LINERVENT

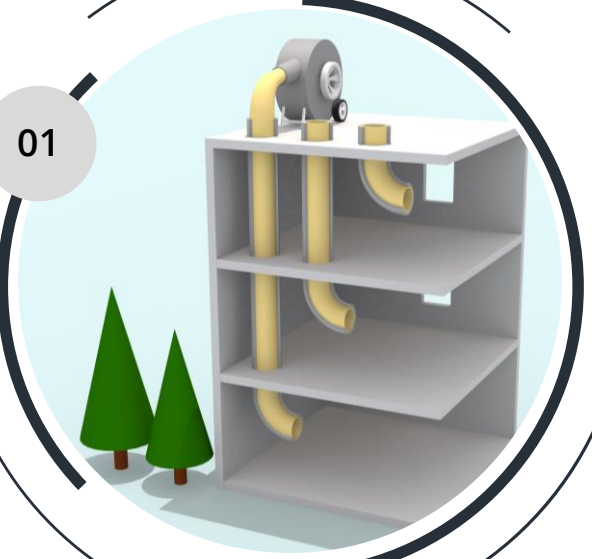
SAVE ENERGY
WITH DUCT SEAL

What is Linervent?

- How does heat disappear from a building?
- Examples of houses where Linervent has been used to save heat.
- Definitions

What is Linervent?

01



Linervent is a method that seals the ventilation ducts and restores the function of a building's ventilation system.

02

The technique used is called duct sealing and is based on a composite material being inserted into the ducts and forming a new, flexible and tight duct on the inside of the existing duct.

03

Linervent can be used in all types of ventilation ducts and in all types of buildings.

Why should you duct seal?

- According to the National Board of Housing, Building and Planning, 8 out of 10 exhaust air ducts are leaking.
- Reuse of old bricks and eternit ducts.
- The leaking air is expensive to heat and in the long run an environmental villain, there is a lot of money to be saved.
- The economic aspect of duct sealing is just one of several reasons that ducts may need to be sealed.
- Compliance with mandatory ventilation requirements is often an equally strong motivation to carry out a duct seal.
- There are examples where Linervent has been used to bring order to installations where there are repeated problems with overloading of compressors etc. in the recycling systems.
- FX and FTX systems that are deployed where channels leak frequently find it difficult to deliver what the supplier promised. With duct sealing, FX/FTX keeps the supplier's calculations.
- In order to meet EU requirements for energy efficiency in buildings, duct sealing is an effective and profitable improvement.

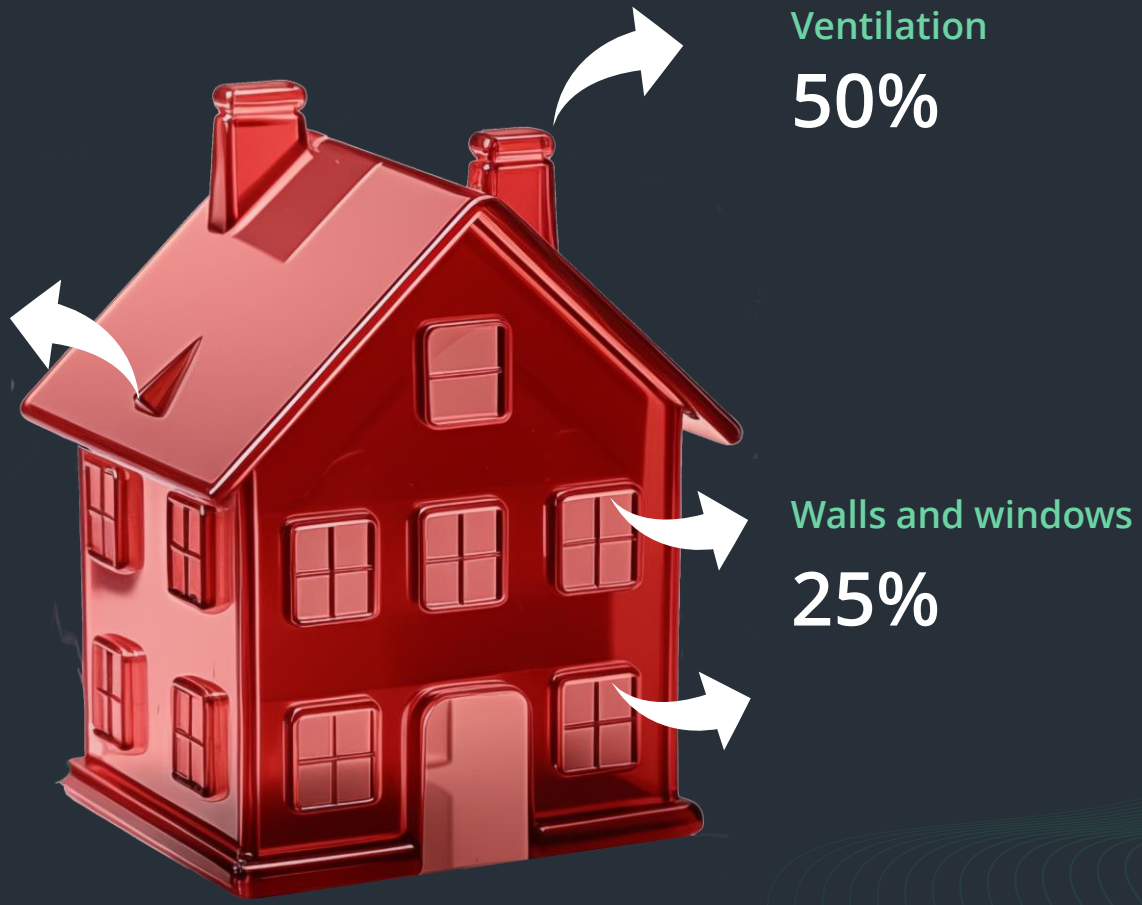
What is Linervent?

