



Bayer MaterialScience



VULKOLLAN[®]

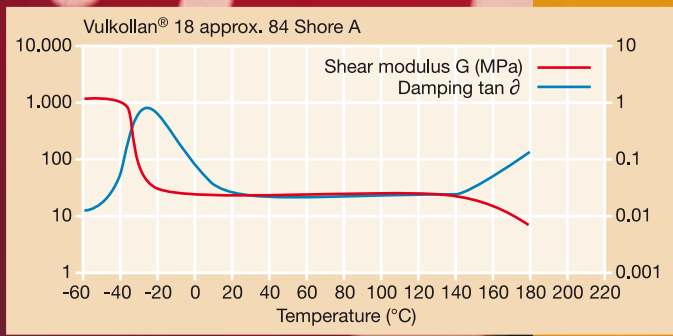
**SQUEEGEES
FOR TOP-CLASS
PERFORMANCE!**



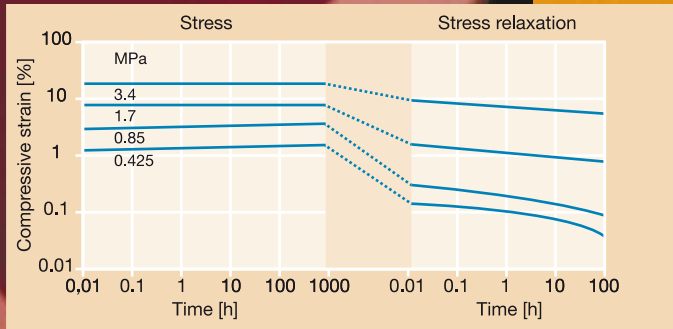
BaySystems

customized polyurethanes

Proven



Impressive dynamic load resistance: The stiffness of Vulkollan® remains virtually constant over a broad temperature range.



Even under heavy loads, you can count on Vulkollan®. Vulkollan® has low flow and retains its shape.
 Test specimen: 20 mm dia. x 20 mm high
 Pre-tension: 0.04 MPa
 Test climate: 23 °C / 50 % r.h.

benefits: Perfect property profile for professional results.

Cost-conscious screen printing shops with high quality specifications make full use of the unique property profile of Vulkollan®.

The properties of Vulkollan® materials are measured and recorded by appropriate test procedures.

Shore hardness:
This is a measure of indentation resistance and involves a sprung needle on a scale of 0 to 100.

Tensile strength:
Vulkollan® has very high strength values. Test pieces can be stretched to over 7 times their original length before they tear.

Tear propagation resistance:
High tear propagation resistance ensures reliable material function, even when components are damaged.

Compression set:
The degree of deformation and recovery is assessed. Low values mean low permanent deformation.

Abrasion:
Abrasion is measured using a variety of methods. Low abrasion values mean high wear resistance.

In the printing machine industry and in print shops, whenever it is a question of finding the optimum squeegee material for a particularly demanding job, most experts will opt for elastic high-performance Vulkollan®. For very good reasons: **Screen-printing squeegees made of Vulkollan®** can withstand extreme loads so that modern screen printing machines can run with high squeegee speeds at maximum output. The results are outstanding.

To cope with the tough everyday work at a print shop and be able to ensure consistently high-quality printing, the material used to produce the squeegee must have outstanding physical and chemical properties. This is where Vulkollan® really comes into its own:

Vulkollan® has a unique array of properties that are attributable to a combination of high-grade components such as Desmodur® 15 and a sophisticated production process. The spectrum of properties is impressive: extremely high solvent resistance, outstanding mechanical and dynamic load resistance and extremely low wear – even with very demanding screen printing applications. It also has excellent dimensional stability, high temperature resistance and long service life. The desired material properties barely change even after a large number of print passes.

Selected processors ensure the development of customized, application-specific solutions by varying the relative proportions of the raw material components.

Vulkollan® properties depending on hardness*										
Properties	DIN test specification	Units	Vulkollan® grade (based on Vulkollan® 2010 I)							
			18/40	18/30	18/20	18	21	25	27	30
Individual measurements			Soft				Hard			
Shore hardness (approx.)	53505	[A / D]	70/-	74/-	78/-	83/29	89/35	92/36	93/38	94/41
Compression set 70 h / 23 °C	53517	[%]	< 12	< 12	< 12	12	12	12	12	13
Compression set 24 h / 70 °C	53517	[%]	< 20	< 20	< 20	20	20	20	20	21
Rebound resilience	53512	[%]	52	54	59	65	64	62	62	61
Tear propagation resistance (Graves)	53515	[kN / m]	15	19	25	25	31	48	53	57
Abrasion	53516	[mm²]	16	49	45	37	32	28	27	26

