

Testing devices for road building laboratory



Wehner/Schulze/Freundl Apparatus for skid resistance prediction and for testing polishing resistance of asphalt, concrete and aggregates

Baustoff-Prüfsysteme Wennigsen GmbH

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In close cooperation between the Department of Road Construction at the Technical University of Berlin under the direction of Univ.-Prof. Dr. sc. ETH S. Huschek and the company Maschinen- und Gerätebau Josef Freundl a new test system for general laboratory use in accordance with the Wehner/Schulze test method was developed. Mr. Josef Freundl has already built in the seventies a first Wehner/ Schulze test equipment for the Technical University in Vienna. Through his new development since 2000 he has contributed significantly to the introduction and spread of this test method in Europe. To honor the achievements and contributions of Mr. Josef Freundl we continue the further development and production of this testing device as "**Wehner/Schulze/Freundl Apparatus**".

Together with other devices and accessories in our product range a complete and proven concept to all issues of grip prognosis and polishing and skid resistance testing from sample preparation through to complete data acquisition and analysis is available from a single manufacturer.

1. Sample production in the laboratory or the taking of drill cores out of the road

1.1 Production of slab-asphalt-samples with the GZM-laboratory mixer and the WSV slab compacting equipment.



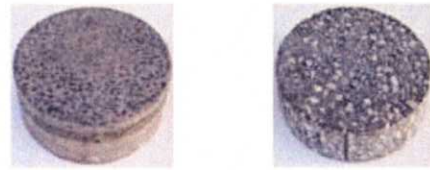
1.2 Production of concrete samples with jute cloth- and brush coat procedure



1.3 Production of aggregates samples with sand sticking procedure, mastic-mould procedure and mosaic-lay out procedure



1.4 Drill cores



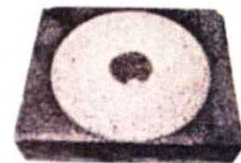
2. Polishing and friction measurements



3. Simulation of the weather-beaten asphalt and concrete by sandblasting

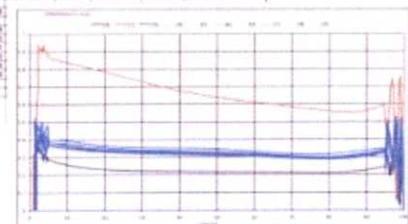


Blast cabinet with automatic blast gadget.



4. Registration and analysis of results

Verfahren	Bestandteil	Beispiel
Methoden	Einheit	Ergebnis
1.1	1.1.1	1.1.1.1
1.2	1.2.1	1.2.1.1
1.3	1.3.1	1.3.1.1
1.4	1.4.1	1.4.1.1



Company Profile

The family-owned company is manufacturer of testing equipment for asphalt, soil, concrete, cement, aggregate materials and building renovation according to DIN, EN, ASTM and BS. The product range includes complete laboratory equipment, laboratory containers and special test systems for research and industry and an extensive selection of accessories.

Permanent new and further developments of test systems to the needs of our customers, the results from the research and the information and contacts from our membership in various associations (e.g. FGSV, DAV/DAI, SETAC) ensure the company's survival and thus offer our customers a long-term investment protection by availability of customer service, spare parts service and retrofitting of existing test systems to current requirements.

The basis of our company is the extensive expertise in many technical areas (mechanical engineering, production engineering, plant construction, heating-, refrigeration- and air-conditioning systems, instrumentation, electrical engineering, electronics and software development for controllers and computer), which makes it the first place, to develop optimally adapted universal test systems and solutions from a single source. Here are some parameters for viable technical solutions:

- Force measurement systems from 0,001 N to 5,000 kN
- Torque measurement systems from 0.001 Nm to 1000 Nm
- Pressure measurement systems from -0.999 bar (vacuum pressure) to 1000 bar
- Strain rate control with spindle motors and hydraulic cylinders in the range of 0.000001 mm / min. to 300 mm / s (= 18,000 mm / min) and accelerations up to 100 m / s²
- Dynamic test systems up to 2.000 kN test load
- Dynamic hydraulic cylinders up to 400 Hz operating frequency sine
- Temperature chambers for testing machines from -180 °C to 200 °C
- Climate cabinet with humidity control
- Static triaxial cells up to 4500 kN axial load, radial pressure up to 500 bar and up to 200 °C temperature stress
- Dynamic triaxial cells up to 50 kN axial load, radial pressure to 15 bar, -20 °C to 60 °C temperature conditions, test frequency to 10 Hz with adjustable phase shift between axial and radial stress
- Testing machines for samples up to 3500 mm sample height and several tons of sample weight
- Data acquisition systems with data acquisition rates of up to 20,000 readings per second, and long-term measurement systems up to 2 years of continuous test period
- Mobile power-independent testing devices with a few kilograms net weight to test systems with more than 100 kW electric consumption and more than 20 tons net weight.

By the extensive expertise and the flexibility of a medium sized family-owned company can thus respond to future developments, requirements and scientific challenges.

Legal notice

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Responsible for content according to §10 paragraph 3 MDStV: Andreas Freundl

Note

All information and technical data are noncommittal about products from our product range or product ideas about possible future developments in this prospectus and are subject to change. This brochure is subject to copyright.

Extract from our production and delivery program

Dynamic universal testing device Dynam-IT Research, Professional, Basic



- Dynamic tests up to ± 50 kN up to 60 Hz test frequency
- Statistical tests up to ± 100 kN and $\pm 0,00005$ mm / min. to ± 100 mm / min feed
- Optional integrated tensile testing device for highly elastic materials to 10 kN and 500 mm test length at up to 500 mm / min.
- Very large temperature cabinet with a temperature range from -40 °C to 65 °C

Universal roller compactor

Available in 3 sizes for the preparation of samples up to $700 \times 500 \times 300$ mm. Various sample sizes in a device with removable moulds and rollers are possible. Measuring systems for compression forces and energy is available.



Wheel tracking device



Asphalt laboratory mixer GZM

Available in various sizes up to 200 l useable volume for the production of rolled and mastic asphalt. Measurement systems for determining the energy inserted into the mix (keywords: lowering the temperature and workability) are available.



Freeze-thaw and climatic chests



Test and measurement systems for construction repair



Pull-off and pull-out tester EASY M and EASY-Estrich, device for sampling of drilling dust, CM-device, Schmidt-Hammer, thickness, temperature and humidity measuring instruments in various versions