How does heat disappear from a building?

Examples of houses where Linervent has been used to save heat

Definitions

How does heat disappear from the house?



What Makes More Heat disappears than necessary?

Ventilation

- Higher extraction than required due to leaking ducts

Roof

- Poor insulation

Walls and windows

- Poor insulation
- Low energy class

How to fix heat loss?

Ventilation

- Duct sealing and/or heat recovery

Roof

- Additional insulation

Walls and windows

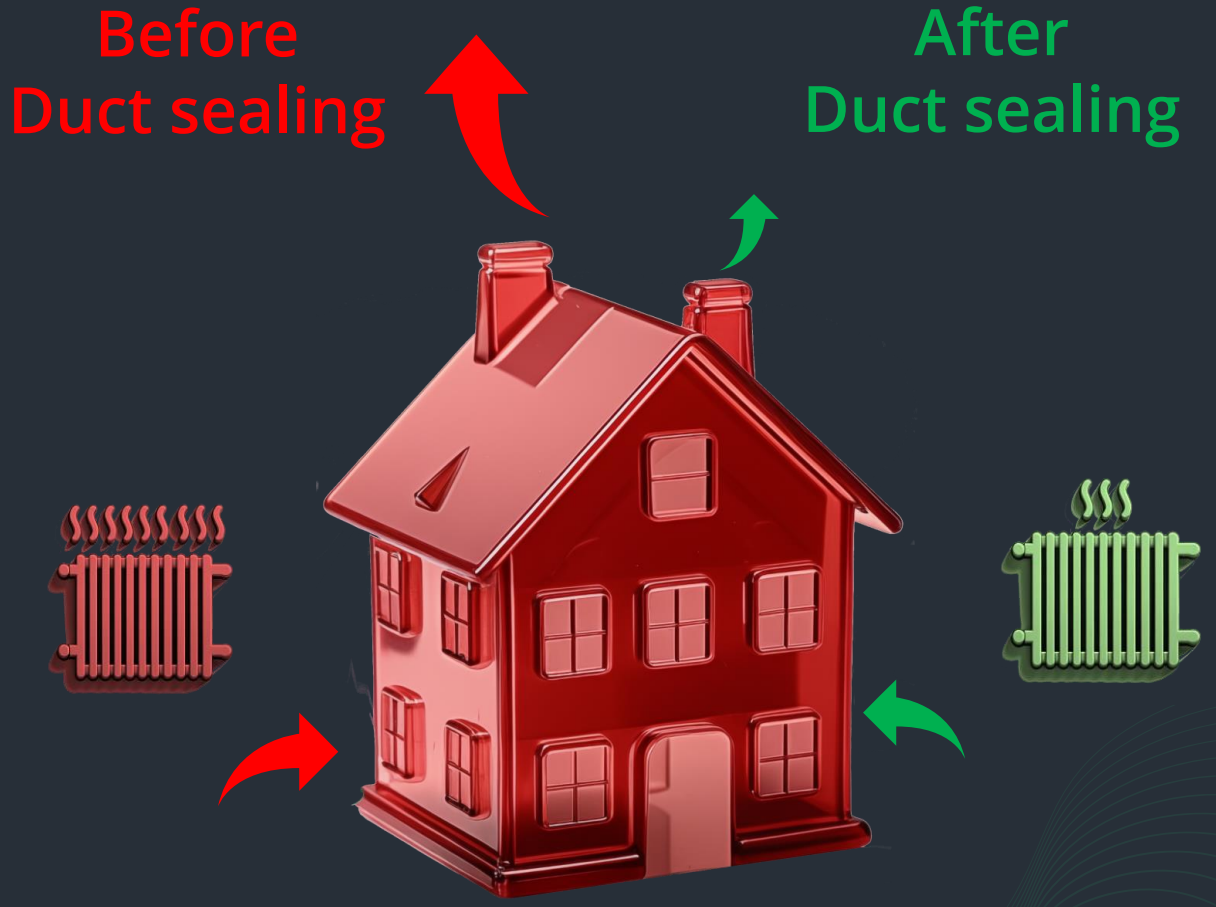
- Additional insulation
- Windows with a higher energy rating

