

## Surface technology products

The new generation of strip materials

### Special features of Sandvik surface technology products for tactile dome applications

- Excellent flatness and surface finish of coated steel strip
- Good processing properties during stamping for enhanced productivity
- Close thickness and width tolerances
- Superior adhesion between base material and coating
- Superior surface conductivity
- Products can be tailor-made to meet customer requirements
- Environmentally friendly manufacturing process

## Sandvik Santronic™ for tactile domes

Sandvik Santronic is a new and unique product specially developed for metallic tactile dome applications. All kinds of mechanical switch product, containing metal domes as the switch element, such as tactile membrane keypads, keyboards and other keypad-related products, can benefit from Sandvik dome materials in terms of contact reliability and long service life.

Sandvik Santronic provides low resistivity contacting, either through Ni or Ag surface layers and we claim superior low resistivity contact properties compared with conventionally plated materials. Our technology ensures high quality coating, resulting in excellent adhesion and purity.

Sandvik Santronic's high strength stainless steel spring materials provide the fatigue strength and relaxation resistance that will make tactile domes last through millions of actuation cycles.

A wide range of standard products is offered to ensure optimum and longterm performance for all kinds of tactile dome applications. We work closely with customers to understand and meet their specific needs and ensure the success of their product.

### Quality control

Sandvik ensures the visual and electrical quality of our surface technology products. We let our surface technology materials go through a standardised accelerated laboratory corrosion test and after testing the materials must meet our surface finish and electrical specifications.

#### Test

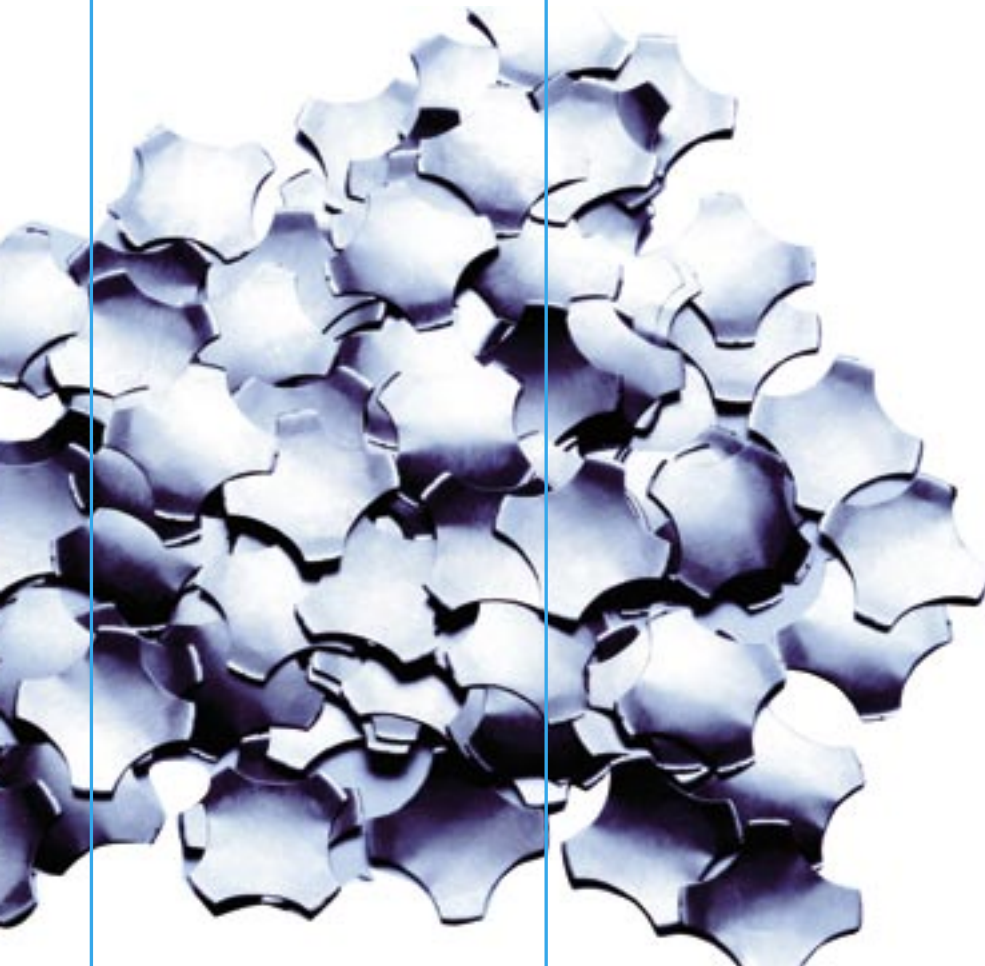
Corrosion – General atmosphere

#### Standardisation

IEC 60068-2-60

#### Information

10 days, 40°C, humid vapour (70%RH) containing NO<sub>2</sub> (0.2 ppm), H<sub>2</sub>S (0.01 ppm), Cl<sub>2</sub> (0.01 ppm)



# Material characteristics

## Stainless steel strip materials

Sandvik's stainless steel strip materials for tactile dome applications are characterised by their strength, formability and relaxation resistance.

Sandvik grade*	Standard	Chemical composition, nominal (%)						Distinguishing property
		C	Si	Mn	Cr	Ni	Other	
Santronic 301	ASTM 301 EN 1.4310	0.05–0.15	<2.0	<2.0	16.0–19.0	6.0–9.5	Mo=<0.8	Fatigue strength Relaxation resistance

\* Other grades and alloys, including non-magnetic stainless steel, are available on request.

## Mechanical properties, standard programme

A standard programme of stainless steel strip with dimensions and mechanical properties particularly suited to dome applications has been selected. This ensures that optimum performance and endurance of the Sandvik surface technology dome materials are achieved. Non-standard materials are available on request.

Tensile strength, $R_m$ MPa	Thickness range mm	Hardness HV	Recommended steel grade
2050 ± 100	0.030 – 0.060	600 ± 30	Sandvik Santronic 301
1900 ± 100	0.060 – 0.10	570 ± 30	Sandvik Santronic 301
1400 ± 100	0.070 – 0.10	430 ± 30	Sandvik Santronic 301

## Surface layer materials

High purity Ni and Ag coatings are offered to provide contact reliability to dome materials. Single and double-sided coatings are available in various thicknesses and with very close thickness tolerances.

Coating material	Std. thickness range* µm	Std. tolerance**
Ni	0.1 – 0.5	± 10%
Ag	0.1 – 1.0	± 10%

\* Other layer thicknesses are available on request

\*\* Closer tolerances are available on request

Recommendations are for guidance only, and the suitability of a material for a specific application can be confirmed only when we know the actual service conditions. Continuous development may necessitate changes in technical data without notice.

## Surfaces

Sandvik Santronic is normally delivered with class Y8 ( $R_{a, \text{mean}} = 0.08 \mu\text{m}$ ) surface roughness. This is the highest class available in the Sandvik surface roughness standard programme. Materials in other classes are available on request.

## Electrical properties

Coating material	Contact resistance	Load
Ni	< 100 mΩ	5 N
Ag	< 100 mΩ	5 N

