

Industry Information

Adhesive solutions for windows and doors



Your partner in bonding

Jowat
Klebstoffe



Always a solution on hand

Modern and energy-efficient construction with Jowat.

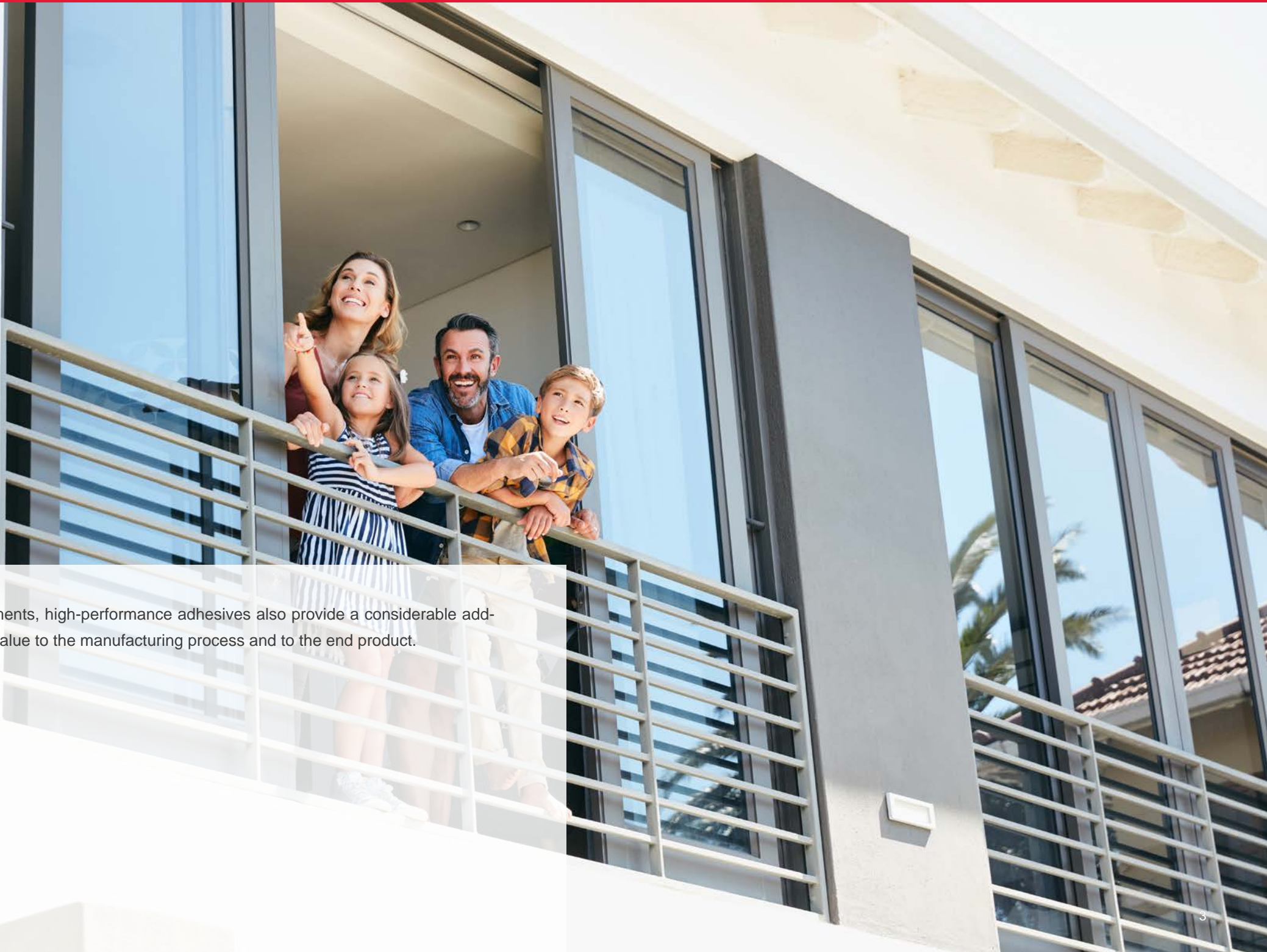
From facades to front doors to flooring products - every building element fulfils unique and essential functions and therefore has different requirements to meet in the manufacturing process. Powerful adhesives from Jowat are adapted to the individual applications and are specialists for efficient production processes, high environmental resistance and reliable bonding of diverse material combinations.