Why is ventilation such a heat thief?

- Ventilation consists of air being sucked out of buildings and replaced by new air from outside.
- When the ventilation ducts are leaky, it means that more air than necessary is sucked out of the building.
- Too much air out = too much air in. The air that is sucked out must be replaced by new air from the outside.
- When it is cold outside, the air that is sucked into the building must be heated, which means increased heating costs.
- In other words, we will heat up more air than we need if we have leaky ducts.

Duct sealing reduces heat loss

- Ventilation accounts for 50% of heat leakage, so there is great potential for savings.
- The duct seal means that the amount of hot air we suck out of the building is reduced (because the fans can be turned down).
- This means that the amount of cold air we suck in that needs to be heated is also reduced.
- In this way, we save on our heating.



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Definitions

The consequence of leaky ducts

- If the cost of heating is SEK 1.0/kWh, the cost of air extracted from a building will be approximately SEK 5,000 per apartment and year for an average Swedish apartment where you have mechanical exhaust air (fans) with correctly adjusted air flows.
- In leaking duct systems, the outflow from the apartments decreases and mandatory ventilation inspections are no longer met. The measure will be to put a larger fan on the roof. Then the outflow from the apartments increases to acceptable levels (in the best case). This greatly increases the outflow out of the house, which increases costs.
- The larger fans can often mean that the heating cost of an apartment doubles.
- By having sealed ducts, you can keep your heating costs down.
- The conclusion is that there is a lot of money to be saved on airtight existing exhaust air ducts at the same time as mandatory ventilation is fulfilled.

