



KÖMADUR[®]
moulding. bonding. cladding.



KÖMADUR[®] solid PVC-U sheets —
tough stuff!



Trade information for:

- Advertising technicians
- Design & advertising agencies
- Exhibitors
- Exhibition stand builders
- POS fitters
- Sign makers
- Sandwich element manufacturers
- Window manufacturers
- Thermoformers
- Tank and apparatus constructors
- Industrial users
- Electrical industry
- Electroplaters



KÖMMERLING[®]
Business Unit Sheets

KÖMADUR® PVC-U sheets — more of a system

“Jack of all trades, master of all!”

The all-in-one solution for the most varied of requirements. Kömmerling's KömaDur is a system of solid PVC-U sheets. Available in five different variants, KömaDur meets even the most specific of demands. Whether it is for the chemical, building or electrical engineering industry, the exhibition or the advertising sector, the various KömaDur variants—with the specific modifications to their material properties—are ideally matched to the different and wide range of both indoor and outdoor applications. Just perfect from the point of view of users is the simplicity and high level of efficiency with which the sheets can be worked.

KömaDur is the result of intensive research and development work as well as more than 30 years' experience in the extrusion of PVC-U sheets. During this period, the material has undergone continuous development and improvement and been adapted to suit the changing needs of the market.

The result is a system of solid PVC-U sheets that stand out thanks to their homogeneous, smooth and glossy surface finish. They are flame-retardant and resistant to chemicals and corrosion in line with DIN 8061, as well as to most aggressive media.

Exceedingly easy to work!



Machining

Cutting, sawing, turning, filing, drilling, planing, milling, grinding and screwing



Forming

Stretch forming, thermoforming, vacuum forming, blow moulding, bending, folding and punching



Welding

Hot-gas, heated-tool and folding



Delivery programme

Dimensions and thicknesses in mm	M 640	D 669	ES 669	ES 913	ES 712	ES 411	ES 520	ES 814	H 654	WA 155	WA 112
	White RAL 9003*	White RAL 9003*	White RAL 9003*	Black RAL 9005	Yellow RAL 1021*	Red RAL 2002*	Green RAL 6005*	Blue RAL 5010*	White RAL 9016*	Dark grey RAL 7011	Light grey RAL 7035*
2000 X 1000 X 1	x	x	x	x	x	x				x	x
2000 X 1000 X 1,5		x	x	x							x
2000 X 1000 X 2	x	x	x	x	x	x	x	x	x	x	x
2000 X 1000 X 3		x	x	x	x	x	x	x	x	x	x
2000 X 1000 X 4		x	x	x					x	x	x
2000 X 1000 X 5		x	x	x						x	x
2000 X 1000 X 6		x	x							x	x
2000 X 1000 X 8			x						x	x	x
2000 X 1000 X 10			x							x	x
2000 X 1000 X 12										x	
2000 X 1000 X 15**										x	
2000 X 1000 X 20**										x	
2000 X 1000 X 25**										x	
2000 X 1000 X 30**										x	
3000 X 1500 X 2		x	x						x	x	x
3000 X 1500 X 3		x	x						x	x	x
3000 X 1500 X 4		x	x						x	x	x
3000 X 1500 X 5		x	x							x	x
3000 X 1500 X 6		x	x						x	x	x
3000 X 1500 X 8			x							x	x
3000 X 1500 X 10										x	x
3000 X 1500 X 12										x	
3000 X 1500 X 15										x	
3000 X 1500 X 20										x	










* Similar to RAL.

** Factory test certificate to be drawn up after consulting with Kömmerling.

Permissible colour deviation in accordance with DIN 6174, Colours: $dL + dH \leq \pm 1,5$ CIELAB units, Shades of white: $dE \leq 1,2$ CIELAB units

KÖMADUR M

Properties

-  .Matt surface on one side
-  .Impact-resistant
-  .Thermoformable
-  .Colour: white M 640
-  .Flame-resistant
-  .Suitable for welding
-  .Suitable for bonding
-  .Weather resistant
-  .Resistant to chemicals and corrosion

Applications










.Signs
.Billboards
.Lettering boards
.Exhibition stands
.Shop-window displays

.Displays
.Digital printing
.Shopfitting
.Interior decorating
.Zones of high humidity (e.g. bathrooms)

.Air-conditioning and ventilation systems
.Sandwich elements for parapets and door panels
.Equipment for photographic laboratories

KÖMADUR D

Properties

-  .Smooth and glossy surface
-  .Particularly impact-resistant
-  .Suitable for thermoforming
-  .Colour: white D 669
-  .Flame-resistant
-  .Easy to print
-  .Easy to film-laminate
-  .Weather-resistant
-  .Protective film on one side

