

## **KÖMA DUR**<sup>®</sup> 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**<sup>®</sup>  
*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



## 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                | .Displays                                | .Air-conditioning and ventilation systems       |
| .Billboards           | .Digital printing                        | .Sandwich elements for parapets and door panels |
| .Lettering boards     | .Shopfitting                             | .Equipment for photographic laboratories        |
| .Exhibition stands    | .Interior decorating                     |   |
| .Shop-window displays | .Zones of high humidity (e.g. bathrooms) |   |

## KÖMADUR D

### Properties

-  .Smooth and glossy surface
-  .Particularly impactresistant

-  .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            | .Displays             | .Exhibition stands  |
| .Billboards       | .Shop-window displays | .Thermoformed parts |
| .Lettering boards |                       |                     |

## 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<br>.Billboards<br>.Lettering boards<br>.Exhibition stands<br>.Shop-window displays<br>.Displays | .Shopfitting<br>.Machine construction<br>.Interior decorating<br>.Zones of high humidity<br>(e.g. bathrooms)<br>.Cladding and facings | .Sandwich elements<br>for parapets and door panels<br>.Air-conditioning<br>and ventilation systems<br>.Thermoformed parts<br>(maximum degrees of forming) |
|--|---|---|

**KÖMADUR H****Properties**

- |  |   |   |
|--|---|---|
|  .Smooth and glossy surface   |  .Suitable for thermoforming |  .Weather-resistant            |
|  .Particularly impact-resistant, specially designed for outdoor applications (cold temperatures) |  .Colour: white H 654        |  .Protective film on one side |
|  |  .Flame-resistant           |   |

**Applications**

- |   |   |   |
|---|---|---|
| .Shopfitting<br>.Interior decorating<br>.Zones of high humidity<br>(e.g. bathrooms) | .Air-conditioning<br>and ventilation systems<br>.Cladding and facings | .Thermoformed parts<br>.Sandwich elements<br>for parapets and door panels |
|---|---|---|

**KÖMADUR WA****Properties**

- |   |  |   |
|---|--|---|
|  .Impact-resistant |  .Colour: WA 155 dark grey or WA 112 light grey |  .Suitable for bonding                 |
|  .Thermoformable   |  .Suitable for welding                          |  .Resistant to chemicals and corrosion |
|  .Flame-resistant  |  |   |

**Applications**

- |  |                                  |  |
|--|----------------------------------|--|
| .Thermoformed parts<br>.Apparatus and container construction | .Accumulators<br>.Electroplating | .Chemical industry and laboratory equipment<br>.Machine construction |
|--|----------------------------------|--|

## 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 6016*	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						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	X
2000 X 1000 X 4	X	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 1	X										
3000 X 1500 X 1,5	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
3000 X 1500 X 6			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.

## Technical data

Properties		Unit	Values				
			M	D	ES	H	WA
<b>Mechanical properties</b>							
Apparent density*	DIN 53479/ISO 1183	g/cm³	~ 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/m²	≥ 4	≥ 6	≥ 6	≥ 8	≥ 4
Impact strength	DIN 53453/ISO 179	KJ/m²					
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
<b>Thermal properties</b>							
Vicat softening temperature	DIN 53460/ISO 306 (process B <sub>50</sub> )	°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
<b>Electrical properties</b>							
Dielectric constant E <sub>r</sub> (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 <sup>15</sup>	> 10 <sup>15</sup>	> 10 <sup>15</sup>	> 10 <sup>15</sup>	> 10 <sup>15</sup>
Volume resistivity	DIN VDE 0303 T30/ DIN IEC 93	Ω · m	> 10 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>	> 10 <sup>14</sup>
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
<b>Other properties</b>							
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.