



Save Energy
Reduce Noise



4-Zero

E-Therm

NuWave[®]

NuWrap5[®]





4-Zero



THERMAL PIPE INSULATION



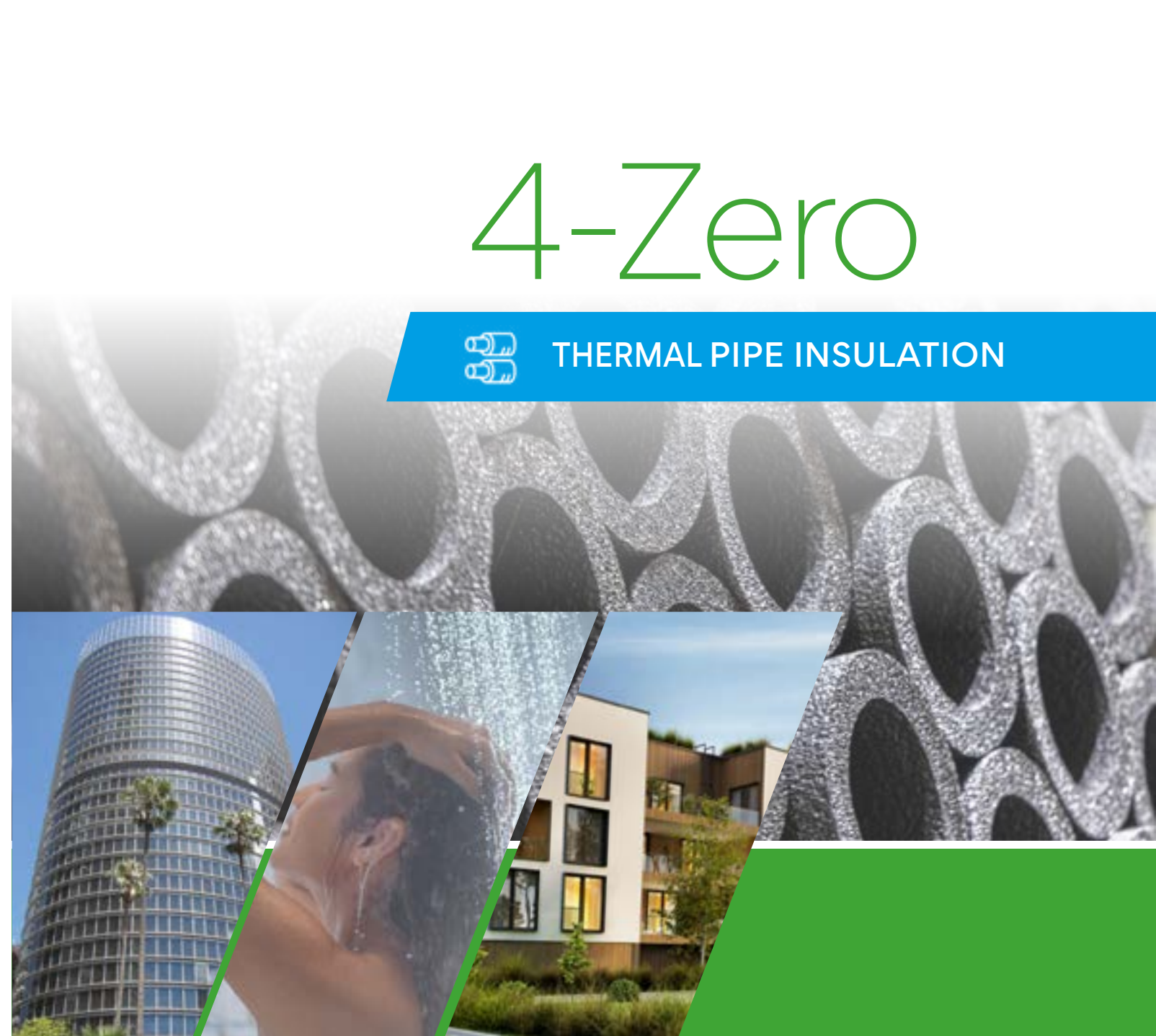
Thermotec is an Australian based manufacturer and distributor of thermal insulation, acoustic solutions and polyethylene foam products. Our extensive product range is manufactured with sustainability in mind for both domestic and commercial applications.

For over 30 years, Thermotec have continued to expand our technical abilities, plant capacity, and product range. Our 10,000m² factory and warehouse located in Sydney Australia is testament to our commitment to delivering unrivalled quality and an extensive product range. Our “Australian Made” products are exported to China, Japan, Thailand, England, Hong Kong, Singapore, UAE, South Africa, South Pacific Islands, Brunei and New Zealand.

Our manufacturing capabilities allow us to develop customised products to meet the unique needs of our customers.

Being one of the only local manufactures with the proven capability to produce hybrid polymeric closed cell foams that provides sustainable value for our customers, Thermotec has led the Australian foam market since 1987.

Innovation is an integral part of our DNA. We lead industry solutions and drive new technologies using the most advanced technologies in the world. We service a broad range of industries which include insulation, building, acoustic, leisure, toy, consumer, packaging and bedding.



