



HVAC & Industrial

Insulation Product Selector

NCC - 2016 & 2019



CSR

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Introduction

Designing and selecting the right materials to meet National Construction Code and end user requirements is critical during the design phase of a project. With the introduction of amendments to the National Construction Code of Australia (NCC) for 2019, CSR Bradford has updated this HVAC manual to incorporate the latest changes to the Energy Efficiency provisions for Class 2-9 commercial buildings contained within the NCC 2019 Volume 1.

This manual provides guidance on:

- The NCC energy efficiency provisions for flexible and rigid HVAC ducting;
- How to meet and exceed these NCC requirements with CSR Bradford insulation products;
- Functional and decorative insulation blanket facing options to suit a broad range of applications.

The NCC represents the minimum level of insulation for good energy efficiency and performance of the building envelope. Given the relatively low capital cost of insulation, increasing insulation R-Values during the design phase can decrease the air conditioning load, thus reducing project capital equipment costs as well as future running costs.

Important Note: In some climates and air conditioning applications, the minimum ductwork insulation requirements specified in the NCC for energy efficiency may be insufficient for either optimum energy efficiency performance of the system or for control of condensation. CSR Bradford recommends that a qualified Mechanical Services Engineer always be consulted when specifying duct insulation for your project.

Contents

1.	Introduction	3
2.	Design Considerations	4
	2.1. Design Considerations	4
	2.2. Material Selection Considerations	4
	2.3. Important Specification & Installation Guidance	4
3.	Compliance To The NCC	5
	3.1. Climate Zones	5
	3.2. Ductwork	6
	3.3. Rigid duct applications	6
	3.4. Flexible duct applications	6
4.	Product Applications & Facing Selection	7
	4.1. Ductwork product application guide	7
	4.2. Available facings for HVAC applications	7
5.	Acoustic Performance	8
	5.1. Sound absorption	8
6.	Product Detail	9
	6.1 Flexible duct product overview	9
	6.2 Rigid ductwrap product overview (External)	9
	6.3 Rigid ductliner product overview (Internal)	11
	6.4 Industrial Rockwool Overview	14
	6.5 HVAC Accessories	15
7.	Health and Safety	18
8.	Product Warranty	18



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Design Considerations

2.1 Design Considerations

HVAC insulation can provide many benefits, such as helping to meet or exceed the NCC Energy Efficiency requirements, provide a more comfortable and safer environment for occupants, minimise the risk of condensation, and decrease building running costs. When designing a HVAC system, it is important to consider the following design requirements and risks.

- NCC's minimum Deemed-to-Satisfy total thermal performance for HVAC systems
- Achieving a Green Star rating by contributing to the energy improvement of the building
- Condensation management by selecting appropriate facing materials
- Acoustic control through insulated ducts for noise absorption whilst providing thermal performance to meet NCC Energy Efficiency targets
- Maintenance of indoor air quality through the use of products approved by the National Asthma Council of Australia's Sensitive Choice program
- Control fire risk by minimising the possibility of fire spread through the duct by using inert mineral fibres such as Glasswool
- Sustainability by using Bradford glasswool insulation, which is manufactured from up to 80% recycled glass
- Aesthetics where the ductwork is exposed and selection of the appropriate facing is critical.

2.2 Material Selection Considerations

When designing rigid ductwork, consideration should be given to the following material considerations and consultation sought on specific issues prior to specification:

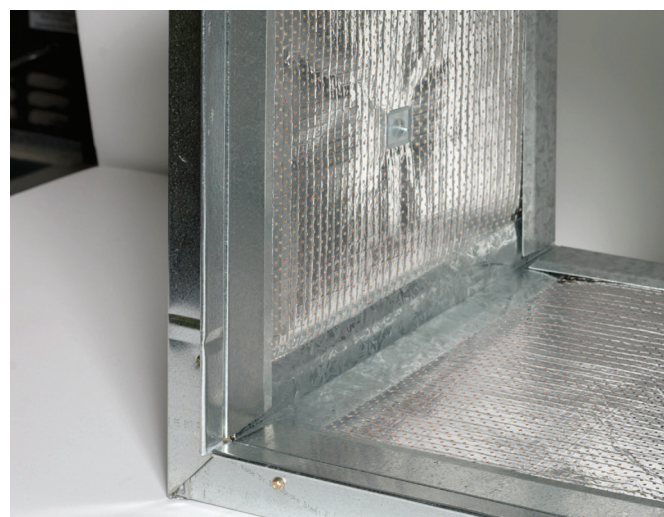
- Compressed insulation: To achieve its declared R-Value in accordance with AS/NZS4859 (as required by AS4254.2), bulk insulation must not be compressed;
- Moisture absorption: Excessive moisture can reduce the thermal performance of Glasswool insulation and degrade the facing material so the duct must not accumulate moisture;
- Environmental exposure: Some corrosive environments (such as indoor aquatic centres) can circulate harsh chemicals through HVAC systems and degrade insulation materials – seek advice from CSR Bradford during design phase;
- Mechanical Damage: Facing materials and Glasswool insulation can be damaged by mechanical cleaning and the subsequent damage to the vapour barrier can be a condensation risk in some climate zones;

- Service temperature of facing materials: maximum 70°C for paper-based and plastic-based products, 100°C for glass woven products;
- Air velocity for facing materials: Air velocities should be calculated in accordance with AS4254 and it is recommended that sheet metal be used where specified by AS4254 and in areas above 12 m/s.

2.3 Important Specification & Installation Guidance

It is recommended that as a minimum, ductwork should be specified and installed in accordance with AS4254.2 Rigid Ducts. The additional specification and installation guidance listed below is optional provided as general advice and it is acknowledged that other alternative compliant methods may also be used to address these elements.

