

### 3 System and material properties

The Akatherm dBlue system is made from a state-of-the-art combination of plastic and sound absorbing mineral filler (PP-MD). The material formula is developed by the Aliaxis R&D laboratory and offers a unique combination of acoustic performance, weight, resistance and mechanical strength. The triple-layer pipe structure is produced using latest co-extrusion technology. Each layer has its own function optimised to reduce sound levels, increase mechanical characteristics and improve the drainage flow.

#### 3.1 Technical specifications

Property	Value
<b>Material</b>	PP-MD mineral-reinforced (pipes and fittings)
<b>Size range</b>	DN40 to DN200
<b>Wall thickness</b>	DN40-50 : 1,8 mm, DN75 : 2,3 mm, DN200 : 6,2 mm DN90 : 2,8 mm, DN110 : 3,4 mm DN125 : 3,9 mm, DN160 : 4,9 mm
<b>Area of application</b>	Drainage pipes in buildings and above ground installation
<b>Chemical resistance</b>	Polypropylene basis No waste water containing benzene Rubber ring made of SBR
<b>Application</b>	Waste water with pH value 2 - 12 Waste water temperature up to 90°C (continuous load) and 95°C for brief periods
<b>Application area (EN1519)</b>	Inside buildings (B) : DN40 to DN50 Inside and under the buildings (BD) : ≥DN 75
<b>Density</b>	Mineral filled layer: 1,4 g/cm <sup>3</sup>
<b>Coefficient of thermal expansion</b>	0,10 mm/mK
<b>Coefficient of thermal conductivity</b>	0,25 W/mK
<b>Ring stiffness</b>	> 4 kN/m <sup>2</sup>
<b>Colour</b>	Internal layer: light grey (RAL7040) Middle layer: grey External layer: blue (RAL5012)
<b>Structure</b>	Triple-layer pipe Uniform fitting
<b>Connection</b>	Rubber ring joint socket with factory-installed lip sealing ring
<b>Fire behaviour</b>	B2 (normally inflammable) DIN 4102-1 E (normally inflammable) EN 13501-1
<b>Standards and approvals</b>	System tested according to EN1451. Refer to the chapter about approvals, standards and quality.
<b>Sound insulation</b>	0,5 l/s 14 dB 1,0 l/s 16 dB 2,0 l/s 16 dB 4,0 l/s 18 dB  All tests were carried out in the accredited Institute for Building Physics Fraunhofer in Germany.
<b>Independent monitoring</b>	Süddeutsches Kunststoffzentrum (SKZ), Germany

Table 3.1

## System and material properties

### 3.2 Properties and benefits

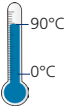


#### Material advantages

High noise reduction without insulation



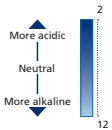
Installation possible at temperatures down to -10°C



High resistance to waste water temperatures up to 90°C (peak 95°C)



Triple layer pipe is rigid, noise-attenuated with a smooth bore that resists incrustation and blockages



High chemical resistance ranging from pH2 to pH12



Sustainable system  
100% recyclable  
ISO 14001 certified company

Table 3.2

#### System advantages



dBblue metal brackets with rubber lining reduce acoustic vibrations to a minimum



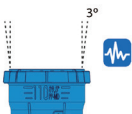
Fast installation of rubber ring joints without additional tools



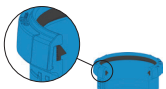
No vent stack required in multi-storey buildings using the dBblue Stack-aerator system



Various solutions available for transition to other materials



Rubber ring joint increases flexibility of the pipe system during ground movement or earthquake



Snap cap technology with tight rubber ring containment and installation angle indication

Table 3.3