


A member of the vdw-group

A photograph of a two-lane asphalt road stretching into the distance, flanked by green trees and a metal guardrail. The road surface is covered in a light-colored, textured dressing. The text 'Whisper-Grip®' is overlaid in large, white, sans-serif font.

Whisper-Grip®

Safer and less noisy

Skid resistant enhancing
and noise reducing
road surface dressing

*No more
skidding!*

A graphic of three curved, grey lines representing skid marks on a road surface.

In cooperation with
MC-Bauchemie Müller GmbH & Co. KG

The three main problems with our roads ...




1. A lack of skid resistance has been identified in accident analyses as one of the main causes for road accidents by departments for road safety and transport. The number of accidents correlates directly to the number of vehicle registrations. In order to "identify" the high risk areas the skid resistance properties of the entire motorway road network in Germany has been SCRIM-tested. Depending on the wearing course aggregate type and the Polished Stone Value (PSV), a significant part of the motorway network is classed as being at "caution level", if not at "threshold level". Should investigations prove that road sections with a lack of skid-resistance cause a significant increase in accidents in wet road conditions, immediate action must be taken. Whisper-Grip®, the new road surface treatment based on reactive resins and special aggregates provides the solution. (Complies with German regulations ZTV-BEB-StB 02, German regulation for rehabilitation of concrete roads).

2. Noise pollution caused by tyres. Traffic noise is "the bane of modern life". New guidelines and regulations over the last few years have led to vast improvements in passive noise protection. However, noise barriers don't always meet the necessary economical and ecological criteria. That's why active noise protection should be of prime importance. The aim must always be noise reduction at source. An optimised, quiet road surface can be achieved with Whisper-Grip®.

3. Traffic obstructions as a result of road maintenance works will increase even more in the future. A quick and economic surface dressing system such as Whisper-Grip® benefits highway maintenance, organizations, drivers and all other road users.

Over 20 years' experience and more than 3.5 million m² speak for themselves! You may have even already been driving on Whisper-Grip®. Check our reference list of Whisper-Grip® laid in Germany and internationally.

 **Giesberg Tunnel**
Switzerland (N6 Interlaken/Brienz)
20,000 m²

... and their fast and economic remedy.



The Whisper-Grip® Safety Concept

Worn and polished road surfaces can achieve micro and macro texture by the application of Whisper-Grip®. The micro texture gives the road surface profile peaks, i.e. the area in contact with the tyre which increases friction between tyre and road surfaces.

A macro roughness between 0.2 and 3 mm provides the road surface with excellent drainage properties that are comparable with open-pored asphalt, where excess water quickly drains away below the surface.

Whisper-Grip® surface dressings are characterised by optimised micro and macro roughness that provide strong grip and excellent skid resistance. Tests have shown that grip and skid resistance values between 50 and 55 SRT result in twice as many accidents on wet roads compared with a value of 60 SRT. Whisper-Grip® however provides grip values between 70 and 85 SRT. Even with regard to SCRM measurements or the Stuttgart-friction-measurements friction values have been found to be excellent – the deciding factor in the elimination of aquaplaning. It is also been demonstrated by statistical analyses that accident numbers are drastically reduced where Whisper-Grip® has been applied.

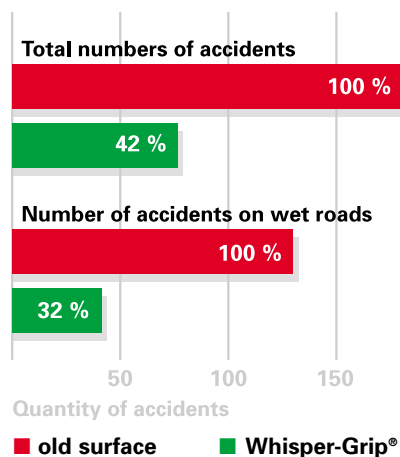


Device for the measurement of grip and skid resistance values

Tyre noise reduction through Whisper-Grip®

The main cause of traffic noise is the noise generated by the rolling contact between the tyre and the road surface. Heavy noise pollution occurs when cars travel at only 30 km/h and trucks at around 60 km/h and above already.

On Whisper-Grip® wearing courses the tyre noise is significantly reduced due to a surface that is much more finely-structured. Noise measurements accompanied by frequency analyses demonstrate this strikingly (see diagram on page 7). In bridge construction alternative noise protection measures are frequently impractical. Here tyre noise can often only be reduced by applying Whisper-Grip® surface dressing.



