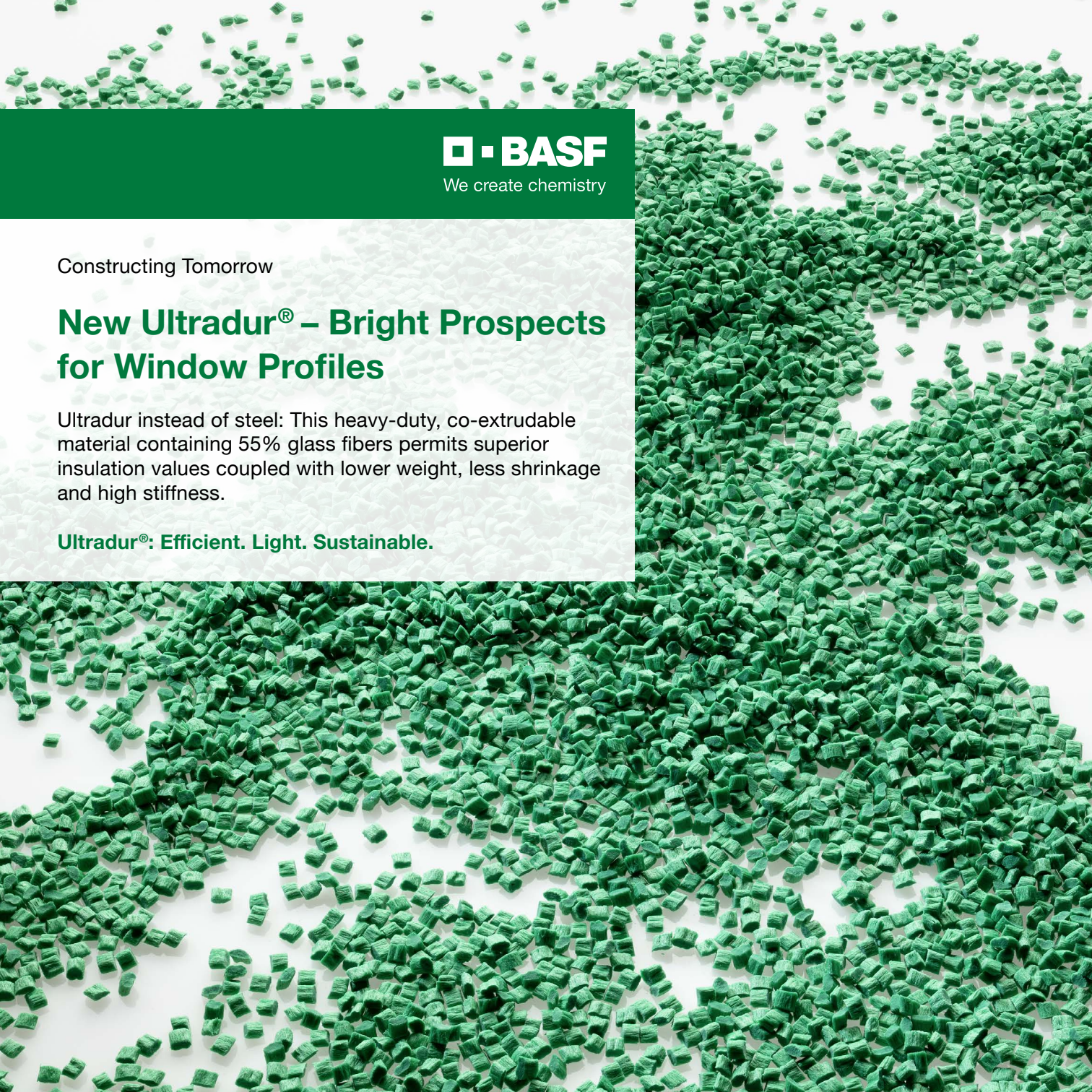


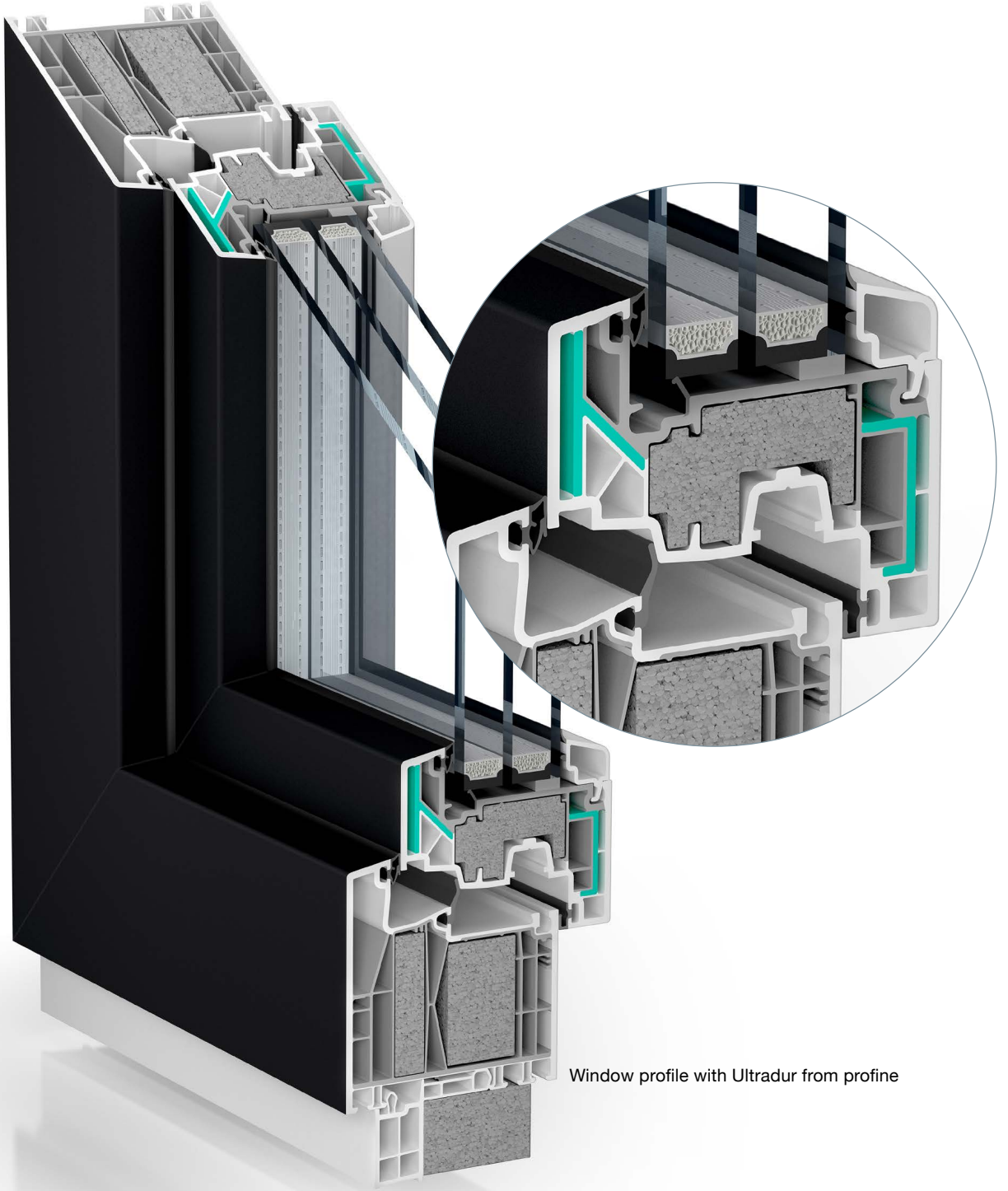
BASF
We create chemistry

Constructing Tomorrow

New Ultradur® – Bright Prospects for Window Profiles

Ultradur instead of steel: This heavy-duty, co-extrudable material containing 55% glass fibers permits superior insulation values coupled with lower weight, less shrinkage and high stiffness.

Ultradur®: Efficient. Light. Sustainable.