✓ Hot & cold pipe insulation

✓ Low V.O.C.

✓ Energy efficient

✓ Green Star Compliant

✓ Non Toxic



4-Zero THERMAL PIPE INSULATION





Thermotec products, such as 4-Zero pipe insulation, are trusted to exceed performance expectations, and are designed to meet or exceed the Building Codes of the Countries, States, Provinces or industry categories where they are specified and installed.

Applications

- › Hospitals & Aged Care Facilities
- › Hotel & Entertainment
- › Commercial Buildings—Offices etc.
- › Public Service Facilities & Buildings
- › Shopping Centre Complexes
- › Multi Level Unit Housing
- › Luxury Accommodation Buildings

Thermotec 4-Zero pipe insulation project applications

Thermotec 4-Zero pipe insulation has been developed to meet the demanding standards of commercial hot and cold water reticulating systems. With excellent thermal insulation performance, Thermotec 4-Zero provides the energy retention properties required by current building specifications.

This pipe insulation contains up to 50% recycled materials, is environmentally safe, and meets the stringent low V.O.C. GreenStar and Green Building requirements.



Product Information

- › Closed cell pre-formed thermal pipe insulation
- › Heat laminated, factory fitted, reinforced aluminium foil face
- › Higher density foam for longevity and durability
- › Suitable for underground applications
- › Low installed cost – Maximum energy savings
- › Resistant to moisture with high vapour resistance - anti-microbial
- › Resistant to hydrocarbons and most chemicals
- › Non-toxic fume performance - BS6853
- › Pre-slit for fast installation
- › Green Star compliant – low VOC and zero ozone depleting substances
- › Manufactured using up to 50% recycled material
- › The original and only genuine “4-Zero” Australian made pipe insulation



Technical Data

Physical State		Closed cell foam / foil faced	
Density Kg/M3		40-50 Kg/M³	
Cell Structure		Closed	
Foam Colour		Charcoal	
Operating Temperature Range		-40°C to 90°C	
Water Vapour Diffusion	DIN52615	H>3.5%	
Resistance	ASTM E96	0.0022G/M² HMM H6	
Water Absorption after 28 Days	DIN53434	<2%	
U.V. Resistance		10 year with E-cladding foil face	
Weatherability		Good	
Thermal Conductivity	ISO 8302-1991	0.032 W/m.K @ 23°C	
Acoustic Reduction		4dB Insertion Loss – 100mm diameter pipe	
Chemical Resistance	ASTM543.56T	Excellent - resists most common acids/chemicals, including oils	
Ozone Resistance	ASTMD1171	Excellent	
Fire Performance per AS1530.3		Ignitability	0
		Spread of Flame	0
		Head Evolved	0
		Smoke Developed	0/1
Toxicity in Fire	BS6853	Tested-no toxic fumes	
Rodent/Pest	Resistant	Contains no food source	

“quality is not expensive, it’s priceless”



What to Specify

The pipe insulation shall be Australian made Thermotec 4-Zero, fire retardant closed cell polyethylene foam, having a density of not less than 40kg/m³. The pipe insulation shall have a wall thickness of either 15mm, 20mm, 25mm, 30mm, 38mm or 50mm (delete thickness not required) and incorporate a factory applied aluminium foil with a 25mm overlap.

The pipe insulation shall comply with the requirements of the National Construction Code of Australia in accordance with AS/NZS4859.1, AS3500.4 and tested to AS/NZS1530.3

All insulation shall be installed around the pipe work surface as tightly as possible without gaps. The edges and ends shall be tightly butted together and all joints and foil overlaps be taped using a 48mm wide 4-Zero rated pressure sensitive adhesive aluminium foil tape.

Where necessary, the preformed sections shall be cut (using a sharp knife) and mitred, to ensure a tight fit around elbows and at tees.

Where pipe size exceeds 101.6mm outside diameter, the insulation shall be specified as Thermotec 4-Zero Thermalag with factory applied aluminium foil, cut to predetermined width to exactly fit the pipe diameter.

Where supports and spacer blocks are used to support the pipe work, the pipe insulation shall be butted tightly up to the spacer blocks and sealed using a silicon sealant.

Energy Efficiency

Thermotec 4-Zero has been designed to provide maximum energy retention in pipework by enabling class leading thermal resistant materials to ensure the most efficient wall thickness to meet today's stringent requirements. Meets requirements of the NCC.

Thermotec 4-Zero is aluminium foil faced, which not only provides excellent resistance to fire, but also provides excellent heat reflecting properties.

