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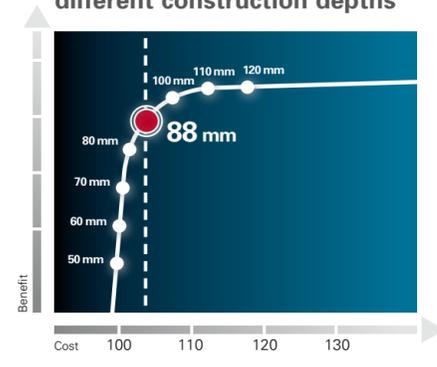
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The answer.  
KÖMMERLING **88**plus

**Cost-Benefit Ratio of different construction depths**



**Comparison of U<sub>f</sub>-values**

KÖMMERLING EuroFutur 70 mm double seal, with steel	1.3 W/(m <sup>2</sup> K)
KÖMMERLING EuroFutur 70 mm central seal, with steel	1.2 W/(m <sup>2</sup> K)
<b>KÖMMERLING 88plus with steel</b>	<b>1.0 W/(m<sup>2</sup> K)</b>
<b>KÖMMERLING 88plus without steel, with thermal insulation certified as suitable component for passive houses</b>	<b>≤ 0.8 W/(m<sup>2</sup> K)</b>

The physical properties of a window profile improve with increasing construction depth. In terms of cost effectiveness and sustainability, the limit is reached with 88mm.

**Cost:** Increase in production costs based on 60mm window systems (= index 100).

**Benefit:** Improvement of physical properties of a window profile as a result of the construction depth using thermal insulation as an example.



What requirements will  
*the future have?*



► Making decisions  
for life tomorrow.

What we build today will have a significant effect on the future. It is always important to consider which architecture and technologies we will be passing on to the next generations. The focus is on the increasing requirements for energy efficiency and the sustainable use of resources as well as the protective function of our homes – our haven of warmth and safety. Innovative products such as KÖMMERLING 88*plus* - the latest generation of PVC-U window profiles - supply the solution to fulfil these requirements. The new Premium Window Profile System gives architects and home-owners the tool today to create a sustainable living environment for the future.

KÖMMERLING **88***plus* – The answer.





# *How free are you* to make decisions?

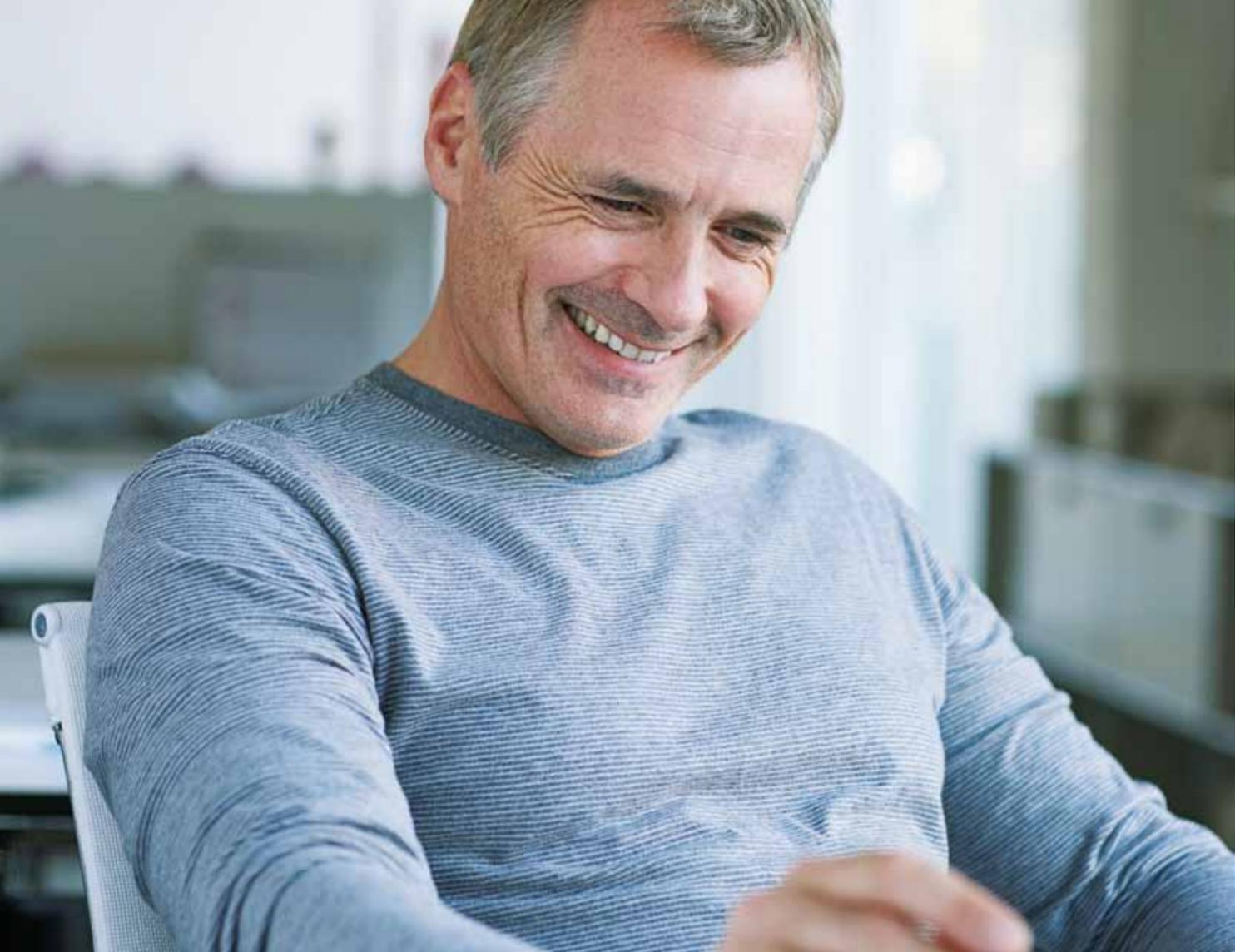
## ► Open for new perspectives.

