duraproof

*Technologies for durable solutions*

SECTOR BROCHURE

# Sealing and damping technologies for the building industry

**A Company of the SAARGUMMI group**

# SEALING SHEETS, PROFILES AND DAMPING ELEMENTS FOR THE BUILDING SECTOR

## Material, practical know-how and service: With Duraproof, everything fits together perfectly

**Sealing systems from DURAPROOF are a perfect and reliable solution for new buildings and refurbishment. Long years of development and production know-how combined with a large number of realized objects create an utmost amount of safety. A central aspect of the DURAPROOF material technology is the optimal waterproofing by which NOVOPROOF® sheets, molded parts and membranes are durably and safely connected to each other using the Thermofast® Welding Technique.**

NOVOPROOF®-DA-K.

**EPDM – Benefit from the material's advantages**

NOVOPROOF® sealing sheets, membranes and profiles as well as other EPDM rubber products from DURAPROOF offer crucial advantages compared to other materials: the high mechanical resistance is supplemented by the extreme durability and permanent elasticity of EPDM products.

Our material competence is based on more than 60 years of experience and an own mixing department. The DURAPROOF laboratory with its technical, physical and chemical analysis centers guarantees constant material quality.

**An important contribution to the German Energy Saving Regulation (EnEV)**

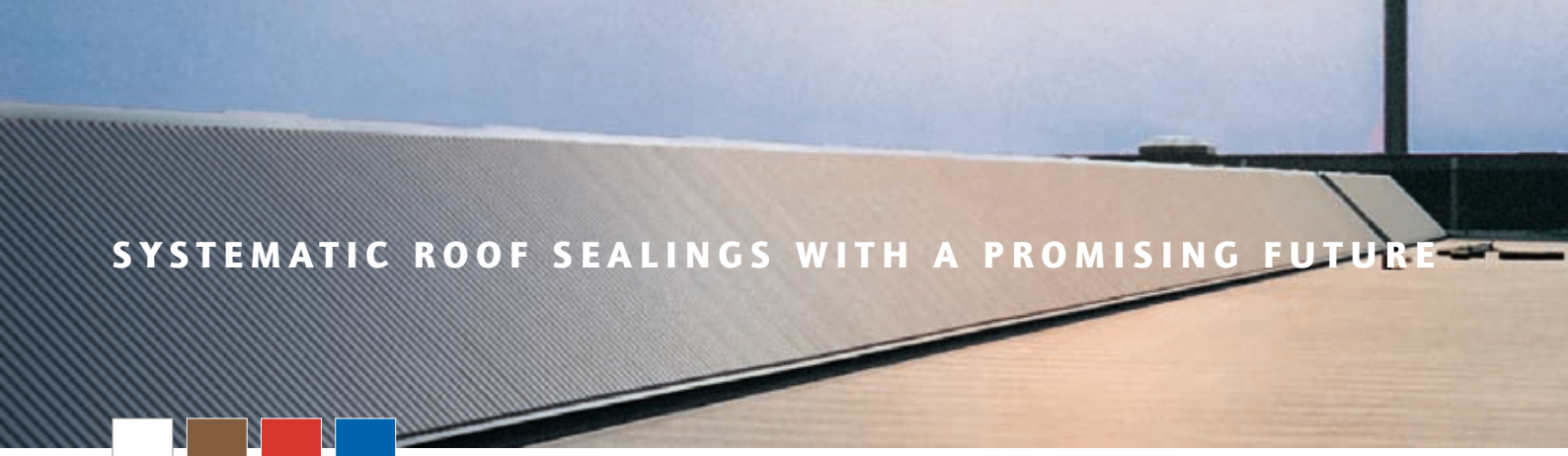
DURAPROOF sealing solutions make an important contribution to a windproof building envelope. Whether roofs, façades or windows: with DURAPROOF both property developers and executing specialists are on the safe side.

**Best partner for planners, craftsmen, developers and investors**

DURAPROOF develops individual solutions for each project, and if desired, it provides assistance during the execution of works. In doing so, the technologically optimal and economically best solution is created for each building object. DURAPROOF has a variety of certificated construction types with the relevant German national technical Test Certificates.

Walt Disney Concert Hall, Los Angeles.