Testing

Fire Performance	AS/NZS1530.3 - AWTA Australia
Fire Performance	BS 476.6&7 - PSB Pty Ltd -Singapore
Low VOC	CETEC - Australia
Toxic Fume	BS 6853:1999 – Warrington Fire – UK
Acoustic	Wilkinson Murray - Australia



Green Product

- › **Low V.O.C.**
Green Building Council & GreenStar compliant
- › **ODP-EMI9**
No ozone depleting substances used in both manufacture & composition of the product
- › **GWP**
Zero contribution to “Global Warming Potential”
- › **Reuse-Reduce-Recycle**
Manufactured using up to 50% recycled material

Sizes Available

Pre-formed to suit pipe diameters from 13mm to 101.6mm. Wall thickness 15mm, 20mm, 25mm, 38mm & 50mm

E-therm



INSULATION



- ✓ Safe
- ✓ Ecofriendly
- ✓ 100% Australia
- ✓ Roof Insulation
- ✓ Wall Insulation
- ✓ Floor Insulation



4-Zero THERMAL PIPE INSULATION

E-THERM INSULATION

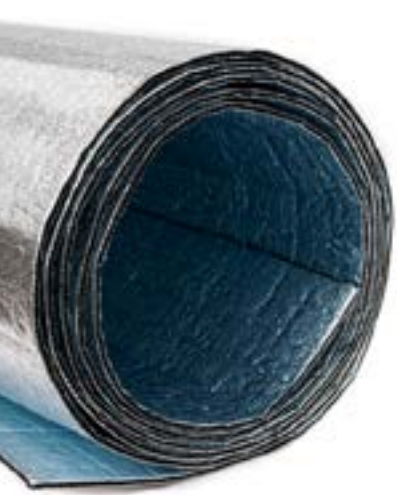




E-therm is a 3 in 1 reflective foil insulation solution replacing traditional foil sarking, bulk fibre, and acoustic noise insulation with one easy product.

With innovative and superior foam technology incorporated in the product, E-therm will also achieve the “thermal break” requirement set by the Building Code of Australia, J Section, when used on buildings with steel framework. E-therm has also been successfully tested and meets all Green Star low VOC Compliance requirements.

E-therm Reflective Foil Insulation is a thin insulation that works by combining closed cell airspace with highly reflective surfaces. It can be used in Domestic, Commercial and Horticultural building applications. E-therm is made using quality materials, and incorporates a bimetallic highly reflective aluminum film that sandwiches a low conductive layer of low density closed cell polyethylene foam. This foam has a very low rate of thermal conductivity, effectively reducing the amount of heat transmission into the building. E-therm also acts as a vapor barrier reducing the passage of moisture and dust particles into the roof and wall cavities.



Thermal break,
Insulation,
Vapour Barrier
and Acoustic
Barrier



Why choose E-therm Insulation

- Effective Thermal and Acoustic Insulation
- Made incorporating Recycled materials
- Fibre free – safe to install
- Insulation lowers your carbon footprint
- Made in Australia
- Meets or exceeds Australian Standards
- Maintains original structure – does not collapse
- Protecting your home from Wind, Dust, Noise and Solar Radiation

E-therm is Greenstar and Basix compliant in that it meets International ODP-EMI4 requirements. This means there are no ozone depleting substances used in either the manufacturing process or the composition of the actual product.

E-therm also contributes to reducing it’s own carbon footprint, by utilising an in house recycling facility, and incorporating up to 80%recycled foam content in the manufacture of the product.

E-Therm’s energy efficient products greatly reduce cooling and heating costs helping achieve the 5 Star Energy Rating, lowering greenhouse gas emissions.

E-Therm is Australian made not transported from overseas, a further reduction in harmful greenhouse gas emissions.

By choosing E-Therm you are maximising both energy saving and environmental benefits for the whole life of the building, which will not only benefit the planet but also create long term energy cost saving solutions for you!

