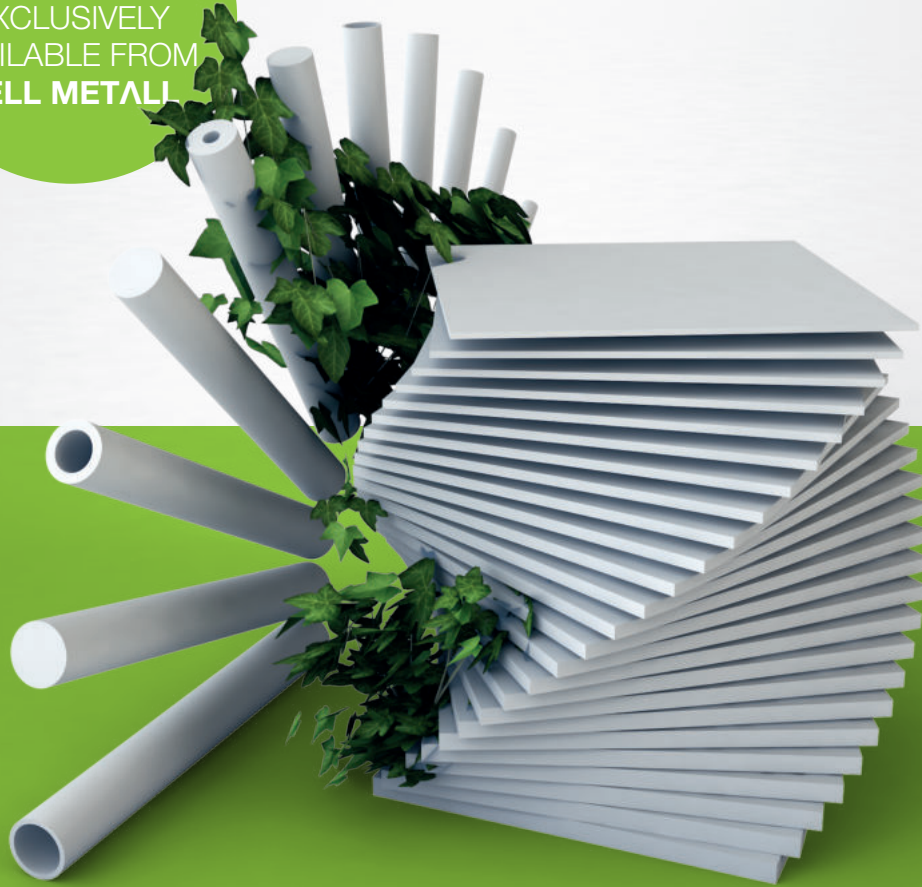


INNOVATION
EXCLUSIVELY
AVAILABLE FROM
ZELL METALL




**LIGHT-WEIGHT
BUT STRONG**


**FOOD
COMPLIANT**


**LOW WATER
ABSORPTION**


**HIGH IMPACT
RESISTANCE**

ZELLAMID[®] 350 XF
BIO-BASED ENGINEERING PLASTIC

ZELLAMID® 350 XF

BIO-BASED
ENGINEERING PLASTIC

EXCLUSIVE

ZELLAMID® 350 XF is a complete new and partly bio-based Co-Polymer, which is available as semi-finished product only at Zell-Metall Engineering Plastics worldwide.

FOOD COMPLIANCE

The composition of the product complies with the requirements of the Commission Regulation (EU) No 10/2011 of 14 January 2011 on plastic materials and articles intended to come into contact with food most recently amended by the Commission Regulation (EU) No 2017/752 of 28 April 2017.

BIO-BASED

The Material **ZELLAMID® 350 XF** fulfills the requirements of TÜV AUSTRIA for the certificate „OK biobased“.

THE VERSATILE GREEN ALTERNATIVE

With its properties, **ZELLAMID® 350 XF** convinces as commercially and technically interesting bio-based alternative to PA 12 in applications with high requirements on impact resistance. First experiences are made in several applications like slightly loaded wheels, castors and vibration damper. Advantages are also seen in food industry, where gases are released like for cheese molds or molds of patties.

Do not hesitate and inquire the material of the future today!

TOP PERFORMANCE

ZELLAMID® 350 XF has „Polyamide-like“ properties and convinces through very good elasticity. This Co-Polymer has a very high viscosity and keeps its high impact resistance even at low temperatures under dry conditions. The product is soft without additional conditioning and takes up water 50% less than Polyamide 6.



