



Reifenhäuser

REILOY

The Extrusioners

Highly wear-resistant barrels for injection molding and extrusion

Sustainable increase in production efficiency by the use of our bimetallic barrels optionally protected against wear and/or corrosion. We will gladly advise you on the best combination of our bimetallic alloys for your custom requirements.

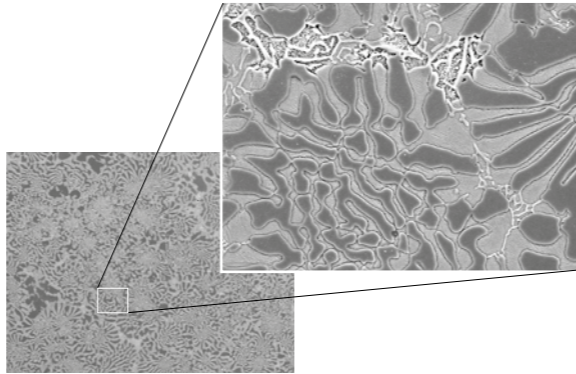
Base materials

Material	R _m [MPa]	R _{p0,2} at 300°C [MPa]
Reiloy Standard	980	580
C60	800	360
NiCr22Mo9Nb	630	300

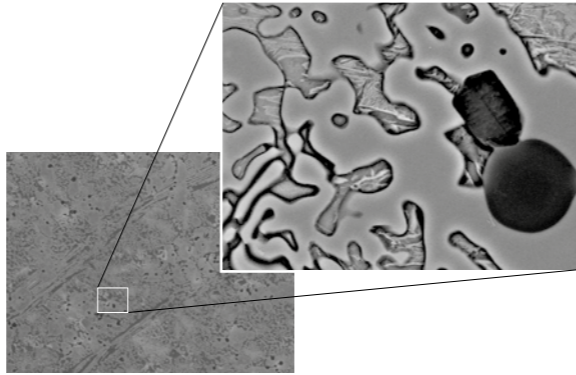
Alloy comparison matrix

Alloy	Base element	Wear resistance	Corrosion resistance
Select R115	Ni	+	++++
Smart R121	Fe	+++	+++
Advanced R131	Fe	++++	++++
Advanced R239	Ni	++++	++++
Premium R241	Ni	+++++	++++

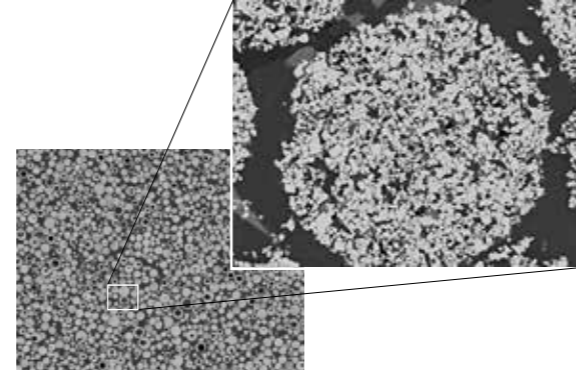
Smart

R121	Excellent wear resistance and good corrosive resistance. Suitable for processing plastics with up to 30 % fiberglass content	
Layer Thickness	1.5 mm	
Surface roughness R_a	min. 0.2 – max. 0.8	
Inner diameter	14 – 400 mm	
Outer diameter	max. 600 mm	
Length	max. 9000 mm	
Hardness at room temperature	min. 65 HRC	
Main alloy components	Cr, Ni, Mo, B	
Microstructure description	Martensitic iron-based alloy with primary solidified chromium carbides and carbon-boride phases	

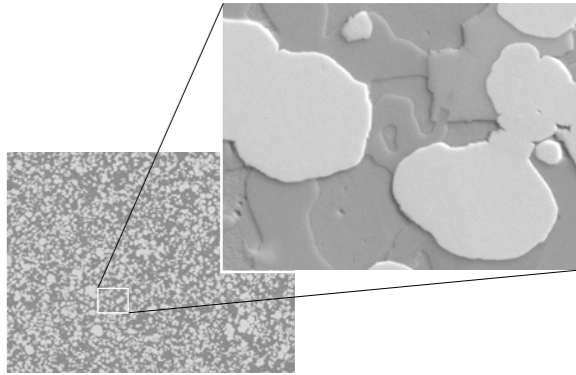
Advanced

R131	Very high wear and corrosive resistance with enhanced ductility. Suitable for processing plastics with up to 40 % fiberglass content	
Layer Thickness	1.5 mm	
Surface roughness R_a	min. 0.2 – max. 0.8	
Inner diameter	14 – 90 mm	
Outer diameter	max. 230 mm	
Length	max. 3000 mm	
Hardness at room temperature	min. 60 – 64 HRC	
Main alloy components	Fe, Cr, V, B, Ni	
Microstructure description	Martensitic iron-based alloy reinforced with primary vanadium carbides and carbon-boride phases	