- It is recommended that longitudinal and transverse joints be secured using metal channels as per the option presented in AS4254.2 rather than tape, particularly when a solid (air-barrier) insulation facing has been selected;
- The use of weld pins applied prior to the application of the insulation in conjunction with postfixed insulation clips is always recommended (as opposed to integrated pins with washer heads) as this technique allows inspection/correction of the pin weld integrity prior to installation of the insulation;
- The use of metal sheathing near fan units and high velocity/high air-flow ducts is always recommended in accordance with AS4254.2.



Thermofoil™ Heavy Duty Perforated facing is suitable for ducts that need a combination of acoustic & thermal properties.

Compliance to the NCC

The NCC makes provisions for energy efficiency in conditioned spaces, sound insulation and fire protection for public buildings. These recognise that well insulated buildings that control heat and cold, along with good acoustic insulation are important elements of good building design.

Please note that the following information is a guide only and CSR Bradford recommends that you work closely with your Mechanical Services Engineer, building surveyor/private certifier, fire engineering consultant and insurance provider early in the design phase of your building to ensure compliance where appropriate to your specific building type and project requirements.

To provide long term energy savings with a minimal increase in initial installation cost, CSR Bradford recommends an incremental increase in insulation performance above the NCC Section J Deemed-to-Satisfy minimum insulation levels. Increasing insulation levels will quickly pay dividends for building owners, representing a short term return on installation costs as the benefits of reduced energy costs

can be passed on to building occupants and ultimately contribute to a reduction of greenhouse gases.

Please note that compliance can be achieved via verification with an acceptable rating scheme or using the Deemed-to-Satisfy provisions in the NCC.

The CSR Bradford DesignSmart program has been developed specifically to help simplify the process of meeting the Deemed-to-Satisfy provisions of the NCC, follow these simple steps to specify the HVAC insulation for your project.

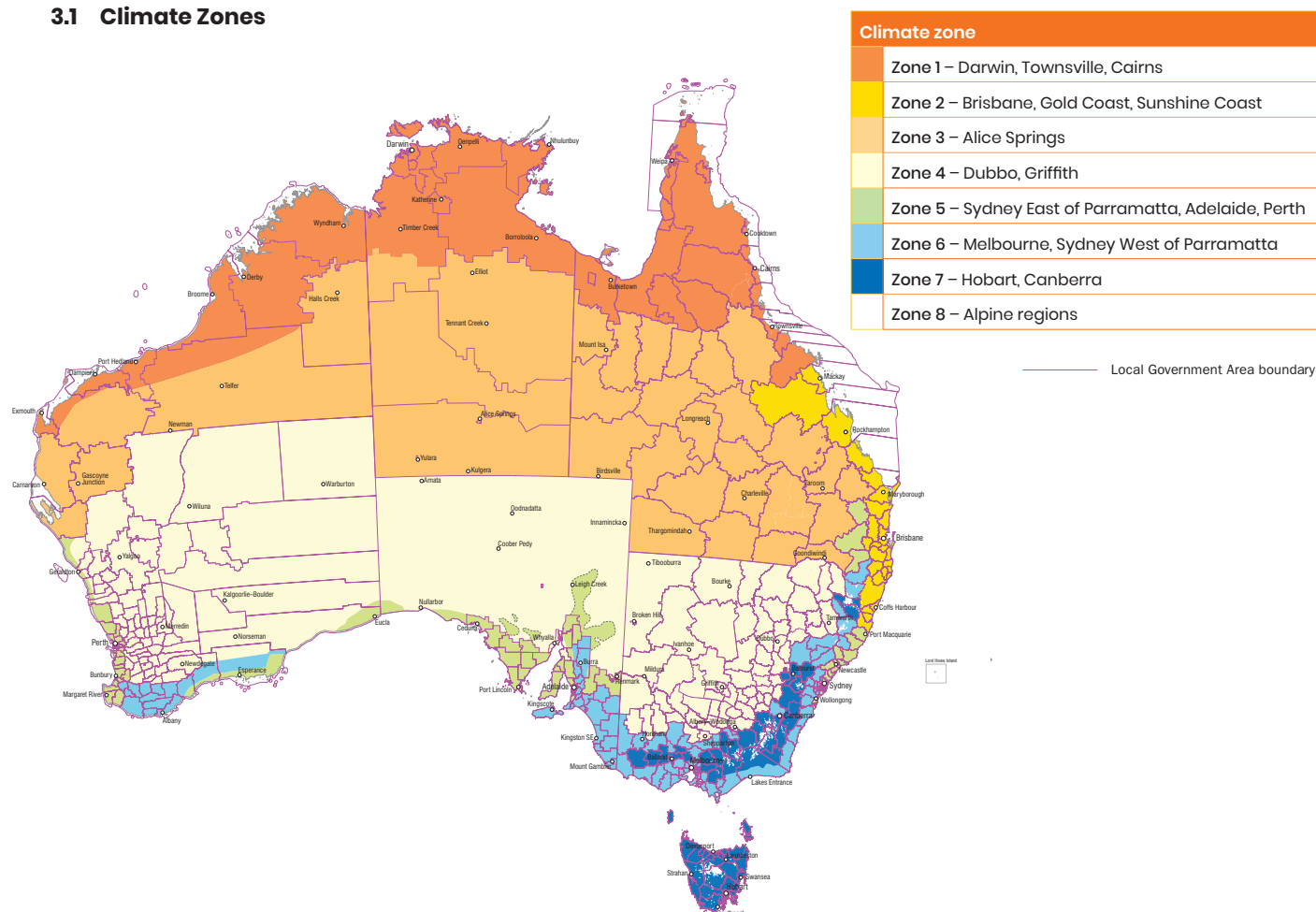


- A.** Select the climate zone for your project location from the NCC map
- B.** Determine the required compliant thermal performance
- C.** For your HVAC duct system, select the minimum required insulation product

Step A: Select the Climate Zone

The NCC specifies minimum Deemed-to-Satisfy performance for HVAC ductwork dependent upon on the climate zone your building is in. Locate the climate zone your building is in from the following map.