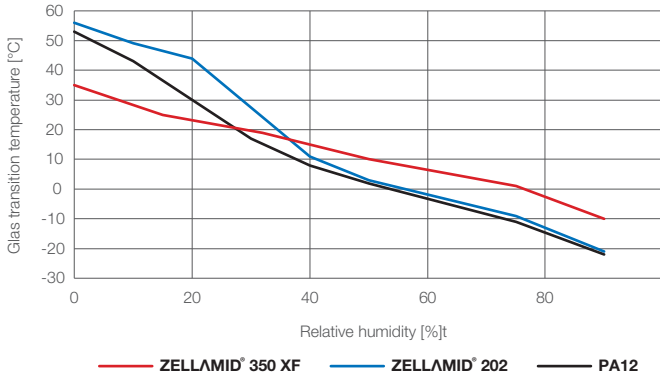
BEING PART OF THE PROGRESS

The testing of application possibilities and machining of the new material **ZELLAMID® 350 XF** is not yet finished. First machining runs showed significant reduction of the feeding rates for cutting compared to Polyamide 6. To further investigate the application and machining Zell-Metall founded the **ZELLAMID® 350 XF COMMUNITY**, which fosters the exchange of information of machining partners. If you are interested to take part in this Community, please read the attachment and contact your Zell-Metall Engineering Plastics sales representative.



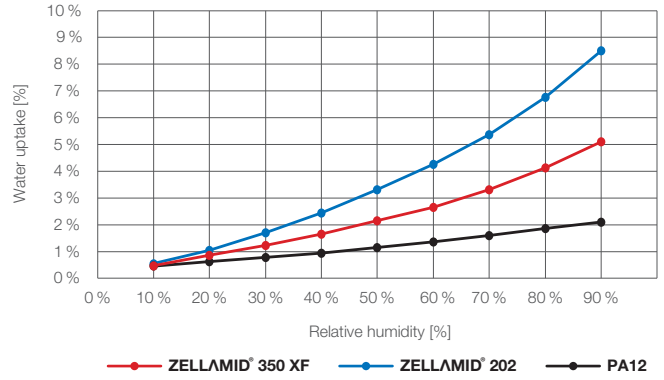
**ZELLAMID® 350 XF
COMMUNITY**

Glas transition temperature for different relative humidity

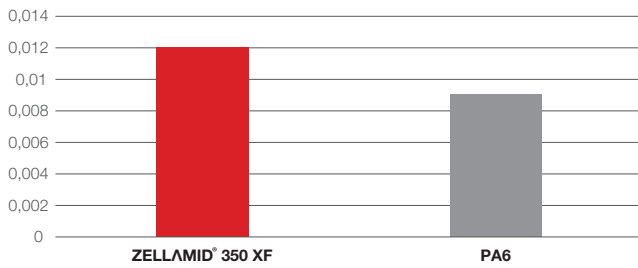


ZELLAMID 350 XF has lower Tg at RH <40% and higher Tg at RH >40%, compared to **ZELLAMID 202**.

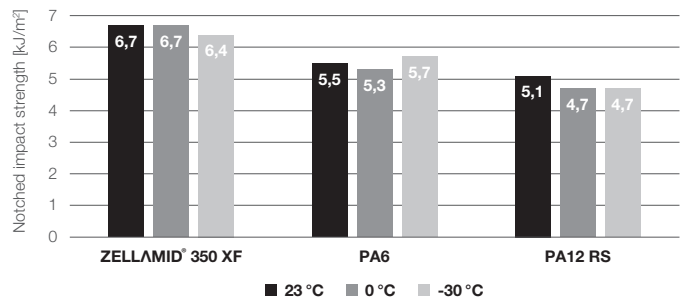
Water uptake at different relative humidity



Linear abrasion rate (mm/100 rpm)

