



Reifenhäuser

REILOY

The Extrusioners

The experts in wear protection.

Our bimetallic barrel alloys provide optimal protection against wear and/or corrosion. Reiloy not only stands for unique wear protection; the variety of our injection molding and extrusion barrel applications is vast, too, so that all components meet your parameters. We are happy to advise you on the selection of a suitable bimetallic alloy, one that offers optimal wear protection for your production process.

Base materials

| Material | R _m (in MPa) | R _{p0,2} bei 300°C (in Mpa) |
|-----------------|----------------------------|---|
| Reiloy Standard | 980 | 580 |
| C60 | 800 | 360 |
| NiCr22Mo9Nb | 630 | 300 |

other materials on request

Alloy comparison matrix

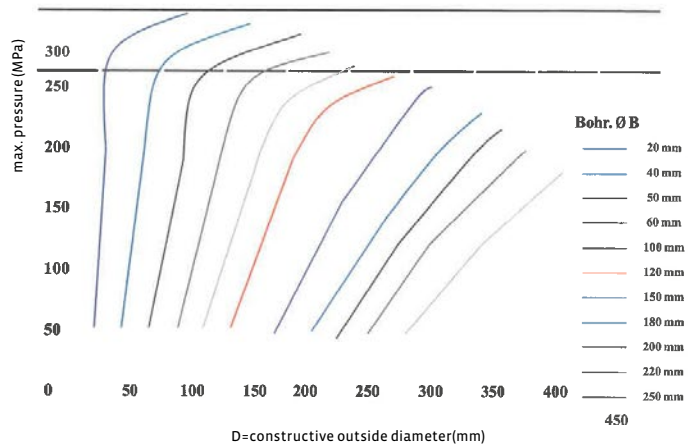
| Product | Base element | Wear resistance | Corrosion resistance |
|---------|--------------|-----------------|----------------------|
| R115 | Ni | + | +++++ |
| R121 | Fe | +++ | +++ |
| R131 | Fe | ++++ | ++++ |
| R215* | Ni-Co | +++++ | +++++ |
| R216 | Ni | +++++ | +++++ |

* only for barrel lengths > 3000 mm

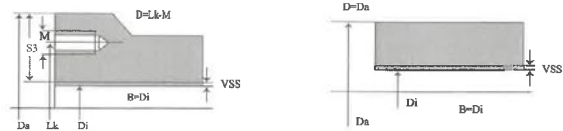
Barrel material Reiloy Standard at 350° operating temperature

For very high pressures, in particular with injection molded barrels, we recommend the special Reiloy Standard Cr-V steel alloy.

The chromium vanadium alloy special steel achieves especially high strengths due to the carbon content of 0.5 percent. Additional micro-alloying elements improve the die elongation at break, notch impact strength and weldability. Thus this material also meets technically demanding customer specifications and allows for maximal inner pressures in barrels.



Maximum permissible pressure inside the barrel, dependent on the outside diameter D, for different bore diameters B



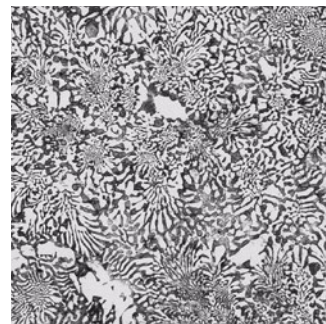
Iron-based armouring alloys

R121

Outstanding wear characteristics and good corrosion resistance

Suitable for processing plastics containing up to 30% glass fiber

| | |
|-------------------------------|--|
| Layer thickness | 1,5 mm |
| Surface roughness Ra | min. 0,2 – max. 0,8 |
| Inside diameter | 14 – 400 mm |
| Outside diameter | max. 600 mm |
| Length | max. 9000 mm |
| Design | Barrel blank; barrel semi-finished product; finished barrel |
| Hardness at room temp. | min. 65 HRC |
| Main alloy components | Cr, Ni, Mo, B |
| Microstructure descr. | Martensitic iron-based alloy with primary solidified Fe/Cr_7C_3 , $Fe/Cr_{23}C_6$, Fe/Cr_2B hard phases as well as carbon-boride phases |

