Bradford™ designSMART TECHNICAL SERVICES

Case Study

Application: HVAC Silencers
Product: Bradford Glasswool, Ultratel 48kg/m^3 with Black Matt Facing
Performance: Sound Attenuation

Acoustic Insulation for HVAC Silencers

Application Overview

HVAC systems are required to provide comfort to building occupants, they are however often a source of noise within buildings. HVAC system design therefore needs to balance temperature and humidity control with noise reduction. The most common source of noise in HVAC systems are the large central motors and fans otherwise known as air handling units.

Air handling units need sound attenuation to reduce the transmission of noise to the rest of the building. HVAC Silencers are a reliable solution and are often positioned a short distance downstream from the air handling unit. A Silencer is typically an in-line section of duct with integrated baffles designed to dissipate noise. Small silencers may also be found within the duct system to reduce noise generated by airflow and duct configuration.

Silencers incorporate baffles with internal surfaces fabricated from perforated sheet metal, beneath the perforated metal is high density insulation such as Bradford Glasswool, which provides excellent broadband sound attenuation.


Bradford Ultratel installed inside the baffle frame


Acoustic baffle finished with perforated sheet metal


Acoustic baffle installed inside the silencer frame

CSR

Acoustic Performance

The Bradford Glasswool insulation range is often the first choice for HVAC system designers. The extensive range provides solutions for HVAC Silencers, HVAC Duct Lining and HVAC Duct Lagging. In this Case Study the specified product is Bradford Ultratel (48kg/m^3) with Bradford's Black Matt Facing.

Bradford Ultratel (48kg/m^3) with Black Matt Facing provides both mass and absorptive properties which is key to ensuring acoustic attenuation across a range of sound frequencies. The Black Matt Facing allows airflow while providing a clean aesthetic finish which also improves the durability of the acoustic baffles.

PRODUCT	THICKNESS (mm)	MATERIAL R-VALUE (R_M)	FREQUENCY (Hz)								PRODUCT CODE
			125	250	500	1000	2000	4000	5000	NRC	
Ultratel Unfaced	50	R1.5	0.34	0.65	1.23	1.11	1.08	1.02	0.98	1.02	15278
Ultratel with Black Matt Facing	50	R1.5	0.25	0.70	1.13	1.13	1.12	1.12	1.12	1.00	15298

Bradford Ultratel shaped to fit the acoustic baffle frame

First layer of Bradford Ultratel installed in the baffle frame

Second layer of Bradford Ultratel installed in the baffle frame

Bradford Glasswool Manufacturing

Bradford manufactures to strict product tolerances and provides the most comprehensive warranty in the market with a lifetime cover on performance of product, all backed by CSR, Australia's oldest and most trusted building products manufacturer.

Technical Project Support

The DesignSmart team has a wealth of construction experience and utilise industry-leading building science research for acoustic, thermal and fire insulation products. As the experts in building insulation they can assist with:

- project-specific support
- value engineering challenges
- specification documentation
- system design detailing
- product installation and certification

Call the DesignSmart team on **1800 354 044** or visit **BradfordDesignSmart.com.au**

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