CaseStudy

SIMONA

atp advanced technology process

High-purity systems for semi-conductor production – the perfect SIMONA® product for all components

Top: automated wet-processing unit for the machining of silicon wafers; bottom left: fully automated supply systems for high-purity chemicals; bottom right: distribution systems for equipment ports

atp GmbH specialises in end-to-end concepts developed for applications in the semi-conductor industry, including the production of high-purity media distribution and disposal systems, as well as plant and process equipment. Sheets, pipes and fittings from the product groups SIMONA® PP white, SIMONA® PVC-GLAS, SIMONA® PVDF and SIMONA® PP-H AlphaPlus® were used for the production of two wet-processing units and ten chemical supply systems.

The project at a glance

Project
- Two automated wet-processing units
  L x W x H = 3.40 x 1.40 x 2.20 m
- Ten chemical supply systems with piping and distributors
  L x W x H = 2.40 x 1.50 x 2.10 m

Requirements
- High chemical resistance to acids and alkalis
- High rigidity
- High dimensional accuracy
- High surface quality
- UV stability

Client
Vishay Siliconix Itzehoe GmbH, Itzehoe, Germany

Contractor
atp GmbH, Ötzingen, Germany

Technical support
SIMONA AG, Technical Service Centre

Products used
Bodies:
- SIMONA® PP white Sheets

Doors:
- SIMONA® PVC-GLAS Sheets

Media-transporting components:
- SIMONA® PVDF Sheets, Pipes and Fittings
- SIMONA® PP-H AlphaPlus® Pipes and Fittings

Project period
2011

Duration of project
3 months

More overleaf ▶



From left to right: interior view of the chemical supply system; distribution systems for equipment ports; manual wet bench

Everything from a single source – SIMONA® products meet the most demanding requirements for chemical resistance

Initial situation

With the aim of expanding its production and research capacity, Vishay Siliconix Itzehoe GmbH was looking to secure the services of an experienced and proficient supplier to provide support during the planning stage and in the production of high-purity equipment systems for semi-conductor production. This technically and chemically demanding field of application meant that extremely stringent requirements were posed in terms of the purity and reliability of the materials to be used.

Task

The materials used had to comply with specific mechanical and chemical standards for the production of the various system sectors:

- Superior chemical resistance to high-purity acids and alkalis
- High resistance to stress cracking and corrosion
- Excellent processing properties
- High rigidity
- High surface quality
- Purity specifications
- UV stability

Solution

Within the area of body production, the high surface quality of the sheets made of SIMONA® PP white meant that these components met the clean-room conditions essential for semi-conductor technology. They also impressed due to their high levels of rigidity and excellent processing properties. The pipes and fittings made of SIMONA® PVDF and SIMONA® PP-H AlphaPlus® provided a key advantage when used for media-transporting components thanks to their high levels of chemical resistance and reliable corrosion resistance. The transparent sheets made of SIMONA® PVC-GLAS were the perfect solution for applications involving inspection and operational monitoring. The high quality of the materials used and the possibility of procuring all necessary materials for the various components from a single source – i. e. from SIMONA – meant that the units could be produced quickly and efficiently.

SIMONA® PP white 9002

Properties

- Permanent-heat stability
- High chemical resistance
- High corrosion resistance
- High surface quality
- High rigidity even at high temperatures
- UV stability

Areas of application

- Chemical tank and equipment construction
- Laboratory construction
- Food industry
- Mechanical engineering industry
- Semi-conductor industry

Range of products

- Extruded sheets in the following formats: 2000 x 1000 mm, 2440 x 1220 mm, 3000 x 1500 mm and 4000 x 2000 mm, thickness 1 to 30 mm
- Welding rods

Further information

SIMONA AG
Technical Service Centre
Phone +49 (0) 67 52 14-587
Fax +49 (0) 67 52 14-302
tsc@simona.de

atp GmbH
Neubitz 3
56244 Ötzingen, Germany
Phone +49 (0) 2 60 26 70 16-10
Fax +49 (0) 2 60 26 70 16-66
info@atp-gmbh.de
www.atp-gmbh.de

Printed on Hello Fat matt by Deutsche Papier.

11/2013 - 11/13 - 300 - GB - KE