



**Reifenhäuser**

REILOY

The Extrusioners

# Screws in Reiloy Quality

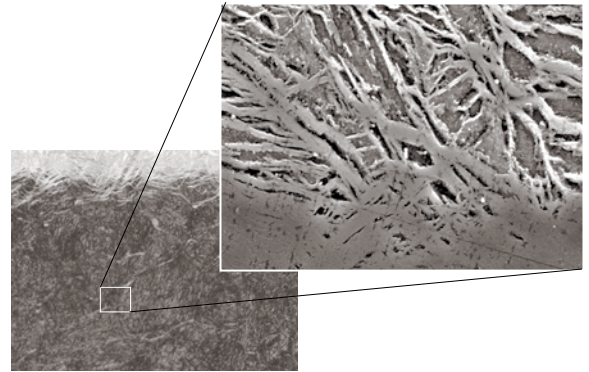
For processing thermoplastics, duroplasts, and elastomers for extrusion and injection molding. Backed by our technical capabilities and experience, we design screws customized to your requirements so that you can boost the efficiency of your production sustainably. Alternatively, we can also manufacture screws in full compliance with your drawing. Whatever you decide, we are capable of manufacturing a wide range of screw geometries on our ultra-modern production facilities.

## Armoring alloys for screws with armored flights

<b>Screw diameter</b>	40 – 300 mm
<b>Length</b>	max. 9000 mm
<b>Surface coating</b>	Ion-nitrided, gas-nitrided, hard chrome-plated, or PVD-coated
<b>Design</b>	Screw according to drawing, or Reiloy geometry design

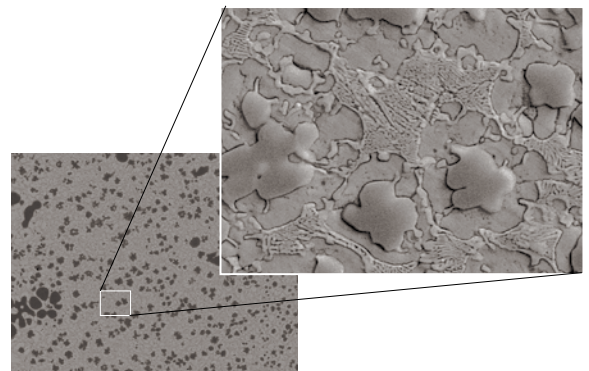
## Smart

<b>Nitriding steel</b>	High surface hardness
<b>Surface hardness at room temperature</b>	900 – 1,100 HV5
<b>Main alloy components</b>	Cr, Al, Ni
<b>Microstructure description</b>	Nitride-rich edge zone



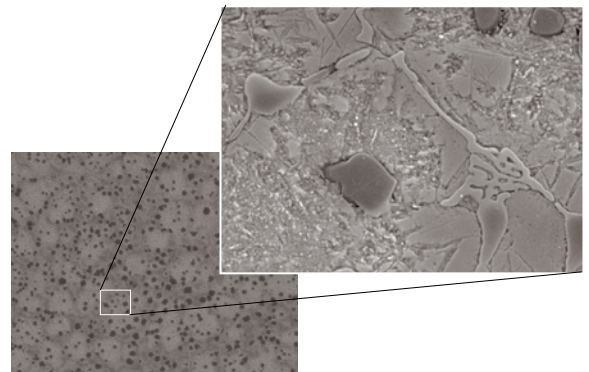
## Advanced

<b>R331</b>	High wear protection
<b>Hardness at room temperature</b>	min. 56 HRC
<b>Main alloy components</b>	Vanadiumcarbide, Cr
<b>Microstructure description</b>	Martensitic iron-based alloy reinforced by vanadium carbide



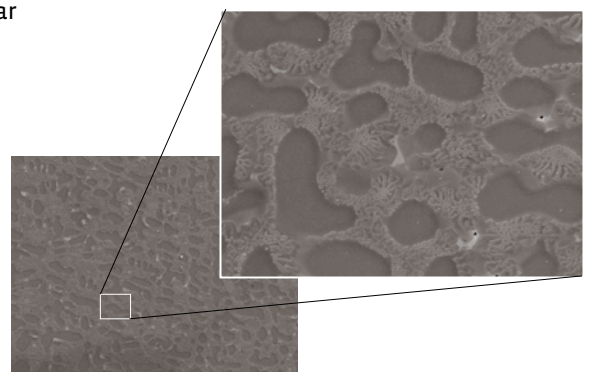
## Premium

<b>R341</b>	Highest wear protection with very good corrosion resistance
<b>Hardness at room temperature</b>	min. 56 HRC
<b>Main alloy components</b>	Vanadiumcarbide, Cr
<b>Microstructure description</b>	Martensitic iron-based alloy reinforced by vanadium carbide
<b>Screws ≤ Ø 70 mm</b>	Also available in through-hardened PM-HIP tool steel