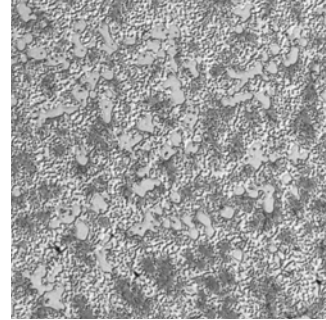


R131

Very high wear and corrosion protection, at improved ductility

Suitable for processing plastics containing up to 40% glass fiber

| | |
|-------------------------------|---|
| Layer thickness | 1,5 mm |
| Surface roughness Ra | min. 0,2 – max. 0,8 |
| Inside diameter | 14 – 90 mm |
| Outside diameter | max. 230 mm |
| Length | max. 3000 mm |
| Design | Barrel blank; barrel semi-finished product; finished barrel |
| Hardness at room temp. | min. 60 – 64 HRC |
| Main alloy components | Fe-Cr-V-B-Ni-C |
| Microstructure descr. | Martensitic iron-based alloy with primary solidified vanadium carbides, Fe/Cr ₇ C ₃ , Fe/Cr ₂₃ C ₆ , Fe/Cr ₂ B hard phases as well as carbon-boride phases |

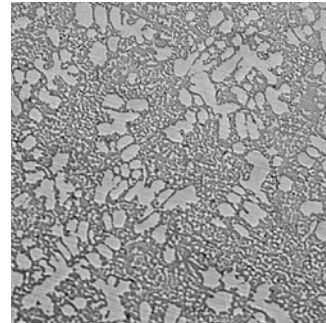


Nickel-based armouring alloys

R115

Maximum corrosion resistance

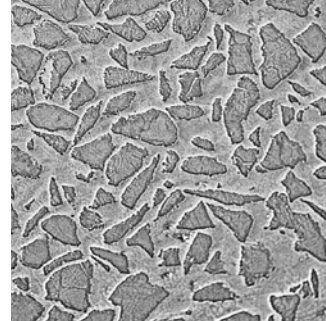
| | |
|-------------------------------|---|
| Layer thickness | 1,5 mm |
| Surface roughness Ra | min. 0,2 – max. 0,8 |
| Inside diameter | 18 – 105 mm |
| Outside diameter | max. 350 mm |
| Length | max. 3000 mm |
| Design | Barrel blank; barrel semi-finished product; finished barrel |
| Hardness at room temp. | min. 49 HRC; Di > 70 mm – min. 47 HRC |
| Main alloy components | Co, Cr, B |
| Microstructure descr. | Nickel-cobalt-base alloy with fine precipitations of primary solidified Ni ₂ B-nickel borides, eutectic solidified Cr ₇ C ₃ chromium carbides and Ni ₃ B nickel borides |



R215

Maximum wear protection,
maximum corrosion resistance

| | |
|-------------------------------|---|
| Layer thickness | 1,0 mm |
| Surface roughness Ra | min. 0,3 – max. 0,8 |
| Inside diameter | as of 105 mm |
| Outside diameter | as of 260 mm up to max. 600 mm |
| Length | as of 3000 mm up to max. 9000 mm |
| Design | Barrel blank; barrel semi-finished product; finished barrel |
| Hardness at room temp. | min. 59 HRC |
| Main alloy components | Co, W, Cr, B |
| Microstructure descr. | Dispersion hardening of a highly corrosion resistant Ni-Co matrix alloy with thermally stable tungsten carbides |

**R216**

Maximum wear and corrosion
protection with good machinability

| | |
|-------------------------------|--|
| Layer thickness | min. 1,0 mm Di 15 mm – min. 0,75 mm Di 14 mm – min. 0,5 mm |
| Surface roughness Ra | min. 0,3 – max. 0,8 |
| Inside diameter | 14 – 105 mm |
| Outside diameter | max. 260 mm |
| Length | max. 3000 mm |
| Design | Barrel blank; barrel semi-finished product; finished barrel |
| Hardness at room temp. | min. 59 HRC |
| Main alloy components | W, Cr, B |
| Microstructure descr. | Dispersion hardening of a highly corrosion resistant Ni matrix alloy with thermally stable micro tungsten carbides |