3.1 Climate Zones



STEP B: Determine the thermal performance required by the NCC

Look up the R-Value required for the type of air conditioning system and location of the duct from the table below (NCC Vol. 1 Spec. J5.2).

3.2 Ductwork – minimum required material R-Value (R_M)

		Climate Zones							
	Locations	1	2	3	4	5	6	7	8
NCC 2011-2016	Conditioned space	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.6$
	Exposed to sun	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.4$
	All other	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.4$
NCC 2019	Conditioned space	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 1.2$	$R_M 2.0$
	Exposed to sun	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$	$R_M 3.0$
	All other	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$	$R_M 2.0$

STEP C: Select the minimum required insulation product

Specify the minimum recommended CSR Bradford products to meet the NCC ductwork requirements from the tables below – refer to section 3.3 for Rigid Ducts and section 3.4 for Flexible Ducts.

3.3 Rigid duct applications

Target NCC minimum material R-Value	Internal Ductliner			External Ductwrap							
	Product	Thickness	Material R-Value (R_M)		Product	Thickness	Material R-Value (R_M)		Product	Thickness	Material R-Value (R_M)
$R_M 1.2$	Supertel™	40mm	$R_M 1.2$	OR	Multitel™	50mm	$R_M 1.3$	OR	Flexitel™	50mm	$R_M 1.4$
$R_M 1.6$	Supertel™	63mm	$R_M 1.8$	OR	Multitel™	75mm	$R_M 2.0$	OR	Flexitel™	75mm	$R_M 2.1$
$R_M 2.0$	Supertel™	67mm	$R_M 2.0$								
$R_M 2.0$	Supertel™	75mm	$R_M 2.2$	OR	Multitel™	75mm	$R_M 2.0$	OR	Flexitel™	75mm	$R_M 2.1$
$R_M 2.4$	Supertel™	100mm	$R_M 3.0$	OR	Multitel™	2 x 50mm	$R_M 2.6$	OR	Flexitel™	2 x 50mm	$R_M 2.8$
$R_M 3.0$	Supertel™	100mm	$R_M 3.0$								
$R_M 3.4$	Supertel™	2 x 63mm	$R_M 3.6$								

3.4 Flexible duct applications

Target NCC minimum material R-Value	Flexible duct product selector		
	Product	Thickness	Material R-Value (R_M)
$R_M 1.0$	Specitel™	40mm	$R_M 1.0$
$R_M 1.5$	Specitel™	60mm	$R_M 1.5$
$R_M 2.0$	Building Blanket	90mm	$R_M 2.0$
$R_M 2.5$	Building Blanket	110mm	$R_M 2.5$

HVAC Product Applications & Facing Selection

4.1 Ductwork product application guide






Ducts are primarily insulated internally for noise absorption. Internal insulation is usually more cost effective than using additional silencers or attenuators to control noise. Internal insulation also assists with compliance with the NCC thermal energy efficiency provisions. If there is no internal insulation then the duct must be externally lagged to achieve the required thermal performance.

Application	Product	Recommended Product Facing Application				
		Un-faced	BMF	Plain MD or HD Thermofoil™	Acoustituff™	HD Perforated Thermofoil™
Flexible Ducting	Specitel™	✓	N/A	N/A	N/A	N/A
Internal Ductliner	Supertel™	✓	✓	✓	✓	✓
Internal Ductliner	Ultratel™	✓	✓	N/A	✓	✓
External Ductwrap	Multitel™	N/A	N/A	✓	N/A	N/A
External Ductwrap	Flexitel™	✓	✓	✓	N/A	N/A
Industrial Internal Ductliner	Fibertex™ 350	✓	N/A	N/A	N/A	N/A
Industrial Internal Ductliner	Fibertex™ 450	✓	N/A	N/A	N/A	N/A

Table 4.1: Recommended Product Facing Application

4.2 Available facings for HVAC applications

Please note that only facings that are air and vapour impermeable are suitable for condensation control, which requires all joints and penetrations to be lapped and taped with a suitable adhesive tape at installation.

Facing	Description	Suitable Applications	Condensation Control ¹	Aesthetics ²	Acoustic ³
Black Matt Facing (BMF) 	A black, light duty tissue facing for budget conscious acoustic applications where the duct liner may be partially visible – non aesthetic, suitable to reduce the prominence of the duct liner only and not suitable for mechanical cleaning.	HVAC duct liner	N/A	✓	✓
Thermofoil™ Medium Duty (MD730) 	A stronger foil with additional crush resistance.	HVAC duct wrap and liner	✓	✓	N/A
Thermofoil™ Heavy Duty (HD750) 	Premium strength for a premium finish.	HVAC duct wrap and liner	✓	✓	N/A
Acoustituff™ 	A tough, lightweight reflective foil facing that provides a combination of acoustic performance and can act as an air and vapour control layer when fully sealed at all overlaps and penetrations with a suitable adhesive tape – provides tear and puncture resistance, and allows for light duty cleaning, such as mechanical duct cleaning by soft brushing or vacuuming.	HVAC duct liner	✓	✓	✓
Thermofoil™ Heavy Duty Perforated (750PERF) 	A heavy duty foil reflective facing for applications where a combination of acoustic & thermal properties are required. (Note: Not suitable as a vapour barrier.)	HVAC duct liner	N/A	✓	✓

1 CONDENSATION CONTROL Please note that only facings that are vapour impermeable are suitable for condensation control, which requires all joints and penetrations to be lapped and taped at installation.