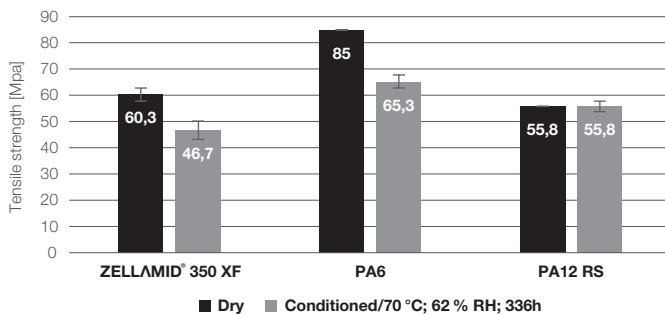


Charpy notched impact dry – ISO179-2/1eA(F):1997

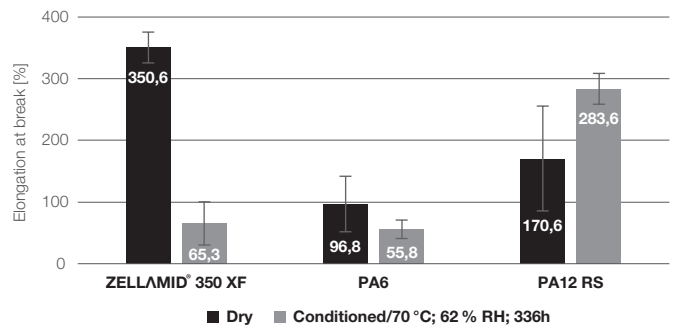


Samples were dried before the measurement at 80 °C/vacuum/336h.

Tensile Properties ISO 527-3 – Tensile strength



Tensile Properties ISO 527-3



ZELLAMID® 350 XF

DIMENSIONS
ON STOCK

ZELLAMID® 350 XF RODS

ø mm	Tolerance mm	Length mm	Weight kg/piece	Availability
30	+0,2 / +1,0	1000	0,81	[+]
30	+0,2 / +1,0	3000	2,43	[+]
50	+0,3 / +1,3	1000	2,22	[+]
50	+0,3 / +1,3	3000	6,65	[+]
80	+0,4 / +2,0	3000	17,21	[+]
100	+0,6 / +2,5	1000	8,97	[+]
100	+0,6 / +2,5	3000	26,91	[+]
120	+0,8 / +3,5	3000	39,03	[+]
150	+1,0 / +4,2	3000	60,96	[+]

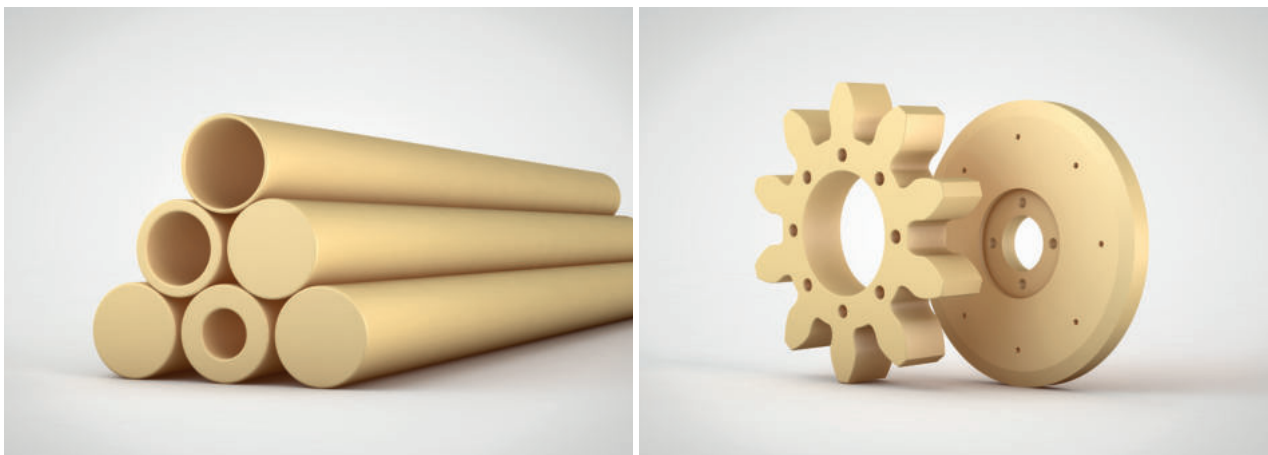
ZELLAMID® 350 XF PLATES

Thickness mm	Tolerance mm	Width x Length mm	Weight kg/plate	Availability
10	+0,2 / +1,1	1000 x 2000	23,83	[+]
20	+0,3 / +1,5	1000 x 2000	46,86	[+]
30	+0,5 / +2,5	1000 x 2000	70,59	[+]
40	+0,5 / +2,5	1000 x 2000	92,96	[+]