Applications










.Signs
.Billboards
.Lettering boards

.Displays
.Shop-window displays

.Exhibition stands
.Thermoformed parts

KÖMADUR ES

Properties

-  .Smooth and glossy surface
-  .Particularly impact-resistant
-  .Optimum thermoforming qualities
-  .Colour: white ES 669 and various colours
-  .Flame-resistant
-  .Colour: white, specifically formulated
-  .Colours for indoor use
-  .Weather-resistant
-  .Protective film on one side

KÖMADUR ES

Applications



- .Signs
- .Billboards
- .Lettering boards
- .Exhibition stands
- .Shop-window displays
- .Displays

- .Shopfitting
- .Machine construction
- .Interior decorating
- .Zones of high humidity (e.g. bathrooms)
- .Cladding and facings

- .Sandwich elements for parapets and door panels
- .Air-conditioning and ventilation systems
- .Thermoformed parts (maximum degrees of forming)

KÖMADUR H

Properties

-  .Smooth and glossy surface
-  .Particularly impact-resistant, specially designed for outdoor applications (cold temperatures)

-  .Suitable for thermoforming
-  .Colour: white H 654
-  .Flame-resistant

-  .Weather-resistant
-  .Protective film on one side

Applications




- .Shopfitting
- .Interior decorating
- .Zones of high humidity (e.g. bathrooms)


- .Air-conditioning and ventilation systems
- .Cladding and facings



- .Thermoformed parts
- .Sandwich elements for parapets and door panels

KÖMADUR WA

Properties

-  .Impact-resistant
-  .Thermoformable
-  .Flame-resistant

-  .Colour: WA 155 dark grey or WA 112 light grey
-  .Suitable for welding

-  .Suitable for bonding
-  .Resistant to chemicals and corrosion

Applications

- .Thermoformed parts
- .Apparatus and container construction

- .Accumulators
- .Electroplating

- .Chemical industry and laboratory equipment
- .Machine construction

Tolerances

Standard measurement	Tolerances	
	Length (in mm)	width (in mm)
under 500 mm	+ 2,0 / - 1,0	+ 1,5 / - 1,0
about 500 to 1000 mm	+ 3,0 / - 1,0	+ 2,0 / - 1,0
about 1000 to 1500 mm	+ 4,0 / - 1,0	+ 2,5 / - 1,0
about 1500 to 2000 mm	+ 5,0 / - 1,0	+ 3,0 / - 1,0
about 2000 to 2500 mm	+ 6,0 / - 1,0	+ 4,0 / - 1,0

Thickness s: $\pm (0,08 + 0,03 \times s)$

Example at 2 mm: $\pm 0,14$ mm

Rectangularity: max. 2mm / m

Chemical Resistance

Agent	Concentr. %	Temperature		Agent	Concentr. %	Temperature	
		20°C	60°C			20°C	60°C
Anorganic chemicals				Organic Chemicals			
Ammonia	24	++	-	Formic acid	10	++	++
Chromated sulphuric acid	-	++	0	Formic acid	100	++	+
Potassium lye	10	++	++	Aniline	-	-	-
Potassium lye	40	++	++	Ethanol	-	++	+
Aqua regia	-	++	+	Petrol-Benzene mixture (BV-Aral)	-	-	-
Sodium chloride	40	++	++	Benzene	-	-	-
Sodium hydrosulphide	10	++	++	Butanol	-	++	++
Sodium hypochloride	40	++	++	Cyclo-hexane	-	++	+
Sodium hydroxide	10	++	++	Cyclo-hexanol	-	++	++
Sodium hydroxide	40	++	++	Decaline	-	++	++
Phosphoric acid	10	++	++	Diesel fuel	-	++	-
Phosphoric acid	85	++	++	Diethylether	-	-	-
Nitric acid	10	++	++	Glacial acethic acid	-	++	-
Hydrochloric acid	10	++	++	Acethic acid	10	++	++
Hydrochloric acid	35	++	++	Formaline	-	++	+
Sulphuric acid	10	++	++	Glycol	-	++	++
Sulphuric acid	96	++	++	Fuel oil	-	++	not tested
				Heptane	-	++	-
				Hexane	-	++	++
				m-Cresol	-	+	-
				White spirit	-	++	0
				Machine oil	-	++	++
				Methanol	-	++	+
				Olive oil	-	++	++
				Petrolether	-	++	+
				Turpentine oil	-	++	0
				Toluene	-	-	-
				Transformer oil	-	++	++
				Xylene	-	-	-

