

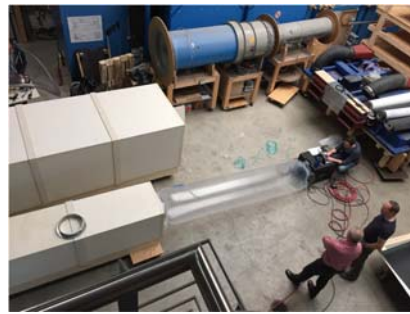
The new air tightness class in ductwork - Aeroseal technology to seal leakages in new/retrofit ductwork and duct components - the foundation for highest energy efficiency in ventilation systems

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SUMMARY

- **Historical Background:** The use of aerosol particles to seal ductwork from the inside was brought to the proof of concept stage in 1994 by researchers at Lawrence Berkeley National Laboratory (LBNL) (Carrie and Modera 1994-1995). Originally applied mainly in the US market and in residential ventilation systems, ductwork specialist and innovator MEZ-TECHNIK transferred the technology together with Aeroseal LLC (Amit Gupta) in 2015 to Europe, adapted, approved and reengineered the Aeroseal technology according to today's European market needs, requirements and standards.
- **Today:** Mid 2018, so far seventeen companies in Europe (out of more than 400 worldwide) provide Aeroseal sealing services on construction sites for new and retrofit ventilation systems in order to reduce leakages of ductwork, duct components and AHU's in the most efficient and effective way. In 2017, 65 commercial and residential projects have been performed in Europe. Thousands worldwide and in the US.
- **Potential:** More than 20 years after its invention Aeroseal has still the potential to change the process chain in how to build highly efficient air duct systems and therefore to play a significant role in reducing energy consumption and CO₂ pollution worldwide. Facing leakages between 15-30% in European ventilation systems in average, this technology can close this gap to nearly zero leakage and reduce the energy consumption of Aeroseal sealed systems by up to 40% in average, including a quick amortisation rate of between 1 to 5 years.
- **In brief:** Aeroseal technology utilizes air laden with fine aerosol particles (2-20 µm) to pressurize a duct system, resulting in deposition of those particles at the leaks within that duct system. By reducing leakages of duct systems by 90% in average Aeroseal sealing technology allows reducing leakages to a standard better as air tightness class D or ATC 1 for a complete system. Aeroseal technology can be applied in new constructions as well as in existing systems to improve energy efficiency, cleanliness of ventilation systems, IAQ and comfort.
- **New quality standard:** The technology defines a new standard in air tightness, hygiene and comfort in non-domestic & domestic air duct systems. Air tightness classes C & D as described in European standards such as EN 1507, EN 1237 and EN 16798-3 (ATC 3, ATC 2 and ATC 1) could not or only hardly be reached so far for a complete and installed duct systems with today's technology, due to several influence factors in today's process chain in ductwork construction. Problems like odours or noise created by leaky ductwork can be solved easily.
- **Fulfilment of European Standards:** Tested to nearly all relevant European standards and requirements related to air duct systems, Aeroseal can be applied in most building types and industrial ventilations systems as well as for AHU's.



KEYWORDS

Aeroseal, ductwork, tightness class (ATC), energy-efficiency, cleanliness, comfort, IAQ,

1 AEROSEAL IN EUROPE

Reference projects & case studies from various European Countries and building types can be found on our website: <https://mez-technik.de/en/mez-aeroseal/case-studies-references.html>
UL & European standards, approval, test results and MSDS can be handed out upon request. Please contact j.mez@mez-technik.de

2 ACKNOWLEDGEMENTS

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3 REFERENCES

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Modera M. (1993) *Residential Field testing of Aerosol-based technology for sealing ductwork*