Building industry

The global construction sector is on a growth trajectory, reporting considerable gains in revenue, and demand for building elements is rising. At the same time, innovative solutions are needed which take into account the technological progress in the industry and meet the increasing requirements regarding energy-efficiency and sustainability. Facades, for instance, are no longer just building envelopes that look the same, with the sole purpose to protect the interior from the environment. They have become multifunctional envelope systems which meet complex specifications. Due to the energy-saving construction method demanded, facades have become increasingly denser, and new ventilation systems are needed to ensure a proper air exchange. "Smart" modern buildings can adapt

to exterior conditions and are equipped with solar modules or electrochromic windows that darken automatically under direct sunlight. The visual appearance also plays an increasingly important role. Be it claddings made from environmentally friendly and aesthetic wood, weathering-resistant and durable aluminium, or robust and highly demanded concrete – a large selection of different materials facilitates unique, striking facades which also fulfil different essential functions.

Going hand in hand with these new concepts, intelligent adhesive solutions play a major role in an increasing number of applications in the building industry. Apart from facilitating the high durability necessary for building



elements, high-performance adhesives also provide a considerable added value to the manufacturing process and to the end product.

Windows



Windows - Then, now and in future

Adhesive bonding solutions for the manufacture of window profiles.

Humans have been building windows since the Bronze Age. The first windows consisted of simple round, arched or rectangular openings in a wall. Later, they were covered with translucent materials to protect the inhabitants. To this day, that is a key function of windows.

Window profiles

Apart from providing protection against the weather, windows are also a source of light or fresh air. Established windows today are made from wood, plastic, aluminium or two-material compounds that have to meet a wide range of additional functions. For instance, in regard to burglar resistance or thermal insulation. In addition to the design, functionality, and long-term weathering resistance, cost-effective production is also a major aspect.

Jowat supplies a comprehensive portfolio of powerful adhesives that meet the requirements for all types of windows. For every application, there is the right adhesive – from PVAc dispersions for the manufacture of solid wood window scantlings to primers (adhesion promoters) to PUR hot melt adhesives for window profile wrapping. The health protection of machine operators is also a major concern of Jowat. The product range also provides VOC-reduced primers and non-hazardous PUR hot melt adhesives with hazard-free labelling.

As a member of the German Quality Assurance Association for Plastic Window Profiles (Gütegemeinschaft Kunststoff-Fensterprofilsysteme e.V.), Jowat has a deep expertise in the development and manufacture of adhesives in line with the applicable quality requirements.



Open for everything

Flexible adhesive solutions for windows and doors.

