



Industrie Service

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Plastics in Process Plant Construction

A Product Information Sheet by the Plant Engineering / Institute for Plastics Business Area

Nowadays, modern technical plastics are common in process plant construction. Safety components, such as apparatuses, (pressure) vessels, piping etc., are also made of plastics today. In the construction of chemical process plants in particular, designers, engineers and operators increasingly rely on components made of plastics (pipes, vessels, apparatuses and ducts) which offer a host of technical advantages:

- Excellent mechanical, chemical and thermal resistance
- Good electrical properties
- Good weather resistance
- High availability
- Long service life
- Low maintenance requirements

However, the operational safety, functionality, durability and last but not least the price of a component depend on:

- Familiarity with specific operating conditions
- Material selected
- Understanding of the material's mechanical and technological properties
- Component dimensioning
- Expert material processing and component manufacturing
- Quality assurance
- Expert assembly and operation

Our services

The planning and design of plastic components call for detailed familiarity with design data, process engineering and the mechanical, chemical and thermal properties of the materials in question. Based on our longstanding know-how in plastic apparatus construction and our extensive experience in mechanical, technical and chemical testing carried out in certified laboratories, we support you with the following services:

- Preparation and review of structural analyses (conventional calculations in line with national and international standards, Finite Element Analysis)
- Preparation of specifications for manufacturers, engineering offices and operators of plastic components
- Stress analyses of piping systems
- Process testing of new manufacturing procedures in line with national and international standards
- Personnel qualifications
- Preparation of quality assurance schemes
- Surveillance of manufacturer quality
- Third-party inspections
- Inspection of component assembly and installation
- Periodic inspection
- Failure analyses

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