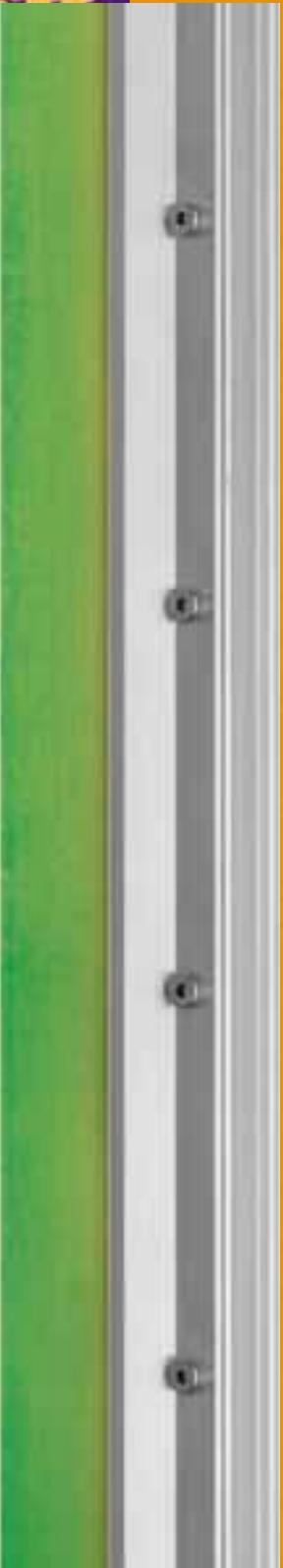
*Guide data based on individual measurements

Perfect print results and maximum utilization of machine capacities can only be achieved with a top-class squeegee. Vulkollan® is the optimum material for this!



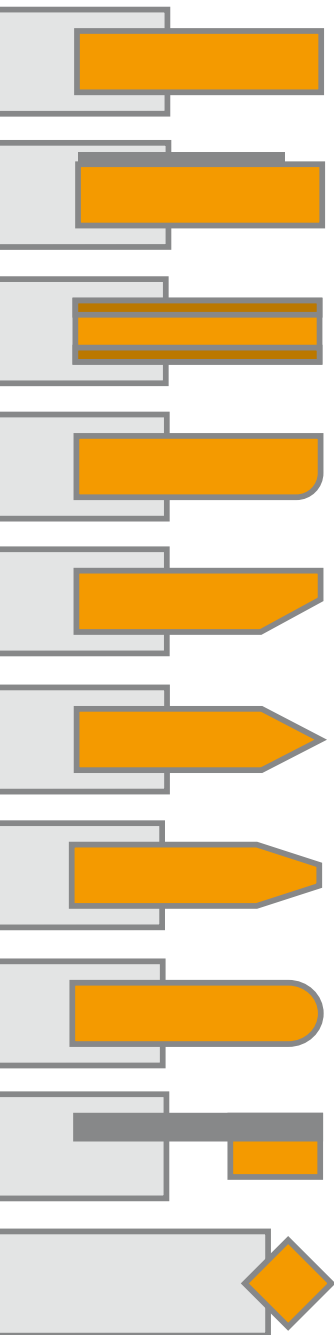


S *ound*



Squeegees made of Vulkollan® are ready-made by our partners and are available in trade outlets or offered as a standard flat version for further processing on squeegee cutting machines.

arguments: Outstanding quality plus optimum cost-efficiency.



Perfectly shaped profiles for different fields of application. In addition to its hardness and other criteria, the profile of a squeegee has a major influence on the level of deflection and working angle and thus on the final print.

With Vulkollan®, all conceivable squeegee geometries can be manufactured. Alongside the frequently used profiles, composite materials can also be deployed, e.g. with different mountings and squeegee edges, or a double and triple sandwich structure.

Vulkollan® is noted for its outstanding resistance to solvents and chemicals – swelling and wear are minimized.









Squeegees made of Vulkollan® leave behind a good impression not only on the screen but also in terms of brilliance. Taken together, the outstanding properties of Vulkollan® convert into appreciable advantages: for example its high dimensional stability and rapid recovery mean that the squeegee pressure has to be adjusted less often. The resultant reduction in maintenance brings significant time savings and greater efficiency for the entire printing process.

The high squeegee speeds increase output and reduce the amortization period. Day by day, month by month and year by year, this brings more orders and more sales – and above all more profit. This is, of course, especially true with large production runs.