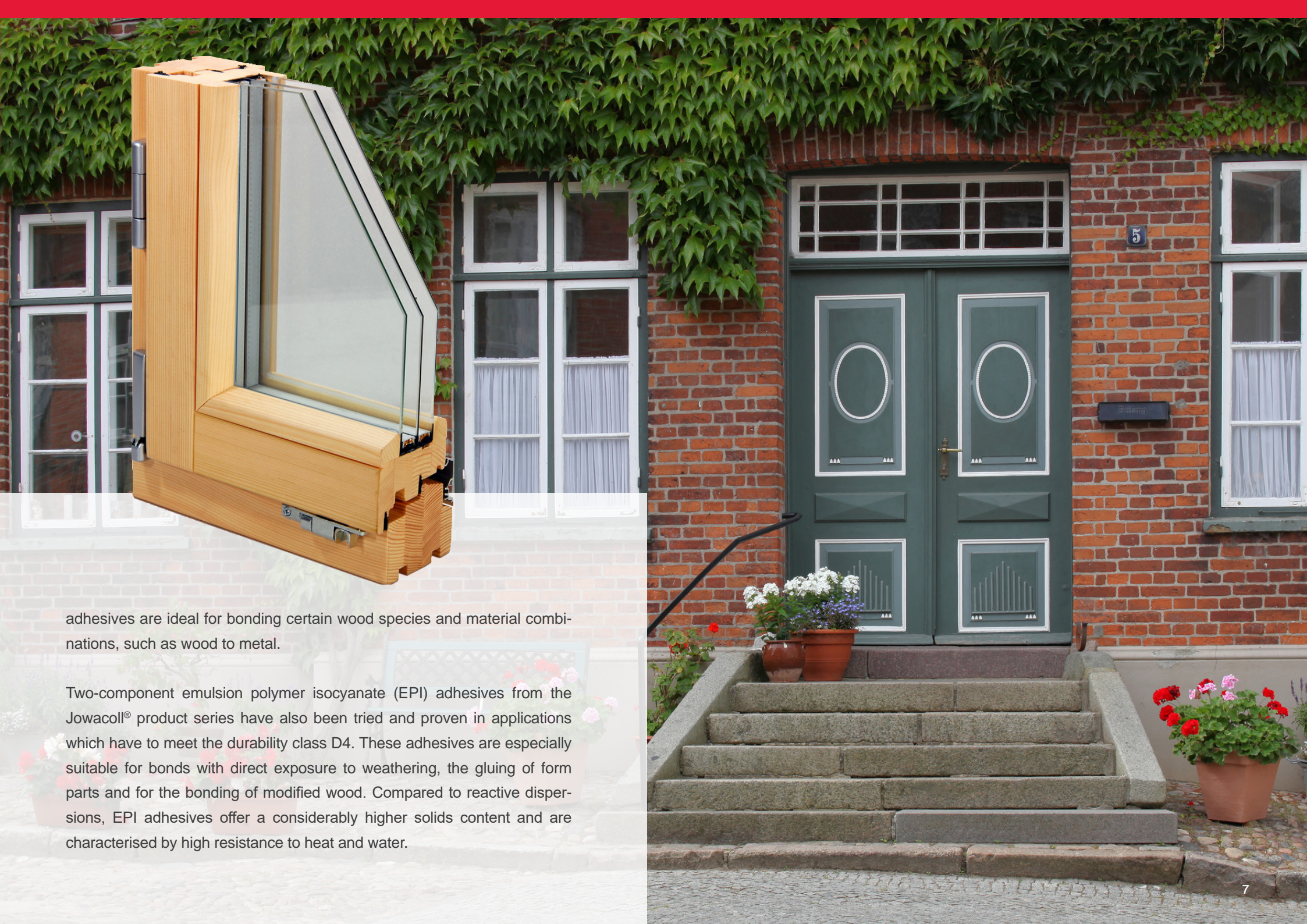
From window scantlings to door frames: A permanent resistance of the solid wood elements is essential due to the exposure of these products to outdoor conditions. The Jowat product portfolio with powerful D4 dispersions, EPI dispersions and PUR adhesives provides processors with the opportunity to meet different requirements.

Window scantlings and doors

In the manufacture of window scantlings and door frames, certain regulations which also involve the processed adhesive have to be observed. Laminated window scantlings and door frames are largely bonded with PVAc adhesives which meet the requirements for durability class D4 according to EN 204. Products which are bonded with PVAc glues and are intended for exterior use need an appropriate surface coating. For a moisture-resistant bond, Jowat provides special reactive one- and two-component D4 dispersions. Compared to other systems like the synthetic resin adhesives which were largely used in the past, these reactive dispersion adhesives of the latest generation offer several major advantages. They are free of formaldehyde and therefore meet the strict requirements regard-

ing a “pollutant-free” inside air, and have a considerably higher adhesive yield. In addition, these reactive dispersions impress with shorter pressing times in cold gluing applications and a more elastic bondline. They can be processed at significantly lower temperatures in hot pressing procedures and thereby lead to a reduced energy consumption. Due to their great processing variability, dispersion adhesives are highly suitable for solid wood bonding applications.

