

# Sustainable Design...

for the future

*Safety and quality*

**PRIMAX**  
Design for  
Roads and Airports

*Pavement Consultants*

## Key features:

- Back & forward calculation, Grontmij MET or Backfaa LET
- Calculation based on 18 sensors
- Multiple calculation engines
- Overlay (optimize reinforcement)
- Critical layer
- E modulus for up to 10 layers
- Service life
- Design Options
- Design options

# PRIMAX DESIGN - Making a difference

## PRIMAX DESIGN for roads

PRIMAX Design is the software applied for processing data collected by the PRIMAX FWD. The analyses and calculations made with the system provide road and airport authorities with valuable information about road and airfield pavements allowing decision-makers to make the right decisions with regard to reinforcement needs or maintenance strategies that will ensure safe roads and runways.



Based on the calculated field data, PCN values (Pavement Classification Number) are determined for individual pavement sections.



A design part (RoSy DESIGN) makes an advanced design of the road pavement possible.



## Results on site

PRIMAX Design integrated in the PRIMAX survey software allows the operator to analyse deflection and load signals at any measured point on site. Results can be presented for an entire road network, per section and per measuring point with specifications of applied calculation parameters.

## Parameter setups for several projects

A large amount of parameter setups can be stored allowing the operator to select the best suited parameters for a particular project. By splitting setup parameters into several levels, combinations can be selected and stored to be used again for projects with similar conditions.

## Output airfields

PRIMAX design provides layer moduli, residual life and reinforcement need for all analysed points as well as per section. PCN values (Pavement Classification Number) are determined for individual pavement sections on the basis of calculated field data. To determine whether the existing pavement is capable of carrying a given aircraft, the calculated PCN value is compared to an aircraft's ACN value (Aircraft Classification Number).

## Output roads

PRIMAX design provides layer moduli, residual life and reinforcement need for all analysed points as well as per section.

RoSy PMS/BMS is a modular system, which is normally supplied with a data base module, which may be extended as required.

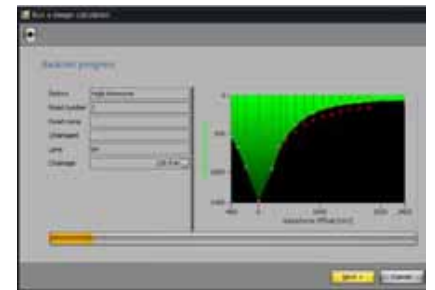
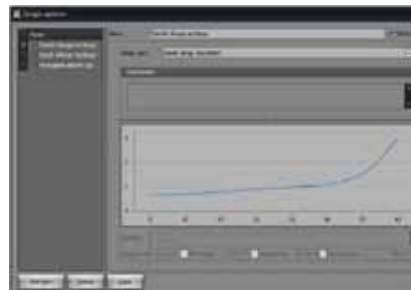
## Backcalculation method - technical information

PRIMAX Design uses various backcalculation methods. Calculation of deflection of pavement surfaces are based on the theory of elasticity and the method of equivalent thickness, as framed by J. M. Kirk and N. Odemark on the basis of Boussinesq's equations or optional by BAKFAA developed by FAA and based on linear elasticity theory.

Calculation of reinforcement is based on fatigue relations and the stresses and strains caused by the actual traffic for which calculation of necessary overlay is required. For aircraft loads, the areas, on which overlap is found, the equivalent factors are found by calculation of the fatigue caused by the individual aircrafts in correlation to the fatigue caused by the Design Aircraft.

### Key Features:

- Calculation based on 18 sensors
- Overlay (optimize reinforcement)
- Critical layer
- E-modulus up to 10 layers
- Service life
- Design options
- Multiple calculation engines



Grontmij is a leading sustainable design and management consultancy active in four business lines: Planning & Design, Transportation & Mobility, Water & Energy, Monitoring & Testing. At the heart of our business is the sustainability by design principle. It is a leading value proposition for our customers. Grontmij is the fourth largest engineering consultancy in Europe with almost 300 offices across the region and a further 50 offices globally. We have nearly 11,000 professionals around the world.

<b>Grontmij</b> Kokbjerg 5 DK-6000 Kolding T +45 8228 1400 www.pavement-consultants.com	<b>Grontmij</b> Granskoven 8 DK-2600 Glostrup T +45 4348 6060 www.grontmij.com
---	--