2 AESTHETIC Aesthetics refers to the visual appearance of the exposed duct – the table above provides guidance to the visual appearance that can be achieved with the facing material based on typical installation conditions. Other application and installation conditions may affect the visual appearance of the duct.

3 ACOUSTIC Acoustic performance of the facing material assumes same base material.

Acoustic Performance

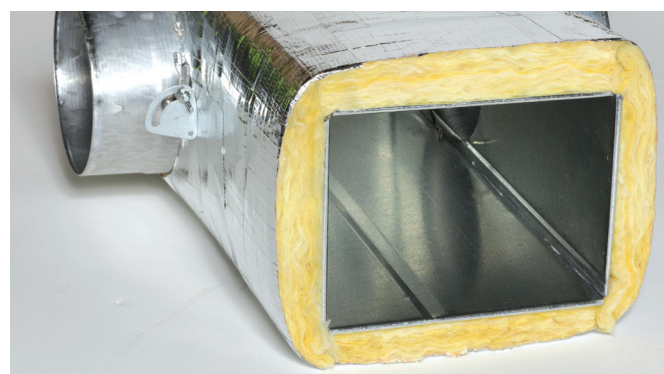
Sound absorption is a key requirement of internal ductliners. Table 5.1 below outlines the key acoustic performance characteristics of popular ductliner and facing combinations.

5.1 Sound absorption

Product	Nominal thickness mm	ISO354 individual representative Sound Absorption Coefficients										
		100	125	250	500	1000	2000	3150	4000	5000	NRC	α_{ω}
Supertel™ Ductliner												
Unfaced	38 (40)	0.07	0.13	0.42	0.89	1.03	0.99	0.98	.097	0.96	0.85	0.70 (MH)
Thermofoil™ HD Perf	38 (40)	0.10	0.13	0.43	0.89	1.02	0.89	0.84	0.82	0.82	0.80	NA
Acoustituff™	38 (40)	0.23	0.28	0.53	1.08	0.88	0.47	0.31	0.25	0.19	0.75	NA
Unfaced	50	0.10	0.20	0.57	1.09	1.12	1.04	1.04	1.06	1.04	0.95	0.90
Thermofoil™ HD Perf	50	0.16	0.20	0.70	0.91	1.08	0.95	0.94	0.89	0.80	0.90	NA
BMF	50	0.06	0.13	0.58	1.09	1.09	1.06	1.09	1.09	1.04	0.95	0.85
HD Perf & Microfilm	50	0.24	0.32	1.14	0.94	0.48	0.22	0.15	0.06	0.03	0.70	NA
Acoustituff™	50	0.13	0.23	0.87	1.15	0.88	0.51	0.38	0.30	0.25	0.85	0.4 (LM)
Unfaced	75	0.19	0.28	1.01	1.21	1.09	0.99	1.05	1.00	0.98	1.05	1.00
Thermofoil™ HD Perf	75	0.17	0.33	1.05	1.25	1.06	0.98	0.95	0.91	0.83	1.10	1.00
BMF	75	0.19	0.29	1.01	1.19	1.07	1.00	1.01	0.98	0.95	1.05	1.00
Unfaced	100	0.32	0.48	1.19	1.22	1.08	1.03	1.02	1.03	1.04	1.15	1.00
Thermofoil™ HD Perf	100	0.45	0.60	1.21	1.21	1.13	1.09	1.01	0.99	0.94	1.15	1.00
Ultratel™ Ductliner												
Thermofoil™ HD Perf	50	0.11	0.21	0.75	1.25	1.16	1.05	1.01	1.02	0.97	1.05	1.00
BMF	50	0.15	0.25	0.70	1.13	1.13	1.12	1.10	1.12	1.12	1.00	NA
Acoustituff™	50	0.14	0.26	0.79	1.03	0.92	0.69	0.56	0.42	0.30	0.85	0.65 (LM)
Thermofoil™ HD Perf	75	0.26	0.36	1.14	1.17	1.09	1.01	0.98	0.93	0.87	1.10	1.00
Fibertex Rockwool 350												
Unfaced	25	0.01	0.07	0.29	0.81	1.09	1.11	1.10	1.12	1.13	0.85	0.60 (MH)
Fibertex Rockwool 450												
Unfaced	50	0.09	0.21	0.77	1.11	1.15	1.10	1.10	1.10	1.10	1.05	1.00

Note: ω indicates the practical sound absorption coefficient result, which exceeds 0.25 or more absorption from the shift reference curve at a particular frequency range (Low at 250Hz, Medium at 500Hz or 1000Hz, or High at 2000Hz or 4000Hz).

- Sound absorption results in yellow tested in accordance with AS ISO 354 - 2006 and NRC results tested in accordance with ASTM C423-90A
- Sound absorption results in grey tested in accordance with AS1045:1998



Multitel and Flexitel are ideal ductwrap insulation choices combined with Thermofoil.

Product Detail

The following tables outline the key products and technical information, as well as key item codes on the Bradford HVAC range. Most products come in a range of thicknesses that meet the performance requirements as set out by the NCC, and are available plain and faced.