Indicative R-Values

6.5mm thermal performance - deduct R0.05 - in most cases the same as 8mm



Metal Roof

Pitched Metal Roof with Flat Ceiling
Ceiling Ventilated

R-Value	Heat In	Heat Out
5mm	R2.7	R1.2
8mm	R2.8	R1.3

E-THERM UNDER METAL OVER BATTEN



Commercial Roof

5° Metal Roof with Ceiling

R-Value	Heat In	Heat Out
5mm	R3.2	R1.4
8mm	R3.3	R1.5

E-THERM UNDER METAL OVER BATTEN



Brick Veneer Wall

110mm brick
10mm Plasterboard

R-Value	Heat In	Heat Out
5mm	R2.0	R2.0
8mm	R2.1	R2.1

BRICK VENEER, E-THERM TO OUTSIDE OF FRAME

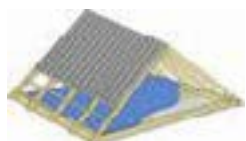


Double Brick Wall

110mm brick
110mm brick

R-Value	Heat In	Heat Out
5mm	R2.0	R2.0
8mm	R2.1	R2.1

DOUBLE BRICK, E-THERM IN MIDDLE OF CAVITY



Metal Roof Retrofit Ceiling

Pitched Metal Roof with Flat Ceiling
Ventilated

R-Value	Heat In	Heat Out
5mm	R3.2	R1.2
8mm	R3.3	R1.3

METAL ROOF E-THERM OVER CEILING JOISTS VENTILATED



Tile Roof

Pitched Tile Roof with Flat Ceiling
Ceiling Ventilated

R-Value	Heat In	Heat Out
5mm	R2.7	R1.4
8mm	R2.8	R1.5

E-THERM UNDER TILES UNDER BATTEN



Commercial or Shed Roof

5° Metal Roof with no Ceiling

R-Value	Heat In	Heat Out
5mm	R1.9	R0.8
8mm	R2.0	R0.9

E-THERM UNDER METAL OVER BATTEN

Cladded Wall

Cladding
10mm Plasterboard

R-Value	Heat In	Heat Out
5mm	R1.8	R1.7
8mm	R1.9	R1.8

E-THERM BEHIND CLADDING

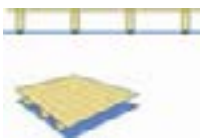


Commercial Roof Retrofit

5° Metal Roof Retrofit
No Ceiling

R-Value	Heat In	Heat Out
5mm	R3.0	R1.2
8mm	R3.1	R1.3

METAL ROOF E-THERM UNDER PURLINS RETROFITTED



Timber Floor

19mm Timber Floor
Unventilated

R-Value	Heat In	Heat Out
5mm	R1.1	R2.7
8mm	R1.2	R2.8

E-THERM UNDER FLOOR JOISTS





Insulation Performance

E-therm™ has been independently tested by Australian Hearing National Acoustic Laboratories, an accredited and recognised Australian testing authority.

E-therm™ insulation (8mm) on its' own achieves a STC 12 giving up to 12dB sound reduction to help minimise rain, aircraft and traffic noise. This is one of the highest acoustic ratings.

E-therm™ Insulation - the ORIGINAL innovation for thermal break

The Building Code of Australia requires a thermal break in steel framed walls and roof construction.

To reduce thermal bridging on walls a minimum thermal break of R0.2 is required between the steel frame and wall cladding. On roofs this R0.2 thermal break is required between the steel frame and metal roof if there is no ceiling, or the ceiling is also attached to the underside of the frame.

E-Therm's 6.5mm and 8mm products meet or exceed the BCA's requirement for steel framed construction, making E-Therm the all-in-one solution.

Product Dimensions

Etherm 5mm		
Thickness	5mm	Nominal
Length	22.25mtr	30m² cover per roll, plus overlap piece
Width	1.35mtr	
Weight	13Kg	Approximate Weight
Etherm 6.5mm		
Thickness	6.5mm	Nominal
Length	22.25mtr	30m² cover per roll, plus overlap piece
Width	1.35mtr	
Weight	15.5Kg	Approximate Weight
Etherm 8mm		
Thickness	8mm	Nominal
Length	22.25mtr	30m² cover per roll, plus overlap piece
Width	1.35mtr	
Weight	18Kg	Approximate Weight

Technical Specifications

Specification	Standard	Rating
Emissivity	ASTM E 408-71	Silver 0.03
Antiglare 0.06		
Material R-Value	ASTMC518	5mm R0.16 6.5mm R0.20 8mm R0.25
Thermal Performance	AS/NZS 4859.1	Compliant
Flammability Index	AS/NZS 1530 Part 2	≤5 Pass
Ignitability Index	AS/NZS 1530 Part 3	0 Pass
Spread of Flame Index	AS/NZS 1530 Part 3	0 Pass
Heat Evolved Index	AS/NZS 1530 Part 3	0 Pass
Smoke developed Index	AS/NZS 1530 Part 3	0 Pass
Oxygen Consumption	AS/NZS 3837	Group One Rating
Toxic Fume Performance	BS 6853	Non-Toxic Pass
Airborne Sound Performance	AS 1191	STC 12 Rw (12dB reduction)
Vapour Barrier Performance	AS/NZS 4200	Medium
Duty Rating - Extra Heavy Duty	AS/NZS 4200	2.4mtr span (without product support mesh)
Edge Tear Test	AS/NZS 4200	Pass
Dry Delamination	AS/NZS 4200	Pass
Wet Delamination	AS/NZS 4200	Pass
Water Penetration	AS/NZS 4200	Pass
Shrinkage	AS/NZS 4200	Pass
Compression Recovery	ASTM D 545-84	95%
Load Bearing	ASTM D 545-84	10Kn

NuWave®



ACOUSTIC NOISE BARRIER



- ✓ High noise reduction
- ✓ Reduces inter-office noise
- ✓ Meets ODP-EMI 4
- ✓ Reduces impact noise
- ✓ Essential fit-out material
- ✓ Green Star Compliant
- ✓ Effective for silent walls
- ✓ Low V.O.C.





Thermotec NuWave® Acoustic products are designed to meet the requirements of modern buildings, building standards and codes of the Countries, States or Industry categories where these products are specified and installed.

