



SEKISUI

ALVEO
INNOVATION IN FOAM

Alveo-Soft for HVAC duct sealing tapes

The new opportunity to seal HVAC (Heating Ventilation Air Conditioning) ducts

Sealing performance

A good sealing performance is determined by:

- > Low air permeability at low compression
- > Low compression stresses over a wide range of compression

This allows excellent sealing at low closing forces even for irregular gaps.

Air permeability

(measured acc. EN 1026/DIN 18055)

The air flow through the compressed foam tape is measured for various pressure differences.

For sealing tapes, the air permeability should be as low as possible.

At low compression, Alveo-Soft offers far lower air permeability than standard and impregnated open cell PUR (Polyurethane) foams as well as soft PVC QR (quick recovery) foams.

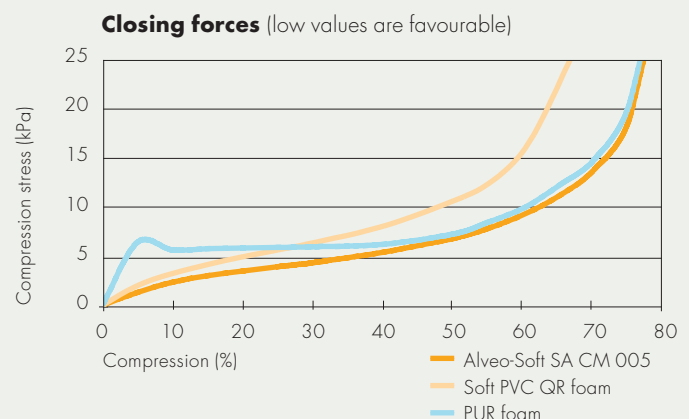
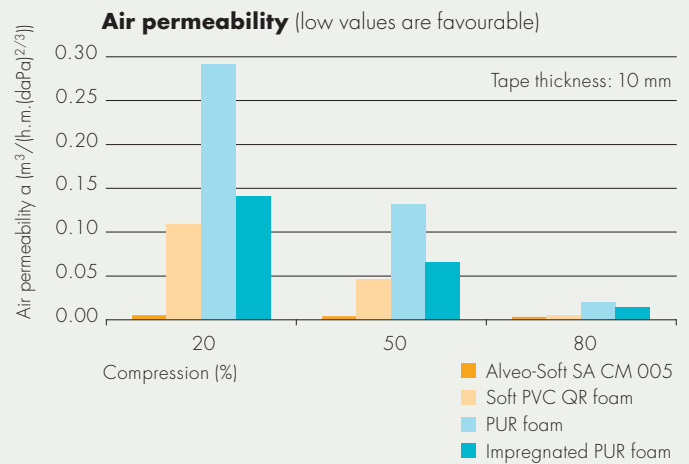
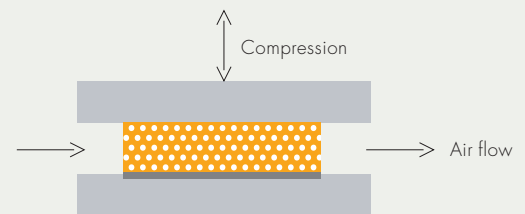
Using Alveo-Soft, the thickness of the sealing tape can be significantly reduced compared to soft PVC QR or PUR foam, because these need to be compressed to a higher degree for acceptable sealing.

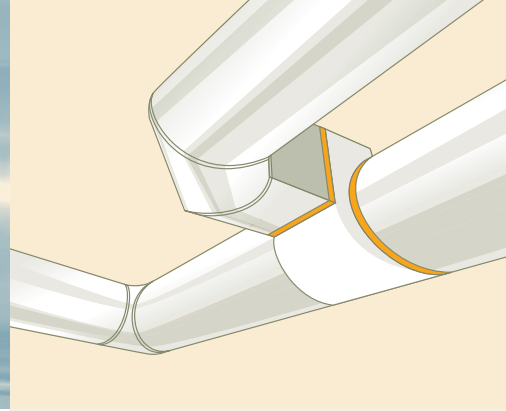
Closing forces

(measured acc. ISO 844)

The compression stress is measured as a function of compression. For sealing tapes, the compression stress should be low over a wide range of compression, to allow low closing forces even for irregular gaps.

