Window profile wrapping

- PUR hot melt adhesive for extreme weather conditions
- Certified adhesive-primer system for PVC profiles
- VOC-reduced primers specially for PVC window profiles

Jowatherm-Reaktant® 604.17/20/25
Jowatherm-Reaktant® MR 604.90
Jowat® 406.78/84/89

Jowat Klebstoffe

Adhesives for window profiles

Products with a high degree of individuality have become an integral part of our lives.
This also includes building elements such as windows, doors, or facades.
One established method to meet that demand is to laminate PVC or aluminium profiles with decor foils. And due to the growing diversity in materials and designs, the customisation possibilities are virtually unlimited.

In addition to the appearance, however, functionality also plays a crucial role. Extreme weather conditions and service lives from 25 to 40 years place increased demands on all the processed materials.
With a product portfolio consisting of primers and adhesives, Jowat is supplying a response to the specified requirements, in order to prevent decor foil delamination on the wrapped profiles.
Apart from a wide range of adhesion, fast crosslinking and therefore fast downline processing, reliable processes are a key characteristic of the adhesive systems which can be processed on all established profile wrapping units.

The combination of high-performance adhesives coupled with Jowat primers impresses with excellent processing characteristics and outstanding process stability. The crosslinking speed is increased only during the lamination process when the PUR adhesive comes into contact with the reactive components in the NEP-free primers. Therefore, the laminated window profiles can are ready for downline processing after a very short storage time.

The Jowat portfolio allows processors to choose an optimum adhesive for the requirements in their specific process.

The powerful bonding system consisting of Jowat primers and adhesives represents the optimum product mix with regard to processing characteristics as well as to process reliability and efficiency.
By choosing NEP-free, VOC-reduced primers and monomer-reduced PUR hot melt adhesive, processors additionally have the possibility to achieve a maximum of environmental protection and occupational safety. This system is not subject to hazardous material labelling requirements and provides a high initial strength as well as many other benefits.

Therefore, Jowat meets the demands for the protection of employees and the environment while factoring sustainability into the equation. The combination of primers and adhesives also impresses with superior bonding results, and of course fulfils the requirements for a minimum peel strength of 3.0 N/mm under RAL-GZ 716. The standard adhesive application amount is 50 – 70 g/m², depending on the application technology used, the other process parameters, and the profile and foil type.

Structure of the adhesives portfolio

604.17:	basic “all-rounder” of the profile wrapping adhesives
604.20*:	very fast crosslinking
604.25*:	universal product with high initial strength
604.90*:	Monomer-reduced PUR hot melt adhesive

Structure of the primer portfolio

406.78*:	wash primer based on MEK
406.84*:	wash primer with reduced VOC content, not subject to labelling requirements
406.89*:	wash primer based on MC

* approved according to RAL-GZ 716

Testing procedure of the technical annexe according to RAL-GZ 716, dated July 2018

1. Adhesion of the foil to the carrier profile at 23 °C
   - Peel resistance ≥ 3.0 N/mm
     (or foil stretching or foil tearing ≥ 3.0 N/mm)
2. Adhesion of the foil after exposure to hydrolysis / thermolysis
   - Storage at 70 ± 2°C, 95 ± 3 % relative humidity for 42 days
   - Peel resistance at 23 °C ≥ 1.5 N/ mm
     (or foil stretching or foil tearing ≥ 1.5 N/mm)
3. Proof of identity (IR spectrum)
   - Adhesive and the solids content in the primers