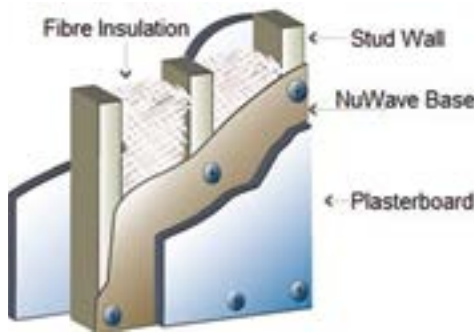
Typical Applications

- › Partitions and common walls - housing units
- › Noise Barrier screens, temporary & permanent
- › Carpet underlay - studios, theatres, offices
- › Ceiling - offices, meeting rooms, home theatres
- › Studios, theatres, media rooms & hospitals
- › Heavy industrial machinery - noise isolation
- › Waste/Soil pipes - noise reduction
- › Plant rooms, engine rooms, heavy transport
- › Acoustic Doors
- › Mining barrier screens—Milling, screening, etc.
- › Fan & Blower Housings

Thermotec NuWave® Acoustic Barrier

- › NuWave® mass loaded vinyl barriers - 4kg, 6kg & 8kg
- › Other densities available on request
- › Low profile - High Performance - long life
- › Industry acceptance and proven performer
- › Available as 4-Zero fire rated & outdoors variants
- › No ozone depleting substances (ODP-EMI 4)
- › Available in composite products - NuWrap5® & Cabmat
- › Easy to cut and install as curtains, inside walls and ceilings
- › Low VOC - meets Green Building Council requirements
- › Maximum transmission loss across the range of frequencies

Properties	Standard Roll Size	1350mm x 5 metre / 1350mm x 3 metre
	Weight - nominal	NuWave® 4kg/m², NuWave® 6kg/m², NuWave® 8kg/m²
	Thickness - nominal	NuWave® 4kg = 2mm, NuWave® 6kg = 3mm, NuWave® 8kg = 4mm
	Operating Temperature	Up to 100°C
	Green Building Council Compliant	Yes (Low VOC & ODP-EMI4)
	Available as Fire Tested Product	NuWave® 4-Zero Foil Faced—AS/NZS1530.3
	Barrier Material	Mass Loaded Vinyl (MLV)
	Country of Manufacture	Australia



Thermotec NuWave® Mass Loaded Barrier

The NuWave® range of high-performance barriers is based on high density, limp mass polymers to take the energy out of sound waves right across the hearing frequency spectrum. NuWave® barriers are flexible, inexpensive and will control unwanted noise from home theatre systems, aircraft noise, machinery noise, unwanted noise through walls and floors, office ceilings and other types of airborne noise.

When noise and sound transmission needs to be effectively controlled, NuWave® Noise Barriers provide the solution to ensure that building standards are complied with, and that noise levels are effectively reduced.

NuWave® noise barriers are also manufactured in various composite products such as high-performance carpet underlays, heavy transport cabin insulation, plant room noise control, and waste pipe.

NuWave® Barriers Performance Summary

Test No.	Description of Sample	STC rating	Rw (C, Ctr)
1	Thermotec NuWave® 4kg/m²	26	26 (-1,-3)
2	Thermotec NuWave® 6kg/m²	29	29 (-1,-4)
3	Thermotec NuWave® 8kg/m²	30	30 (-1,-4)

NuWave® Barrier Test Data

Third Octave Band Centre Frequency (Hz)	4kg/m² Sound Transmission Loss (dB)	Precision Achieved	6kg/m² Sound Transmission Loss (dB)	Precision Achieved	8kg/m² Sound Transmission Loss (dB)	Precision Achieved
100	15	1.0	16.7	0.6	16.9	2.0
125	16	0.8	16.4	1.0	17.3	1.6
160	13	0.6	16.0	0.7	16.9	1.0
200	15	0.9	18.0	1.2	19	0.7
250	18	0.4	20.3	1.7	22.2	0.8
315	17	0.5	21.0	0.3	21.8	0.3
400	20	0.4	22.2	0.3	24.8	0.6
500	21	0.5	25.0	0.4	25.5	0.5
630	23	0.1	26.9	0.5	26.9	0.4
800	25	0.2	28.2	0.4	29	0.5
1000	26	0.3	29.0	0.4	30.4	0.4
1250	28	0.2	30.7	0.2	32	0.5
1600	29	0.3	32.6	0.2	33.2	0.4
2000	31	0.2	34.3	0.5	35.2	0.5
2500	33	0.2	35.8	0.2	36.9	0.5
3150	35	0.2	37.4	0.3	38.6	0.5
4000	37	0.2	39.8	0.2	40.7	0.4
5000	42	N/A	43.2	N/A	44.5	N/A
Rw/STC	26		29		30	
Rw(C,Ctr)	26(-1,-3)		29(-1,-4)		30(-1,-4)	



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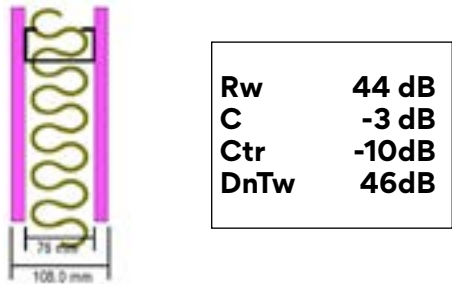


