



check it!

Issue 2013

MPA NRW
Materialprüfungsamt Nordrhein-Westfalen
TESTING - SURVEILLANCE - CERTIFICATION

Contents

Product Certification	02
Technical innovation	04
Registered Laboratory	06
Health day at the MPA NRW	06
Apprenticeship at the MPA NRW	06
Thermal insulation composite systems	07
Certification QM-systems	08



The Product Certification Body (from left to right): Kristina Kura (office), Hans Foerster, Detlef Karrenberg, Dr. Joanna Krasch, Dieter Goedecker (head), Dr. Matthias Duemmler; not shown in the picture: Juergen F. Pennings

All services from a single source

■ ■ ■ In its “Product Certification Body” the MPA NRW has bundled all fields of activity having to do with the new EU Construction Products Regulation.

The Construction Products Regulation (CPR) that will fully enter into force on 1 July 2013 brings wide-reaching changes in its wake: Thus for the first time in the European economic area the obligations of all parties involved in the manufacturing and sales of building products have been bindingly defined. For instance processing companies, importers or traders assume the role of the manufacturer when they bring a product onto the market in their own name or submit these products to considerable alterations.

The regulation defines so-called basic requirements which buildings and therefore indirectly also building products have to meet: “Without meeting the requirements of stability, fire prevention, hygiene, accessibility, sound insulation, energy saving resp. sustainability, manufacturers do not receive the necessary certificate in order to bring their products onto

the European market”, explains Dr. Hans-Rudolf Wilde, graduate physicist, deputy chief of the MPA NRW.

For the customers of the MPA NRW the changes are significant only at first glance and then less problematic at second: “They can continue to rely on their service provider MPA NRW as a partner and a pilot when they need to align their products according to the European standards and regulations”, says Dr. Wilde.

In order to be able to effectively react to the requirements of the customers, the company’s five departments occupied with testing and certifying building products have been combined to become the “Product Certification Body”. Thus the customers can receive all services having to do with the new regulation from a single source: testing and certification of their building products as well the surveillance of the manufacturer’s works.

The Certification Body is headed by Dieter Goedecker, graduate engineer, head of the department for construction safety, “a recognised expert with a vast overview of all departments having to do with building products”, declares Dr. Wilde.

BUILDING TEST EXPO

11TH – 13TH JUNE 2013
COLOGNE | GERMANY

■ ■ ■ | MPA NRW at the Cologne trade fair

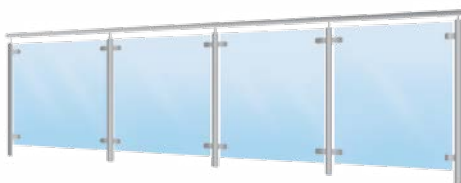
The MPA NRW will be represented with a stand at the trade fair “Building Test Expo” in Cologne that is taking place for the first time. The specialized fair wants to give manufacturers of buildings, building materials and building products an overview of the service offers of companies that work in the fields of testing, surveillance and certification as well as quality control.
Koelnmesse from 11 till 13 June 2013
MPA NRW: hall 11.1, stand C-17



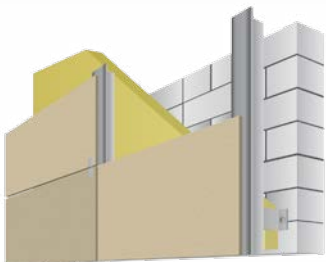
From the cellar to the roof

■ ■ ■ The Product Certification Body will begin its work in due time on 1 July 2013 according to the regulations of the EU Construction Products Regulation after its EU notification.