A further decisive advantage is the excellent tear propagation resistance and high wear resistance compared with other polyurethane materials, especially with highly abrasive media or uneven print formes. The high mechanical strength ensures longer service life and minimizes the work needed to resharpen the squeegee edges. This all saves costs and produces outstanding results.

Apart from that, Vulkollan® is noted for its excellent resistance to heat and solvents. If necessary, the addition of antistatic agents will reduce the surface resistance during production of the squeegees.

Shore hardness (Shore A)

Yellow		55 - 60
Red		60 - 65
Red		65 - 70
Green		70 - 75
Blue		75 - 80
Brown		80 - 85
Orange		85 - 90
Magenta		90 - 95

Squeegees made of Vulkollan® can be "labeled" by the addition of color pigments, as shown in the illustration on the left.

This minimizes the risk of mixing up specific qualities and makes work very much easier on the screen printing machine. Various color codes are offered by the squeegee manufacturers.



Top connections:
In the precision and circuit printing of computer and consumer electronics, squeegees made of Vulkollan® can be relied on for their faithfulness to detail. The same applies to membrane keyboard pads.

Patentl



Eye-catching advertising:
Large surfaces, adhesive film and tarpaulins can be decorated with brightly colored graphics using squeegees made of Vulkollan®. It goes without saying that the images are weather-proof and UV-resistant.



Fun and games:
Squeegees made of Vulkollan® have no problem meeting the stringent specifications for screen printing on glass.



At home in the world of fashion: In the screen and film printing of fabrics, squeegees made of Vulkollan® help make garments, fabrics and wallpapers look attractive.



Clear view:
With the direct printing of heating filaments or special UV-resistant adhesives on windscreens, squeegees made of Vulkollan® ensure clear vision even in icy weather.



Ceiling eye-catchers:
When squeegees made of Vulkollan® are used, there is no limit to the design scope for fabrics and plastic film. Vulkollan® shows its true colors particularly with highly abrasive dispersions (gold, silver, graphite) and UV inks.

Very good: Ideal for the finest details and the largest orders.

If you would like to know more about the full potential and applications of Vulkollan®, ask for our comprehensive brochure or visit our Internet site at www.vulkollan.com.

Squeegees made of Vulkollan®: A winning advantage!

High swelling resistance for consistently outstanding print quality.

Squeegees are in constant contact with screen printing inks and cleaning agents that can attack the material. This is no problem for Vulkollan®: It is free of fillers and plasticizers, and deterioration of the properties through the rinsing out of unbound additives is unheard of. Squeegees made of Vulkollan® swell only slightly – their high resistance to a variety of conventional solvents ensures consistently good print quality. A squeegee that has swollen through the influence of the solvent can be used again after drying and still has virtually the same properties.

High shape retention and low setting under all conditions.

Long periods of exposure to heavy loads – especially at elevated temperatures – are often a problem for squeegees made of other materials. This is precisely where Vulkollan® shows its strengths: its outstanding shape resistance and very low compression set guarantee fast recovery after loading. For good line contact and a consistent working angle to the print.

Impressive heat stability and elasticity for a high profile resistance.

Vulkollan® offers convincing, virtually constant stiffness over a temperature range from -20 °C to +120 °C. The excellent dynamic load resistance of heavy-duty Vulkollan® makes an important contribution to the wide range of possible applications.

High wear resistance means a long service life.

Wherever two materials generate friction, e.g. during the screen printing process, wear occurs through abrasion. With Vulkollan®, print shops benefit from slower, more uniform wear and tear. And that means longer life.

Conclusion: Vulkollan® is a perfect material for top performance in screen printing! The outstanding material properties of Vulkollan® allow much faster squeegee speeds. And this means more economical use of the printing machines.



**HIGHEST MECHANICAL
LOAD-BEARING PROPERTIES**
**OPTIMUM DYNAMIC
LOAD CAPACITY**
**FORMULATED FROM
DESMODUR® 15**

Variety, made to measure:
Standard or special-purpose.
With Vulkollan®, the
properties of the squeegees
can be adjusted perfectly to
any job, print medium,
material or technology.



This information and our technical advice – whether verbal, in writing or by way of trials – is given in good faith but without a warranty, and this also applies where proprietary rights of third parties are involved. It does not release you from the obligation to test the products supplied by us as to their suitability for the intended processes and uses. The application, use and processing of the products are beyond our control and, therefore, entirely your own responsibility. Should, in spite of this, liability be established for any damage, it will be limited to the value of the goods delivered by us and used by you. We will, of course, provide products of consistent quality within the scope of our General Conditions of Sale and Delivery.

Presented by:



Bayer MaterialScience

Bayer MaterialScience AG
D-51368 Leverkusen
Germany
www.bayermaterialscience.de

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