**Solutions for the building industry**



# SYSTEMATIC ROOF SEALINGS WITH A PROMISING FUTURE

## Absolutely waterproof: Sheets and membranes for the roof

**With its NOVOPROOF® products, DURAPROOF offers the ideal solutions for an economic installation of roof sheets and membranes on accessible exterior roof insulations of any kind. The uncomplicated installation and processing of the EPDM material offers best conditions for durably waterproof roofs. Thousands of roofs have already been sealed with NOVOPROOF®: Both new constructions and refurbishments of industrial and private as well as public buildings, lightweight roof constructions as well as green roofs. NOVOPROOF® is the answer to all problems.**

Left picture:
Roof sealing sheets at Makino Engine works, Japan.

Right picture:
Roof sealing membrane of the roof-terrace Contec, Switzerland.

**Product highlight "light roof sheet":**
**Aesthetic and heat reflective**

The light grey roof sealing sheet NOVOPROOF® DA-G reduces the roof's surface temperature by approximately 20 °C compared to a black roof. An additional benefit is the aesthetic aspect: visible roof areas are optically improved and thus appear much friendlier. Thanks to the reduced convection there is fewer thermal loading on adjacent, ascending building parts. Energy costs for air conditioning can thereby be minimized.

**Root resistant sealing of green roofs**

Temperature balance in summer and winter, silencing, ecological benefits and availment of subsidies – the advantages of green roofs are convincing. NOVOPROOF® DA-P provides the best basis for their realization. EPDM rubber is almost natureidentical. NOVOPROOF® products are therefore environmentally compatible, permanently elastic, robust and resistant to root penetration.

**Extensive sealing membranes:**
**Precisely fitting safety**

NOVOPROOF® sealing membranes are tailored individually in the factory. The precisely prefabricated membranes provide guaranteed safety in one piece. With NOVOPROOF® molded parts and the Thermofast® Welding Technique, penetrations and connections are integrated in the membrane in an absolutely waterproof manner.

**All-encompassing program for roof sealings**

NOVOPROOF® sealing sheets and membranes for roofs, terraces, balconies and park decks, etc.:

- NOVOPROOF® DA-K, roof sealing sheet for modern lightweight constructions
- NOVOPROOF® DA-G, light grey alternative for estival heat insulation
- NOVOPROOF® DA-S, roof sealing sheet for the refurbishment of old roofs
- NOVOPROOF® SK, the advanced and fully self-adhesive EPDM sheet, of course with weldable joints
- NOVOPROOF® DA-P 13, prefabricated roof sealing membrane for the quick and extensive sealing with super imposed load (for example green roofs)
- NOVOPROOF® DA-P 15, roof sealing membrane for all green roof systems and utilized roof areas
- NOVOPROOF® BIOTOP, the sealing membrane for biogas plants

Roof detail: Precisely prefabricated mold for attic area.

**NOVOPROOF® –**
**The systematic roof sealing**

- CE certified according to DIN EN 13956
- Extreme longevity of far more than 50 years
- Subsequent enlargement of roof area possible
- Solutions for green roofs, even subsequently
- DEKRA test report on long-term durability
- Test report on root resistance from Technical College Weihenstephan (Germany)
- NOVOPROOF® fulfills all application norms and guidelines

# WATERPROOFING FAÇADES WITH SHEETS AND PROFILES

## Sealing surfaces and connectors at utmost quality

**Each building construction requires a permanent moisture barrier between window/façade element and structure. Joint areas that have to absorb relatively strong building movements are reliably sealed with NOVOPROOF® connection sheets. They are applied between door/window frames and brickwork, in façades and thermal insulation compound systems, as well as in wooden and prefabricated houses.**

5.000 m  of façade sealing at Tower 101, Taiwan.

**Permanently proof: NOVOPROOF® FA made from EPDM**

The approved NOVOPROOF® FA sealing sheet ensures a permanently wind- and waterproof outer façade. This safe barrier against ascending and laterally penetrating humidity is bitumen-compatible and can be easily installed on almost all types of undergrounds.

**NOVOPROOF® FAI made from butyl: Proof against water-vapor**

The NOVOPROOF® FAI sealing sheet is applied to ensure that the building's interior is water-vapor-proof. This highly effective vapor barrier in the suspended façade is a safe protection against structural damage.

**Product highlight: self-adhesive sealing sheets and strips FA-SELF and FAI-SELF**

Affixed sealing strips allow for the installation of the sheets even on humid surfaces and at temperatures as low as −10 °C: almost in every weather condition, with short installation times and without additional adhesives.

Façade sealing at Agora theatre, Netherlands.

Façade sealing at Convention Center Montreal, Canada.