❶ **Product Certification Body at the MPA NRW, office**
Telephone: +49.231.4502-611 – E-Mail: kura@mpanrw.de



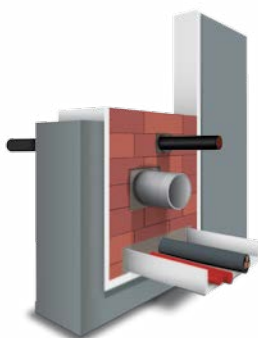
Stainless steel balustrade with safety glass filling



Ventilated curtain construction for external walls with natural stone slabs, thermal insulation of glass wool and concrete blocks with mortar joints

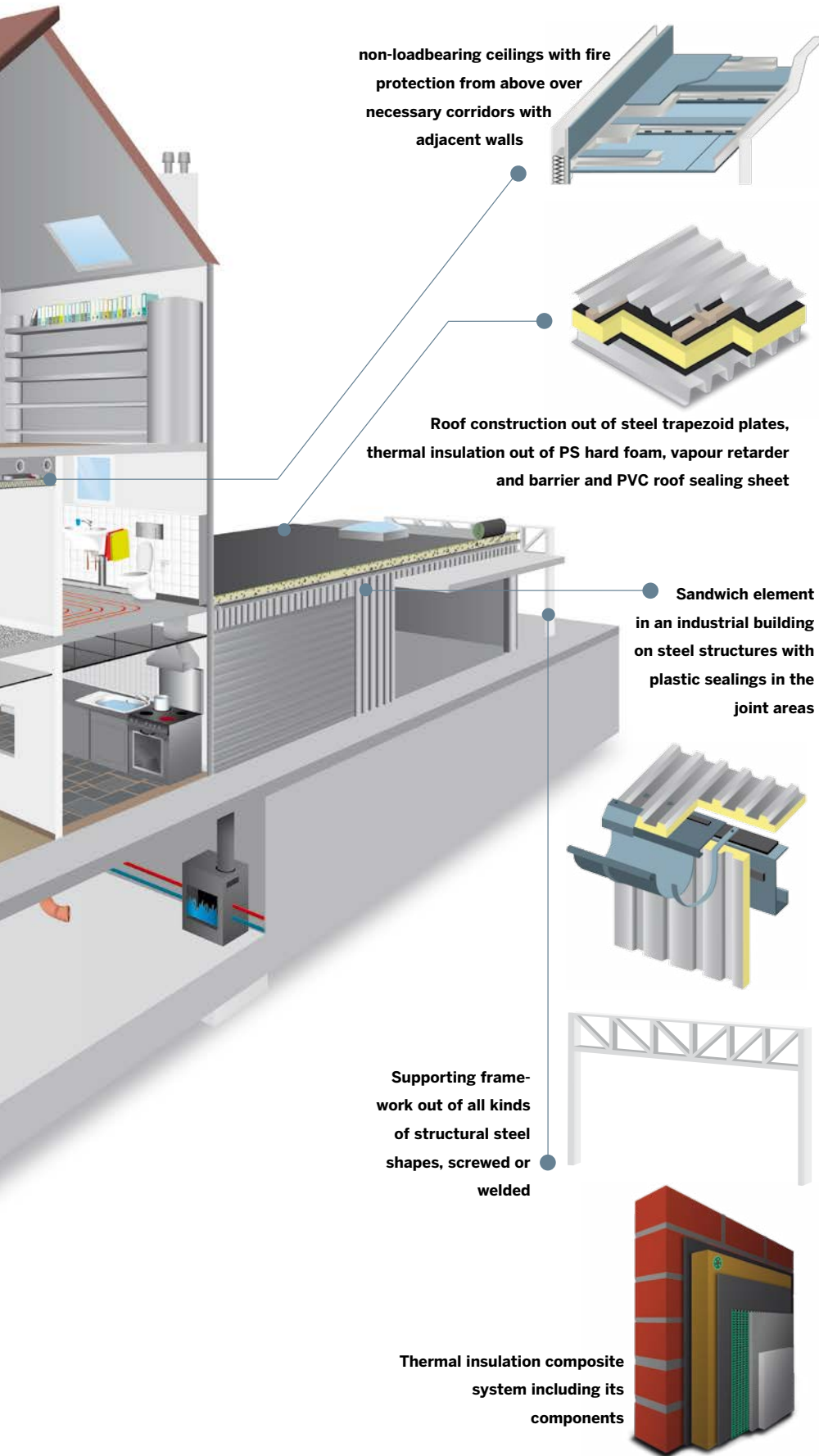


Projecting roofs out of safety glass mounted on structural steel shapes



Fire stopping and fire sealing products - penetration seals





non-loadbearing ceilings with fire protection from above over necessary corridors with adjacent walls