The gap between the desired and the feasible provides room for creativity. The new generation of window profiles **KÖMMERLING 88plus** offers vast scope for both creative and economical designs. **KÖMMERLING 88plus** – the freedom to let your ideas become reality.

**KÖMMERLING 88plus** – The answer.

## Creative freedom in size, shape and colour

- Lineal, recessed design with perfect window profile proportions.
- The best results for heat and sound insulation and burglary protection.
- Slim window profiles to allow the greatest amount of light in and for high solar energy gains.
- Floor-to-ceiling window walls – sash doors up to 2.5m high.
- High-quality, attractive woodgrain and plain colour designs – aluminium shells for individual choice of colour.
- Optimum economic efficiency; environmentally friendly, durable, easy to clean and robust.



Is it really possible to be

# *creative with aluminium?*

Slim and elegant appearance, wide choice of colour – the KÖMMERLING 88*plus* window profiles with aluminium shells give plenty of opportunity for creativity.

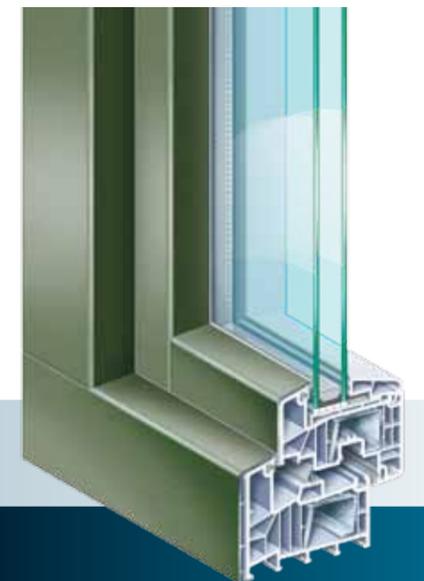
If you opt for aluminium surfaces for their appearance then you should consider KÖMMERLING 88*plus* with aluminium shells which will give you all the advantages of modern PVC-U windows: environmental compatibility, sound insulation, economic efficiency and recyclability.

Above all, the best possible thermal insulation – for a sensible energetic balance. Without doubt, aluminium and PVC-U make the perfect combination, especially for innovative and presentable buildings.

KÖMMERLING **88***plus* – The answer.

## ► Good connections – good energetic balance.

Aluminium on PVC-U – elegance combined with the best insulating values. Each material offers its own individual advantages.



- Butt jointed aluminium shells in classic design.
- Extraordinary heat insulation compared to aluminium windows.
- Outside aluminium appearance, inside neutral white.
- Almost unlimited choice of colour of the aluminium shells due to finishing techniques such as anodising and powder coating.
- Conservation of resources by using only a minimum quantity of aluminium.
- Easy to clean, durable and robust.



## What makes the perfect *passive house window?*

Passive houses give a stunning performance. The technical demands on windows are exceptionally high. KÖMMERLING 88*plus* is a new generation of PVC-U window profiles with sophisticated insulation technology and high construction depths with slim window profiles. They look elegant, have ideal proportions and are efficient in gaining solar energy. Never before have such beautiful and perfect windows been built for passive houses.

