

Reference report **Siemens Research Centre, Erlangen**



Bild: Daniel Schwarcz



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Fire protection solutions in a laboratory building

History:

Building 34 is located within a larger facility belonging to Siemens in Erlangen. It was constructed in the 1970s and has been used as a laboratory building for many years. Due to extensive renovations, the fire protection measures needed to be improved and modernised.

Initial situation:

Because of structural changes and changes in use, areas in a corridor around the circumference needed to serve as an emergency corridor and escape route under building law. In the past, this corridor was not suited for use as an escape route, since there were different fire loads and fire hazards in the ceiling and behind the metal wall covering.

Cables, ventilation ducts and pipelines carrying different media were installed in the

ceiling. Electrical distributors, storage areas, and cables, ventilations, and pipelines were installed behind the wall coverings. All of these elements increased the complexity of the structure, which was not easily reduced.

These installations and storage areas needed to be separated in accordance with modern technical requirements.

Solution:

To create an escape corridor (escape route) clear of the different fire loads, a fire-resistant wall construction system from PRIORIT was designed made of non-combustible panels.

A total of 19 alcoves needed to be made fire-resistant and covered with the wall system.

The wall system was designed in different shapes (I, L and U-shapes) in widths of 1,215 to 10,600 mm.

Three steps were required to achieve the protective goal:

- Steel girders were mounted at the intersection between the new fire protection suspended ceiling and the new wall system along the corridor, to be covered in compliance with fire protection requirements
- The fire protection false ceiling was connected to the new steel girders, separating the fire loads in the ceiling area from the emergency corridor
- The PRIOWALL wall system from PRIORIT was installed from the floor to the new steel girders, to dampen the fire loads in the walls



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Design:

The entire solution was developed and coordinated in the implementation phase by Spie, Erlangen, in collaboration with the companies involved in the project.

A PRIORIT project manager conducted a site inspection and took careful measurements. The information was used to create detailed drawings showing the required height of the steel girders to be installed.

After the steel girders were mounted, the PRIORIT installation team was able to install the custom pre-fabricated wall systems.

The existing wall coverings, flooring and floor tracks (metal) in the system area

were removed as an on-site service. After the removal was completed, the plastered framing needed to be made flush with the wall once again.

Likewise, a fire-resistant covered steel girder was installed on site at a height of 2,450 mm to which the wall system was connected at the top.

Conclusion:

The custom planned wall systems with integrated inspection opening closures were an ideal solution for the structural situation. All key areas remain fully accessible, while ensuring fire protection requirements are met.

The assembly process was smooth and clean, thanks to careful advance planning. The custom pre-fabricated wall and door elements, just 42 mm thick, were installed quickly and almost dust-free. The developer and users alike are satisfied with the visually appealing overall solution.



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Project data

Project location:	Erlangen
Building:	Siemens research centre, laboratory building
Year of construction:	2021
Solution	PRIODOOR EXT inspection closures; PRIOWALL wall system
Material:	Non-combustible panel with surface coating, classification A2 – s1, d0
Fire-resistance rating:	30 minutes
Protective target:	Fire-resistant separation of fire loads of different kinds (electrical distributor units, storage for laboratory materials, gas canisters, supply lines carrying different materials)
Special features:	PRIORIT elements were constructed in I, L, and U shapes
Developer:	Siemens AG
Planning & construction management:	Spie Erlangen
Photos:	Daniel Schwarcz