Roof construction out of steel trapezoid plates, thermal insulation out of PS hard foam, vapour retarder and barrier and PVC roof sealing sheet

Sandwich element in an industrial building on steel structures with plastic sealings in the joint areas

Supporting framework out of all kinds of structural steel shapes, screwed or welded

Thermal insulation composite system including its components

Some fields of activity of the Certification Body

Building hardware: windows, door locks and fittings; burglar resistant windows, doors, closings, covers and grids, smoke and fire protection closures

Exhaust systems (metal): kits for pre-tensioning structures; steel fibres; metal construction products; shaped steel metal parts, metal building products; cast iron pipes and fittings, their connections and accessories for the draining of buildings; manhole coverings; ductile cast iron pipes and fittings for wastewater discharge and water and gas distribution; organic coated hot-galvanized strip and sheet; prefabricated reinforcements from concrete reinforcement steel

Calcium sulphate binders for screeds; metal anchors for use in concrete; screeds; exhaust systems (concrete and ceramics); masonry units; masonry mortar; aggregates; precast concrete components; additives; plastic anchors; binders and additives; sealings in wet rooms; glass products; mineral building materials, natural stones and natural stone products

Bearings; Thermal insulation composite systems; mechanically fixed roof sealings; kits for liquid roof sealings; plastic, elastomer and bituminous products; plastic pipes and fittings (including multilayer pipes); exhaust systems (also plastic), insulation materials; waterproofings, vitrified clay, concrete and plastic pipes (and their corresponding fittings including connections for sewers and sewage pipes)

Natural smoke and heat exhaust ventilators fire stopping and fire sealing products: penetration seals and linear joint and gap seals



Making good things better

■ ■ ■ The innovations of its employees help the MPA NRW to improve procedures or to optimise test equipment.

In a ceremonial in-house meeting on 15 February 2013 Jens-Peter Steuck, manager of the MPA NRW, could once again award prizes to the employees for numerous improvement suggestions. Every year the project group "Technical innovation" accompanies and encourages the ideas of the staff. Its head, Artur Orlikowski, graduate engineer, underlines that "the creativity and the ideas of our staff members are the basis for improving the efficiency and the effectivity of our company's services".

Please find an overview of already implemented improvement suggestions from the years 2009 to 2011.

Safe with a template

Birgit Popanda (13 Dec., normal hardness): Holding device for safer working with the belt sander

Decision of the jury: The idea optimises operating sequences and enhances working safety.

In order to recalibrate hardness test blocks they have to be sanded with a belt sander. So far this has been done

by hand. The awarded idea relates to the production of different grinding templates. These are used as holding devices for the blocks and significantly reduce the risk of injury and also prevent grinding errors.

Correctly counted

Eckhard Knaebe (12 Dec., Personal Dose Measurement): Mechanism for counting, spooling and error detection for developed dose films

Decision of the jury: The idea optimises operating sequences and increases profitability.

Up to the implementation of this idea, films in the sphere of dosimetry were opened, reeled, developed and prepared for analysis in darkrooms. This procedure occasionally led to reeling and development errors and therefore to temporal delays for the analysis of the films. Due to this idea the quantity of films is automatically registered. Therefore it is possible to search for lost films directly after development. Furthermore, double gluings of films are recognised and thus measuring errors are avoided.

Moist films are also recognised during this procedure.

Water saved, environment protected

Volker Radtke (14 Dec., components of gas and water installation): Integrating the cooling of the hydraulic power unit into the test room's air-conditioning of hall 11

Decision of the jury: The idea reduces costs and optimises environmental protection.

So far the hydraulic power unit has exclusively been cooled with piped water. This consumes about one hundred cubic metres of water per week. The improvement suggestion plans to integrate the hydraulic power unit into the heat exchanger and the cooling tower of hall 11. This reduces the water consumption to about four cubic metres per week.