**All-embracing program for the façade sealing**

- NOVOPROOF® FA, façade sealing sheet from vapor diffusion resistant EPDM. Also as self-adhesive version NOVOPROOF® FA-SELF
- NOVOPROOF® FAI, façade sealing sheet from vapor barrier butyl rubber. Also as self-adhesive version NOVOPROOF® FAI-SELF
- NOVOPROOF® KE, façade strips with welded keder profile. For the durable and elastic connection of windows and façade
- NOVOPROOF® FA and FAI can be delivered in widths from 100 to 1,300 mm

**NOVOPROOF® –**
**Façade sealing without compromise**

- CE certified according to DIN EN 13859-2
- NOVOPROOF® FA for permanently wind- and waterproof façades
- NOVOPROOF® FAI for permanently water-vapor-proof façades
- Avoidance of hygroscopic material changes
- Prevents damage that might be caused by aggressive salts likely to destroy concrete or brickwork

# WINDOW SEALING – DURABLE AND RELIABLY FUNCTIONING

## The right decision for each window

**With the sealing profiles NOVOPROOF® FE, DURAPROOF offers a wide spectrum of solutions for glazing, compression and center seals in plastic, timber and aluminum windows and in doors and gates. These sealing profiles and sheets provide optimum sealing conditions between window pane and frame, between window sash and frame, and in the difficult connection area between window and façade.**

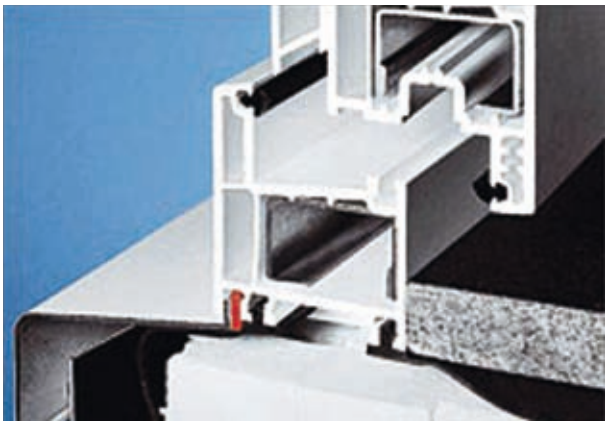
### Sealing profiles for all window materials

DURAPROOF sealing profiles for plastic windows can be introduced manually as well as mechanically. Closed corners are guaranteed. In timber windows, the patented dry glazing system combines efficient processing with increased safety. For reasons of thermal engineering and acoustics, DURAPROOF offers multi-layered sealing profiles for aluminum windows.

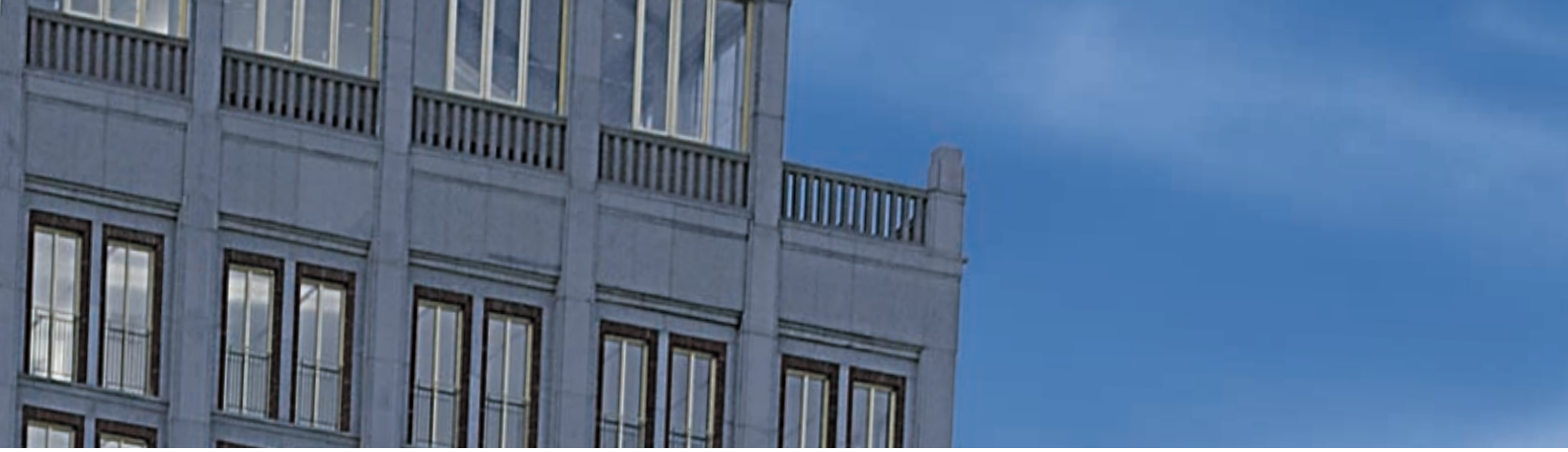
### NOVOPROOF® keder profiles connect window and façade

