

PVC sheets



PVC sheets

CHARACTERISTICS

regular, fine-celled structure,
homogeneously colored,
closed-cell surface, matt

ADVANTAGES

- light in weight compared with solid rigid PVC sheets
- low thermal conductivity, good insulation
- resistant to chemicals and corrosion
- absorbs vibration and oscillation
- very easily worked
- weather resistant
- color white for external use
- very low absorption of water
- low flammability,
- highly suitable for printing and foiling
- excellently suited for bonding

AREAS OF APPLICATION

Advertising

Signs, boards, letters, displays,
decoration of shop windows,
exhibition stands

Building sector

Shop-fitting, interior decorating,
zones of high humidity (bathrooms
etc.) air-conditioning and ventilation
systems, heat and sound insulation,
roller shutter boxes

Miscellaneous

models, photographic lamination,
traffic signs, building site boards.

TOLERANCES

Thickness s : $\pm (0.1 \text{ mm} + 0.05 \cdot s)$

Width: $- 0 / + 2.5 \text{ mm}$

Length: max. $- 0 / + 10 \text{ mm}$

Rectangularity: $\leq 2.0 \text{ mm/m}$

Linearity: max. 1.5 mm/m

Evenness: max. 1.5 mm/m

Permissible color difference according to DIN standard 6174, color white, $\leq 1,2$ CIELAB units.

Permissible color difference according to DIN standard 6174, colored, $\leq 2,5$ CIELAB units.

Special lengths on request.

Sizes

Kömateg (density 0.5 g/cm^3)

$4' \times 10' \times \frac{3}{8}"$

$5' \times 10' \times \frac{3}{8}"$

$5' \times 10' \times \frac{5}{16}"$

color white 652

Kömateg (density 0.7 g/cm^3)

$4' \times 8' \times \frac{5}{128}" - \frac{1}{4}"$

$4' \times 10' \times \frac{5}{128}" - \frac{1}{4}"$

$5' \times 10' \times \frac{5}{64}"$

color white 652

Kömateg colored (density 0.7 g/cm^3)

$4' \times 8' \times \frac{1}{8}"$

$4' \times 8' \times \frac{1}{4}"$

$4' \times 10' \times \frac{1}{8}"$

$4' \times 10' \times \frac{1}{4}"$

colors

light grey 140, grey 191, beige 351,
red 491, green 591, dark yellow 750,
yellow 791, dark blue 850, blue 891,
black 991

The illustrations 1-6 show examples for the use of KÖMATEX for displays, exhibition stands, cladding, advertising.



Kömatex PVC sheets can be easily and economically worked.

WORKING DIRECTIONS

Machining

Rigid PVC foam sheets can be easily and quickly worked with standard tools and machinery used in the wood and metal industries. They can be cut, sawn, turned, filed, drilled, planed, milled, screwed and polished.

The tools must be sharp in order to prevent breaking and splintering. One generally works at high cutting speed, low forward feed and low rate of cut. Normally, it is not necessary to cool the cutting tools. In special cases, compressed air is sufficient.

Forming

To a limited extent, Kömatex sheets are suitable for vacuum forming. Bending and folding are also easily possible when heated up.

Welding

Kömatex sheets can be welded according to the usual welding procedures. However, extreme care must be taken as the foam might collapse.

Bonding

Kömatex sheets, like all other materials made of rigid PVC, can be bonded to each other and other materials. Depending on the requirements and applications, various types of adhesive can be used.

When bonding Kömatex sheets to each other, adhesives containing solvents and solvent-free polyurethane adhesives are suitable.

Adequate adhesives are available from our affiliated chemical company, KÖMMERLING CHEMISCHE FABRIK KG.

Printing

Due to their smooth surface, Kömatex sheets can be easily printed, painted and lacquered. They are ideal for silk screen printing for which special inks are used (the surface of the PVC is slightly etched, thus ensuring a good adhesion).

Ray-hardened inks are now also used; this process could, however, cause discoloration of the unprinted surfaces). The surface to be printed must be clean and free of grease.

Due to high absorption of heat, please avoid lacquering large areas with dark colors if the sheets are exposed to sunlight.

