Sandvik products for nuclear power applications
Sandvik has a comprehensive quality assurance system and holds, for example, ASME Quality System Certificate as a Material Organisation.
As a leading supplier of advanced materials for the nuclear power industry, Sandvik fulfils the most stringent demands on product quality and quality assurance.

Sandvik has extensive experience in the materials field for nuclear power generation. For over 50 years we have delivered top-of-the-range products to nuclear power plants worldwide for both pressurized and boiling water reactors.

As a fully integrated supplier of tube, strip and wire in advanced materials, we control the entire manufacturing process – from the steel melt to the finished product. Sandvik’s unique ability in meeting material specifications lies in our extensive R&D resources and our expertise in producing materials exactly in accordance with customer specifications. In addition, we hold an exclusive position as the world’s largest independent, fully integrated manufacturer of nuclear fuel cladding tubes.

**A certified supplier**
Sandvik has a comprehensive quality assurance system implemented throughout the entire organisation. The company is certified to a number of quality management system standards, such as the ASME NCA 3800, ISO 9001, RCCM, and ISO/TS 16949. All our production units are also certified to ISO 14001, the international standard for environmental management. We are actively implementing the OHSAS 18001, the inter-national occupational health and safety management system specification.

**A safe and sure choice**
The stringent security and productivity demands on nuclear power plants leave no room for compromising on materials. Sandvik fulfils every material demand, from chemical composition and surface properties to quality control standards.

Since we are a research-based company with global presence we are able to quickly respond to market needs and customer demands.

Advanced materials are our speciality. Technical challenges are our driving force. That’s why the nuclear power industry and Sandvik are a perfect match.
A wide product range for nuclear power applications

Steam generator tubes
Steam generator tubing meeting the most stringent MIZ-30/70 requirements.

Nuclear fuel cladding tubes
Nuclear fuel cladding tubes for all nuclear fuel types.

Tube and pipe
Tube and pipe for a wide range of applications in the primary, secondary and auxiliary systems.
Welding products
Welding consumables for joint and overlay welding.

p.10

Strip
Strip for positioning grids, hold-down springs and debris filters.

p.12

Other products
Bar, hollow bar, billets for forging and different types of wire.

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Steam generator tubes

One of our tube mills in Sweden has been specifically designed for the manufacture of steam generator tubes. It includes state-of-the-art Non Destructive Examination (NDE) equipment. To date we have delivered more than 300,000 steam generator tubes meeting the most stringent Eddy Current Multi Frequency Inspection demands and with a Signal to Noise ratio of 15:1 or better.

**Materials:** Sandvik Sanicro™ 69 (Alloy 690)
Sandvik Sanicro 30 (Alloy 800)

**Sizes:** OD 10-25.4 mm

We have extensive experience of working with power plant owners and steam generator fabricators in Asia, Europe and the USA.
Nuclear fuel cladding tubes

Sandvik’s experience and ability to supply nuclear fuel cladding tubes cover all fuel designs and most technical specifications. We manufacture tubes for the following nuclear fuel types:

- PWR /VVER
- BWR
- CANDU
- AGR
- LMFBR

Since 1964 we have delivered nuclear fuel cladding tubes to around 100 reactor units worldwide.
Tube and pipe

Sandvik offers an extensive program of tube and pipe for a wide range of applications in the primary, secondary and auxiliary systems of nuclear power plants. Our standard product program includes more than 40 different materials and many other special steel grades can be supplied on request. Tubes are supplied in seamless, welded or welded and redrawn conditions.

Materials:  
- Austenitic stainless steels
- Duplex steels
- High-alloy austenitic stainless steels and Ni-based alloys

Sizes:  
OD 4.5-219.1 mm

Application examples:
- Piping systems for primary, secondary and auxiliary equipment
- Control rod guide tubes
- Heat exchangers
- Hydraulic and instrumentation systems
- Feeders for light water primary reactor cooling systems

Sandvik also offers a complete program of fittings and flanges in accordance with ANSI and ISO/DIN standards.
Sandvik offers a complete program of products for welding austenitic stainless steels, duplex steels and Ni-based alloys. Containing low contents of contaminants such as Cobalt, Copper, Boron and Vanadium, our products are adapted for the requirements of nuclear applications. Our 309L welding products have the optimized ferrite contents demanded by the nuclear industry. The product range includes consumables for the following welding processes:

- **Metal Inert Gas Welding**
- **Metal Active Gas Welding**
- **Tungsten Inert Gas Welding**
- **Submerged Arc Welding**
- **Electroslag Welding**
- **Manual Metal Arc Welding**

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Our consumables for welding Alloy 690 are high-performing products with good resistance to micro fissuring.
Welding products from Sandvik for joint and overlay welding of Alloy 690 (Sandvik Sanicro™ 69), a frequently used material for the construction of steam generators in nuclear power plants.
The Ni-based alloy Sandvik Sanicro™ 75X is specially suited to nuclear power applications, because of its extremely low Cobalt content (less than 0.05%).

Strip

Sandvik is one of the world’s leading manufacturers of strip steel. In nuclear power plant applications, Sandvik strip is found typically in positioning grids, hold-down springs and debris filters.
We produce wire for several different applications, e.g. guide rails for control rods and various types of springs.

Other products

Sandvik also manufactures a range of other products, such as:

- Bar and hollow bar
- Billets for forging
- Precision and spring wire
- Powder technology products
**Sandvik Group**
The Sandvik Group is a global high technology enterprise with 49,000 employees in 130 countries. Sandvik’s operations are concentrated on five business areas in which the group holds leading global positions in selected niches: Sandvik Mining, Sandvik Machining Solutions, Sandvik Materials Technology, Sandvik Construction and Sandvik Venture.

**Sandvik Materials Technology**
Sandvik Materials Technology is a world-leading developer and manufacturer of products in advanced stainless steels and special alloys for the most demanding environments, as well as products and systems for industrial heating.

**Quality management**
Sandvik Materials Technology has quality management systems approved by internationally recognized organizations. We hold, for example, the ASME Quality System Certificates as a Material Organization, approvals to ISO 9001:2008, ISO 17025:2005 and PED 97/23/EC. We also have product and/or shop approvals from bodies such as TÜV, JIS, DNV and Lloyd’s Register.

**Environment, health and safety**
Environmental awareness, health and safety are integral parts of our business and are at the forefront of all activities within our operation. We hold ISO 14001 and OHSAS 18001 approvals.

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