With the combination of sealing profiles and sealing sheets, DURAPROOF offers a practice-oriented and economic solution. In addition to the standard profile seals, DURAPROOF has developed a product from EPDM rubber that withstands extreme movements and seals durably. Thus, a variety of practice-oriented and easy to handle keder profiles for almost all common façade elements and window types has been created in close cooperation with window and façade manufacturers.

Façade sealing at the Technical University Rosenheim, Germany.



NOVOPROOF® keder profiles.



**All-embracing program for window sealings**

- Patented NOVOPROOF® KE sealing strips with keder profile for all window types
- NOVOPROOF® FE window sealing profiles from EPDM for glazing, center and compression seals

Prefabricated NOVOPROOF® FA collar for windows.

Skyscraper De Stadsheer Tilburg, Netherlands.

**DURAPROOF sealings for windows, doors and gates**

- Patented procedure for all-round glazing seals
- Patented dry glazing system for timber windows
- Patented antifriction coating for permanent load, as for example with sash windows
- Polymer coating as installation aid, alternatively to silicone coating
- Profiles from EPDM and chloroprene rubbers
- Patented multiway spools

# BEAUTY AND RELIABILITY FOR MAN AND BEAST

## System sheets for the permanent sealing of ponds and pools

**The NOVOPROOF® TE membrane is suitable for swimming and ornamental ponds, water gardens, parks and golf courses as well as for biological clarification plants, settling basins and dikes. In this membrane, the qualities of EPDM rubber material show their particular advantages: it is extremely resistant against mechanical stress, as for example settings, root resistant and flexible at temperatures as low as –40 °C.**

ASIA pond, Lebach, Germany.

**No health risks for humans and animals**

NOVOPROOF® TE does not emit any substances that could be harmful to humans, fish, frogs, birds or microbes. Besides, the material is resistant to algae, microorganisms and root penetrations according to the German FLL guidelines.

**Thermofast® Welding Technique free of adhesives and solvents**

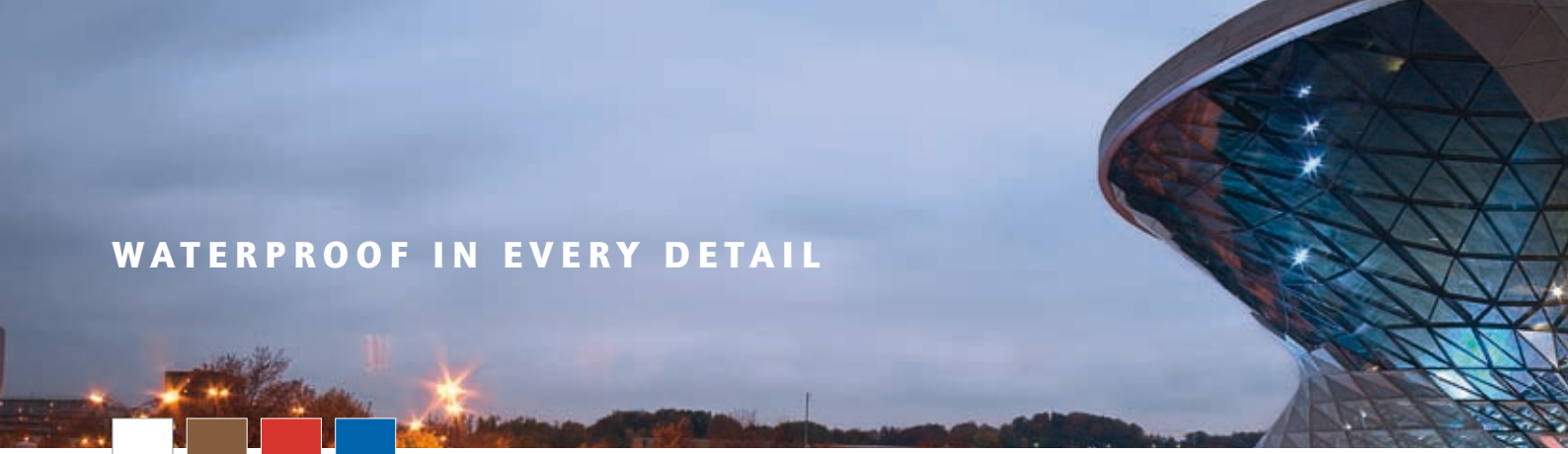
The waterproof connection of the NOVOPROOF® sealing membranes is realized by means of the approved Thermofast® Welding Technique. For in- and outflowing drains or spillway plugs, the prefabricated NOVOPROOF® molds are integrated in the sealing system to ensure durably waterproof sealing.

