



**idealcore™**

Innovative window design with thermal PUR

# Developed to withstand the Danish west coast

THE WINDOW OF  
THE FUTURE HAS

**idealcore™**

Lasts longer  
Insulates better

**idealcombi** 

Windows. Designed & Manufactured in Denmark



### **Manufactured with care by skilled Danes**

At the largest window factory in Denmark on the west coast, facing the North Sea, we develop, test and manufacture all Idealcombi product ranges.

About 550 dedicated employees take care of all aspects of manufacturing the wide range of products in our window and door series. The state of the art production facility is of great importance for the local community as well.



# "That'll do!" never really does it, on the Danish west coast.

03 / idealcore™

**At Idealcombi we have since the beginning in 1973 put all our professional pride into developing a better window. Improving durability, insulation, minimising maintenance and improving the aesthetics by exploring new materials, new designs and new manufacturing methods.**

The first big milestone was in 1988 when we were the first to launch the aluminium clad sash/frame timber window. It was designed as a traditional timber window with external frame and sash profiles in aluminium and timber internally.

We have now, once again, developed an innovative window solution. This time by creating a unique frame design using the imperishable and super-insulating material polyurethane (PUR) to add unmatched properties to our windows and doors.

As a worlds first, Idealcombi is manufacturing windows and doors using **idealcore™** – a unique frame design, where the core of the frame is moulded in thermal PUR at the factory in the North West of Denmark.



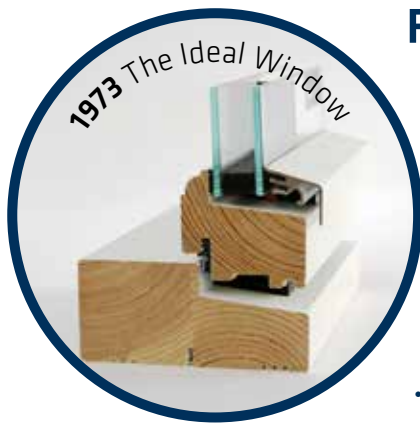
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# The road to the perfect solution

That'll do! never does it, at Idealcombi. We are always searching for the next idea that will evolve the window even further. To make the good even better. That is why we have always focused our efforts on the weakest point of the window the frame and the rebate.



## Frame rebate in wood

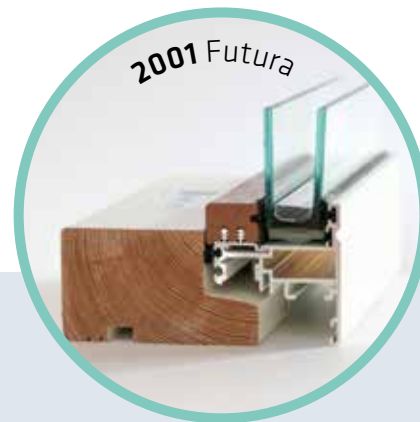
The first Ideal windows from 1973 were made entirely from pine wood.

### Pros:

- Simple production
- Natural material

### Cons:

- Risk of rot in the wet zone
- Needs continuous external painting & maintenance
- Needs regular painting of the frame rebate



## The challenges

There are 4 main reasons why the frame and frame rebate is crucial for the lifespan of a window:

### 1. Water

When the rain falls on the window the water will collect in the frame rebate. The same happens for water from condensation on both sides of the window. If the entire frame is made from wood water will, at some point, penetrate the paint and cause the wood to deteriorate and rot.

### 2. Cold weather

One of the most important functions of the window is to keep the cold weather out of your home and the heat in. This is where materials play a key part. Some combinations of materials can result in thermal bridges where heat is lost through the external aluminium profiles causing low temperatures and condensation on the inside of the glass.

### 3. Dirt and bugs

In windy conditions dirt will be carried to the window and it usually ends up sitting in the frame rebate. At the same time bugs love to hide in drainage holes and cavities around the frame. Cobwebs, dirt and dead bugs will block the drainage holes and channels.

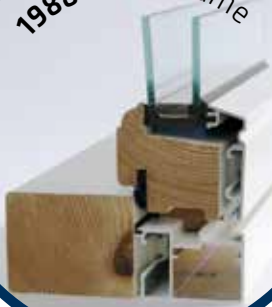
### 4. Replacement

Unlike the rest of the components in a window the frame cannot be replaced without performing major works.

## Frame rebate in aluminium

When we launched the original CombiFrame wood/alu window in 1988 it had a powder coated aluminium rebate similar to the external protective aluminium profile.

1988 CombiFrame



### Pros:

- Imperishable material in the wet zone
- Low maintenance
- No repainting
- Long life span
- Great total economy

### Cons:

- Thermal bridging from aluminium rebate to the internal timber frame
- Risk of internal condensation

## Composite rebate

To combat the thermal challenges the next step was a composite solution with a thermal break of extruded plastic.

### Pros:

- Imperishable material in the wet zone
- Reduction of thermal bridging

### Cons:

- Drain holes can be blocked by dust and dirt.
- Ironmongery grooves makes cleaning harder.
- Sealant must be applied further back
  - Risk of standing water in the wet zone

2006 CombiFrame



2015 Frame IC & Nation IC



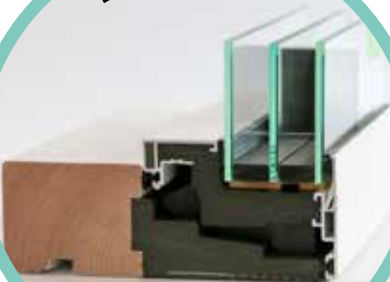
## Rebate in thermal PUR

With **idealcore™** our research and development team has found the ideal solution.