The total R-Value of a ducted system includes the material R Value plus a contribution from the foil facing and air film. This may be up to R0.2 for external lagging, but will vary with design and application. All material R-Values quoted comply with AS4859.1. Further information can be found in the product guide and on the product datasheets, or please contact your Bradford representative for expert advice specific to your project needs.

6.1 Flexible duct product overview



Bradford Specitel™ Glasswool insulation

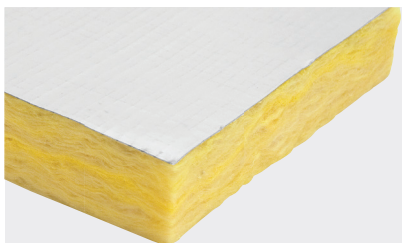
Description - Specitel is typically un-faced and is used to satisfy the requirements of AS4508-1999; "Thermal Resistance of Insulation for Ductwork used in Building Air Conditioning." Specitel has high compressibility and resilience, making it easy to transport as compressed ducting.

Application - Designed for use as the base insulation material for flexible HVAC ducting, for residential and commercial applications.

Specitel™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_m)	Standard Size (m x mm)	Product Code
No Facing	40	R1.0	18 x 1005	15889
	50	R1.2	18 x 1060	157184
	60	R1.5	18 x 1100	103072

6.2 Rigid ductwrap product overview (external)



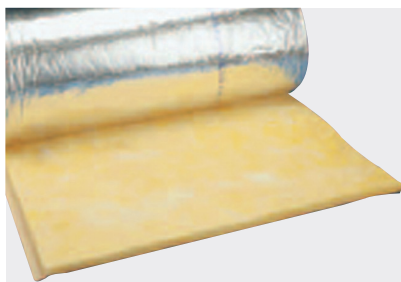
Bradford Multitel™ Glasswool insulation

Description - Multitel is a low-density lightweight insulation blanket, typically faced with medium or heavy duty Thermofoil. Multitel is a versatile flexible insulation material that is designed for the economic external insulation of heating, ventilating and cooling ductwork.

Application - Designed for externally lining rigid ductwork, for commercial applications. Can also be used to complement internal ductwork insulation to achieve higher R-Values.

Multitel™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_m)	Standard Size (m x mm)	Product Code
Medium Duty Thermofoil (1500mm)	25	R0.6	15 x 1380	16147
	38	R1.0	15 x 1380	78288
	50	R1.3	10 x 1380	81581
	55	R1.5	10 x 1380	91312
	75	R2.0	7 x 1380	81583
Heavy Duty Thermofoil (1200mm)	50	R1.3	15 x 1200	109724
	75	R2.0	10 x 1200	109725
Heavy Duty Thermofoil (1350mm)	25	R0.6	20 x 1200	95568
	38	R1.0	15 x 1200	77852
	50	R1.3	10 x 1200	15587
	55	R1.5	10 x 1200	77851
	75	R2.0	10 x 1200	29175
			7.5m x 1500	102033



Bradford Ductwrap™ Glasswool insulation

Description – Bradford Glasswool Ductwrap is a flexible insulation blanket used for externally insulating rigid ductwork. Glasswool Ductwrap is typically faced with a Bradford Thermofoil facing which acts as a vapour barrier, once installed.

Application – Designed for externally lining rigid ductwork, for commercial applications. Can also be used to complement internal ductwork insulation to achieve higher R-Values.

Ductwrap™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Heavy Duty Thermofoil (1500mm)	25	R0.6	15 x 1400	187239
	25	R0.6	15 x 1500	15391
	38	R1.0	10 x 1400	96294
	50	R1.3	10 x 1400	96295
	75	R2.0	7.5 x 1400	112891



Bradford Flexitel™ Glasswool insulation

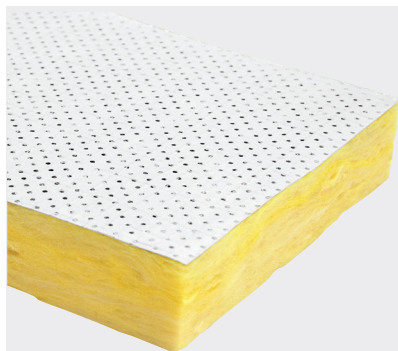
Description – Flexitel is a lightweight flexible insulation blanket with higher compression resistance and tensile strength than Multitel, plus the added density allows the achievement of a more aesthetic surface finish for external ductwrap when compared to Multitel or Ductwrap. Available in flexible blanket, Flexitel is typically faced with Heavy Duty Thermofoil.

Application – Designed for either internal or external duct lining applications, for commercial applications. Can also be used to complement internal ductwork insulation to achieve higher R-Values.

Flexitel™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
No Facing	25	R0.65	15 x 1200	15412
	25	R0.65	15 x 1500	15453
	38	R1.1	15 x 1200	77365
	38	R1.1	10 x 1500	77366
	50	R1.4	15 x 1200	15996
	50	R1.4	10 x 1500	16029
Black Matt Face	25	R0.65	15 x 1200	15876
	50	R1.4	15 x 1200	43318
Heavy Duty Thermofoil (1200mm)	25	R0.65	15 x 1200	15777
	38	R1.1	15 x 1200	85903
	50	R1.4	10 x 1200	86320
	75	R2.1	10 x 1200	82863
Heavy Duty Thermofoil (1500mm)	25	R0.65	15 x 1500	16056
	38	R1.1	10 x 1500	77923
	50	R1.4	10 x 1500	62963
	75	R2.1	7 x 1500	106250

6.3 Rigid ductliner product overview (internal)



Bradford Supertel™ Glasswool insulation

Description – Supertel provides an ideal combination of thermal and acoustic insulation to meet most ductlining applications. Available as a board or blanket in a full range of R-Values to meet the NCC requirements and is complemented by an extensive range of facing options to meet most applications and environments. Supertel can offer a combination of acoustic, thermal and moisture control for commercial air conditioning and acoustic enclosures.