For applications with special requirements, such as in the production of façades which have to withstand high static loads or patios, Jowat offers polyurethane adhesives with an increased resistance to heat and moisture. The product portfolio includes certified PUR adhesives, which are approved for load-bearing construction purposes. In addition, these moisture-curing



adhesives are ideal for bonding certain wood species and material combinations, such as wood to metal.

Two-component emulsion polymer isocyanate (EPI) adhesives from the Jowacoll® product series have also been tried and proven in applications which have to meet the durability class D4. These adhesives are especially suitable for bonds with direct exposure to weathering, the gluing of form parts and for the bonding of modified wood. Compared to reactive dispersions, EPI adhesives offer a considerably higher solids content and are characterised by high resistance to heat and water.

A clear vision

Optimum interaction between adhesive and primer for superior window profile wrapping.


Modern windows are expected to have a lifecycle of several decades. During that time, they are exposed to permanent, high mechanical stress, and frequently also to extreme weathering. The resistance necessary to meet this expectation is provided by a combination of robust materials coupled with certified high-performance adhesives and primers.

Window profile wrapping

Lamination applications in the manufacture of window profiles are characterised by a growing diversity of substrates and decor materials, further developed foil types, higher fluctuations in surface tension, and increasing feed speeds. These challenges can only be mastered with suitable adhesive products.

Jowat has expanded its portfolio of tried and proven bonding systems for wrapping window profiles and developed a new generation of adhesive systems consisting of powerful PUR hot melts and primers. The new high-performance adhesives are characterised by significantly improved properties, such as a wider range of adhesion for optimum adhesion to PVC and aluminium, and a higher green strength. The latter facilitates an

increased laminating speed while maintaining process stability and providing a reliable bonding of window profiles and new, more rigid foils with higher restoring forces – even in applications with shorter pressing zones. In addition, the new hot melt adhesive also has a lower viscosity, which means it can be processed at lower temperatures, therefore facilitating shorter production cycles and a reduced thermal exposure of the thermoplastic foils to be laminated. The hot melt adhesives are certified according to RAL-GZ 716 for use in combination with conventional primers as well as with new VOC-reduced, NEP-free primers that are not subject to hazardous labelling restrictions.

A close-up photograph of a person's hand with pink nail polish turning a white, oval-shaped handle on a window frame. The window is partially open, and bright sunlight is streaming through, creating a warm, golden glow. The background is blurred, showing green foliage and a white building exterior. The overall scene is bright and airy, suggesting a sunny day.

The excellent process stability and outstanding processing characteristics due to the optimum interaction between the new powerful adhesives and the latest generation of Jowat primers provide great benefits in window profile wrapping applications. For instance, the crosslinking of the PUR hot melts is accelerated when the primer components come into contact with the adhesive, facilitating a downline processing of the laminated window profiles after just 24 hours and representing a major contribution towards more efficient lamination processes.

At doorsteps

Optimum adhesive bonding solutions for interior and exterior applications.

Interior and exterior doors are an important aspect in the overall appearance of a building and can also influence the living atmosphere. To provide protection against wind, noise and burglary, they need to be high-performance products - just like the adhesives used in manufacturing.