Efficiently hung rope
Alexander Reich (21 Dec., mechanical-technological tests): Adjustable traverse for fitting rope samples

Decision of the jury: The suggestion optimises operating sequences, increases profitability and enhances working safety.

In order to test wire ropes (with a weight of up to 60 kg) two blocks (with a weight of approximately 400 kg each) are fastened into a horizontally aligned testing machine. The rope subject to testing is threaded into these blocks and arrested by four chocks (with a weight of 18 kg each). So far these works have been carried out by a laboratory staff member in standing position on the machine. This led to long setting-up times and a high physical strain.

The improvement suggestion provides that the complete assembly of the sample carrier is carried out on a marked space on the floor of the hall. For this the blocks are roughly positioned by the indoor crane, the rope is threaded in and the four chocks are inserted into the blocks. By means of the specially constructed traverse the sample carrier is now lifted together with the test specimen, whereby the blocks automatically move to the outside and thus wedge the rope into the holding device. Finally, everything is lifted into the testing machine by the indoor crane and then fastened for the test. The shorter setting-up time



allows one rope more to be tested per week.

Relief for the staff members
Heinz-Peter Ludwig (21 Dec., mechanical-technological tests) presented three improvement suggestions, here as an example: Alteration of the traverse positioning lever on the 1,600-kN testing machine

Decision of the jury: The suggestion optimises operating sequences and enhances working safety.

When testing samples of different lengths (from approximately 500 mm up to 2.000 mm) on the 1,600-kN testing machine, the upper traverse of the testing machine must be positioned according to the sample length. For this a small lever is actuated that is installed in ankle height on the side in the foot of the testing machine. So far the laboratory staff member had to actuate the lever in a crouching position for so long a time until the traverse reached the required position.

The new lever construction that can also snap in enables a less back-straining working position. At the same time working safety is increased because the movement of the testing machine during positioning can be watched.

Standard testing possible
Heribert Rauchberger (23 Dec., plastics and elastomers) present-



ed five improvement suggestions, here as an example: Sample holding device for the determination of the minimum tensile strength of cable binders

Decision of the jury: The improvement suggestion optimises operating sequences and increases profitability.

So far mechanical-technological tests on cable binders have been conducted as single-axle tension tests – until the test specimen rips apart. However, the holding force of the fastener has not been tested. The suggestion provides the fastening of cable binders to sample holding devices with different diameters in order to test the holding force of the fastener. The round sample holding devices are separated in the middle so that both parts of the sample holding device axially move away from one another after the application of the load. Thus the test forces are equally spread onto the cable binder. Due to this method standard tests can now also be conducted.

■ **Edition notice**

Publisher: MPA NRW, 44285 Dortmund
Coordination:
 Martina Fahnenmann (Marketing MPA NRW)
Editing/design:
 mpk Medienpool Köln GmbH
Print: VD Vereinte Druckwerke GmbH, Dortmund

Printed on 100% recycled paper

The grand cracking sound

■ ■ ■ The MPA NRW trains apprentices – inter alia for the profession of a construction material tester.

Christian Samit finds his apprenticeship “very rich in variety”. Since August 2010 he has been trained at the MPA NRW for the profession of a construction material tester – an occupation that requires three years of training. He does not only learn to control the quality of concrete, but also that of basic materials, auxiliary materials as well as the intermediates such as fly ash or plaster. Construction material testers work in laboratories, but they also have to go “on site” in order to examine the construction site grounds within the scope of construction preparation. It did not take Christian Sameit long to choose his profession: his advanced courses at

middle school were chemistry and other natural sciences.

He also enjoys supporting Katharina Heimbach, who began her apprenticeship for the profession of a construction material tester in August 2012 at the MPA NRW. He explains to her his experiences when preparing and conducting e. g. adhesive tensile tests on tile cement or function tests on pipes.

These tests are “highlights” for both apprentices because in contrast to long-term tests “there can sometimes be a cracking noise”. Their apprenticeship offers both of them an excellent prospect (not only) at the MPA NRW, as their trainers Elvira Lipinski and Stefan Reinke underline.