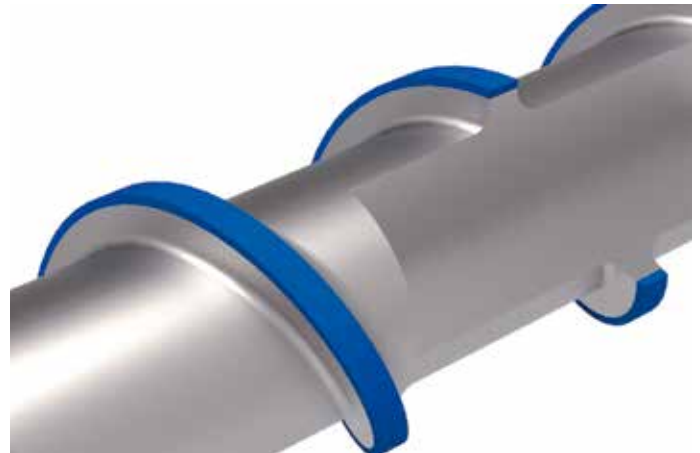
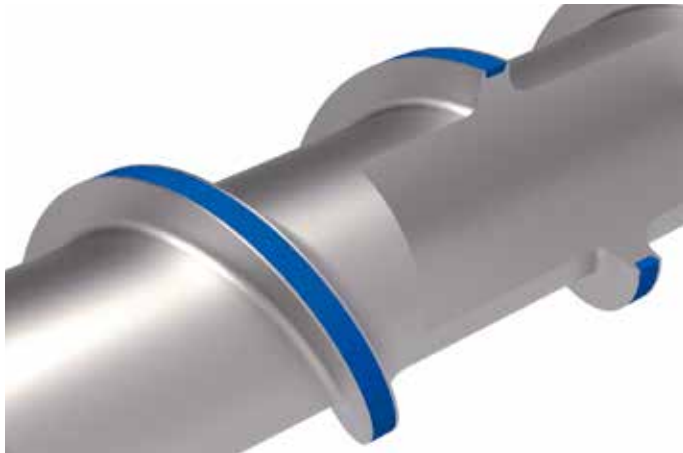


## Select

<b>RS12</b>	Highest corrosion resistance with good wear protection – also at high temperatures
<b>Hardness at room temperature</b>	min. 45 HRC
<b>Main alloy components</b>	Cr, W
<b>Microstructure description</b>	Cobalt base matrix with mixed tungsten and chrome carbides



## Armored screws in Reiloy quality



### Advanced

Screws for plastic with low filler content, greater wear protection against abrasion on outer flight surfaces.

### Premium

Screws for plastic with filler content of >30 %, maximum wear protection against abrasion, corrosion, and adhesion. Complete flight surface protection in armored quality; suitable for use in high-wear applications.

### Base material

Material	Material-number	R <sub>p0.2</sub> (MPa)	R <sub>m</sub> [MPa]
31CrMoV9	1,8519	780	850
X39CrMo17-1	1,4122	550	750
X38CrMo16	1,2316	600	800
NiCr22Mo9Nb	2,4856	425	870

# Plasticizing unit Recommended material combinations

Screw \ Barrel	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	-	-	-	-	-	++

# Screw matrix

## Overview by plastic

Size	Smart	Advanced	Premium	Select
<b>Screws &lt; Ø 50</b>	1.2379 through-hardened or 1.8550 nitrided	1.2316 or 1.8519 R331	PM-HIP through-hardened	2.4856 RS12
<b>Screws &gt; = Ø 50</b>	1.8550 nitrided	1.2316 or 1.8519 R331	1.2316 or 1.8519 R341	2.4856 RS12

Depending on the application, screws can receive additional treatment; nitrided, chrome-plated, PVD-coated.  
These are recommendations; as required, some raw materials may need alternative treatment.

Raw material	< 10% filler	< 30% filler	> 30% filler
ABS	Advanced / Premium	Premium	Premium
ASA	Advanced / Premium	Premium	Premium
CA	Smart / Advanced	-	-
COC	Advanced** / Premium	-	-
EVA	Advanced** / Premium	Premium**	Premium**
HDPE	Smart / Advanced	Advanced / Premium	Premium
HIPS	Smart / Advanced	Advanced / Premium	Premium
LDPE	Smart* / Advanced	Advanced / Premium	Premium
PA	Advanced / Premium	Premium	Premium
PBT	Advanced / Premium	Premium	Premium
PC	Premium**	-	-
PEEK	Premium**	Premium**	Premium**
PEI	Advanced / Premium	Premium	Premium
PESU	Advanced / Premium	Premium	Premium
PET	Advanced** / Premium	Premium**	Premium**
PF	Select	-	-
PFA	Select	-	-
PMMA	Premium**	-	-

Raw material	< 10% filler	< 30% filler	> 30% filler
POM	Advanced / Premium	Premium	Premium
PP	Smart* / Advanced	Advanced / Premium	Premium
PPA	Advanced / Premium	Premium	Premium
PPS	Advanced / Premium	Premium	Premium
PPSU	Advanced / Premium	Premium	Premium
PS	Smart / Advanced	-	-
PS, transparent	Advanced** / Premium	-	-
PSU	Advanced / Premium	Premium	Premium
PTFE	Select	-	-
PVC-C	Advanced** / Premium	Premium**	Premium**
PVC-P	Advanced** / Premium	Premium**	Premium**
PVC-U	Advanced** / Premium	Premium**	Premium**
PVDF	Select	-	-
SAN	Advanced** / Premium	-	-
SB	Advanced** / Premium	-	-
TPE	Advanced** / Premium	Premium**	Premium**
TPU	Advanced** / Premium	Premium**	Premium**

\* Depending on the material    \*\* Additional surface coating required