Application – Designed as a high performance thermal and acoustic insulation product for applications where superior insulation performance is required at minimal thickness. Typical applications for Supertel include HVAC internal duct lining, acoustic enclosures and under soffit insulation, for commercial applications.

Supertel™ HVAC Boards

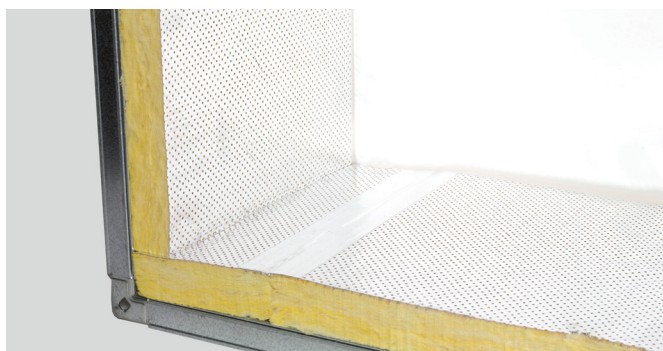
Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Plain	13	R0.3	2.4 x 1200	16026
	25	R0.7	2.4 x 1200	15311
	25	R0.7	2.4 x 1500	77921
	25	R0.7	3 x 1500	15714
	40	R1.2	2.4 x 1200	111256
	40	R1.2	2.4 x 1500	111397
	50	R1.5	2.4 x 1200	15332
	50	R1.5	2.4 x 1500	15709
	50	R1.5	3 x 1500	77931
	75	R2.2	2.4 x 1200	15282
	75	R2.2	2.4 x 1500	30493
	100	R3.0	2.4 x 1200	15371
	100	R3.0	2.4 x 1500	17454
Black Matt Face	13	R0.3	2.4 x 1200	17468
	25	R0.7	2.4 x 1200	15326
	25	R0.7	2.4 x 1500	74995
	50	R1.5	2.4 x 1200	15292
	50	R1.5	2.4 x 1500	74996
	75	R2.2	2.4 x 1200	15285
Acoustituff	25	R0.7	2.4 x 1200	15676
	25	R0.7	2.4 x 1500	85421
	25	R0.7	3 x 1500	94106
	40	R1.2	2.4 x 1200	112259
	40	R1.2	2.4 x 1500	112282
	50	R1.5	2.4 x 1200	16214
	50	R1.5	2.4 x 1500	30501
	50	R1.5	3 x 1500	94108
	75	R2.2	2.4 x 1200	97338
	75	R2.2	2.4 x 1500	111108
	75	R2.2	3 x 1500	123553
	100	R3.0	2.4 x 1500	113211
Heavy Duty Perforated	25	R0.7	2.4 x 1200	15281
	25	R0.7	2.4 x 1500	15276
	25	R0.7	3 x 1500	77922
	40	R1.2	2.4 x 1200	112281
	40	R1.2	2.4 x 1500	111607
	40	R1.2	3 x 1500	112023
	50	R1.5	2.4 x 1200	15302
	50	R1.5	2.4 x 1500	15362
	50	R1.5	3 x 1500	77932
	67	R2.0	2.4 x 1500	115203
	67	R2.0	3 x 1500	170225
	75	R2.2	2.4 x 1200	15268
	75	R2.2	2.4 x 1500	88665

Supertel™ HVAC Boards

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Heavy Duty Perforated	75	R2.2	3 x 1500	104210
	100	R3.0	2.4 x 1500	17684
Perforated/PET Film	25	R0.7	2.4 x 1200	84686
	50	R1.5	2.4 x 1500	83992
	50	R1.5	2.4 x 1200	17564
	75	R2.2	2.4 x 1200	87247

Supertel™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Plain	25	R0.7	15 x 1200	15759
	25	R0.7	15 x 1500	15805
	50	R1.5	10 x 1200	16028
	50	R1.5	10 x 1500	15488
	75	R2.2	7.5 x 1200	15976
Black Matt Face	25	R0.7	15 x 1200	26513
	25	R0.7	15 x 1500	17458
	50	R1.5	10 x 1200	18926
	50	R1.5	10 x 1500	17460
Acoustituff	25	R0.7	15 x 1500	17579
	50	R1.5	8 x 1390	41486
	50	R1.5	10 x 1200	15550
	50	R1.5	10 x 1500	15395
	75	R2.2	7.5 x 1200	84451
Heavy Duty (1200mm)	25	R0.7	15 x 1200	43881
	50	R1.5	10 x 1200	17965
Heavy Duty (1500mm)	40	R1.2	10 x 1500	112284
	67	R2.0	7.5 x 1400	122191
	75	R2.2	7.5 x 1500	11649
Heavy Duty Perforated	25	R0.7	15 x 1200	15830
	25	R0.7	10 x 1500	15706
	40	R1.2	10 x 1500	112283
	50	R1.5	10 x 1200	15948
	50	R1.5	10 x 1500	16099
	100	R3.0	5 x 1380	122961
	100	R3.0	5 x 1500	124138



Perforated Thermofoil combined with Supertel is a popular ductliner combination



Bradford Thermatel™ Glasswool insulation

Description – Thermatel is an insulation blanket specially designed for high temperature HVAC applications up to maximum service temperature of 480°C.