Good prospects at the MPA NRW: Katharina Heimbach and Christian Sameit, apprentices for the profession of a construction material tester

■ ■ ■ | Awarded

The Chamber of Industry and Commerce Dortmund honoured the MPA NRW for “excellent training work”: The apprentice Marlen Recklies successfully passed her final exam at the end of June 2012 for the profession of a chemical laboratory assistant with the final grade A.



Keeping well and fit

With a health day the workplace health management of the MPA NRW highlighted the material well-being of the staff members as the company’s most important resource.

On 23 August 2012 there was an attractive offer inter alia with sports medical examinations, motion and relaxation exercises as well as possibilities for recognising health risks.

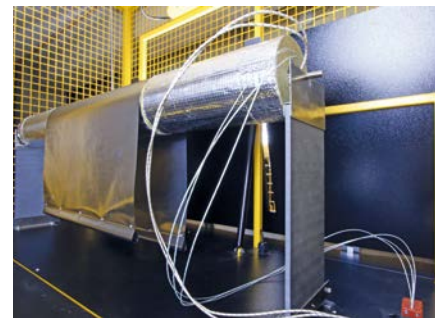
The overall 150 participants could choose among measurement of the central venous pressure, cardioscan, stress test with the HRV scanner, Medi-Mouse-measurement, back muscle training and Hatha Yoga. There were also lectures about healthy eating and stress management.

At the end of the event many staff members expressed their wish that

the company should continue to offer yoga courses, back muscle training as well as a walking and jogging meeting.



Yoga on the health day of the MPA NRW



Testing device in the laboratory for thermal insulation and moisture protection

■ ■ ■ | Registered laboratory

The testing laboratory for thermal insulation and moisture protection of the MPA NRW has now also been acknowledged as a “registered laboratory” for “domestic engineering and operational facilities” by the Quality Assurance Committee (QAC). During an audit of the expert group the equipment of the laboratory was surveyed, the documentation was viewed and the application of the measuring procedures was surveyed.



External thermal insulation composite systems (with rendering) consist of various components: insulation, reinforcement, rendering and attachment.

Composite heat

■ ■ ■ The testing of external thermal insulation composite systems (with rendering) involves several departments of the MPA NRW. Nevertheless, the customers have a central person of contact.

Residential houses are more and more being built respectively upgraded with external thermal insulation composite systems (ETICS-systems). This is a combination of thermal insulation, reinforcement, rendering or clinking and attachment. The systems are self-supporting and are plugged or stuck directly to the facade instead of being fixed to a substructure. The requirements to the composite materials are high and therefore also to the material tests: the thermal conductivity, fire behaviour and the material properties like tensile strength, adhesive tensile strength of the material and its components as well as resistance against ageing are determined.

Approval only for complete systems

True to the company's motto "everything for the client from one source" the MPA NRW offers a complete test of the systems. "In this case I function as a contact person for the client", says Tayyar Uysal from the department for product survey. The graduate engineer forwards the materials and test documents to the current competent departments in the MPA NRW. In the end he also



insulation sample (EPS) after a dowel pull test

presents the general report to the client. "We can test everything required by ETAG 004, Guideline for European Technical Approval of external thermal insulation composite systems

with rendering. Thus the manufacturer can use the CE mark that enables the EU-wide selling of the systems."

The composite systems have a speciality, as graduate engineer Thomas Kloos from the department for thermal insulation and moisture protection explains: "Even if the individual components only come together at the building site – the granted approval is valid only for the entire system."

Of course it is the manufacturer's free decision to buy the individual components of his ETICS-system from different companies. However, he is ultimately responsible for the entire system. The system's approval comes to an end when he changes the supplier or the material composition of one of the components stipulated in the approval.

