







# Polymer- and rubber modified binders

The modification of bitumen binders with rubber, additives or polymer in a state of art technology to improve lifetime, resistance against high traffic loads and many other quality requirements of asphalt and pavement constructions.

Extraction and separation of these mixtures so far was more or less difficult. The new Asphaltanalysator PG is our answer to these difficulties. The machine is equipped with a special mixing and collecting tool which allows as well as the extraction of rubber modified bituminous mixtures and standard asphalt material in one machine.

#### Solvents

The chemical liquid Trichloroethylene, which is in use for the separation and extraction of bituminous mixtures, is according to the European Chemicals Agency (ECHA) classified as Substance of very high concern (SVHC). The use of this solvent in the future will only be allowed under special handling conditions.

The team of infraTest engineers is already working on this problem for the last five years. On the one hand we designed a concept in which we can easily adjust existing Asphaltanalysators to different kinds of solvents which are not classified as SVHC's. On the other hand we developed the concept machine VERTE which can perform extractions with solvents made of renewable resources.

# New options and upgrades of Asphaltanalysator Touchscreen

- Programming and storage of extraction of all extraction procedures
- Visuable on line test procedure
- Storage of all test parameters on hard drive and USB
- Trouble shooting via Internet
- Connection of other devices like balances
- Machine update / Solvent change via USB



Asphaltanalysator VERTE

#### **Renewable resources made solvents**

Our newest development is the Asphaltanalysator VERTE, which is currently under design for serial production. Based on the successful technology of the Asphaltanalysator ECOTEST this machine can be operated with non dangerous and renewable solvents like Methyloctanoate.



Asphaltanalysator



Asphaltanalysator T



# Asphaltanalysator

EN 12697-1, ASTM, AASHTO Asphaltanalysator PG for the extraction and determination of binder content in rubber modified bituminous mixtures in use with nonflammable solvents as Trichloroethylene, Tetrachloroethylene and Dichloromethane (methylene dichloride) as well. The standard system is equipped with a SPS controller.

# **Technical data:**

- Dimensions: approx. 1250 x 950 x 1600 mm
- Power: 5 kW
- Power supply: 400 V, 50 Hz, 3 ph.



#### 20-1100

# **Sampling Attachment**

with gas tube and special clamp for rotary evaporator flask 1000 and 2000 ml attached at the upper outlet cock of the recovery still. The laboratory staff didn't get in contact with any solvent and bitumen mixtures.



# Asphaltanalysator T

EN 12697-1, ASTM, AASHTO Asphaltanalysator PG for the extraction and determination of binder content in rubber modified bituminous mixtures in use with nonflammable solvents as Trichloroethylene, Tetrachloroethylene and Dichloromethane (methylene dichloride) as well.

The extraction and distillation is PC controlled and using LINUX<sup>®</sup> Software. Every extraction step can be followed on the large intuitive understandable touch panel. The user is able to program and store his own test sequences in order to have a optimal extraction for every kind of asphalt mix.

# **Technical data:**

- Dimensions: approx. 1250 x 950 x 1600 mm
- Power: 5 kW
- Power supply: 400 V, 50 Hz, 3 ph.

20-11000



#### Screen shot

Easy and fast control via the well arranged display.





# Asphalt/Bitumen

# Asphaltanalysator PG

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The extraction and distillation is PC controlled and using LINUX<sup>®</sup> Software. Every extraction step can be followed on the large intuitive understandable touch panel. The user is able to program and store his own test sequences in order to have an optimal extraction for every kind of asphalt mix.

Equipped with a second solvent circle the device allows the extraction of all kind of rubber materials using the new designed automatic decantation system. The bituminous material will be separated through continuously mixing, washing and solving. The rubber parts will be separated from the minerals and float due to their lower density to the solvent surface. There they can easily be collected by the special PG tool. The aggregates are stored in the washing chamber, filler material is separated in the centrifuge. Bitumen and solvent will be divided from each other in the solvent recovery as usual. All parts of the bituminous mixtures are dried during the test procedure. The machine is equipped with the special collection tray PG and the mixing tool. Centrifuge cups 20-0330, washing chamber 20-1112 or closing lid 20-1106 have to be ordered separately.

# **Technical data:**

- Dimensions: approx. 1255 x 960 x 1785 mm
- Power: 8,5 kW
- Power supply: 400 V, 50 Hz, 3 ph.

#### 20-11100

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Solvent logbook

# **Receiver PG**







Mixing tool PG



**Rubber collector PG** 





Separated and dried rubber.

# Asphaltanalysator VERTE

Based on the concept of the Asphaltanalysator Touch the bituminous mixtures will be extracted under the use of coconut ester as solvent. The vacuum distillation of the high boiling ester connections allows easy separation of bituminous mixtures based on natural solvents. The system is equipped with high resistant sealing material against the rubber aggressive solvents.

#### **Technical data:**

- Dimensions: approx. 1250 x 950 x 1600 mm
- Power supply: 400 V, 50 Hz. 3 ph.





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