

DSM 3.9.8

POLYURETHANE (Squeegee)

General:

TPU (Thermoplastic Polyurethane) belong to a material group that has gradually developed into a material class of their own. Positioned between plastics (thermoplastics) and rubber (elastomer) their mechanical properties can be manipulated through chemistry to create a broad range of performance types.

They behave like thermoset rubber but are processed like thermoplastics and unlike thermoset rubber, can be easily reprocessed and remoulded.

Benefits:

- Available in a hardness range of 55 SHORE A to 95 SHORE A.
- Has a high tear resistance along with high tensile properties.
- Performs very well when used in high flex fatigue applications.
- May distort under high loads but will return to its original shape.
- Very resistant to temperature extremes and chemicals.
- Polyurethane's material properties will remain stable (with minimal swelling) in water / oil / grease.
- Exhibits good electrical insulating properties. 10^{12} (Ohms/sq.)

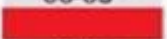
Limitations: (unmodified)

- Aromatics. (Benzene) will cause TPU to swell
- Yellows with exposure to UV radiation

ASM (DEK) Applications:

- Squeegee wiper inserts

Drawing call-out:

DSM 3.9.8 A	DSM 3.9.8 B	DSM 3.9.8 C	DSM 3.9.8 D
PU500/1 55-60°  YELLOW	PU500/3 60-65°  RED	PU500/3-4 65-70°  RED	PU500/4 70-75°  GREEN
DSM 3.9.8 E	DSM 3.9.8 F	DSM 3.9.8 G	DSM 3.9.8 H
PU500/8 75-80°  BLUE	PU500/9 80-85°  BROWN	PU101/9° 85-90°  FAWN	PU500/15 90-95°  PINK

Issue	01	02	03	04	05	06	07	08	09
DCR	42085	42771	44832						



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Advantages

- Sharper printing edge
- Easy on screens
- Low absorption
- Longer life
- Quality controlled
- Consistent product

Applications

- Graphics
- Compact Disc
- Printed Circuit Boards
- Containers
- Textiles



"The finest Vulkollan squeegee in the world"

Vulkollan

Unitex has been manufacturing Vulkollan® (ULON HP) squeegees for over 50 years. Vulkollan® is a superior grade of polyurethane formulated without adding fillers and plasticizers, (unlike some squeegees) a factor that contributes to its exceptional chemical and abrasion resistance.

Performance

Squeegees can be subjected to considerable wear and tear and must have very good dimensional stability. The high shear modulus of Vulkollan® and its low permanent deformation are key factors when it comes to ensuring consistent print results.

Long life

ULON HP has a superior combination of properties - namely high mechanical strength

and excellent chemical resistance - which guarantee an extremely long service life even when the squeegees are subjected to extreme conditions.

RoHS

ULON HP squeegees are fully RoHS Compliant.

Availability

All grades of ULON HP squeegees are available to suit manual, semi and fully automatic machines. Specific Squeegees developed and manufactured for bespoke applications.

Profiles

All standard profiles and shapes available.

Hardness

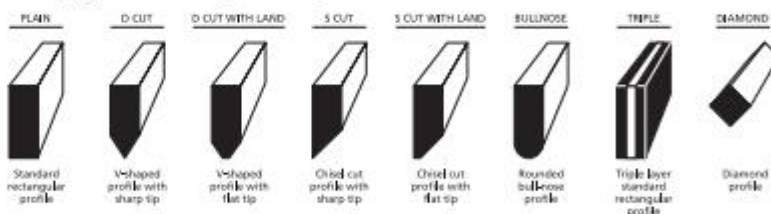
Available in 55 to 95 Shore A in 5 Degree increments.

Colour Coding

Unitex squeegees use a colour coding system (Shore A Hardness) that enables you to make an instant and positive selection of the right squeegee - saves time - saves mistakes.

Unitex

Part of the Global Trelleborg Group. Unitex has been manufacturing ULON squeegees and high grade polyurethane products since the 1950's. Screen Printers who recognise Unitex quality and performance use our squeegees in over 50 countries worldwide. Unitex is equipped with sophisticated production and process machinery backed by the most up to date inspection and quality control procedures. Accredited to ISO 9001/2000 and ISO 14001.