Wall & Ceiling Predictions

NCC F5.5 (a) Sound insulation rating of walls—A wall in a Class 2 or 3 building must -

- (I) have an $R_w + C_{tr}$ (airborne) not less than 50, if it separates sole-occupancy units;and
 - (II) have an R_w (airborne) not less than 50, if it separates a sole-occupancy unit from a plant room, liftshaft, stairway, public corridor, public lobby or the like, or parts of a different classification
- (c) A wall in a Class 9c aged care building must have an R_w not less than 45 if it separates-
- (I) a sole-occupancy unit;or
 - (II) a sole-occupancy unit from a plant room or liftshaft

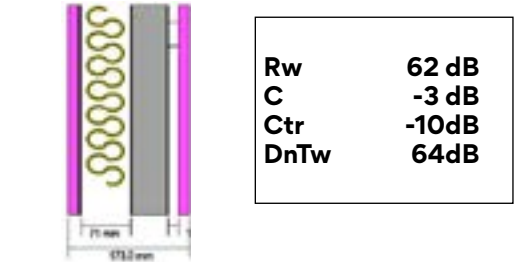
Typical Double Stud Party Wall Construction—NCC Compliant



SYSTEM DESCRIPTION

Panel 1: 1 x 16mm CSR Gyprock Fyrecheck Plasterboard
Cavity: Steel stud (20g-16g): Stud spacing 600mm
Infill: Fibreglass 60mm (10kg/m³)
Panel 2: 1 x 16mm CSR Gyprock Fyrecheck Plasterboard
Mass air-mass resonant frequency = 77Hz

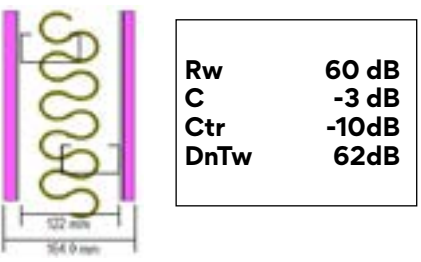
Typical Speedwall Party Wall Construction—NCC Compliant



SYSTEM DESCRIPTION

Panel 1: 1 x 16mm CSR Gyprock Fyrecheck Plasterboard + 1 x NuWave® 6kg/m² (5mm) Cavity: None - Stud spacing 600mm, infill Fibreglass 50mm (22kg/m³)
Panel 2: 1 x 51mm Speedwall 750kg/m³
Cavity: Steel stud (0.55mm) Stud spacing 600mm
Panel 3: 1 x 16mm CSR Gyprock Fyrecheck Plasterboard
Mass air-mass resonant frequency = 60Hz, 180Hz

Typical Stud Wall Construction for internal walls—NCC Compliant



SYSTEM DESCRIPTION

Panel 1: 1 x 16mm CSR Gyprock Fyrecheck Plasterboard + 1 x NuWave® 6kg/m² (5mm)
Cavity: Staggered Steel stud, spacing 600mm
Infill: Fibreglass 75mm (22kg/m³)
Panel 2: 1 x NuWave® 6kg/m² (5mm) + 1 x 16mm CSR Gyprock Fyrecheck Plasterboard
Mass air-mass resonant frequency = 48Hz

Typical Ceiling Attenuation Class (CAC) Predictions

Table 1 is a summary of the acoustic opinion considering the assumptions in this report. It is to be noted that this acoustic opinion is likely to be within ±2dB of a laboratory test and that the performance in the field is likely to be lower.

Table 1 – Opinion of the CAC for various ceiling plenum systems

NuWave Product (kg/m²)		
4	6	8
Base ceiling minimum CAC 30		
43	44	45
Base ceiling minimum CAC 35		
48	49	50



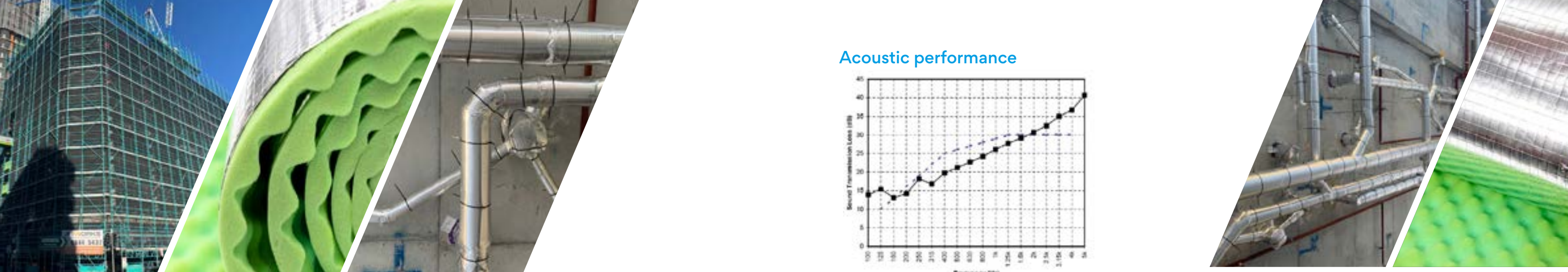
NuWave® will need to be installed so that all penetrations, material overlaps, interface with the soffit and the back of the ceiling are sufficiently detailed with respect to acoustics. Furthermore, the extent of the plenum, including the likely amount of return, will/may need consideration to facilitate the final acoustic outcomes.

