

## 1 System information

### 1.1 Intended use

Akatherm dBlue is an innovative noise-attenuated soil & waste drainage system, designed to be installed in accordance with EN12056. It is suitable for use in multi-occupancy applications as well as hospitals and hotels and other commercial applications, where reduced noise levels are preferred.

Akatherm dBlue is available in nominal diameters DN40 to DN200 with a full range of socketed pipes, a comprehensive range of fittings including brackets, transition adaptors as well as the Stack-Aerator high-rise solution for single stack downpipes.

- +** The system has the following features:
- Complete rubber ring joint system with excellent sound-insulation properties
  - Made from a state-of-the-art combination of polypropylene and sound absorbing mineral filler (PP-MD) for airborne noise reduction
  - A triple layer pipe which is rigid, noise-attenuated with a smooth bore that resists incrustation and blockages
  - dBlue metal brackets with rubber lining dampen vibrations and reduce Structure borne noise
  - Fast and easy installation without special equipment
  - Robust fittings that resist on-site- and transit damage
  - Installation inside the building and embedded in concrete (wrapped connections)
  - Stack-Aerator high-rise solution for single stack downpipes
  - Sustainable system which is 100% recyclable



Illustration 1.1

### 1.2 Applications

Akatherm dBlue is designed to be installed in accordance with EN12056. Thereby, Akatherm dBlue meets the requirements for use in residential and commercial buildings.

#### Residential buildings

Its excellent sound insulation properties result in a high noise reduction without insulation and is an ideal and cost effective alternative for insulated PVC in single and multi-occupancy buildings.

#### Commercial buildings

Akatherm dBlue is an innovative and professional soil & waste drainage system and its many distinct features and high quality make it suited for a wide range of commercial applications like:

- Hotels, spas, luxury resorts
- Multi occupancy buildings
- High-rise buildings
- Multi-storey buildings
- Concert halls, museums and cinemas
- Hospitals
- Office buildings
- Professional kitchens

Akatherm dBlue is designed for noise reduction and allows you to enjoy urban living with increased living standards.

- +** **No acoustic insulation required**
- Akatherm dBlue does not require additional acoustic insulation, offering many significant advantages:
- No insulation material required
  - No insulation installation time
  - Less scheduling of companies
  - Consistent acoustic results during installation lifetime
  - No unverified insulation materials
  - Faster and easier inspection
  - Faster and easier maintenance

#### Application parameters

The pipes, fittings and seals can be used continuously at 90°C and up to 95°C for brief periods. They are suitable for the drainage of chemically aggressive waste water with a pH value of 2 (acidic) to 12 (basic).

Behaviour in fire corresponds to B2 normal combustibility according to DIN 4102 and E according to EN 13501-1.

Akatherm dBlue is suited for installation down to -10°C.

For installation in applications not listed in this manual or with chemicals not listed in the chemical resistance list found in Appendix A of this manual, please contact your local office for further advice.

#### Where not to use

Although Akatherm dBlue is very versatile, it is not a true chemical drainage system and is not recommended for industrial chemical drainage and laboratory drainage.

The preferred solution for these applications is a homogenous welded PE or PP system using butt-welding and electrofusion technology like Akatherm HDPE. See [www.akatherm.com](http://www.akatherm.com).

## System information

### 1.3 Triple-layer pipe

The triple-layer pipe structure is produced using the latest co-extrusion technology. Each layer has its own function optimised to reduce sound levels, increase mechanical characteristics and improve the drainage flow.

The grey inner layer improves the drainage flow with a low friction smooth surface that is abrasion resistant and resistant to high temperatures. The middle layer is mineral filled and provides the pipe its excellent air borne noise absorption as well as a high pipe stiffness. The outer layer is impact resistant, has increased UV-resistance and allows installation down to -10°C.

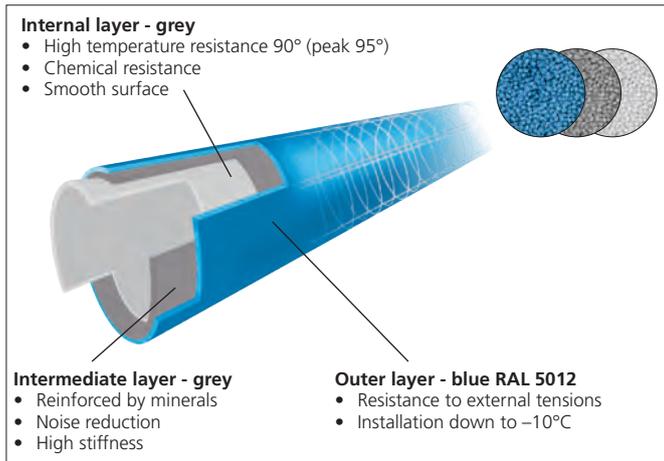


Illustration 1.2

Combined the three layers provide the dBlue system with a pipe suited for a wide range of applications.

One end of each pipe has an integrated socket with rubber ring whilst the other side has a chamfered end which makes the pipe ready to install.

### 1.4 Uniform fittings

The dBlue fittings have been designed for noise reduction and have many on-site benefits. All fittings are injection moulded (exceptions noted) from PP-MD in a uniform single layer. This provides the fittings with their excellent sound-insulation properties and a constant production quality. The fittings have a mat surface finish and the snap cap rubber ring containment make it a robust fitting.



Illustration 1.3

#### **+** Installation and inspection friendly

The snap cap contains an angle indication for correct positioning. The fitting body has a dedicated area where the installer can mark its position during pre-fabrication. The marking on the fitting is large and highly visible during inspection.

### 1.5 Acoustic brackets

dBlue metal brackets with rubber lining support the system and contain a rubber lining to dampen the structure borne noise vibrations.