Material becomes thinner and thinner

After the manufacturer has received the approval, he as an approval holder has to provide for the internal factory production control (FPC) also of his supplier plants. "To secure constant quality we also offer third-party monitoring", says Tayyar Uysal, who has noticed that constantly even newer composite systems are coming onto the market in quick succession. The application possibilities are increasing, and the manufacturers have the goal to achieve the same thermal insulation coefficient with increasingly thinner material. And not every composite system has successfully embellished a house front.

 uysal@mpanrw.de

■ ■ ■ | Safe in the event of fire

In the testing laboratory for fire tests of the MPA NRW in Erwitte the thermal insulation composite systems are realistically attached to a facade. Then, according to a prescribed procedure, a room fire is simulated with a large gas burner. In the course of this, even systems with combustible hard foams have to withstand the flames for a sufficient period of time. Which mostly is the case "if the corresponding test instruction is complied with, when doing so", explains graduate engineer Hendrik Rademacher.

The head of the department "Behaviour in fire of building materials" reminds of media reports from 2012 about a reputed horror scenario in another testing laboratory: There a thermal insulation composite system had also been set on fire. In this case the flames could spread fast and uncontrollably. However, this was due to the non-compliance of test instructions concerning constructive fire protection, as department head Rademacher knows: "The test set-up did not comply with the standard. Thus, there were no fire barriers without which the complete system cannot work."

These reports have raised public doubts on behalf of thermal insulation composite systems without cause. At the same time the team around Hendrik Rademacher day after day proves with these fire tests how safe these systems can be if the rules are complied with.

 rademacher@mpanrw.de



The team of the certification body for QM-systems at the MPA NRW guarantee the highest possible degree of process knowledge and confidentiality

A sharp sight for details

■ ■ ■ Professional knowledge, personal contact, trust: As an accredited certification body for QM-systems the MPA NRW and its auditors are experts in their field.

For manufacturing companies and service providers, quality management systems (QM-systems) are the basis to secure the quality of their products or their service on a constantly high level. This has an effect on the customer satisfaction. Therefore, an increasing amount of companies do not

only trust in the certification of their QM-system by the MPA NRW, but also want to obtain the Quality Label of the MPA NRW as a sign of their QM-competence.

Highest quality expectations

The awareness that companies need well-structured internal procedures is not new. However, the inspection depth when “controlling a control system” is constantly increasing, not least because the procedures are becoming more complex – be it due to international integration or technical specialisations. Therefore, the quality of the tests has to meet the highest requirements. The graduate engineer Artur Orlikowski, department head and head of the QM-certification body at the MPA NRW is confident that his experienced and well-trained team consisting of his deputy, graduate engineer Hubertus Knopp-Ladwig, Marianne Reuter and Andrea Thormann in the central office as well as the auditor pool will deliver outstanding service. Besides eight internal auditors the MPA NRW also mandates twelve external auditors. All of them have

experience and detailed knowledge in various branches of industry. An audit – meaning the survey of a company – depends on the auditors. They check all procedures of the company by random samples and compare them with the requirements of ISO 9001. During the audit they often detect improvement possibilities or deviations from the QM-standard, which the company has to rectify before the issuance of a certificate. “What interests us is whether the system is practiced,” says Knopp-Ladwig. The auditors take a deep insight into the company’s structure. Here maximum confidentiality is guaranteed. Therefore, the auditors’ professional abilities are equally important as the personal contact with the client. Therefore, the MPA NRW regularly trains the team of the certification body. Every three years the auditors themselves are surveyed. “After all, an auditor has to assess the strategies of the management in the company just as well as the work of the employees at the machines”, says Orlikowski.

■ ■ ■ | Personnel updates

The MPA NRW has new staff members: in the “competence center for radiation protection” the graduate physicist **Dr. rer. nat.**

Joerg Walbersloh will support the personal dose measuring point to develop a new personal dosimeter system as well as the expert body concerning the approval procedure for the removal of nuclear facilities.

Tel. +49.231.4502-155. **Jessica Weigert** (bachelor of engineering) is a new staff member in the department “components for the gas and water installation /sanitary fittings”. Tel. +49.231.4502-498. The graduate engineer **Dirk Voosen** will support the team “safety glass”, Tel. +49.231.4502-229.

The graduate engineer **Boris Sonntag** is a further person of contact in the department “thermal insulation and moisture protection”, Tel. +49.231.4502-236.



📧 orlikowski@mpanrw.de