NuWrap5®

ACOUSTIC PIPE INSULATION



- ✓ High noise reduction
- ✓ Zero - O.D.P.
- ✓ Safe fibre free product
- ✓ Low V.O.C.
- ✓ Fire performance tested
- ✓ Green Star Compliant



Thermotec NuWrap5[®] acoustic pipe and duct lagging is classed as a “one solution” product that can be used either indoors or manufactured for use outdoors. NuWrap5[®] uses a barium loaded limp polymer with a mass of 5kg per square metre. It is faced with a scrim reinforced fire resistant aluminium foil and bonded to a high performance polyether - polyurethane de-coupling open cell foam. NuWrap5[®] is suitable for soil/waste pipes and all types of ductwork.

Applications

- › Hospitals & Aged Care Facilities
- › Hotel & Entertainment
- › Commercial Buildings—Offices etc.
- › Public Service Facilities & Buildings
- › Shopping Centre Complex
- › Multi Level Unit Housing
- › Luxury Accommodation Buildings

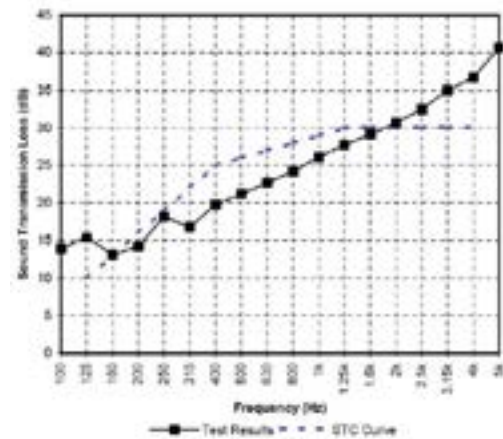
“quality is not expensive, it’s priceless”

Thermotec NuWrap5[®] meets modern building requirements

Construction materials of today are causing pipe and duct noise to be of more concern than in previous times. PVC pipe replaces cast iron and noise break out needs to be controlled by effective insulation of the pipe or ductwork. An effective acoustic lagging is a barium loaded limp polymer used with a decoupling material, of which open cell, hydrolysis resistant, polyether PU foam has proven to be highly efficient.

This type of material combination is considered very safe and an alternative to fibre based products which may have varying amounts of formaldehyde content and fibres that can compress and come loose over time. NuWrap5[®] ensures compliance with National Construction Code of Australia and other Specifier and Building Codes’ acoustic requirements.

Acoustic performance



STC 29 - 6kg tested as a free hanging barrier

Table 5.1: Comparison of Measured Noise Levels - dBA

Construction.	L Amax	SEL
Bare Pipe with a Rw+Ctr 40 wall	37.7	44.5
Pipe Lagged with 5 kg/m² NuWrap5 [®] with 25 mm convoluted foam and reduced wall thickness of 10mm Plasterboard	36.0	42.8

Therefore, based on the comparative noise testing, the treatment of wastewater pipework with NuWrap5[®] pipe lagging in combination at 10mm plasterboard ceiling will comply with the provisions of section F5.6 of the NCC. No ceiling Batt is required for compliance.

Frequency (Hz)		Sound Power Levels (dB re 1 pW)		
		Bare Pipe	Lagged Pipe	Insertion Loss*
100		33.4	28.5	4.9
125		34.8	26.3	8.4
160		35.4	30.9	4.5
200		32.6	30.9	1.7
250		35.5	30.4	5.1
315		37.6	29.4	8.2
400		41.0	27.9	13.1
500		42.2	27.9	14.4
630		47.0	30.9	16.1
800		48.6	32.8	15.7
1000		52.3	34.8	17.5
1250		54.5	35.1	19.4
1600		53.7	32.7	21.0
2000		54.7	32.1	22.7
2500		54.1	29.2	24.9
3150		54.9	27.7	27.2
4000		54.9	25.7	29.2
5000		51.7	22.4	29.3
6300		47.0	17.6	29.3
8000		43.6	12.3	31.3
10000		41.3	8.6	32.7
SUM (linear)	100 Hz - 10 kHz	63.6	43.4	20.2
	100 Hz - 5 kHz	63.4	43.3	20.2
SUM (A-weighted)		64.3 dBA	42.4 dBA	21.9 dBA

Thermotec NuWrap5[®]

5 kg/m² acoustic barrier bonded to 25mm thick convoluted foam

Test Location:

Twin Reverberation Rooms
National Acoustic Laboratories
126 Greville Street, Chatswood NSW

Instrumentation:

- Brüel and Kjær “PULSE” Data Acquisition Unit Type 3560C
- Brüel and Kjær High Sensitivity Microphone Type 4179 x 2
- Brüel and Kjær Microphone Preamplifier Type 2660 x 2
- Brüel and Kjær Microphone Calibrator Type 4231

*The Insertion loss was calculated for each pipe and then averaged, hence the (average) SWL of the bare pipe minus the (average) SWL of the lagged pipe does not exactly equal the (average) insertion loss.