BAB A40 Wankum/Wachtendonk
(motorway), Germany
12,100 m² (1 lane, km 6.3 – 10.9)

A3 Südautobahn (South) Klagenfurt/Velden
(motorway), Austria
63,000 m² (km 325.8-348.3)

Bridge Project Schengen
Luxembourg
4,000 m²

BAB A8 Karlsruhe/Stuttgart
(motorway), Germany
17,000 m² (km 254.7-253.2)

Whisper-Grip® – one surface dressing for many different requirements ...

How does Whisper-Grip® work?

Whisper-Grip® is a surface dressing that can be applied to both asphalt and concrete wearing courses. Whisper-Grip® is a two-component reactive resin agent mixed with a high polish stone value (PSV) aggregate (maximum particle size 4mm).

Electronically controlled application equipment is used to spray the correct amount of resin binder onto the dry surface. The rate and speed of application is determined by the pump capacity and the settings determined by the operatives.

Immediately after the resin application special high PSV aggregate is scattered onto the still wet surface. Depending on the amount of resin applied, 1–2 mm, 2–3 mm or 3–4 mm aggregates are used.

After curing of the reaction resin the strews aggregate that has not bonded is removed by road sweeping machines.

Immediately after application of Whisper-Grip® the road can be re-opened for traffic.


The exceptional bonding properties of the binder resin ensure durability of the surface dressing. The outstanding properties are certified through:


■ **ZTV-BEB-StB 02** (German)


For the structural maintenance and repair of concrete traffic surfaces

■ **"Notes on slid resistance enhancing measures for asphaltic traffic surfaces"**, edition 2002, by the Research Institute of the Department of Transport. (Germany)



 **BAB A5 Achern/Appenweiler**
(motorway), Germany
51,000 m²

 **Katschberg Tunnel**
Austria (A10 Tauern Motorway)
20,000 m²

 **Seelisberg Tunnel**
Switzerland (A2 Luzern/Gotthard)
3,450 m²



... skid resistant, quiet, light-coloured and quickly installed

Whisper-Grip® – tried-and-tested and highly adaptable

The unique application of Whisper-Grip® ensures rapid installation. Short lane closure times are also ensured through the special formulation of the resin binder. These advantages have made Whisper-Grip® the preferred choice for road surface treatment, especially in tunnel road works.

Often tunnels only have two lanes and closing one of them causes significant traffic disruption. The fast application rate minimises the negative impact on traffic flow. Up to 20,000 m² of Whisper-Grip® can be applied in a single day (application at night or day possible).

Improved visibility in dark and wet conditions combined

The cubic form of the aggregate particles combined with the excellent surface texture of Whisper-Grip® result in a superb retro-reflection of the headlights even on wet roads.

Therefore visibility particular in dark and wet conditions is improved.

The surface appearance can be further enhanced by the use of a special light-coloured bauxite grit; **an additional safety aspect of Whisper-Grip®!**


A smooth ride – thanks to Whisper-Grip®


Busy road networks and the steadily increasing traffic volume frequently necessitate tailor-made solutions.


Special coloured lanes for instance can be laid quickly and cost-effectively.


The use of a special aggregate, such as red porphyry or granite, makes it possible to create coloured road surfaces with Whisper-Grip®. This achieves a good visual separation of different traffic zones.



 **A2 Südbahn (South) Kärnten**
(motorway), Austria
41,300 m² (km 328.7 – 331.0)

 **BAB A57 Köln/Neuss**
(motorway), Germany
78,000 m² (km 107.8 – 97.2)

 **A7 Genua, Vignole, Ronco**
Italy
33,000 m²

 **HVO busbaan Utrecht**
Netherlands
7,300 m² (coloured Whisper-Grip® surface to separate bus lane)



Whisper-Grip® – ready for take-off

Grip-perfection a must

Whisper-Grip® surface dressings are not just used on motorways and other classified roads – its unique application technology and numerous outstanding qualities have made it the preferred choice for airport traffic surfaces.

The demands on the surface dressing are extremely high in this particular application. Whisper-Grip® has been successfully used in areas where airplanes de-icing takes place.

In wintry conditions planes are de-iced almost continuously. This involves large amounts of de-icing agents (e.g. “Clear-Way” or “Safe-Wing”) that form a gelatinous, slippery mass on the apron. In order to keep the risk of skidding as low as possible for aircraft and vehicles it is of paramount importance to achieve high grip and skid resistance on these surfaces.


With a macro roughness between 0.2 and 3 mm Whisper-Grip® provides an ideal surface that quickly drains the de-icing slurry away from the contact point between tyre and surface.




During taxiing an aircraft's nose wheel puts a heavy point load onto the de-icing surface. With the excellent bonding properties of its binder both to the substrate as well as to the strewn in aggregate, Whisper-Grip® ensures lasting durability of the wearing course.

Resistance to aviation fuel goes without saying!