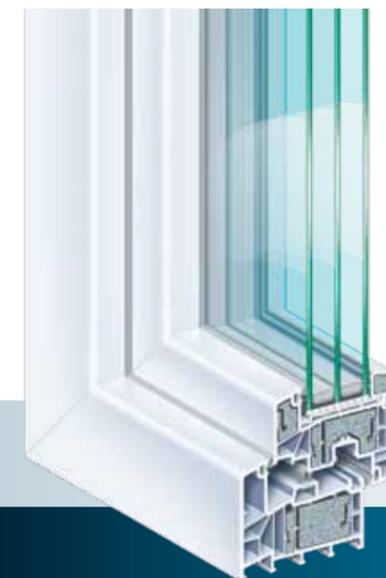
Extremely slim window profiles will be the design for passive houses in the future – a new era has begun.

KÖMMERLING **88***plus* – The answer.



### ► A new class of passive house windows.

Exceptional demands for extreme thermal insulation have had a strong influence on the design of window profiles, especially for passive houses. With the latest window technology, modern design and sophisticated construction, diverging requirements have been brought in line with each other.



- Certification as suitable component for passive houses.
- Straight, recessed design with perfect window profile proportions.
- Slim window profiles allowing the greatest amount of light in and providing high solar energy gains.
- High warping and torsion resistance owing to force-transmitting composite glue between window sash and glazing.
- Floor-to-ceiling window walls – sash doors up to 2.5m high.
- Fully recyclable – polystyrene insulating material can be removed.



## ► Sustainability is the highest command.

With every product today, its environmental compatibility is always questioned. Up to now lead has always been used as a stabiliser in the production of PVC-U windows. For many years, KÖMMERLING has proven that there is an alternative with "greenline". Instead of lead, environmentally-friendly calcium-zinc is used.

A further important criterion for the production of PVC-U window profiles is to ensure the best possible use of resources. Recycled material is used in KÖMMERLING profiles. This means that high-quality rest material from profile extrusion processes and window production are reused in the production cycle.

We have made it our objective to ensure environmental compatibility and sustainability. This guarantees that those who use KÖMMERLING products are also working to protect the environment.



**greenline**  
LEAD-FREE STABILIZER



## What makes a product *environmentally sound*?

- Conservation of resources by using recycled material in the non-visible areas of fitted windows (fig.① frame and fig.② sash window profile).
- All PVC-U window profiles are produced with "greenline" – the environmentally-friendly calcium-zinc stabiliser instead of lead.
- Active environmental protection through consistent recycling.
- Great reduction in energy consumption and CO<sub>2</sub> emissions with improved thermal insulation.





## Why does it have to be *one or the other?*

### ► Extremes merge.

Better sound insulation or better thermal insulation? Better design or better economic efficiency? Such combined requirements for new buildings or renovation work have increased significantly in the past few years. Windows have always played a key role. Windows are the most sensitive part of a house and it is here that energy consumption, security, noise protection and the whole design of a building are defined. KÖMMERLING is setting new standards – not only for high performance PVC-U windows. With this new generation of PVC-U window profiles, KÖMMERLING has achieved the ideal balance between different technical requirements and between desire and feasibility. Our answer is therefore: both.

KÖMMERLING **88**plus – The answer.

### 1. Design

Perfect proportions with slim window profiles, classic aluminium design with aluminium shells, almost unlimited choice of colour – the KÖMMERLING 88plus programme fulfils every wish.

### 2. Economic efficiency

Whatever the requirement – KÖMMERLING 88plus always has a solution. “Economic efficiency” is always at the forefront.

### 3. Thermal insulation

KÖMMERLING 88plus has a value of  $U_i = 1,0 \text{ W}/(\text{m}^2\text{K})$  in the standard version and top values of  $U_i \leq 0,8 \text{ W}/(\text{m}^2\text{K})$  for windows certified as suitable components for passive houses.

### 4. Sound insulation

The ideal combination of three layers of the sash rebate seals and a wide spectrum of glazing offer numerous sound insulation values up to 48 dB (Class 5).