Window profile with Ultradur from profine

Ultradur for window profiles: Lighter than steel and yet high-strength

Ultradur®: High-tech system for modern window construction

Whether in new buildings of passive house standard or the energy-efficient renovation of existing buildings, windows play a key role in building insulation. In older buildings in particular, windows and window frames, along with the roof, are responsible for the biggest heat losses. So the potential that can be exploited here with new, innovative materials is correspondingly large. In combination with other measures, this contributes significantly to energy savings and thus to lower greenhouse gas emissions and better climate protection.

Outstanding material properties – efficient manufacture

BASF Ultradur has been used for many years in numerous industrial applications for high-quality technical components. A new grade of Ultradur (B4040 G11 HMG HP green 75074) has been specially developed as a heavy-duty material capable of replacing steel in PVC window profiles. With its 55% glass fiber content, it exhibits not only high stiffness and strength, but also outstanding dimensional and temperature stability: Its melting point is 195° Celsius.

BENEFITS TO WINDOW CONSTRUCTION

- Cost-effective production process*
- Efficient production thanks to fewer process steps*
- Reduced materials management effort (orders, stockpiling, etc.)*
- Processing on existing production machinery possible with modified tools*
- Lower weight for easier processing, transport and assembly*
- Eliminates the risk of faulty reinforcement as rigidity is integral to profile design*
- Satisfied customers: Appropriate profile design means fewer complaints, e.g. due to warpage after hot summers
- Processing safety for the window constructor: SGS TÜV Saar has issued a positive report on the sawing, milling, drilling and welding processes

*Confirmed in a study by Bliestle Fensterbau Optimierung

"If extruded components fail to deliver the required high mechanical properties, co-extrusion of the new Ultradur grade can significantly improve component properties"

Dr. Kay Brockmüller, Project Manager Construction at BASF

Ultradur® enables excellent adhesion to PVC profiles, which significantly reduces the post-shrinkage of colored profiles in particular. The material can be shaped as required, welded, and readily integrated into existing production processes. This permits the realization of modern profile geometries and a slimmer appearance. Due to its lower thermal conductivity, Ultradur also displays appreciably better insulation values than steel. Heat loss via the window profile is considerably reduced.

For profile and window manufacturers, Ultradur thus offers decisive advantages over conventional steel reinforcement. This is also confirmed by users, as the profine group in Germany is already equipping window profiles with the new technology.

Co-extruded Ultradur in further applications

New Ultradur is attractive for many other industrial applications. Wherever extruded profiles require higher strength, stiffness and high temperature stability, Ultradur is the material of choice. Ask our experts for advice on your specific applications.

