



**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.

## Armouring alloys for screws with armored flights

<b>Screw diameter</b>	40 – 300 mm
<b>Length</b>	max. 9000 mm
<b>Surface coating</b>	ionitrided or hard chrome plated
<b>Design</b>	Screw blank Screw finish according to drawing Screw finish Reiloy geometry design

## Iron-based armouring alloys

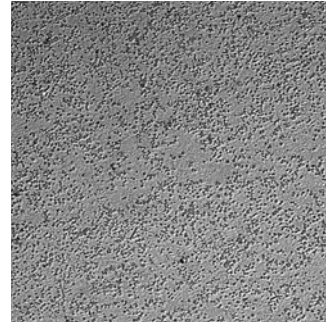
### RC3

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.



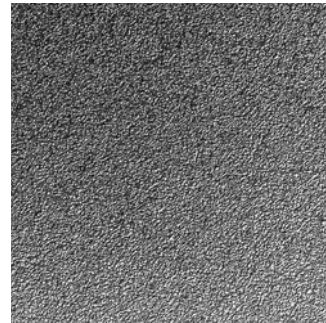
### RC5

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 armouring alloys

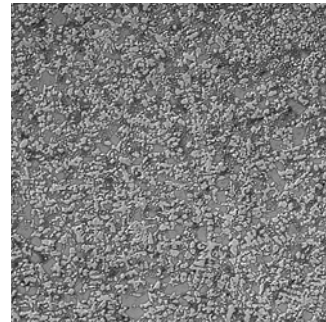
### RP50

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  $Ni_3B$  nickel borides and Mo-Si-C Laves phases. Also eutectic solidified  $Cr_7Cr_3$  chromium carbide as well as  $Ni_3B$  nickel borides.



## Cobalt-based armouring alloys

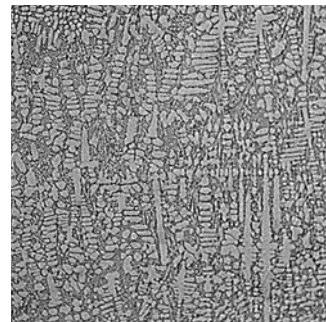
### RS12

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 <sub>p0,2</sub> (in Mpa)	R <sub>m</sub> (in MPa)
31CrMoV9	1.8519	780	850
X35CrMo17-1	1.4122	600	800
NiCr22Mo9Nb	2.4856	425	870
X38CrMo16	1.2316	600	800

## Alloy comparison matrix

Alloy	Base element	Wear resistance	Corrosion resistance
RC3	Fe	+++++	+++
RC5	Fe	+++++	+++
RP50	Ni	+++	++++
RS12	Co	++	+++

# Through-hardened screws

<b>Screw diameter</b>	14–70 mm
<b>Length</b>	max. 2500 mm
<b>Design</b>	Screw Screw finish according to drawing Screw finish Reiloy geometry design

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

# Plasticizing unit

## Recommended material combinations

Barrel	Screw						
	Through-hardened tool steel	Through-hardened PM tool steel	Nitrided steel	RC3	RC5	RP50	RS12
R121	+++	++	++	+++	+++	+++	++
R131	+++	++	++	+++	+++	+++	++
R115	-	-	-	-	-	-	++
R215	++	++	-	+++	+++	++	-
R216	++	++	-	+++	+++	++	-

## Design

### Screws with armored flights

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