ZELLAMID® 350 XF TUBES

Nominal Size		Tolerance		Length mm	Weight kg/tube	Availability
OD mm	ID mm	OD mm	ID mm			
150	100	+4,5 / +1,1	-2,0 / -6,5	1000	12,39	[+]
150	100	+4,5 / +1,1	-2,0 / -6,5	3000	37,17	[+]

[+] Product on stock



Representative illustration

ZELLAMID® 350 XF

TECHNICAL PROPERTIES

ZELLAMID®	Unit	Test Method	350 XF	202 PA 6	PA12 Extruded ³	PA12 Cast ³	PE-UHMW ³	TPU Elastollan C74D ³	TPE ZC100 D40 ³
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Mechanical Properties									
Yield stress	Mpa	ISO 527	57	79	46	60	17	45	26
Elongation at break	%	ISO 527	> 300	70	280	55	>50	>300	---
Tensile strength	MPa	ISO 527	1900	3200	1500	2200	720	730	---
Bending Modulus (flexural test)	MPa	ISO 178	1659	3000	---	2400	---	---	670
Flexural Strength	MPa	ISO 178	67,2	110	55	90	---	---	---
Charpy Impact strength +23°C	kJ/m ²	ISO 179/1eU	---	no break	no break	no break	---	no break	---
Charpy notched Impact strength +23°C	kJ/m ²	ISO 179/1eA	7,2	6,4	7	> 15	---	120	20
Shore D Hardness	---	ISO 868	76	82	73	---	63	73	56
Ball indentation hardness	N/mm ²	ISO 2039-1	79,5	172	95	---	38	---	---
Compressive Modulus	MPa	ISO 604	1.647	2.400	---	---	---	---	---
Compressive stress at					---	---	---	---	---
1 % nominal strain ¹	MPa	ISO 604	17	25	---	---	---	---	---
2 % nominal strain ¹	MPa	ISO 604	33	49	---	---	---	---	---
5 % nominal strain ¹	MPa	ISO 604	54	79	---	---	---	---	---

Thermal Properties									
Heat distortion temperature, Method A	°C	ISO 75	80	70	50	---	42	---	---
Melting temperature	°C	ISO 3146	199	220	180	190	132	---	---
Max. service temperature for few hours operation	°C	---	160	170	150	150	120	---	---
Service Temperature long term	°C	---	90	100	95	110	80	---	---
Minimum Service temperature	°C	---	-50	-40	-70	-60	-200	---	---
Specific heat capacity	J/(g.K)	IEC 1006	1,7	1,7	1,6	1,7	1,84	---	---
Thermal conductivity, Method A	W/(K.m)	---	0,3	0,33	0,23	0,23	0,42	---	---

Elektrische Eigenschaften									
Dielectric constant at 1MHZ	---	IEC 250	3,1	3,5	2,5	3,7	3,0	4	---
Dissipation factor tan δ at 1 MHz	---	IEC 250	0,02	0,03	0,03	0,03	0,01	0,03	---
Dielectric strength	KV/mm	IEC 243	34	25	27	50	45	31	---
Volume resistivity	Ω.cm	IEC 93	10 ¹⁴	10 ¹³	10 ¹³	10 ¹⁶	20 ¹⁴	10 ¹³	---
Surface resistivity	Ω	IEC 93	10 ¹⁵	10 ¹³	10 ¹³	10 ¹³	10 ¹²	---	---

Additional Data									
Mass density	g/cm ³	ISO 1183	1,07	1,13	1,01	1,03	0,93	1,25	0,9
Moisture absorption at 23°C, 50% RH	%	ISO 62	2,1	3	0,8	0,9	<0,1	0,5	---
Water absorption at 23°C	%	ISO 62	6	9	1,5	1,4	<0,1	1,4	---
Flammability according to UL Standard	---	UL 94	HB	HB	HB	HB	---	HB	---

Specimen dry, room temperature. All information is without warranty and liability. Printing and typographical errors reserved.

¹(1mm/min) ²Ra=0,35 -0,45 µm (steel disc), v=0,3 m/s, p=3 N/mm² time T>16 h ³Values are obtained from literature.

klepsch group - the plastic power network



SENOPLAST

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seletec®

SENCO

SENO SPEZIALMASCHINEN
Sondermaschinen- und Stahlbau

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