BRF in Mölndal, 182 apartments in several three-storey buildings

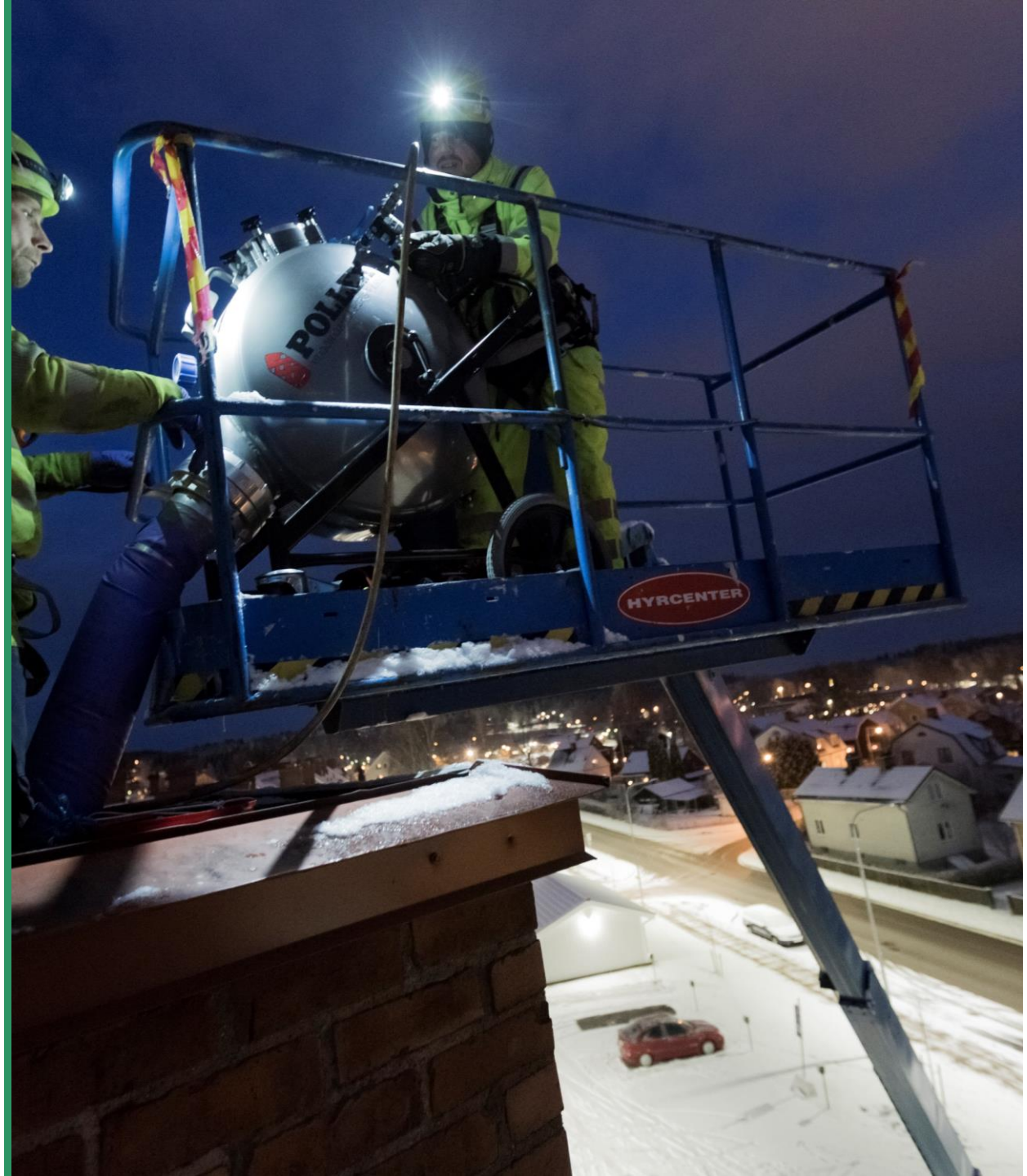
01 Housing cooperative in Mölndal where the ventilation worked poorly.

02 The mandatory ventilation inspection was not complied with.

03 After investigation, new fans were put on one of the houses in the association, the mandatory ventilation inspection was not fulfilled despite that.

04 The next step was to seal the canlats using the Linervent method.

05 When evaluating after duct sealing, the result is that mandatory ventilation control is met and that heating costs are significantly reduced.



BRF in Mölndal, 182 apartments in several three-storey buildings

New fans without duct seal

- Heating cost 470 000 USD / year
- Not fulfilled mandatory ventilation inspection

With duct seal

- Heating cost 110 000 USD / year
- Approved mandatory ventilation inspection

Total savings: 370 000 USD / year

- Savings over seal life: 9 million USD.
- The seal that was made saves itself in about 3 years!

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- Examples of houses where Linervent has been used for heat saving.

Definitions

Definitions

OVK

Statutory review of the ventilation systems required in Swedish apartment buildings. OVK dictates a minimum airflow out of the building.

Mechanical exhaust air

A fan that sucks air out of the building.

Mechanical supply air

A fan that supplies air to the building that is distributed via a ventilation system.

Natural draught

The building has no fans, heat differences allow the air to move through the ducts

FX

Heat recovery with a heat exchanger on the exhaust air. That is, you recover the heat in the air that is sucked out of the house.

FTX

The heat is recovered from the exhaust air and returned to the supply air, which is also is mechanical.