



BRANZ Appraised
Appraisal No. 610 [2021]

DBLUE ACOUSTIC PIPE SYSTEM

Appraisal No. 610 (2021)

This Appraisal replaces BRANZ
Appraisal No. 610 (2016)



dBlue

BRANZ Appraisals

Technical Assessments of
products for building and
construction.



by **alixis**

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Product

- 1.1 The dBlue Acoustic Pipe System is a sanitary plumbing system that consists of discharge pipes and fittings that have been acoustically designed to reduce the noise caused by water and waste passing through the discharge system. The system is for internal use within multi-floor buildings such as offices, multi-floor hotels, or large residential buildings where noise is an issue. The pipes and fittings are blue in colour.

Scope

- 2.1 The dBlue Acoustic Pipe System has been appraised for use within the following scope:
 - as pipes, fittings and materials for sanitary plumbing system design and installation in accordance with NZBC Acceptable Solution G13/AS3 and AS/NZS 3500.2; and,
 - for use as a sanitary plumbing system for internal use within buildings.
- 2.2 Installation of components and accessories supplied by Marley New Zealand Ltd must be carried out only by licensed and registered plumbers.

Building Regulations

New Zealand Building Code (NZBC)

- 3.1 In the opinion of BRANZ, the dBlue Acoustic Pipe System, if designed, used, installed and maintained in accordance with the statements and conditions of this Appraisal, will meet the following provisions of the NZBC.

Clause B2 DURABILITY: Performance B2.3.1 [b] 15 years. The dBlue Acoustic Pipe System meets this requirement. See Paragraph 8.1.

Clause F2 HAZARDOUS BUILDING MATERIALS: Performance F2.3.1. The dBlue Acoustic Pipe System meets this requirement.

Clause G13 FOUL WATER: Performance G13.3.1 and G13.3.2. The dBlue Acoustic Pipe System meets these requirements. See Paragraphs 7.1-7.5.



Technical Specification

4.1 The dBlue Acoustic Pipe System is primarily designed for use in multi-floor buildings where a reduction of sound transmission in the discharge system is required. Pipes are extruded in a three-layer construction with a middle layer containing a mix of polypropylene and mineral compounds to reduce sound originating from the passage of waste through the system. See Table 1 for pipe composition.

Table 1: dBlue Acoustic Pipe Composition

Layer	Material	Pigment/Colour
Internal layer	Polypropylene	Grey
Intermediate Layer	Polypropylene/Mineral blend	White
Outer Layer	Polypropylene	Light Blue

4.2 The dBlue Acoustic Pipe System consists of a selection of pipe diameters and associated injection moulded polypropylene fittings. Pipe ends and fittings are formed and contain a pre-fitted styrene butadiene O-ring. Pipe lengths are manufactured and supplied with one pre-formed socket end and one spigot end. The system is designed for conventional push-fit component connection.

4.3 The dBlue Acoustic Pipe System is available in the range as detailed in Table 2.

Table 2: dBlue Acoustic Pipe System Range

Item	Sizes	Types
Pipes	50 mm, 75 mm, 110 mm and 160 mm	Lengths - 0.15 m, 0.25 m, 0.5 m, 1 m, 1.5 m and 3 m
Bends	50 mm, 75 mm, 110 mm and 160 mm	15°, 30°, 45° and 88°
Y-Junctions	50/50, 75/50, 75/75, 110/50, 110/75, 110/110, 160/110 and 160/160	45°
T-Junctions	50 mm, 75 mm and 110 mm	All at 88°
Stop Couplers	50 mm, 75 mm, 110 mm and 160 mm	
Slip Couplers	50 mm, 75 mm, 110 mm and 160 mm	
Reducers	75/50, 110/50, 110/75 and 160/110.	Level invert
Inspection Pipe	110 mm and 160 mm	
Socket Plugs	50 mm, 75 mm and 110 mm	
Proprietary Pipe Clamps	50 mm, 75 mm, 110 mm and 160 mm	'Clamps' with acoustic rubber inlays
Socket Clips	50 mm, 75 mm, 110 mm and 160 mm	
PVC Transition Items [dBlue to DWV sizing]	DWV 40 mm to 50 mm dBlue DWV 50 mm to 50 mm dBlue DWV 50 mm to 75 mm dBlue DWV 65 mm to 75 mm dBlue	Bung Adaptor Bung Adaptor
Floor Waste Gully	100 mm top inlet; 3 x 50 mm side inlets; 1 x 75 mm side outlet	Siphon
Trap Connection	50 mm	88°

Handling and Storage

- 5.1 Handling and storage on-site of all materials supplied by Marley New Zealand Ltd, is under the control of the licensed and registered plumber. It is essential that the pipes and O-rings are protected from sunlight at all times during storage prior to installation. The dBlue Acoustic Pipe System must be kept under cover at all times. Care must also be taken to avoid surface damage to the pipes and fittings. For further information on storage and handling requirements, refer to the Technical Literature.