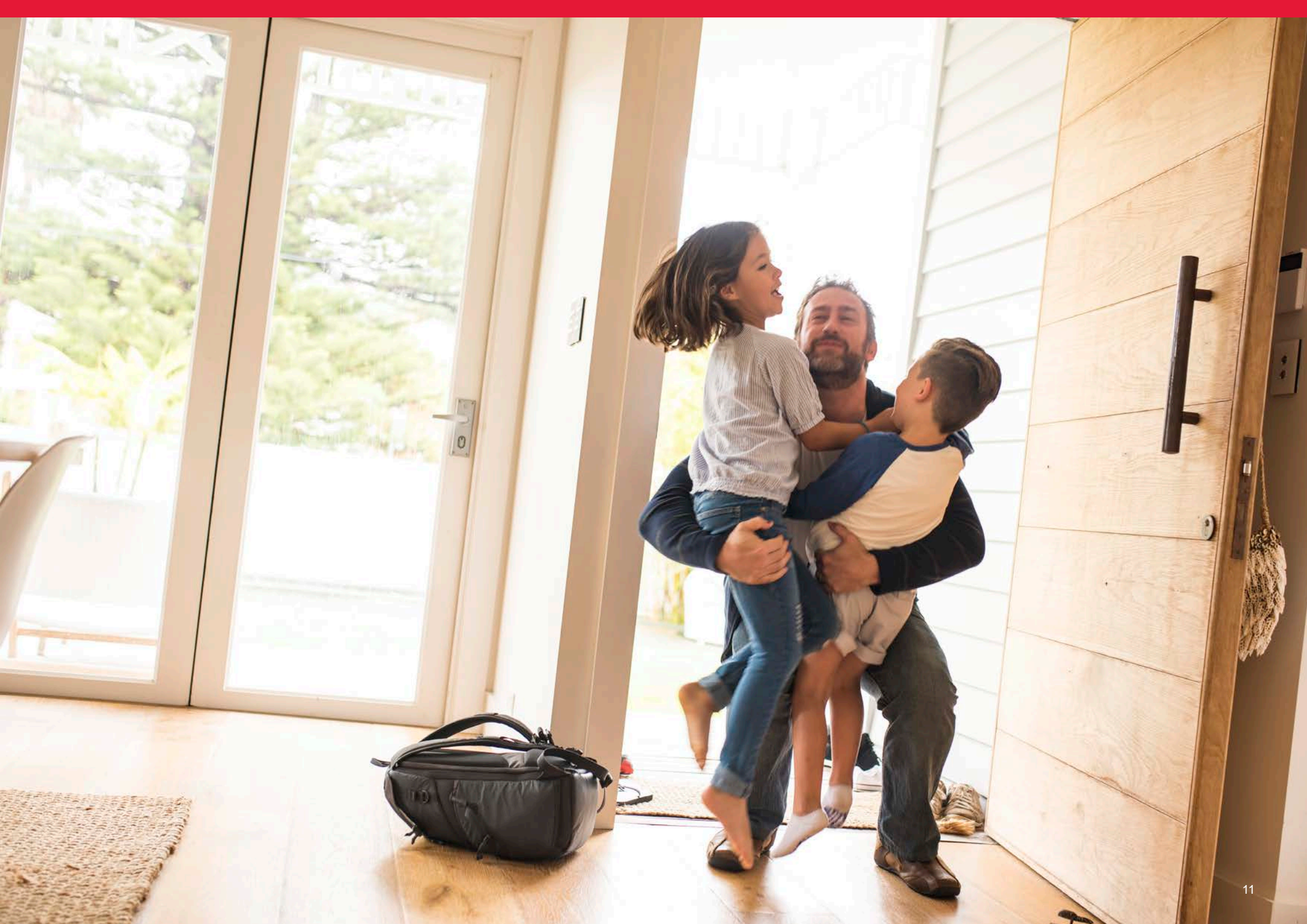
Exterior doors

Exterior doors provide access into a building and give a first, and ideally positive and lasting, impression. Beyond the superior appearance, modern doors are also expected to be permanently resistant to weathering. Aluminium doors, for instance, are usually powder-coated and provide an extremely durable and corrosion-resistant surface coupled with an attractive appearance. Those expectations can only be fulfilled if a high standard is ensured from the very beginning, in the manufacture of door leaves as well as of door frames.

Jowat supplies a powerful adhesive system which has been developed specially for laminating plastic or aluminium exterior doors with decorative foils: Tried and proven hot melt adhesives based on polyurethane (PUR) meet the high requirements regarding thermal stability and hydrolysis re-

sistance necessary in exterior applications. In addition to excellent adhesion characteristics, a new generation of reactive hot melt adhesives also provides a shorter open time and higher green strength, and therefore facilitates faster lamination processes. Like in window profile wrapping applications, Jowat also supplies RAL-certified products for the manufacture of exterior doors.





An open door

Flexible and strong adhesive bonds for interior doors.