SHORE A° - DUROMETER - Colour Coding

PU500/1	PU500/3	PU500/3-4	PU500/4	PU500/8	PU500/9	PU101/9	PU500/15
55-60°	60-65°	65-70°	70-75°	75-80°	80-85°	85-90°	90-95°
YELLOW	RED	RED	GREEN	BLUE	BROWN	FAWN	PINK

Vulkollan® is a registered Trademark of Bayer MaterialScience



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Unitex ULON HP Technical

Before use

- Squeegees must not be stored in sunlight or bright light – UV Light will darken the squeegee colour, although this will not have a negative affect on the quality of its performance.
- Try to store squeegees between 15°C – 25°C in dry conditions and away from inks – in high humidity squeegees will absorb moisture and solvents from the air.
- Store squeegees flat, do not leave rolled up.
- When using a roll, leave flat for 24 hours so the squeegee has time to relax.

General

- Squeegee hardens with time – test old squeegee regularly. Do not use old squeegee that is 5 to 10 degrees more than its original hardness.
- The shelf life of the new unused squeegee is approximately two years if stored correctly.
- Do not use a squeegee without ink. It will quickly destroy the printing edge after very few passes.

Technical Data for ULON HP

Dimensions	PLAIN Section	Tolerance
Length	Up to 3350mm	+/- 10mm
Width	Up to 610mm	+/- 5mm
Thickness	Up to 12.5mm	+/- 0.4mm
Dimensions	SKE/DKE Section	Tolerance
Length	Up to 3200mm	+/- 10mm
Width	Up to 100mm	+/- 1mm
Thickness	Up to 10mm	+/- 0.4mm
Dimensions	TRIPLE Section	Tolerance
Length	Up to 3350mm	+/- 10mm
Width	Up to 100mm	+/- 1mm
Thickness	Up to 10mm	+/- 0.4mm
Type	Hardness	Tolerance
ULON HP	55-95° Sh A in 5° Increments	+/-2.5° Shore A

Squeegee marking

Unless specified at time of ordering all Unitex squeegees are marked with:

- Unitex
- HP or Marathon
- Squeegee Grade
- Batch Number

In use

- Squeegees should be cleaned immediately after use to prevent the accumulation of dried-up ink.
- Remove all remaining ink deposits from the holder and the squeegee. Any remaining ink can cause marks from the squeegee during subsequent printing operations.
- Print quality may deteriorate during a long run as the sharp edge is lost; therefore plan to swap the squeegee early. Rounded edges use and deposit more ink.
- When storing a squeegee still mounted in the holder, do not rest it on the squeegee or allow the squeegee to touch anything during storage.
- Squeegees or their holders must not be left in solvents to soak. Soaking will cause swelling and loss of resilience.
- When cleaning the squeegee use a soft cloth and always wipe away from the edge.
- To prolong the life of a squeegee, 'rest' it for 12 hours after cleaning and before the next printing operation starts.

Grinding/sharpening

- You should not be required to sharpen a squeegee prior to use.
- Only sharpen a squeegee that is clean, dry and has not been used for printing for at least 12 hours.

Technical Data - ULON HP 500/4 70-75° Shore A (Durometer)

PROPERTIES	VALUES	UNITS	BRITISH STANDARD
Shore A hardness @ 20°C	72.5	°Sh A	BS ISO 7619-1:2004
Tensile modulus at 100% elongation	2.600	Mpa	BS ISO 37:2005
Tensile modulus at 200% elongation	3.570	Mpa	BS ISO 37:2005
Tensile modulus at 300% elongation	4.591	Mpa	BS ISO 37:2005
Tensile strength (Maximum)	39.73	Mpa	BS ISO 37:2005
Tensile strain at break	666.4	%	BS ISO 37:2005
Tear resistance (initiated tear)	38.14	kN/m	BS ISO 34-1:2004
Specific gravity	1.23	g/cm³	BS 903:A1:1996
Swelling in solvent (I.P.A. 24 Hrs)	10.03	%	BS ISO 1817:2005
Abrasion weight loss (mg)	13.2	(mg)	BS 903 :A9:1988

Packaging

Your squeegee packaging is optimised to ensure it arrives with you in the best condition possible.

- We use secure, moisture proof containers for sea freight.
- Light weight packaging for air freight.
- Priority freight if required for fast delivery to the rest of the world.
- Customer specified carriers when required.

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ENGINEERED SYSTEMS



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