Technical Literature

- 6.1 Refer to the Appraisals listing on the BRANZ website for details of the current Technical Literature for the dBlue Acoustic Pipe System. The Technical Literature must be read in conjunction with this Appraisal. All aspects of design, use, installation and maintenance contained in the Technical Literature and within the scope of this Appraisal must be followed.

Design Information

General

Foul Water Sanitary Plumbing

- 7.1 The dBlue Acoustic Pipe System must be installed following sanitary plumbing design, and the Marley New Zealand Ltd installation instructions for the system. See Paragraphs 13.1 to 13.4.
- 7.2 Sanitary plumbing systems must be designed in accordance with NZBC Acceptable Solution G13/AS3 and AS/NZS 3500.2.
- 7.3 The dBlue Acoustic Pipe System connects directly or by using PVC transition items to connect to PVC DWV soil and discharge pipes complying with AS/NZS 1260.
- 7.4 The dBlue Acoustic Pipe System is for use in the interior of buildings or buried in the ground. When it is installed where it could be exposed to ultraviolet [UV] light, it shall be protected.
- 7.5 The pipes and fittings must be connected to a drainage system designed in accordance with NZBC Acceptable Solutions G13/AS2 before entering the ground.

Floor Gullies

- 7.6 The dBlue Acoustic Pipe System floor gullies have been certified to AS 2887 and are suitable for use in accordance with NZBC Acceptable Solution G13/AS1.

Acoustic

- 7.7 There are no NZBC requirements for the acoustic properties of sanitary plumbing systems. The dBlue Acoustic Pipe System has been acoustically tested and the results rated to ISO 717 and ISO 140. These results were compared with the performance of lagged PVC drainage pipe tested to the same methodology and found to provide similar performance.

Impact Resistance

- 7.8 The dBlue Acoustic Pipe System has adequate resistance to impact loads likely to be encountered in normal installation and service, although some scratching of the surface finish could occur during installation. The likelihood of impact damage to the system when used in commercial situations should be considered at the design stage, and appropriate protection should be considered for vulnerable areas.

Durability

Serviceable Life

- 8.1 The dBlue Acoustic Pipe Systems is expected to have a serviceable life comparable with conventional plumbing and drainage systems, provided the system is installed and maintained following the instructions of Marley New Zealand Ltd and this Appraisal.

Maintenance

- 9.1 The dBlue Acoustic Pipe System does not require maintenance in normal service. Where accessible, fixings should be inspected to check the system continues to be secure.

Prevention of Fire Occurring

- 10.1 Separation or protection must be provided to the dBlue Acoustic Pipe System from heat sources such as fireplaces, heating appliances and chimneys. Part 7 of NZBC Verification Method C/VM1 and Acceptable Solution C/AS1, and Acceptable Solution C/AS2 provide methods for separation and protection of combustible materials from heat sources.

Fire Affecting Areas Beyond the Fire Source

- 11.1 Sanitary piping systems are exempt from surface finish requirements by NZBC Acceptable Solution C/AS1, Paragraph 4.3 c) and NZBC Acceptable Solution C/AS2, Paragraph 4.17.6 c).

Installation Information

Installation Skill Level Requirements

- 12.1 Installation of the dBlue Acoustic Pipe System and associated components supplied by Marley New Zealand Ltd must only be installed by licensed and registered plumbers.

System Installation

- 13.1 Installation must be completed in accordance with instructions given in the dBlue Acoustic Pipe System Technical Literature and this Appraisal. Installation of the pipe and fitting system is similar to standard rubber ring jointed pipe systems.
- 13.2 Installation as a sanitary plumbing system must be in accordance with NZBC Acceptable Solution G13/AS3 or AS/NZS 3500.2.
- 13.3 Particular attention must be paid to the fixing instructions of the system when installed through floors, or the sound reducing acoustic properties of the pipe system will be compromised. Vertical pipes must not be fixed as they pass through floors. The pipes at this point must be surrounded by an acoustic packing to prevent any acoustic bridge between the pipe and floor. The system is supplied with proprietary clamps for pipe fixing. The clamps contain rubber soundproofing inlays designed to absorb acoustic vibration. Vertical fixing intervals using clamps must be between 1 m and 2 m into walls. Horizontal fixing interval must be no more than 10 x the diameter of the pipe.
- 13.4 The dBlue Acoustic Pipe System must be enclosed within buildings where it is not exposed to UV light.

Health and Safety

- 14.1 There are no special health and safety issues.