Superior design does not stop at the doorstep. On the contrary: Interior doors play an increasing part in interior finishing, and the variety in products and design possibilities is continuously growing. But beyond an attractive appearance, they have to withstand a lot. And with them, so do the adhesives used in manufacturing.

Interior doors

The trend towards customised and expressive designs and the associated variety in materials coupled with ever faster process cycles in industrial mass production present considerable challenges for processes and the adhesives used in the manufacture of doors. In addition, the adhesives also have to support the different technical functions of the door, depending on its place of use.

For the flat lamination of door leaves with different decorative layers from real wood veneer to modern material combinations, Jowat supplies dispersion and hot melt adhesives that are optimally adapted to the individual processes. Each adhesive system has its very unique strengths. Special dispersion formulations, for instance, can minimise the bleeding of glue through the veneer and an adapted pH value can prevent discolouring.

A foil adhesive with reduced emissions and high adhesion facilitates a plasticiser-free bonding of special thermoplastic foils and decor foils, thus contributing to a healthy living environment. Hot melt adhesives prevent the swelling of wood-based surfaces due to a 100 percent solids content. They are characterised by optimised application amounts and uniform bondline which facilitates smooth as well as resistant surfaces.

The product variety increases even further when the door leaf is coupled with a door frame. The range of laminating materials is vast and designs can vary from country to country due to different requirements. Jowat supplies a comprehensive product portfolio of hot melt adhesives based on EVA, PO or PUR for the profile wrapping of door frames as well as for the edgebanding of the door rebate. Fast manufacturing processes with high feed speeds and modern application technologies in profile wrapping operations demand adhesives with good flow properties and initial strength.

Modern high-performance adhesives based on polyolefin have excellent processing characteristics and provide a broad spectrum of adhesion to many different materials. Their outstanding thermal stability in the melt and low application amounts facilitate a smooth and efficient application and provide high heat resistance. PUR hot melts are the adhesives of choice for wrapping materials that are difficult to bond or when highest resistance to heat and moisture as well as strength are demanded.



Specialists for every application

Jowat adhesives: Flexible high-performance products for the building industry.

The wide range of different building elements, each with very individual specifications, coupled with increasing expectations regarding energy-efficient construction require adhesives which are optimally adapted to the specific manufacturing processes and support the essential functions of the product.

Jowat adhesive products for the manufacturing of building elements provide superior results in operations where different materials are to be bonded, create a very hard or very flexible bondline depending on the application, and can compensate for tensions due to their ductile properties. The high-performance adhesives facilitate a permanently resistant bondline as well as high hydrolysis and heat resistances which are essential for exterior applications.

Intelligent adhesive solutions can also add value to the manufacturing process and the end product. In the production of modern doors, for instance, PUR prepolymer adhesives are used to bond mineral wool between metal sheets. This provides the advantage of more stable doors, prevents wavy surfaces and reduces material consumption due to thin-

ner metal sheets. Adhesives used in this application easily resist temperatures of more than 200 degrees when the doors are heated in the curing oven.

Modern ventilation systems and shutter boxes are increasingly integrated into the façade. At the same time, it must be ensured that this does not lead to any heat escaping the building. Adhesives play a major role in this application as well, and facilitate an optimum bonding of the insulation materials.

Have we sparked your interest?

Jowat actively supports innovation in the manufacture of building elements and draws on a deep understanding of the challenges in the building industry – be it special physical properties, different material combinations, requirements for high resistance and durability in exterior applications, or energy- and cost-efficiency as well as an increasing range of applications.



We help processors meet their customer's specifications and provide a comprehensive advisory service for the entire process: From the constant search for and testing of new, sustainable raw materials, the development of innovative adhesive products in close contact with subsuppliers, in cooperation and service projects, to individual claim analyses. For years, Jowat has played a key role in safeguarding success and protecting investments by providing adhesive solutions for the many different applications in the building industry and facilitating the optimisation of products and processes.

Have we sparked your interest? Contact us!
We look forward to working together.



www.jowat.com

Jowat SE

Ernst-Hilker-Straße 10-14

32758 Detmold • Germany

Telefon +49 (0) 5231 749-0

www.jowat.de • info@jowat.de