



Reifenhäuser

REILOY

The Extrusioners

Complete screws in Reiloy quality.

For processing thermoplasts, duroplasts, and elastomers for extrusion and injection molding. We manufacture most varied screw geometries with our state-of-the-art production lines.

With our technical expertise and experience, we design screws specifically for improving the efficiency of your production processes and applications or manufacture completely according to your drawings.

Armoring alloys for screws with armored flights

Screw diameter	40 – 300 mm
Length	max. 9000 mm
Surface coating	ion-nitrided or hard chrome plated
Design	Screw blank ready for installing according to drawing or Reiloy geometry design

Iron-based armoring alloys

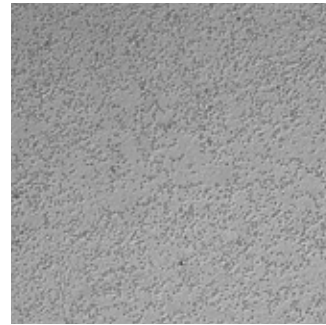
RC3

Highest wear protection with good corrosion resistance

Hardness at room temp. min. 56 HRC

Main alloy components V, Cr

Microstructure descr. Martensitic iron-based alloy with primary vanadium monocarbide (VC) precipitate as well as Cr_7Cr_3 chromium carbides.



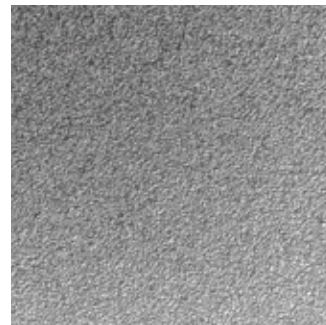
RC5

Highest wear protection with very good corrosion resistance

Hardness at room temp. min. 57 HRC

Main alloy components V, Cr, Ni

Microstructure descr. Martensitic iron-based alloy with primary fine vanadium monocarbide (VC) precipitate as well as chromium carbides (Cr_7Cr_3).



Nickel-based armoring alloys

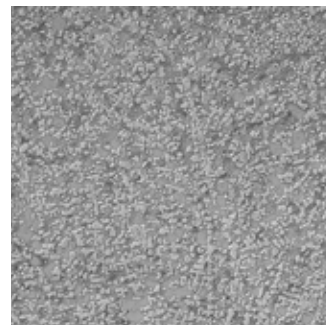
RP50

High wear protection with very good corrosion resistance

Hardness at room temp. min. 49 HRC

Main alloy components Mo, Cr, B

Microstructure descr. Nickel cobalt base alloy with primary solidified Ni_2B nickel borides and Mo-Si-C Laves phases. Also eutectic solidified Cr_7Cr_3 chromium carbide as well as Ni_3B nickel borides.



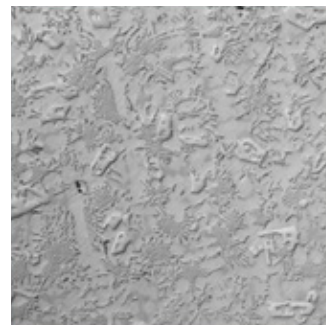
Colmony 56® (nur USA)

Good wear protection with good corrosion resistance

Hardness at room temp. min. 52 HRC

Main alloy components Cr, B, W

Microstructure descr. Nickel cobalt base alloy with primary solidified Ni_2B nickel borides. Also eutectic solidified Cr_7Cr_3 chromium carbide as well as Ni_3B nickel borides.



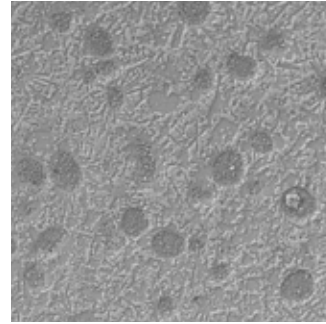
Colmony 83® (only USA)

Highest wear protection with best corrosion resistance

Hardness at room temp. min. 50 HRC

Main alloy components Cr, W

Microstructure descr. Tungsten carbide dispersion hardened nickel-chromium-tungsten base alloy.

**Cobalt-based armoring alloys****RS12**

Optimal wear and corrosion protection at high temperatures

Hardness at room temp. min. 45 HRC

Main alloy components Cr, W

Microstructure descr. Dendritic cobalt base matrix. Eutectically precipitated mixed tungsten and chromium carbides in the spaces between dendrites.

**Base materials**

Material	Material no.	R _{p0,2} (in Mpa)	R _m (in MPa)
31CrMoV9	1.8519	780	850
X35CrMo17-1	1.4122	600	800
NiCr22Mo9Nb	2.4856	425	870
X38CrMo16	1.2316	600	800
42CrMo4 (AISI 4140 – only USA)	1.7225	500	750
36CrNiMo4 (AISI 4340 – only USA)	1.6511	500	750

Alloy comparison matrix

Alloy	Base element	Wear resistance	Corrosion resistance
RC3	Fe	+++++	++
RC5	Fe	+++++	+++
RP50	Ni	+++	++++
Colmony 56® (only USA)	Ni	+++	+++
Colmony 83® (only USA)	Ni	++++	++++
RS12	Co	++	+++

Through-hardened screws

Screw diameter	14 – 70 mm
Length	max. 2500 mm
Design	Screw ready for installing according to drawing or Reiloy geometry design

Material	Material short name	Wear resistance	Corrosion resistance
1.2379 (AISI D2)	X153CrMoV12	+++	+++
PM steel	PMX190CrVMo20-4	++++	++++
PM steel	PMX190VCrMo9-5	++++	+++

Plasticizing unit

Recommended material combinations

Screw

Barrel	Through-hardened tool steel	Through-hardened PM tool steel	Nitrided steel	RC3	RC5	RP50	Colmony 56®	Colmony 83®	RS12
R121	+++	++	++	+++	+++	+++	++	++	++
R131	+++	++	++	+++	+++	+++	++	++	++
R115	-	-	-	-	-	-	-	-	++
R215	+++	+++	-	++++	++++	++	++	++	-
R216	+++	+++	-	++++	++++	++	++	++	-
Nitrided steel	++	-	+++	+++	+++	+	+	-	++

Design

Screws with armored flights

By employing a PTA built-up welding, we apply our highly wear-resistant armoring alloys before the machining the geometry. This also protects the web edges – a very good wear resistance and thus a long service life results.

