STANAL™ 400

As a solid-phase metal diffusion treatment performed at 400°C, STANAL™ 400 improves the GRIPPING resistance of stainless steel parts, without altering their corrosion resistance.

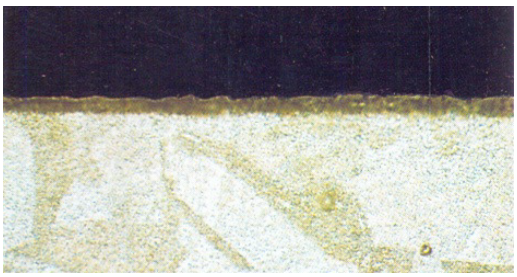
Application examples:

- Electrical connectors for the aerospace industry
- Hot gas take-off joints on aircraft engines
- Hydraulic fittings
- Stainless steel nuts and bolts for the nuclear industry
- Various parts for nuclear valves
- Caps for nuclear fuel containers
- Steam turbine blade fixing pins
- Door hinges for nuclear pools in demineralized water environments
- Mobile parts for robots working in hostile environments (nuclear, underwater exploration).
- Food mixers
- Meat grinder bearings
- Confectionery pistons
- Valve flaps
- Safety pins for agricultural equipment
- Perforator valves
- Distributor pistons
- Gears
- High-grade steel fasteners
- Martensitic chromium stainless steel fasteners
- Locking pins

Layer characteristics

Thanks to a thermal cycle never exceeding 400°C, diffusion phenomena, rigorously controlled, generate the hard metal alloys that form the STANAL™ 400 layer.

Thanks to this thermal cycle, STANAL™ 400 can be produced:



STANAL™ 400 on austenitic stainless steel

- on austenitic stainless steels, without the risk of precipitation of chromium carbides, so without altering the steel's stainless properties
- on structurally hardened martensitic stainless steels, without altering their mechanical properties.

HARDNESS: 350 to 450 HV depending on the steel treated.

COAT THICKNESS: 5 to 10 microns depending on steel treated.

Treatment qualities:

- Increased surface hardness
- Improved resistance to wear and seizure
- Good intrinsic resistance to oxidation and corrosion
- Excellent support for bonded coatings

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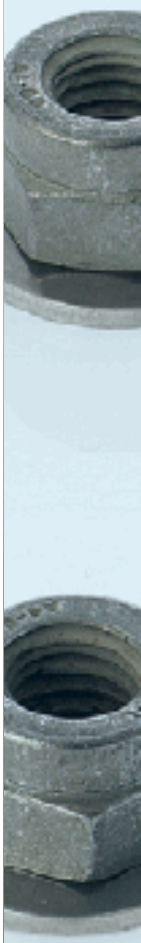

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Precautions to be taken:

- Complex-shaped parts should undergo a 2-hour stabilization treatment at 400°C with slow cooling, before machining.
- When manufacturing parts, a swelling of 12 ± 3 microns in diameter should be taken into account.
- No machining should be carried out after treatment, except for superfinishing such as polishing or roller burnishing.

Treatable materials

All austenitic stainless steels:

- For example: Z2 CN 18.8, Z2 CND 18.10, Z3 CND 18.12, Z6 CNDT 17.12, etc...
- Nickel-chromium martensitic stainless steels, suitable for heat treatment with tempering between 400 and 600°C. For example: Z6 CN 17.04, Z 15 CN 17.03, Z8 CND 14.04.
- Structural-hardening stainless steels: Z 12 CND 16.04, Z 6 CNU 17.04
- Refractory steels: Z 1 2 CND 2 5, Z 1 2 C NKDW 20, E Z 6 NCT 25

Specific conditioning:

- Bonded coatings: in cases of non-lubricated friction or in difficult environments, STANAL™ 400 treatment can be complemented by glide varnish coatings (see technical data sheets).
- Polishing: STANAL™ 400 can be brightened with a wire brush if a shiny appearance is desired. However, it is essential to use soft brushes with stainless steel bristles.
- Decontamination: STANAL™ 400 is resistant to decontamination solutions containing nitric acid.
- Passivation: STANAL™-treated parts can be passivated.

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