 **BAB A4 Eisenach**
(motorway), Germany
19,500 m² (both directions)

 **Intercontinental Airport Leipzig/Halle**
Germany
20,000 m² (de-icing pads with drainage strips
and to sealer)

 **Airport Den Helder**
Netherlands
20,000 m²

 **Airport Leuwarden**
Netherlands
13,000 m²

Whisper-Grip® – the leader in surface dressings.



Whisper-Grip® – A system with good pedigree

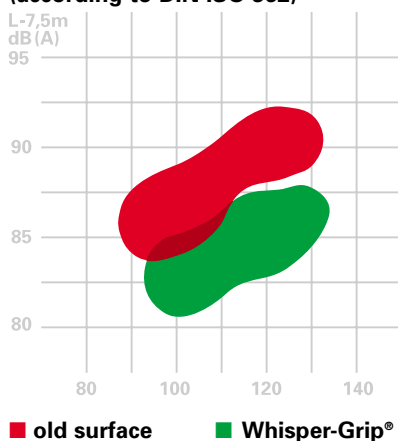
griproad, a subsidiary of the VDW GmbH (Gebrüder von der Wettern, "vdw") has a long and successful track record in road construction. Continuous research, the development of new technologies, and a well-established reputation for mastering difficult technical problems, gripboard is a renowned, sought-after road construction company.

MC-Bauchemie products are used to improve and refine concrete, protect surfaces and restore buildings and structures. Thanks to intensive research and development MC-Bauchemie has been able to develop countless innovations that have been highly influential in the construction industry.

Both companies pursue the same ethos: to strive for the continuous improvement of products and procedures and to develop new concepts. The technical expertise of both companies is trend-setting and forward-looking.



Reduction of moving traffic noise levels for passenger cars (according to DIN ISO 362)



Whisper-Grip® – a versatile product with 8 important advantages

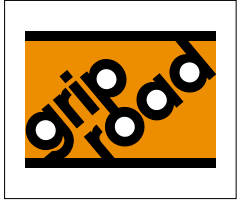
1. High grip and skid resistance
2. Reduces the risk of aquaplaning
3. Reduces the noise generated by tyres
4. Improves visibility in dark and wet conditions
5. Minimal traffic delays as a result of rapid installation
6. Multitude of applications
7. High cost-effectiveness
8. Whisper-Grip® can be recycled

A40 Venlo/Duisburg
(motorway), Germany
12,000 m²

A10 Tauern Motorway
Austria
23,000 m² (section km 136-133)

BAB A81 Stuttgart/Würzburg
(motorway), Germany
25,600 m² (1st and 2nd lane)

Giessbach Tunnel
Switzerland (N6 Brienz/Interlaken)
17,000 m²



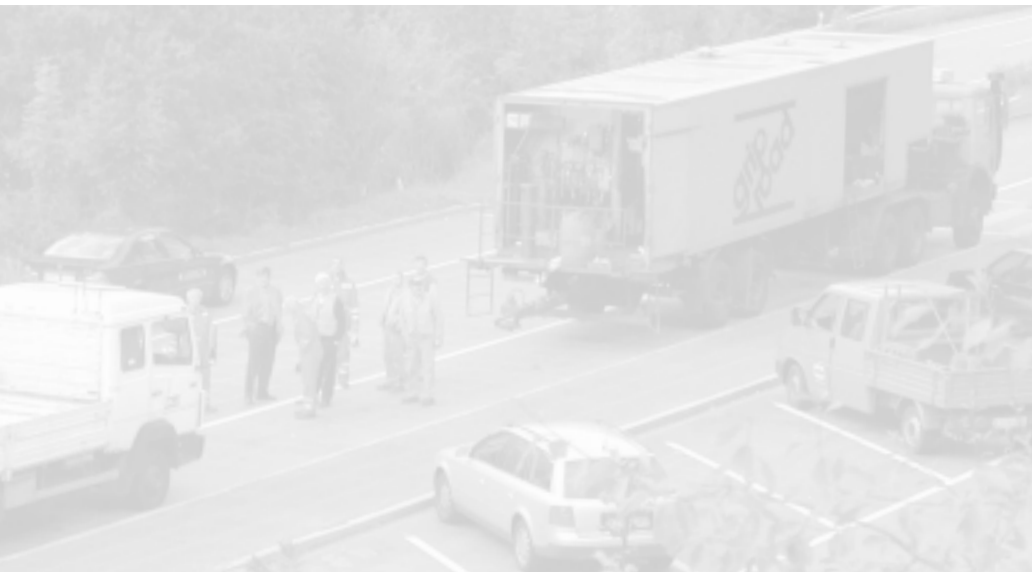
A member of the vdw-group

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