All foams show similar compression behaviour.





Comparison in practice

Typical minimum compression for acceptable sealing:

- > Alveo-Soft foam tape 15 %
- > Soft PVC QR foam tape 30 %
- > PUR foam tape 60 %

- > Alveo-Soft offers the best sealing performance (lowest closing force combined with lowest air permeability).
- > Soft PVC QR foam: The closing force is more than twice the closing force of the Alveo-Soft tape. The air permeability is about 16 times higher.
- > PUR/Impregnated PUR foam: The closing force is more than three times the closing force of the Alveo-Soft tape. The air permeability is approx. 14 times higher.

Conclusions

Alveo-Soft as sealing tape for HVAC ducts offers the following advantages compared to soft PVC QR and PUR foam:

Benefits for the end user

- > Better sealing performance due to lower air permeability and lower compression levels
- > Less heating and air conditioning losses and expenses due to lower air permeability
- > Less condensate problems due to lower air permeability
- > Low potential of damage in case of fire due to low flammability (certified acc. DIN 4102: B2/NF P92-501: M1)
- > No risk for health due to microbial inertness (certified acc. EN ISO 846 and VDI 6022)

Benefits for the constructor of HVAC systems

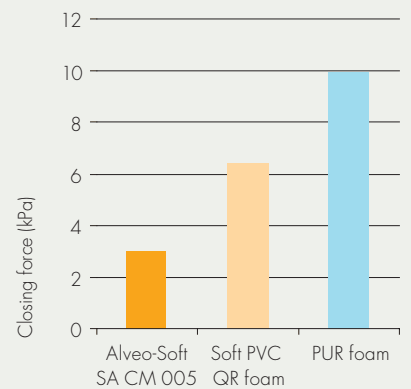
- > Easier to seal the ducts due to lower closing forces
- > Less distortion of duct elements
- > More cost effective in installation as more material is stored on a spool due to thinner tape

Benefits for the tape manufacturer

- > More cost effective as less thickness is required
- > More cost effective in production of tape as more material is stored on a roll, i.e. fewer roll changes

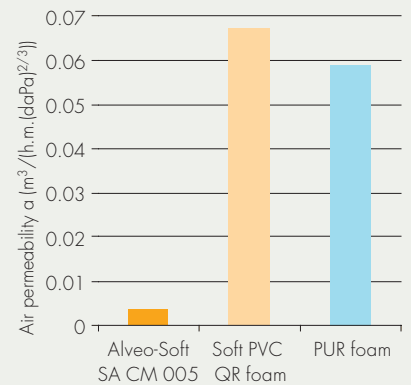
Closing force*

(low values are favourable)



Air permeability*

(low values are favourable)



* measured at typical compression level of each tape



Function	Alveo-Soft	PVC Foam	PUR Foam
Sealing			
Air permeability > Low air permeability results in better sealing performance and allows to reduce tape thickness	+	○	-
Compression stress-strain > Low compression stresses reduce the closing forces > Low and stable compression stresses allow large working range	+ +	+ +	+ +
Conformability > High conformability allows tape to adapt to uneven surfaces	+	○	-
Easy converting			
Stiffness > High stiffness in web direction allows roll to roll conversion without reinforcement	+	-	-
Weight > Low weight allows longer rolls	+	-	+
Plasticizer free > Easy application of adhesive on foam surface > No sticking during conversion	+ +	- -	○ +
Durability, health and safety			
Water absorption > Humidity absorption compromises the insulation capability > Hygienic, no humidity absorption which can act as feeding ground for bacteria and fungi	+ +	○ ○	- -
Flammability, toxicity of fumes > Low potential of damage in case of fire	+	-	-

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