Application – Designed for high temperature HVAC applications, for commercial applications.

Thermatel™ HVAC Blankets

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
No Facing	25	R0.75	15 x 1200	16215
	50	R1.5	7.5 x 1200	16125



Bradford Ultratel™ Glasswool insulation

Description – Ultratel high performance insulation boards deliver superior sound absorption and attenuation due to its higher density and rigid properties, to provide a premium solution or to reduce thickness whilst achieving the same thermal performance.

Application – Designed for high performance internal duct lining applications, for commercial applications.

Ultratel™ HVAC Boards

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Plain	25	R0.75	2.4 x 1200	15324
	50	R1.5	2.4 x 1200	15278
	75	R2.3	2.4 x 1200	68919
Black Matt Face	25	R0.75	2.4 x 1200	15277
	50	R1.5	2.4 x 1200	15298
Acoustituff	25	R0.75	2.4 x 1200	17586
	50	R1.5	2.4 x 1200	63281
Heavy Duty Perforated	25	R0.75	2.4 x 1200	15267
	50	R1.5	2.4 x 1200	15286



Bradford Quietel™ Glasswool insulation

Description – Quietel is an ultra high density insulation board, typically un-faced, with excellent acoustic performance for both sound transmission and absorption while providing excellent thermal resistance. Quietel also has superior compressive resistance for use in trafficable areas.

Application – Designed for specialised HVAC acoustic applications, for commercial applications.

Quietel™ HVAC Boards

Facing	Thickness (mm)	Material R-Value (R_M)	Standard Size (m x mm)	Product Code
Plain	13	R0.3	2.4 x 600	15613
	25	R0.75	2.4 x 1200	15273

6.4 Industrial Rockwool Overview



Bradford Rockwool Fibertex™

Description – Rockwool Fibertex range has excellent insulation and fire resistance properties, and is designed for high temperature applications up to 820°C. Available in either un-faced board or blanket, or as a foil faced blanket, Rockwool Fibertex is generally selected by the temperature of the application. Available in:

- Fibertex 350 (60kg/m³) – up to 350°C
- Fibertex 450 (80kg/m³) – up to 450°C
- Fibertex 650 (100kg/m³) – up to 650°C
- Fibertex 820 (110kg/m³) – up to 820°C

Application – Designed for high temperature applications up to 820°C for commercial and industrial applications. Rockwool Fibertex can be used in applications such as process temperature control, energy conservation, condensation prevention, acoustic absorption treatment and personal protection from plant and equipment.

Fibertex 350 (60kg/m³)

	Thickness (mm)	Standard Size (m x mm)	Product Code
Board Plain	30	1.2 x 600	114044
	50	1.2 x 600	114045
	75	1.2 x 600	114046
	100	1.2 x 600	114047
Blanket Foil Faced	30	4 x 600	118438
	50	4 x 600	118439
	75	4 x 600	118440

Fibertex 450 (80kg/m³)

	Thickness (mm)	Standard Size (m x mm)	Product Code
Board Plain	25	1.2 x 600	114048
	50	1.2 x 600	114049
	75	1.2 x 600	114050
Blanket Plain	25	4 x 600	118467
	50	4 x 600	118468
	75	4 x 600	118469

Fibertex 650 (100kg/m³)

	Thickness (mm)	Standard Size (m x mm)	Product Code
Board Plain	25	1.2 x 600	114092
	50	1.2 x 600	114093
	75	1.2 x 600	114094
Blanket Plain	25	4 x 600	118470
	50	4 x 600	118491
	75	4 x 600	118492

Fibertex 820 (110kg/m³)

	Thickness (mm)	Standard Size (m x mm)	Product Code
Board Plain	25	1.2 x 600	114095
	50	1.2 x 600	114096
	75	1.2 x 600	114097
Blanket Plain	25	4 x 600	118493
	50	4 x 600	118494
	75	4 x 600	118495



Bradford Rockwool Fibermesh™

Description - Rockwool Fibermesh range is designed for applications up to 650°C for commercial and industrial applications. Rockwool Fibermesh features stainless steel or galvanised mesh that is used to hold shape during and after installation. Rockwool Fibermesh is generally selected by the temperature of the application. Available in:

- Fibermesh 350 (60kg/m³) – up to 350°C
- Fibermesh 450 (80kg/m³) – up to 450°C
- Fibermesh 650 (100kg/m³) – up to 650°C

Application - Designed for high temperature applications up to 650°C for commercial and industrial applications. Rockwool Fibermesh products are used to insulate tanks, vessels and larger process equipment from energy loss.

	Thickness (mm)	Standard Size (m x mm)	Product Code Galvanised Mesh	Product Code Stainless Steel Mesh
Fibermesh-350	50	5 X 600	114141	114156
	75	3 X 600	114142	114157
	100	2 X 600	114143	114158
Fibermesh-450	50	5 x 600	114145	114160
	75	3 x 600	114146	114161
	100	2 x 600	114147	114162
Fibermesh-650	50	5 x 600	114149	114164
	75	3 x 600	114150	114165
	100	2 x 600	114151	114166

6.5 HVAC Accessories

Adhesive Tapes

400F Aluminium Foil Tape

Description - Plain aluminium foil tape with high tack adhesive backing. Used for joining and sealing foil-faced sarking or Glasswool and Rockwool in metal deck roofing and around air conditioning ducts.

Product	Width (mm)	Length (m)	Qty per Carton	Product Code
400F Aluminium Foil Tape	36	50	32	17350
	48	50	24	17351
	72	50	16	17352
	96	50	12	17353

493 Reinforced Aluminium Foil Tape

Description - High strength, glass fibre reinforced aluminium foil tape with high tack adhesive backing. Suitable for joining and sealing laps on foil faced sarking or Glasswool and Rockwool in metal deck roofing and around air conditioning ducts.