### Pros:

- Imperishable material in the wet zone
- Solid
- Super insulating
- Smooth surface (easy cleaning)
- 100% water- & moisture resistant
  - No drainage holes & cavities to be blocked by bugs and dirt
  - No maintenance of rebate
  - Longer lifespan

2010 Futura+



2014 Futura+i



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# idealcore™. The window of the future

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Through the years we have developed and tested many different frame designs. All in a quest to solve the four basic challenges in window design. Our development team has finally cracked the code by creating ground breaking frame design with an imperishable and highly insulating frame rebate in polyurethane - also known as thermal PUR.

We have named the new solution **idealcore™**, because that is exactly what it is. An ideal core that unlike any other design on the market solves all four challenges at once.

## 1. Long lifespan

Thermal PUR is an imperishable material. The compact rebate moulded from polyurethane will not deteriorate or break when being exposed to water collecting in the rebate.

The window is designed for a lifespan of 70 years - provided it is maintained as instructed in our manual.

## 2. Minimal heat loss

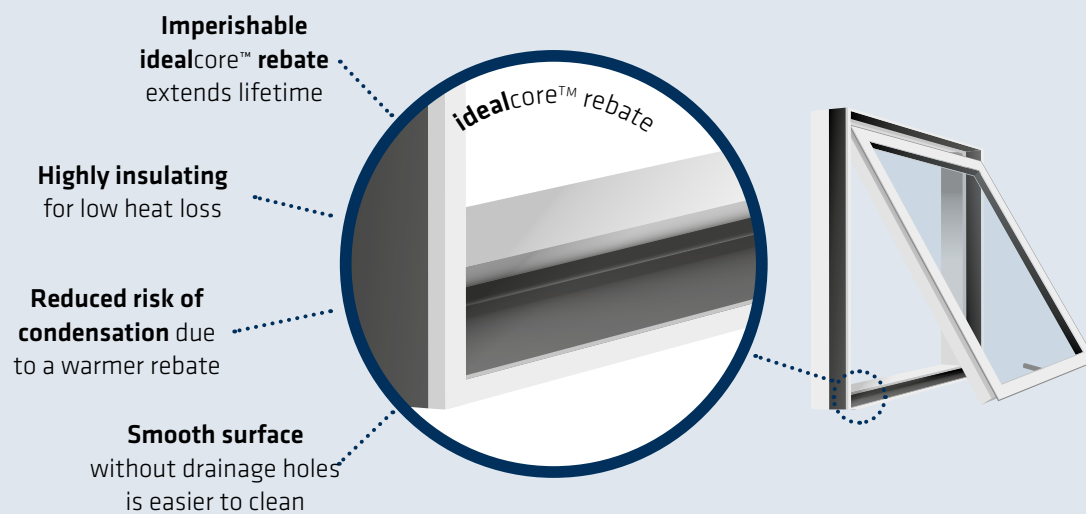
Thermal PUR is a highly insulating material with a lambda value of just 0,074 W/mK. This ensures there will be no thermal bridging from the outside to the inside of the frame. Windows with **idealcore™** therefore have an energy performance that comfortably exceeds building regulations and can be used for any type of build.

## 3. Easy to clean

The **idealcore™** PUR rebate is solid and does not have any cavities which eliminates the need of any drainage holes. This means the the frame rebate has a smooth surface that is very easy to clean with a damp cloth and offers no shelter for bugs to nest in.

## 4. Does not need replacing

Using an imperishable material in the frame rebate significantly extends the lifespan of windows and doors with **idealcore™**. It will therefore not be necessary to replace the frame that is fixed to the building. Other components such as sash, glass and ironmongery can be replaced as required.



## What is Thermal PUR?

**Thermal PUR (polyurethane) is a synthetic resin in which the polymer units are linked by urethane groups. Polyurethane foams can be both soft and rigid and with different masses and properties.**

Today you will find PUR in a range of products such as; shoes, mattresses (ie. Tempur®), car seats, sports equipment and as insulation for pipes, refrigerators and building materials.

Thermal PUR excels in many ways. It is strong, flexible, has a low weight and most importantly PUR has excellent insulating properties. At the same time there is no health related risks associated with the use of PUR.



**idealcore™** is found in the following window systems from Idealcombi:



**Futura+**



**Frame IC**



**Nation IC**





Today Idealcombi is owned and run by Martin and Mikael Søgaard, who are sons of the founders of Idealcombi.

The brothers Bent and Henning Søgaard founded Idealcombi in 1973.

## Idealcombi was started in a barn by two brothers



The story of Idealcombi starts with two entrepreneurial brothers, Henning and Bent Søgaard. In 1973 they started manufacturing windows in their parents' barn in the most western part of Denmark. And they did it well!

It didn't take long before the company started growing. And growing. And growing. Until achieving its current status as the largest window factory in Denmark with over

100,000 m<sup>2</sup> and over 550 skilled employees. All thanks to the two Danes' sense of quality and their distinctive eye for innovation and product development.

Today Idealcombi's future is in the hands of the next generation, the cousins Martin and Mikael Søgaard.



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