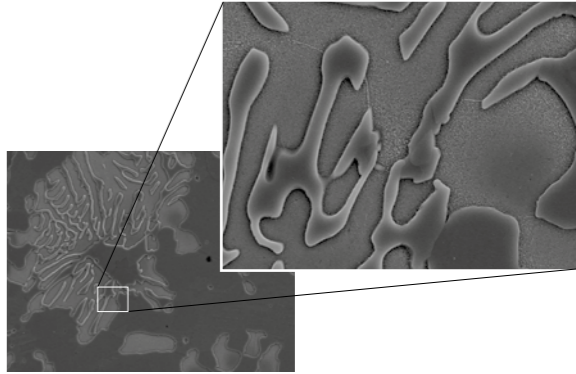
Advanced

R239	High wear resistance with maximum corrosive resistance	
Layer Thickness	min. 1.0 mm	
Surface roughness R_a	min. 0.2 – max. 0.8	
Inner diameter	18 – 165 mm	
Outer diameter	max. 290 mm	
Length	max. 3000 mm	
Hardness at room temperature	min. 58 HRC	
Main alloy components	W, Cr, B	
Microstructure description	Dispersive hardening of a highly corrosive-resistant Ni matrix alloy with common tungsten carbides	

Premium

R241	Maximum wear and corrosive resistance	
Layer Thickness	min. 1.0 mm	
Surface roughness R_a	min. 0.3 – max. 0.8	
Inner diameter	15 – 300 mm	
Outer diameter	max. 600 mm	
Length	max. 9000 mm	
Hardness at room temperature	min. 59 HRC	
Main alloy components	W, Cr, B	
Microstructure description	Dispersive hardening of a highly corrosive-resistant Ni matrix alloy with thermally stable tungsten carbides	

Select

R115	Maximum corrosion resistance	
Layer Thickness	min. 1.5 mm	
Surface roughness R_a	min. 0.2 – max. 0.8	
Inner diameter	15 – 105 mm	
Outer diameter	max. 350 mm	
Length	max. 3000 mm	
Hardness at room temperature	min. 55 HRC, Di > 60 mm min. 47 HRC	
Main alloy components	Co, Cr, B	
Microstructure description	Nickel-cobalt base alloy with fine precipitation of primary solidified nickel borides and eutectically solidified chromium carbides	

Plasticizing unit Recommended material combinations

Barrel \ Screw	Smart Through-hardened tool steel	Premium Through-hardened PM-HIP tool steel	Smart Nitrided steel	Advanced R331	Premium R341	Select R512
Nitrided steel	++	-	+++	+++	+++	++
Smart R121	+++	++	++	+++	+++	++
Advanced R131	+++	++	++	+++	+++	++
Advanced R239	+++	++++	-	+++	++++	-
Premium R241	+++	+++	-	+++	++++	-
Select R115	-	-	-	-	-	++

Barrel matrix

Overview by plastic

Application	Smart	Advanced	Premium	Select
Injection Molding	Reiloy Standard R121	Reiloy Standard R131 R239	Reiloy Standard R241	Reiloy Standard or NiCr22Mo9Nb R115
Extrusion	C60 (1.0601) R121	Reiloy Standard R131 R239	Reiloy Standard R241	Reiloy Standard or NiCr22Mo9Nb R115

These are recommendations; as required, some raw materials may need alternative treatment.

Raw material	< = 30% filler	< 40% filler	> 40% filler
ABS	Smart / Advanced	Advanced / Premium	Premium
ASA	Smart / Advanced	Advanced / Premium	Premium
CA	Smart / Advanced	-	-
COC	Smart / Advanced	-	-
EVA	Smart / Advanced	Advanced / Premium	Premium
HDPE	Smart / Advanced	Advanced / Premium	Premium
HIPS	Smart / Advanced	Smart / Advanced	Premium
LDPE	Smart / Advanced	Advanced / Premium	Premium
PA	Smart / Advanced	Advanced / Premium	Premium
PBT	Smart / Advanced	Advanced / Premium	Premium
PC	Smart / Advanced	-	-
PEEK	Smart / Advanced	Advanced / Premium	Premium
PEI	Smart / Advanced	Advanced / Premium	Premium
PESU	Smart / Advanced	Advanced / Premium	Premium
PET	Smart / Advanced	Advanced / Premium	Premium
PF	Smart / Advanced	-	-
PFA	Select**	-	-
PMMA	Smart / Advanced	-	-

Raw material	< = 30% filler	< 40% filler	> 40% filler
POM	Smart / Advanced	Advanced / Premium	Premium
PP	Smart / Advanced	Advanced / Premium	Premium
PPA	Smart / Advanced	Advanced / Premium	Premium
PPS	Smart / Advanced	Advanced / Premium	Premium
PPSU	Smart / Advanced	Advanced / Premium	Premium
PS	Smart / Advanced	-	-
PS, transparent	Smart / Advanced	-	-
PSU	Smart / Advanced	Advanced / Premium	Premium
PTFE	Select**	-	-
PVC-C	Smart / Advanced	Advanced / Premium	Premium
PVC-P	Smart / Advanced	Advanced / Premium	Premium
PVC-U	Smart / Advanced	Advanced / Premium	Premium
PVDF	Smart / Advanced	-	-
SAN	Smart / Advanced	-	-
SB	Smart / Advanced	-	-
TPE	Smart / Advanced	Advanced / Premium	Premium
TPU	Smart / Advanced	Advanced / Premium	Premium

* Depending on the material ** Flange face surface armoring or nickel-plated