



FLEXIBLY SHIELDED

Mobile components reliably shield the radiation emitted by a system at Technische Universität München.

The object

Forschungszentrum Jülich operates a pure nuclear research unit which is located in the research reactor facility of Technische Universität München. An essential component, the crystal flight time spectrometer DNS, was equipped with a new neutron guide in 2014. The more intensive radiation required stronger shielding.

The product

The DNS was fitted at various points with a complex shielding. This consisted of 8 cm borated polyethylene, 0.5 cm borated epoxy and lead components with thickness of up to 23 cm. In total, 9.2 tonnes lead were used. All radiation protection elements were manufactured individually in consultation with the research centre.

The special features

The shielding not only shields the employees at the research centre. It also serves to channel the radiation for research purposes. The DNS has a pivoting borated PE shield in the neutron output area for this purpose. The lead gates behind the shield are operated by a pneumatic device.

The crystal flight time spectrometer (Fig. 1) is clad inside with lead and borated PE (2). Pivoting shielding elements (3) channel the output of the radiation (4).

The facts

Client:
Forschungszentrum Jülich

Execution:
2014

Task:
Production of customer-specific radiation protection components

Products:
Lead components, thickness up to 23 cm

Object size:
9.2 tonnes lead

Advantages of lead:
Reliable radiation protection due to high density

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