**NOVOPROOF® TE – System membrane for the sealing of water bodies**

- Nontoxic for humans, animals and plants
- Resistant against algae and microorganisms
- Resistant against root penetration
- Object-related membrane sizes
- UV-resistant
- Ozone resistant, cracking degree 0

Swimming pond at Park Hotel Flims, Switzerland.

The exposed membrane borders of the water bodies in gulf courses are not damaged by gulf balls.



# WATERPROOF IN EVERY DETAIL

## Molded parts for most difficult contours and connections – durably waterproof

**By using prefabricated molds and collars, an utmost amount of safety is created on site. Because of the simple Thermofast® Welding Technique assembly mistakes become avoidable. An additional advantage is a considerable reduction of the installation time.**

Application of façade sealing strips at the German Federal Chancellery, Berlin.

### Time-saving installation, safe flanging, durable waterproofing

DURAPROOF has decades of experience in the development and production of molded parts, and it offers a broad range of standard molds and collars:

- Internal and external corners
- Corner molds
- Pipe collars
- Manufacturer-specific collars for all (roof) penetrations

Gutter coating at the landmarked pyramidal glass roof, University of Constance, Germany.

### Special designs for individual solutions

By enabling quicker and safer installation times, tailor-made molds are of decisive advantage to the processor. Our service ranges from an individual expert advice to the delivery of precisely fitting special designs:

- Gutter coatings, etc.
- Column collars
- Window collars for precast concrete elements, etc.

# Thermofast® Welding Technique: The safe connection

NOVOPROOF® EPDM sheets and molds are equipped with the original Thermofast® welding edge. It sets the stage for a thermal welding, which leads to a reliable connection of the sealing sheets. The result: a safe sealing as if made out of one piece.

- Homogenous lap joints
- Manual and mechanical hot air technique
- No use of solvents or adhesives in the joint area
- Weldable at temperatures as low as –10 °C
- Welds are separable by destruction only

**Easy handling for craftsmen**

- Reliable technique, easy procedure
- No fire risk due to hot air technology
- Installation possible at low temperatures
- Time saving thanks to prefabricated sheets, membranes and molds

EPDM sealing at steelworks Dillinger Hütte, Germany.

# UNDERNEATH ROADS, RAILWAY TRACKS AND BUILDINGS

## Highly elastic elastomers for wheel-rail systems

**For constructions such as bridges and tunnels, but also for railway tracks and roads themselves, DURAPROOF offers reliable solutions to protect against moisture coming from above and below and to damp vibrations.**

### Separation layer for high-speed railway routes

The more complex the undertaking, the more sense makes the application of EPDM materials. For modern high-speed railway traffic routes, a separation layer from DURAPROOF fulfills two functions: the EPDM layer creates a defined separation and sliding support in the system "Fixed Track", and it additionally seals the track substructure. NOVOPROOF® separation layers may be applied in both elevated and fixed track systems.

Microcellulare pads and boots at Øresund Bridge, connecting Denmark and Sweden and at Eurotunnel, connecting France and Great Britain.

**Rail pads and mass-spring-systems for railway sleepers**

Railway damping systems from DURAPROOF are elastomer molds that serve as noise and vibration dampers for railway sleepers. These EPDM rail pads are extremely stable and possess defined damping characteristics. They can also be applied as damping elements under turnout systems of any geometry. By using mass-spring-systems from DURAPROOF, the vibrations of the rail track can be efficiently kept away from tunnel and bridge constructions – an important contribution to permanent constructional safety.

**Vibration damping for machines and buildings**

Microcellular EPDM plates are installed in two layers with overlapping joints. To adapt to varying compressive strain areas, we produce different plate versions. The plates are applied to decouple buildings or machines through vibration technology, and they reduce the transmission of vibrations and structure-borne sound.

EPDM mass-spring-system to decouple tunnel, station or bridge from rail track.

**DURAPROOF EPDM**

- High durability due to excellent long-term elasticity
- Vibration and/or noise protection for rail tracks, roads and buildings
- Protects against penetration of humidity into the basic structure of tunnels, bridges and roads

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