Green Product

Complies with GreenStar, Green Building Council & Dubai Municipality, low VOC requirements. Also meets ODPEMI9 “avoids the use of ozone depleting substances used in both the manufacture and product composition”



Product Construction

Thermotec NuWrap5® is manufactured using the latest lamination technology to create a product that is a unique, integrated, multi-layer, high performance acoustic pipe and duct, noise reduction insulation.

Performance is the result of using a special density convoluted foam in conjunction with a barium loaded, high mass, (5kg/m²) limp polymer material that is faced with a reinforced aluminium foil that gives the product additional strength as well as outstanding fire resistance characteristics.

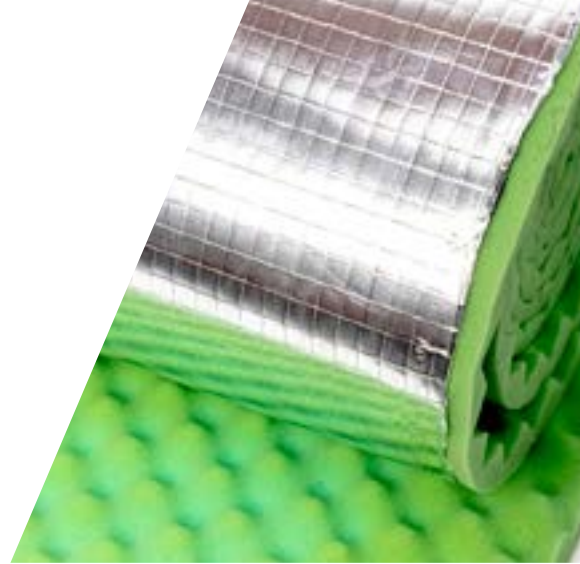
What to Specify

The acoustic lagging for the soil, waste and stormwater pipes will be Thermotec “NuWrap5®”. The Barrier shall be a barium loaded limp mass polymer with a density of 5kg/m². The decoupling layer shall be an open cell Polyether-urethane convoluted foam of 25mm maximum thickness with a reinforced aluminium foil facing. The lagging must demonstrate to meet GreenStar, Green Building Council and Dubai Municipality low VOC requirements and be able to operate continuously at a maximum temperature of 100 degrees Celsius.

When installing. Material should be cut to size and fixed in place, with no gaps, using a self-adhesive aluminium foil faced tape of 72mm width. Straight lengths of pipe must incorporate a minimum 50mm overlap and again be sealed with a 72mm wide foil tape. All material surfaces to be cleaned prior to affixing tape.

Installation

Leak test system. Ensure that surface of outer pipe is clean and free of dust etc. Cut insulation to suit either bends or straight lengths. Wrap insulation in place and ensure no gaps and that butt joins are well sealed. For straight lengths use a minimum 50mm overlap. Use 72mm wide foil face self-adhesive tape ensuring that surface to be taped is clean and dust free. On straight runs, foil tape, cable ties, or packaging strapping should be used as a band approximately every 400-500mm wrapped around the insulation. All longitudinal joins to be overlapped and taped. Joins should be facing downwards to avoid unnecessary weight and strain on the tape. Important to ensure there are absolutely no gaps.



Testing

Fire Performance	AS/NZS1530.3 - AWTA Australia
Fire Performance	BS 476.6&7 - PSB Pty Ltd - Singapore
Low VOC	CETEC - Australia
Acoustic Testing	VIPAC - Australia
Acoustic Testing	Wilkinson Murray - Australia

Properties

Standard Roll Size	1350mm x 5 metre / 1350 x 3 metre
Weight - nominal	5.1kg per square metre
Thickness - nominal	25mm
Operating Temperature	100 degrees Celsius - continuous
Decoupling Foam	Polyether Polyurethane convoluted open cell
Foam Density - nominal	19kg/m ³
Barrier	Barium loaded limp mass polymer - foil faced
Country of Manufacture	Australia

Pipe Size	Strip Size
32mm ID	250mm
40mm ID	280mm
50mm ID	320mm
65mm ID	360mm
80mm ID	405mm
100mm ID	490mm
150mm ID	650mm



The Thermotec Sustainability Focus

Thermotec is committed to environmental sustainability through reducing both our own and our customers environmental footprint.

Our sustainability focus includes:

- › Supplying energy saving insulation and renewable energy products
- › Providing products that meet both National Construction Code of Australia and Green Star Compliance
- › No Ozone depleting substances used in the production of our polyethylene foam products
- › Complying with all relevant environmental regulations.
- › Minimising waste
- › Recycling and utilising all process generated and uncontaminated post consumer foam
- › Not endangering air or water in the production process

Thermotec’s environmental efforts are currently moving beyond compliance to actively focus on minimising our own environmental impact through energy efficiency, CO² reduction and waste minimisation.



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