The bracket is a single solution for guide and anchor points in the installation. Use the provided spacers to create a guide bracket in open position. Without spacers the quick close mechanism fully tightens the bracket around the pipe to create a fixed point.

The bracket is installed to the building with a M10 connection nut firmly welded to the bracket.



Illustration 1.4

## 1.6 Sound insulation

Increased living standards and vertical living have shaped modern installation regulations of drainage systems. In modern urban life noise is around us all the time and this requires proven sound reduction results in each building aspect.

European Directive No.2002/49/EC describes category II as noise measured indoors: 'Building acoustics. Protection of rooms inside buildings against noise. Acceptable indoor sound level values'.

For instance the acceptable noise levels for accommodations in residential buildings, boarding schools, children's homes, care buildings, 4 and more star hotels are 35 dB during daytime and 25 dB at night.

Traditional installation systems don't offer enough acoustic performance and additional insulation is labour intensive.

**+** Akatherm dBblue has been independently tested and meets the requirements without additional insulation.

## 1.7 Packaging, transport and storage

### Packaging

Pipes up to 500 mm and fittings are packed in cardboard boxes. Where required, supplementary items in the cardboard boxes will be packed in a plastic bag.

Pipes longer than 500 mm are packed on wooden pallets and fastened with straps.

**+** For optimal storage each pallet has additional support spacers (combs) installed to avoid shape deviation of the pipes. Two combs are installed for pipe lengths between 1 and 2 m, and three combs for 3 m long pipes.

The pipes are packed socket end next to spigot end for the proper shape retention.

**+** All pallets are wrapped with UV resistant white plastic stretch film, shielding the pipes from UV radiation, dirt, dust and (light) rain.

### Local transport

Pipes and fittings still packed in their original packaging (cardboard box or pallet) must be secured against movement and deflection.

Individual lengths of pipe transported loose should be transported 'side by side': socket end next to spigot end for proper shape retention. The pipes must be firmly supported over the entire length and secured from movement and defect.

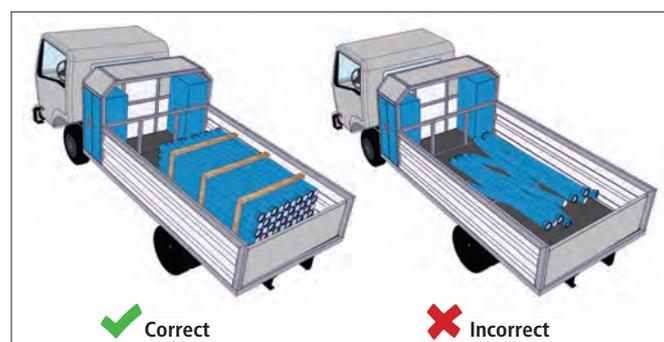


Illustration 1.5

During the transport of pipes and fittings, exposure to rain and snow should be limited.

### Storage

Pipes should be stored in their original lengths in stacks on a flat and clean area. Ensure that the wooden frames are aligned squarely when stacking. The first level of the stack should always be laying on the wooden blocks of the pallets.

The maximum safe height of the stack shouldn't exceed 2,5 m.

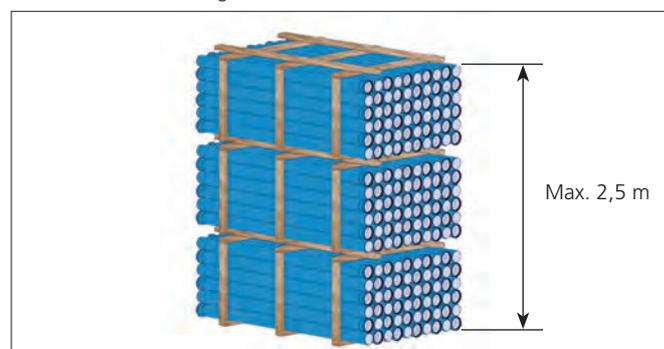


Illustration 1.6

Outside storage of pipe crates is possible when the following guidelines are followed:

- Pipes are protected from direct sunlight (with proper ventilation)
- Storage up to 12 months is possible when the pipes are kept packaged in the original UV resistance stretch foil
- Storage up to 6 months is possible when the pipes are not protected by the original UV resistance stretch film
- Storage temperature should not exceed 60°C

Pipes which have been exposed to UV radiation over a longer period of time can fade in colour. It has no negative effect on the pipe's structure and mechanical resistance.

Store pipes in such a manner that no objects are placed on top of the sockets and spigot ends to ensure that these are not deformed.

Fittings should be kept in their original packaging in a dry covered area and be protected against moisture, dirt, solids and UV radiation.

## System information

### 1.8 Marking

dBlue pipes and fittings are marked with:

- Manufacturer's mark or brand
- Material type
- Nominal diameter
- Area of application
- Conformity of dimensions
- Resistance to low temperatures
- Fire resistance class
- Approvals information
- Information on recycling
- Production year and month
  
- Production day (pipe only)
- Wall thickness (pipe only)
- Time, shift number and production line number (pipe only)
  
- EAN barcode (fittings only)
- Angle indication (fittings only)

### 1.9 Recycling

dBlue pipes and fittings are 100% recyclable.

Left over dBlue materials should be recycled as following:

- |                      |                |
|----------------------|----------------|
| - Remainder pipe     | residual waste |
| - Remainder fittings | residual waste |
| - Lubrication        | residual waste |
| - Cleaning cloths    | residual waste |
|                      |                |
| - Wooden crating     | recycled wood  |
| - Plastic spacers    | residual waste |
|                      |                |
| - Carton boxes       | recycled paper |



Illustration 1.7