Note: In accordance with AS4254.2, longitudinal joints in the insulation must be covered by 96mm wide reinforced foil tape.

Product	Width (mm)	Length (m)	Qty per Carton	Product Code
493 Aluminium Foil Tape	36	50	32	17365
	48	20	25	17367
	48	50	24	17366
	72	20	20	17370
	72	50	16	17369
	96	50	12	17371

Note: Minimum order quantities apply for all tape products – please enquire at time of order. The Thermoplast range of tapes is produced irregularly, please inquire regarding availability and lead-time.

Thermoplast 990 Decorative Foil Tape (Black & White)

Description – A decorative range of tapes which have been specifically developed from the same base material as the facing to provide a good colour match (although some batch variation may occur – please check prior to application). **Note:** Not recommended for applications where condensation or liquid water may be present – use Thermofoil Black as an alternative.

Product	Width (mm)	Length (m)	Qty per Carton	Product Code
Thermoplast 990F White Decorative Foil Tape	72	35	16	180812
	96	35	12	180813
Thermoplast 990 Black Decorative Foil Tape	72	35	12	134143
	96	35	12	134144

Foam Tape

Description – Foam Tape provides an uncompressed material R-Value of R0.2 in accordance with AS/NZS4859. Manufactured from durable PE foam with a high tack adhesive backing with protective paper, Foam Tape is available in 30mm to suit walls or 60mm for roofs.

Product	Width (mm)	Length (m)	Qty per Carton	Product Code
Foam Tape	30	10	12	85495
	60	10	6	113788

Note: Minimum order quantities apply to purchases and freight changes may apply, please enquire at time of ordering.

Metal Insulation Hangers and Clips

Perforated Metal Base Pins and Clips

Description – Perforated Metal Base Pins and Clips are sold together and should be used with suitable anchor adhesive. These perforated pins and clips are well suited for applications where insulation must be fixed to concrete walls.

Product	Hanger Lengths		Qty per Carton	Product Code
	(mm)	(inches)		
Plain Perforated Metal Base Hangers/ Washers	50	2"	1000	83620
	63	2 1/2"	500	16834
	89	3 1/2"	500	89022
	114	4 1/2"	500	16833



Self Adhesive Base Pins and Clips

Description – Self Adhesive Base Pins and Clips are supplied together and are suitable for use when hanging insulation to clean, non porous surfaces. It is important to ensure the surface to which you are fixing is free from oil and dust prior to application. The self adhesive backing on these pins can endure a continuous operating temperature from -30°C to 70°C.

Product	Hanger Lengths		Qty per Carton	Product Code
	(mm)	(inches)		
Self Adhesive Based Hangers/Washers	31	1"	1000	16826
	42	1 5/8"	500	16828
	50	2"	1000	39966
	63	2 1/2"	500	16830
	89	3 1/2"	500	42749
	114	4 1/2"	500	16825

Weld Pins and Clips

Description – Weld pins and clips are used in conjunction with a capacitor discharge weld gun. These pins are a popular choice when fixing internal insulation to rigid metal ductwork. There are two types of clips available which are slipped over the pin to hold the insulation in place. There is the small rectangular metal clip which is regularly used to fix internal insulation to rigid metal ductwork. There is also a black nylon thumb clip which suits exposed applications where a black facing is applied to the base insulation.

Product	Length		Qty per Carton	Product Code
	(mm)	(inches)		
Weld Pins ONLY	32	1 1/4"	1000	16806
	50	2"	1000	40485
	58	2 1/4"	1000	16807
	75	3"	1000	16808
Metal Clips to suit Weld Pins	-	-	1000	16813
Black PVC Nylon Clips to suit Weld pins	-	-	1000	16814

Health and Safety

Glasswool & Rockwool insulation products are excellent insulation materials and are safe to use under all conditions. Insulation materials have been in worldwide use for over 70 years, and during that time their manufacture and use have been extensively monitored and researched.

CSR Bradford Glasswool & Rockwool products are manufactured using the latest FBS-1 technology, which are classified as Non-Hazardous. Detailed information on health & safety is contained in the SUIs & ICANZ (Safe Use Information Sheet & Insulation Council of Australian & New Zealand) literature available from our website www.bradfordinsulation.com.au

Product Warranty

CSR Building Products Limited warrants CSR Bradford products to be free of defects in materials and manufacture.

CSR Bradford bulk insulation and foil faced products should not come into contact with water or be used in external applications or alkaline environments.

Product Warranty excludes the following:

1. Damage caused to the product is a result of incorrect onsite storage prior to installation – refer to CSR Bradford documentation for correct storage and handling.
2. Damage caused to the product is a result of a high pressure water cleaner, high pressure media cleaner, mechanical cleaning device or chemical agent.
3. The Product is exposed to corrosive in-situ conditions, such as an alkaline or acidic environment, that does not provide adequate air quality to prevent deterioration of the Product; or
4. The Product is used in a harsh environment without prior written approval from CSR Bradford, including livestock buildings, indoor aquatic centres and fertiliser storage facilities or as outlined in the literature supplied by CSR Bradford; or
5. The Product is used outside its intended purpose as outlined in the literature supplied by CSR Bradford.

Contact CSR Bradford for further Warranty details or refer to the Product or Project specific Warranty where applicable.

For full Product Warranty details please refer to our website.





For more information call **1300 850 305** or visit **bradfordinsulation.com.au**



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