Fixing recommendations

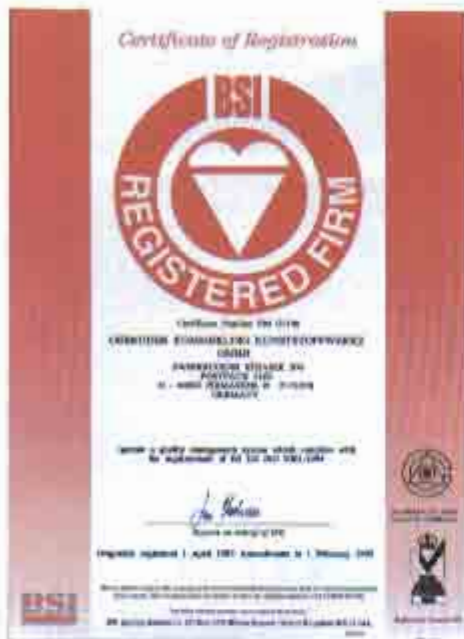
Kömatex sheets are made of thermoplastic PVC and, therefore vary more in length than timber or metal working materials (please note the coefficient of linear thermal expansion). When installing screen-printed advertising boards in cricket or soccer stadium, or when fixing curtain walling or cladding, a possible expansion of the sheets has always to be taken into account. The appropriate fixing depends on the type of application.

Technical values

	Testing method	Unit	Value	Value
Mechanical properties				
* (Apparent) density	DIN 53 479	g/cm ³	0.5	0.7
Tensile strength	DIN 53 455	N/mm ²	12	20
Elongation at tear	DIN 53 455	%	15	15
Flexural strength	DIN 53 452	N/mm ²	20	30
Compressive strength (range of elasticity)	DIN 53 421 (serving as a basis)	N/mm ²	> 3.0	> 3.0
Compressive stress at 30%	DIN 53 421 (serving as a basis)	N/mm ²	> 6.5	> 13
Modulus of elasticity	DIN 53 457 (serving as a basis)	N/mm ²	850	1100
Impact strength	DIN 53 453	kJ/m ²	20	15
Shore hardness D	DIN 53 505		48	55
Thermal properties				
Vicat softening temperature				
Vicat A	DIN 53 460	°C	78	75
Temperature of deflection under load acc. to ISO 75 (HDT)	DIN 53 461	°C	68	60
Coefficient of linear thermal expansion α (from -30° C to +50° C)	DIN 53 752	mm/m°C	0.08	0.08
Thermal conductivity λ (from 0° C to +60° C)	DIN 52 616	W/mK	0.06	0.10
Electric properties				
Surface resistance	DIN VDE 0303 T3	Ω	6×10^{14}	$> 1 \cdot 10^{14}$
Volume resistivity	DIN VDE 0303 T3	$\Omega \cdot \text{cm}$	$> 10^{16}$	$4 \cdot 10^{15}$
Dielectric E_d	DIN VDE 0303 T2	kV/mm	5.0	16
Dielectric constant E_r (at 1 kHz)	DIN 53 483 T2		1.6 ± 0.5	2.5
Dielectric dissipation factor $\tan \delta$ (at kHz)	DIN 53 483 T2		0.012	0.016
Comparative figure of tracking	DIN IEC 112		CTI 600	CTI 600
Other properties				
Water absorption after 7 days	DIN 53 495	%	< 0.3	< 0.3
Fire behaviour	DIN 4102 (D)	1-6 mm		B1
	UL 94 (USA)	≥ 2 mm		VO
	NFP 92-501 (France)	2-6 mm (3-6 mm coloured)		M1
	VKF (CH)	2-6 mm		V3
	VKF (CH)	10 mm	V.3	
	Italy (I)	2-6 mm	—	Class 1
Physiological evaluation	generally recognized as safe (GRAS)			

* These are standard values which apply to an average density. Minor variations depending on the sheet thickness are possible.
Technical specifications are subject to change!

Kömatex PVC sheets: Products of assured quality Certified according to DIN ISO 9001



Consequent research and development work as well as decades of experience with synthetic materials determine the high quality of our products.

Have a look at our production, research and quality control departments, and you will see that there are more testing than production processes.

We carry out tests at all stages — starting with the delivered raw materials until the final check of the finished products.

Regular examinations and tests carried out by independent testing institutes confirm the care we take during the production process.

Our quality security system is certified according to German Standards DIN ISO 9001.

Our PVC products are approved to be not harmful to your health nor to the environment. This approval applies to the manufacturing, processing, application and disposal phases. All products comply with all national and international regulations for the protection of your health and the environment.

Think of the environment and decide in favor of KÖMMERLING PVC sheets.

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