### 5. Security

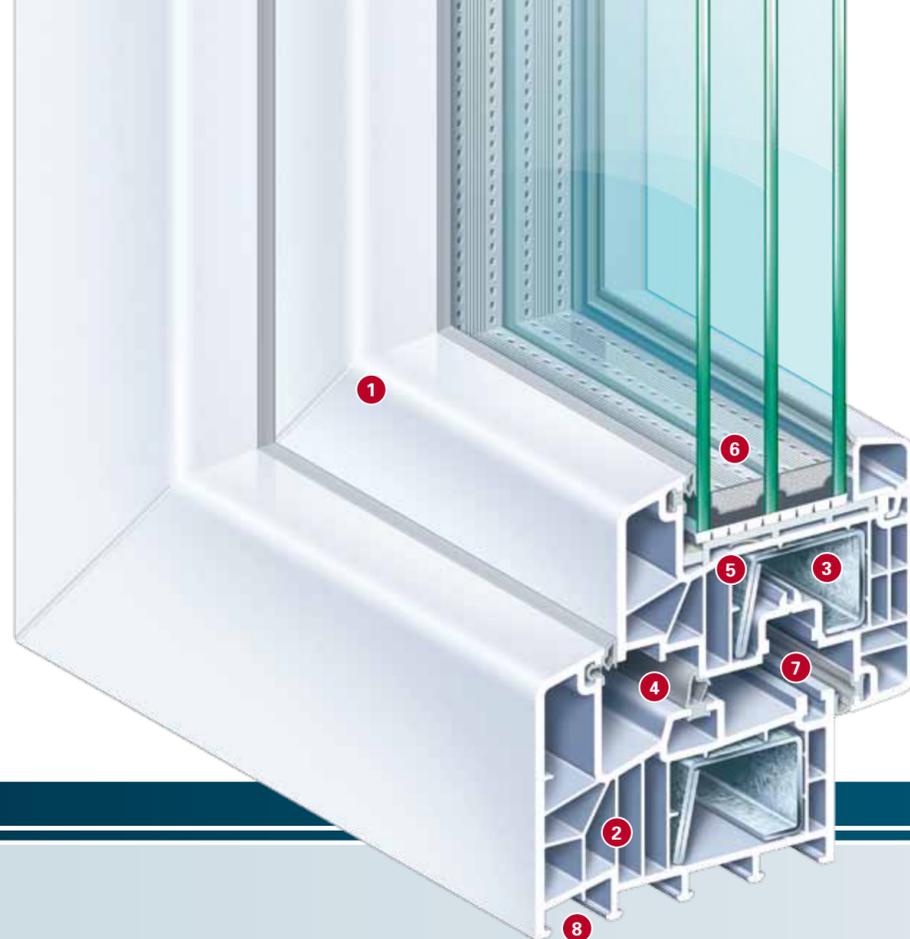
In burglary tests, KÖMMERLING 88plus window profiles together with corresponding fittings and burglary-proof glazing achieved the resistance class 2.

### 6. Environmental protection

Reduction in energy consumption and CO<sub>2</sub> emissions, stabilisation with calcium-zinc instead of lead, use of recycled material, full recyclability – KÖMMERLING 88plus is leading the way in environmental protection.

KÖMMERLING 88plus

A new standard  
*to follow.*



► The highest technical values and optimum economic efficiency.

KÖMMERLING 88plus has defined a completely new quality standard for the development of PVC-U window profiles. It is the sophisticated complete construction of the new generation of window profiles that has resulted in substantial increases in thermal and sound insulation values, security and economic efficiency.

With KÖMMERLING 88plus the leading product has been created giving a totally new quality to buildings and life.

► KÖMMERLING 88plus – the basis for windows with the best characteristics.

**1**

- Straight, recessed design with perfect window profile proportions and slim window profiles allowing the greatest amount of light in and achieving high solar energy gains.

**2**

- Highly insulating, 6-chamber central thermal sealing system with 88mm construction depth.

**3**

- By using a stolped steel reinforcement, a 7<sup>th</sup> chamber is provided.

**4**

- Three layers of sealing and central thermal seal guarantee high protection against driving rain, imperviousness to wind and excellent sound insulation.

**5**

- The innovative sash rebate seal reduces thermally conditioned air movements and ensures excellent thermal insulation values.

**6**

- Wide spectrum of glazing from 24 – 52 mm for use with special functional glazing.

**7**

- Especially easy to clean and low maintenance owing to the protected positioning of the hinges behind the central thermal seal.

**8**

- Safe installation of inner and outer window sills and connection profiles thanks to technically perfect connection details.

► System variations for special requirements.

**Aluminium design**

- Butt jointed aluminium shells in classic design.
- Extraordinary thermal insulation compared to aluminium windows.
- Outside aluminium appearance, inside neutral white.
- Almost unlimited choice of colour of the aluminium shells due to finishing techniques such as anodising and powder coating.
- Conservation of resources with aluminium.
- Easy to clean, durable and robust.

**For passive houses**

- Certification as suitable component for passive houses.
- Straight, recessed design with perfect window profile proportions.
- Slim window profiles allowing the greatest amount of light in and providing high solar energy gains.
- High warping and torsion resistance owing to force-transmitting composite glue between window sash and glazing.
- Floor-to-ceiling window walls – sash doors up to 2.5m high.
- Fully recyclable – polystyrene insulating material can be removed.

**Highly insulating windows with steel reinforcements**

- Further improvement of the U<sub>i</sub>-values is achieved by using special polystyrene thermal insulating components in the frame, sash and glazing bead.

The U<sub>i</sub>-values are available upon request.

**Highly insulating windows with bonding technology**

- These windows do not require any steel reinforcements. It is also not necessary to use special polystyrene thermal insulation components.

The U<sub>i</sub>-values are available upon request.

\*only available in white.