Basis of Appraisal

The following is a summary of the technical investigations carried out:

Tests

- 15.1 Testing of the pipes, fittings and O-rings were carried out to the requirements of EN 1451-1 for filler content, melt flow rate, density, thermal stability, water-tightness, air-tightness, elevated temperature cycling, and dimensions/layer thickness. Test results were reviewed by BRANZ and found to be satisfactory.
- 15.2 Acoustic performance testing of the dBlue Acoustic Pipe System was conducted by the Fraunhofer Institut Bauphysic to the requirements of EN 14366. Test results were reviewed by BRANZ and found to be satisfactory.



Other Investigations

- 16.1 An assessment was made of the durability of the dBlue Acoustic Pipe System by BRANZ technical experts.
- 16.2 Site inspections have been carried out by BRANZ to assess the practicability of installation, and to examine completed installations.
- 16.3 The Technical Literature for the dBlue Acoustic Pipe System has been examined by BRANZ and found to be satisfactory.

Quality

- 17.1 The quality management system of the manufacturer Nicoll Polska Sp. zo.o. has been assessed and registered as meeting the requirements of ISO 9001.
- 17.2 dBlue pipe and fittings hold WaterMark Certifications to AS 2887, AS/NZS 5065 and AS/NZS 7671.
- 17.3 dBlue pipe and fittings are certified by Deutsches Institut für Bautechnik (DIBt). DIBt certification is issued conditional on the testing to EN 1451-1 and manufacture of the components is periodically reviewed by SKZ. This certification has been reviewed by BRANZ and found to be satisfactory.
- 17.4 The manufacture of the dBlue Acoustic Pipe System and accessories has not been examined by BRANZ, but details regarding the quality and composition of the materials used were obtained by BRANZ and found to be satisfactory.
- 17.5 The quality of materials, components and accessories supplied to the market by Marley New Zealand Ltd is the responsibility of Marley New Zealand Ltd.
- 17.6 Quality of installation on-site of components and accessories supplied by Marley New Zealand Ltd is the responsibility of the licensed and registered installing plumber.
- 17.7 Designers are responsible for the building design, and design of the associated sanitary plumbing system within the building.
- 17.8 Building owners are responsible for any required maintenance of the dBlue Acoustic Pipe System in accordance with the advice of Marley New Zealand Ltd.

Sources of Information

- AS 2887-1993 Plastic waste fittings.
- AS/NZS 3500.2:2021 Plumbing and drainage - Sanitary plumbing and drainage.
- AS/NZS 5065:2005 Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications.
- AS/NZS 7671:2010 Plastics piping systems for soil and waste discharge (low and high temperature) inside buildings - Polypropylene [PP].
- EN 1451-1 Plastics piping systems for soil and waste discharge (low and high temperature) within the building structure. Polypropylene [PP]. Specifications for pipes, fittings and the system.
- EN 14366 Determination of Acoustic Performance.
- Ministry of Business, Innovation and Employment Record of amendments - Acceptable Solutions, Verification Methods and handbooks.
- The Building Regulations 1992.



In the opinion of BRANZ, **dBlue Acoustic Pipe System** is fit for purpose and will comply with the Building Code to the extent specified in this Appraisal provided it is used, designed, installed and maintained as set out in this Appraisal.

The Appraisal is issued only to **Marley New Zealand Ltd**, and is valid until further notice, subject to the Conditions of Appraisal.

Conditions of Appraisal

1. This Appraisal:
 - a) relates only to the product as described herein;
 - b) must be read, considered and used in full together with the Technical Literature;
 - c) does not address any Legislation, Regulations, Codes or Standards, not specifically named herein;
 - d) is copyright of BRANZ.
2. **Marley New Zealand Ltd:**
 - a) continues to have the product reviewed by BRANZ;
 - b) shall notify BRANZ of any changes in product specification or quality assurance measures prior to the product being marketed;
 - c) abides by the BRANZ Appraisals Services Terms and Conditions;
 - d) warrants that the product and the manufacturing process for the product are maintained at or above the standards, levels and quality assessed and found satisfactory by BRANZ pursuant to BRANZ's Appraisal of the product.
3. BRANZ makes no representation or warranty as to:
 - a) the nature of individual examples of, batches of, or individual installations of the product, including methods and workmanship;
 - b) the presence or absence of any patent or similar rights subsisting in the product or any other product;
 - c) any guarantee or warranty offered by **Marley New Zealand Ltd**.
4. Any reference in this Appraisal to any other publication shall be read as a reference to the version of the publication specified in this Appraisal.
5. BRANZ provides no certification, guarantee, indemnity or warranty, to **Marley New Zealand Ltd** or any third party.

For BRANZ



Chelydra Percy

Chief Executive

Date of Issue:

15 September 2021