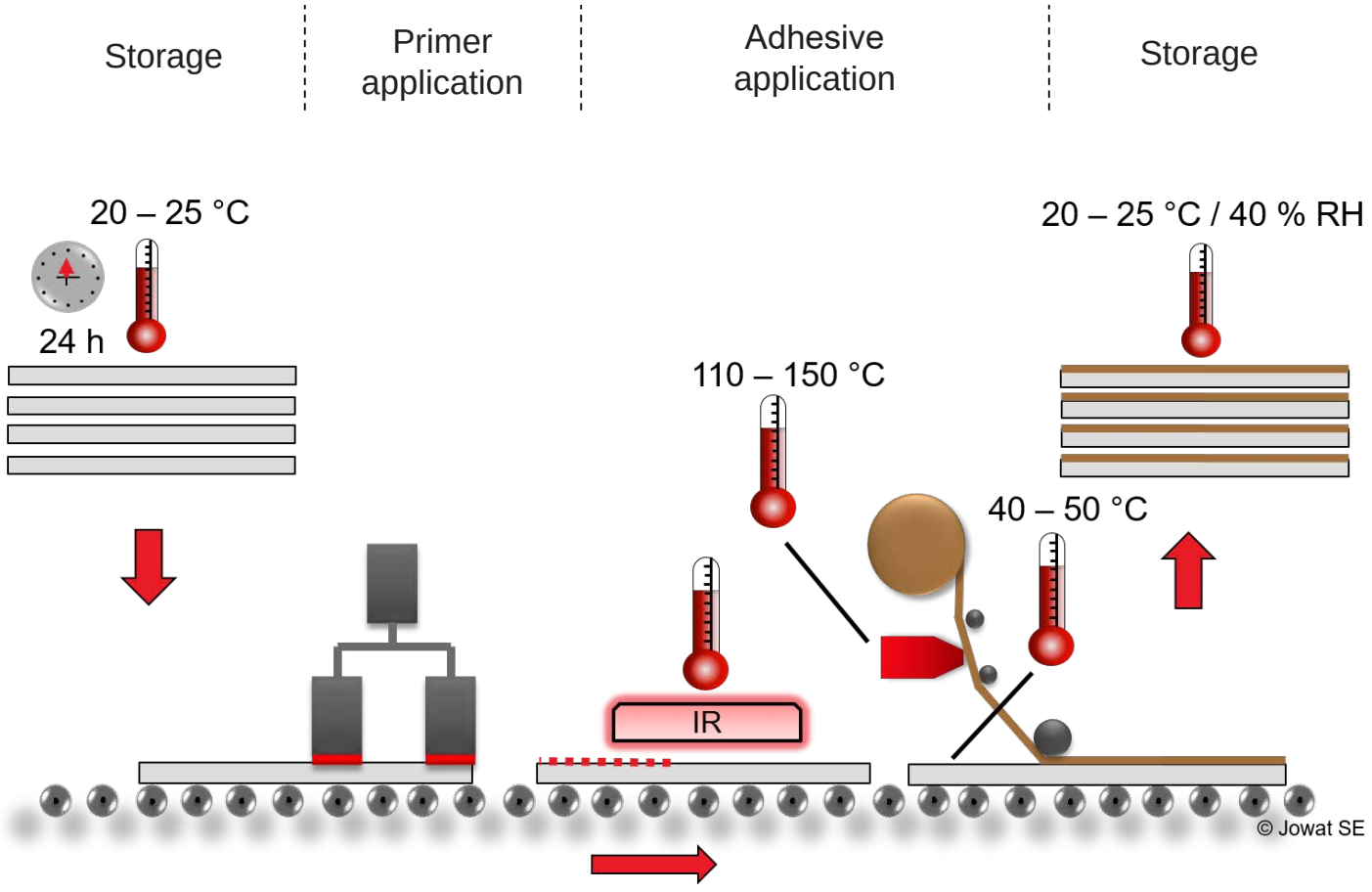
INFO: PUR hot melt adhesives

One-component, reactive polyurethane hot melt adhesives (PUR-HM) are characterised by an additional crosslinking reaction with moisture after the physical setting process through cooling and solidification. This crosslinking reaction, which may continue for several days, leads to a considerable increase in cohesion. In addition, the hot melt develops its elastomeric character due to the multidimensional crosslinking of the adhesive. Among other benefits, this type of adhesive therefore has a superior thermal and hydrolysis stability. The degree of chemical crosslinking depends on the ambient humidity. To prevent a premature reaction, PUR hot melt adhesives must be protected from humidity in manufacturing, storage and processing. After complete chemical crosslinking, PUR hot melts cannot be molten again and provide superior resistance to water, solvents and cleaners.

Jowatherm-Reaktant®		604.17	604.20	604.25	MR 604.90
Characteristics		basic “all-rounder” for PVC and aluminium	Fast crosslinking, therefore short storage time after the laminati-on process	Universal product with high initial strength	Monomer-reduced PUR hot melt adhe-sive with high initial strength
Crosslinking speed		36 h	4 - 8 h	24 h	24 h
Substrate		PVC / aluminium*	PVC / aluminium*	PVC / aluminium*	PVC / aluminium*
Initial strength		++	++	+++	+++
Adhesion spectrum		+++	++	++	++
Feed speed	[m/min]	6 - 30	6 - 40	6 - 40	6 - 40
Viscosity at Processing temperature	[mPas]	approx. 40.000	approx. 60.000	approx. 33.000	approx. 27.500
Processing temperature	[°C]	135	125	130	130
Open Time	[sec]	approx. 25	approx. 20	approx. 10	approx. 30
Tested according to RAL-GZ 716		no	yes	yes	yes

*Preliminary trials are recommended because the surface properties of aluminium can vary depending on the manufacturer.

Process and ambient conditions for an efficient lamination process



INFO: Primer

In general, there are two types of primers. Classic solvent primers based on MEK or methylene chloride with a VOC content of approx. 98 %, and the so-called VOC-reduced primers (with a VOC content of 30 – 50 %) which are applied in considerably lower grammages.