Key to symbols

++ good resistance
0 limited resistance

weight diff. below 1%
weight diff. 5 to 10%

+ resistant
- no resistance

weight diff. 1 to 5%

Please contact us for resistance to other chemicals

Technical data

Properties		Unit	M		D		Values	
					ES	H	WA	
Mechanical properties								
Apparent density*	DIN 53479/ISO 1183	g/cm ³	~ 1,43	~ 1,43	~ 1,43	~ 1,43	~ 1,43	~ 1,43
Tensile stress at yield (tensile strength)	DIN 53455/ISO 527	MPa	> 45	≥ 50	≥ 48	≥ 45	≥ 55	
Elongation at tear	DIN 53455/ISO 527	%	> 20	≥ 15	≥ 20	≥ 20	≥ 15	
Flexural strength	DIN 53452/ISO 178	MPa	≥ 80	≥ 75	≥ 75	≥ 70	≥ 80	
Compressive strength	DIN 53454/ISO 3605	MPa	≥ 70	≥ 65	≥ 65	≥ 60	≥ 70	
Modulus of elasticity	DIN 53457/ISO 527-2/1A/50	MPa	> 2500	≥ 2500	≥ 2500	≥ 2500	≥ 3000	
Notched impact strength	DIN 53453/ISO 179-1ePA	KJ/m ²	≥ 4	≥ 6	≥ 6	≥ 8	≥ 4	
Impact strength	DIN 53453/ISO 179	KJ/m ²						
	0 °C		no failure	no failure	no failure	no failure	no failure	
	-20 °C		-	no failure	no failure	no failure	-	
	-30 °C		-	-	no failure	no failure	-	
	-40 °C		-	-	-	no failure	-	
Ball indentation hardness (358 N/30 s)	DIN 53456/ISO 2039	MPa	~ 100	~ 90	~ 90	~ 90	~ 100	
Shore hardness D	DIN 53505		78	80	80	78	82	

Thermal properties

Vicat softening temperature	DIN 53460/ISO 306 (process B50)	°C	75	≥ 72	≥ 72	≥ 72	≥ 75	
Deflection temperature	DIN 53461/ISO 75	°C	~ 68	~ 66	~ 66	~ 66	~ 68	
Coefficient of linear thermal expansion from -30 °C to +50 °C	(process Ae) DIN 53752	mm/mK	0.08	0.08	0.08	0.08	0.08	
Thermal conductivity from 0 °C to +60 °C	DIN 52612	W/mK	0.16	0.16	0.16	0.16	0.16	

Electrical properties

Dielectric constant E _r (at 1 kHz)	VDE 0303 T4	-	3.4	3.4	3.4	3.4	3.4	
Dielectric dissipation factor tan δ (at 1 kHz)	VDE 0303 T4	-	0.016	0.016	0.016	0.016	0.016	
Surface resistance	DIN VDE 0303 T30/ DIN IEC 93	Ω	> 10 ¹⁵	> 10 ¹⁵	> 10 ¹⁵	> 10 ¹⁵	> 10 ¹⁵	
Volume resistivity	DIN VDE 0303 T30/ DIN IEC 93	Ω · m	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	> 10 ¹⁴	
Dielectric strength	DIN VDE 0303 T21 1 mm sheet	KV/mm	≥ 23	≥ 27	≥ 27	≥ 27	≥ 23	
Tracking resistance	DIN IEC 112	Grade	CTI 600	CTI 600	CTI 600	CTI 600	CTI 600	
Arc resistance	DIN VDE 0303 T5	Ident. No.	2.2.2.2	2.2.2.2	2.2.2.2	2.2.2.2	2.2.2.2	

Other properties

Water absorption after 7 days	DIN 53495	%	< 0.08	< 0.08	< 0.08	< 0.08	< 0.08	
Fire behaviour	DIN 4102 - B 1		-	1-2 mm	1-2 mm	1-2,5 mm	1-3 mm	
	NFP 92-501/M 1 (F)		1-6 mm	1-2 mm	1-2 mm	-	1-2 mm	
	UL 94 (USA) File E100599		-	-	≥ 1 mm	-	≥ 1 mm	
	fire charac. (CH) 5.2		-	-	-	≥ 1 mm	-	
	CSE-RF2/75 A (I) EG/VO 1935/2004	Class 1	-	-	1-3 mm	-	-	
Physiological evaluation			generally recognised as safe					

* These are standard values which apply to an average density.
Minor variations are possible depending on the colour. Subject to change without prior notice.



For the sake of the environment

“Recycling and reuse”

There are no toxic or harmful substances in KömaDur that can be given off over the long term. KömaDur is free from formaldehyde, asbestos, lindane, PCB, PCP and CFCs. What's more, it is cadmium and lead-free and is also made without any monomers, biocides and plasticisers.

This is why KömaDur poses absolutely no hazard to people or the environment, neither during its manufacture, while in use, nor during the recycling process.

Old sheets no longer in use or left-over sections of sheets can be recycled without any problem: they are ground up in shredders and cutting machines before being returned to the production process to make new sheets. This closed material cycle is not only economical, but ecological, too.



Certified to DIN ISO 9001

“Uncompromising quality from start to finish”

Systematic research and development work and decades of experience with plastics are the basis for the generally recognised high quality of our products.

We carry out tests at all stages—starting with the raw materials on delivery through to final inspection of the finished products.

Regular examinations and analyses conducted by independent testing institutes confirm the high degree of care we take during the production process. Our quality assurance system is certified to DIN ISO 9001.



With the compliments of: