging between 0.50 to 0.80 NRC
- Provides an optimum combination of efficient sound absorption, low thermal conductivity and minimal airstream surface friction.

PERFORMANCE

Fire

Duct Liner is tested to ASTM E84

Classification (UL723)	WGF
Flame spread	not over 25
Smoke developed	not over 50

Acoustic

Duct liner Roll has an NRC of 0.75

Duct Liner Roll Ultimate with 25 mm thickness has an NRC of 0.80

Duct Liner Roll Ultimate with 15 mm thickness has an NRC of 0.55

Duct Liner Slab with 25 mm thickness has an NRC of 0.80

Air Velocity (ASTM C 1071)

Duct Liner Roll and Slab are performs to a maximum Airvelocity of 1829 mpm
(Tested to 4572 mpm)

BENEFITS

- Using ECOSE technology, that's free of both formaldehyde and Decabromodiphenyl ether (decaBDE)
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FPM	Hydraulic diameter (mm)						
Velocity	254	406	610	813	1016	1823	2540
500	0.054	0.030	0.018	0.012	0.009	0.005	0.003
600	0.077	0.042	0.025	0.018	0.013	0.007	0.004
700	0.104	0.057	0.034	0.024	0.018	0.009	0.006
800	0.134	0.074	0.044	0.031	0.023	0.011	0.008
900	0.169	0.093	0.056	0.039	0.029	0.014	0.010
1000	0.207	0.114	0.068	0.048	0.036	0.018	0.012
2000	0.806	0.443	0.266	0.186	0.141	0.069	0.046
3000	1.797	0.988	0.594	0.415	0.315	0.153	0.103
4000	3.179	1.748	1.050	0.734	0.557	0.271	0.181
5000	4.952	2.724	1.636	1.143	0.867	0.422	0.283

Liner interior width		
No. Pins	Inches	(mm)
0	≤8	≤203
2	9-16	229-406
3	17-28	432-711
4	29-40	737-1016
5	41-52	1041-1321
6	53-64	1346-1626
7	65-76	1651-1930
8	77-88	1956-2235
9	89-100	2261-2540

KNAUF INSULATION PIPE INSULATION



IRON AND COPPER PIPING, EXTERIORS OF PIPES

- For iron and copper piping for all hot, cold, concealed and exposed piping systems.
- Excellent resistance to heat loss or gain, which saves energy and lowers operating costs

PERFORMANCE

Thermal

Knauf Insulation Pipe Insulation have a Thermal Conductivity of 0.030 w/mK.

Fire

Pipe Insulation tested and listed UL 723, ASTM E84

Classification (UL723)	Unfaced	FSK	Aluglass
Flame spread	not over 25	not over 25	not over 25
Smoke developed	not over 50	not over 50	not over 50

Density

All Knauf Insulation Pipe Insulation are 64 kg m³ density.

BENEFITS

- Using ECOSE technology, that's free of both formaldehyde and Decabromodiphenyl ether (decaBDE)
- Non Combustible Insulation
- Eurofins Indoor Air Quality Gold Standard
- Zero Ozone Depletion Potential (ODP)
- Zero Global Warming Potential (GWP)



RECOMMENDED PIPE INSULATION THICKNESS

Heated pipes			
Nom. Bare (mm)	O.D. (mm)	Thickness (mm)	
		100 °C	200 °C
10	17	25	40
15	21	25	50
20	27	30	50
32	42	40	60
40	48	40	60
50	60	50	60
65	76	50	70
80	89	50	75
90	102	50	75
100	114	65	80
150	168	60	90
250	273	70	100
300	324	70	110

Chilled pipes			
Pipe temperature		Ambient conditions %90 R.H & 25 °C	
°F	°C	Pipe sizes (mm)	Thickness of pipe covering (mm)
35 - 49	1.5 - 9	Upto 50	40
		60 - 350	60
30 - 70	10 - 21	Upto 20	25
		25 - 250	40



Project Name : Midfield Terminal Abu Dhabi
Location : Abu Dhabi, UAE



Project Name : King Faisal Specialist Hospital
Location : Jeddah, KSA



Project Name : Dubai Hills Regional Mall
Location : Dubai, UAE



Project Name : Mall of Sargodha
Location : Sargodha, Pakistan

Insulation Thickness Computer Program

Calculate

- * thickness of insulation for condensation control
- * greenhouse gas emissions and reductions
- * insulation needed for personnel protection

Determine

- * economic thickness of insulation based on fuel cost, installed cost, tax rates, maintenance, etc.
- * surface temperature and heat loss or gain efficiency

Perform

- * calculations for flat surfaces and various pipe sizes

KNAUF INSULATION

version 4.1

3E plus®

Brought to you by

NAIMA

NAIROBI AMERICAN INSULATION MANUFACTURERS ASSOCIATION

Knauf Insulation NAIMA 3E Plus® Makes Specifying Insulation Simple

Thickness is a critical factor in the success or failure of an insulation system. But without the right tool for the job, determining the appropriate glass wool insulation thickness for a particular application can be challenging.

Knauf Insulation partnered with NAIMA to bring you custom 3E Plus® calculation software. NAIMA's 3E Plus® software makes it easy to calculate the appropriate insulation thickness necessary for any application.

3E Plus® has all of the standard HVAC insulation products from Knauf Insulation pre-loaded for your convenience.



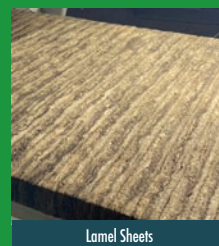
with **ECOSE®** TECHNOLOGY

A superior level of sustainability...

- Insulation manufactured from naturally occurring and/or recycled raw materials
- Bonded using ECOSE® Technology, which is free from phenols, acrylics and with no added formaldehyde, artificial colours, bleach or dyes.
- Contributes to improved indoor air quality
- Reduces impact on environment through lower embodied energy
- Reduces pollutant manufacturing emissions and workplace exposures
- Improves the overall sustainability of buildings when the insulation is installed
- Cost competitive with traditional mineral wool

...and delivers all the benefits too

Thermal insulation, sound absorption and mechanical properties, fire resistance, fire classification, as well as the high levels of recycled content are maintained, with improved product durability.



Lamel Sheets



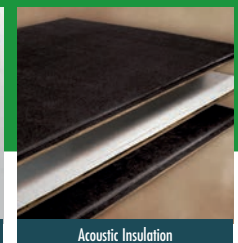
Duct Insulation



Chill Water Insulation



Pipe Insulation



Acoustic Insulation



Thermal



Warmth



Energy saving



Quietness



Fire Protection



Sustainability



Moisture Resistance



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