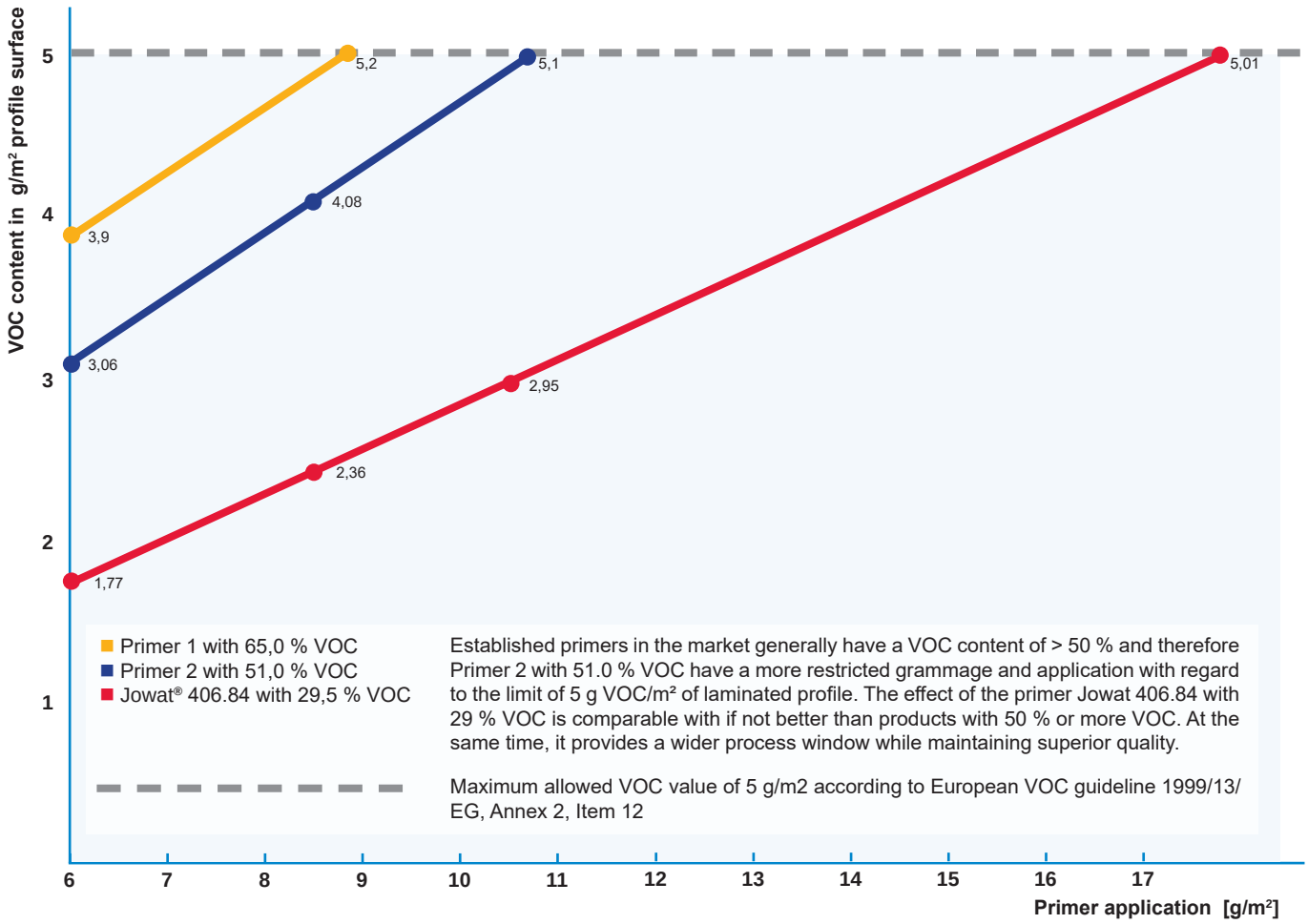
The primer has two major purposes:
1. Cleaning the profile surface by dissolving of usually non-polar foreign matter on the surface, resulting from the PVC formulation or developed during extrusion.
2. Improving the physical adhesion on the profile surface by swelling/slight dissolving and / or by modifying the surface polarity to enhance adhesion.

Quelle: Schüco International KG

Jowat®	406.78 (MEK)	406.84	406.89 (MCI)
Characteristics	fast flash-off flammable	low application amount no GHS labelling	fast flash-off not flamable
VOC-reduced primer	no	yes	no
VOC-share** [%]	98	29	98
NEP-free	yes	yes	yes
Hazardous material	yes GHS02 GHS07	no The product is not classified under the CLP regulation.	yes GHS07 GHS08
Application amount / felt [g/m²]	15-25	8 - 16	40 - 70
Contains UV tracer	yes	yes	yes
Tested according to RAL-GZ 716	yes	yes	yes
Drying to achieve a dry, matt profile surface	using IR radiators	using hot air blowers against the running direction of the profile	using IR radiators

**Please observe the VOC regulation or guideline and emission limits applicable in your country or region (e.g. VOC directive 1999/13/EC Annexe 2, item 12)

Amount of VOC content depending on the dosing quantity



Jowat | Ihr Partner in Sachen Kleben
Jowat | Your Partner in bonding

- Jowat Subsidiaries
- Distribution Partners

Jowat – Kleben erster Klasse
Jowat – first class bonding

www.jowat.com

Jowat Klebstoffe

Australia Brasil Canada Chile 中国 Colombia Deutschland France Italia Malaysia Mexico Nederland Polska Россия Sverige Suisse ประเทศไทย Türkiye United Kingdom United States of America الإمارات العربية المتحدة Việt Nam