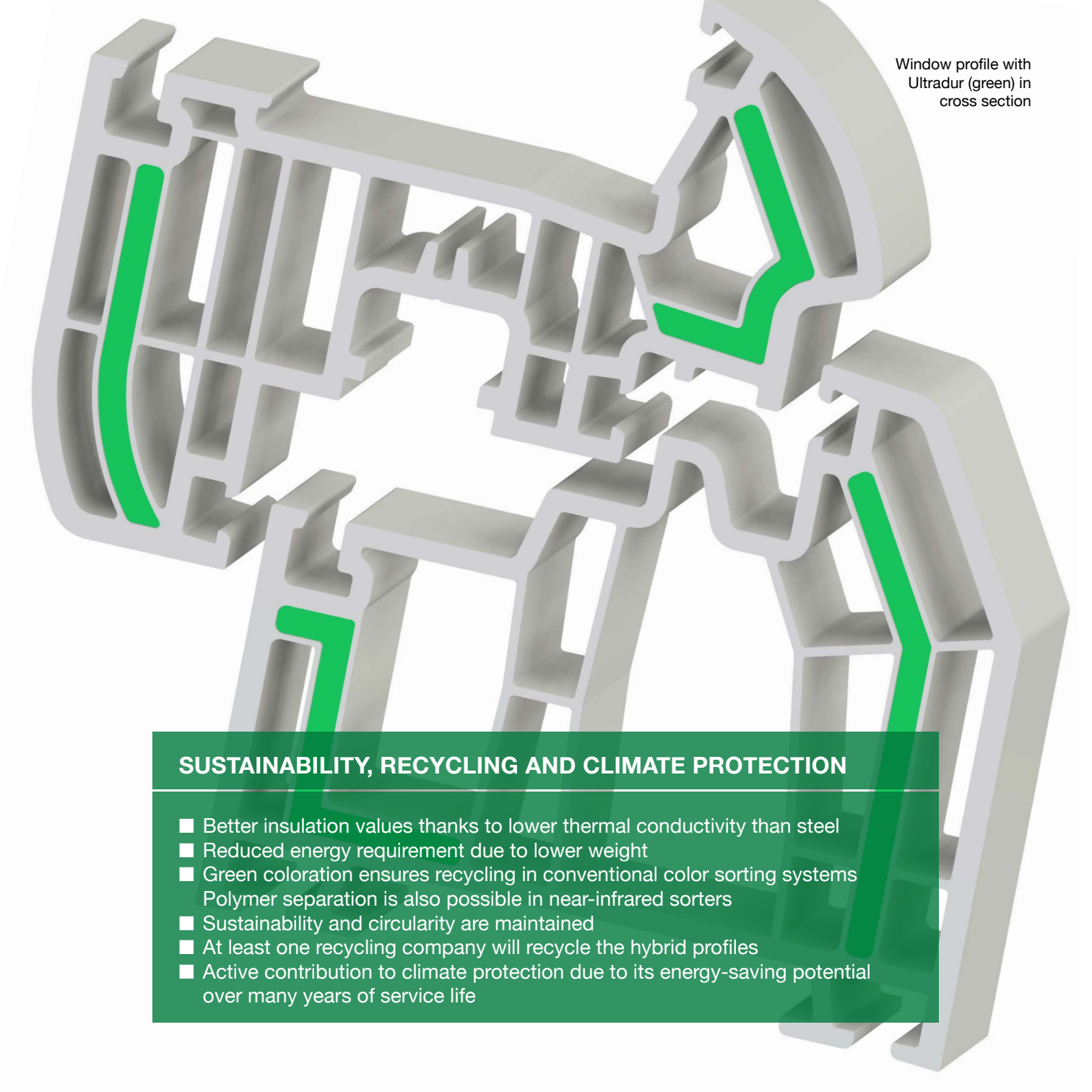
Technical profile with Ultradur

Fast-track to the ready-to-use die

The Exelliq Holding GmbH, a globally reputed supplier of extrusion lines, dies and complete systems for profile extrusion, has already demonstrated its toolmaking skills for Ultradur PVC applications in co-extrusion. The Austrian company has successfully built the first dies providing the desired high fiber orientation, smooth running and extrusion speed.

exelliq Profile Solutions Worldwide

Profile from the “white goods” sector (© Exelliq Holding GmbH)



Window profile with Ultradur (green) in cross section

SUSTAINABILITY, RECYCLING AND CLIMATE PROTECTION

- Better insulation values thanks to lower thermal conductivity than steel
- Reduced energy requirement due to lower weight
- Green coloration ensures recycling in conventional color sorting systems Polymer separation is also possible in near-infrared sorters
- Sustainability and circularity are maintained
- At least one recycling company will recycle the hybrid profiles
- Active contribution to climate protection due to its energy-saving potential over many years of service life

ULTRADUR® FEATURES:
|Ultradur B4040 G11 HMG HP green 75074|

- Versatile and slimmer shaping of Ultradur possible within the PVC
- Suitable for co-extrusion* with PVC and other polymers on existing production lines
- Melting point approx. 195 °C
- Good adhesion to PVC
- Low coefficient of thermal expansion
- Low thermal conductivity and hence better insulation values
- Suitable design reduces the post-shrinkage and associated permanent warpage of dark profiles
- Reinforced with glass fibers – hence high stiffness and dimensional stability
- Weldable
- Recyclable and reusable
- Supplied in granules (for subsequent extrusion)

*Suitable co-extrusion technology is available for this material combination

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