

# Grontmij | Carl Bro Pavement Consultants in brief



## Grontmij | Carl Bro A/S

Grontmij | Carl Bro A/S is part of the Dutch company Grontmij, one of Europe's largest consultancy engineering companies.

## Grontmij | Carl Bro Pavement Consultants

Grontmij | Carl Bro Pavement Consultants was established in 1987 and is part of the Danish consultancy engineering company Grontmij | Carl Bro A/S, but our experience within pavement technology and measuring equipment dates back to 1969 when the first commercial falling weight deflectometers were produced. We are represented worldwide by our large partner network.

## RoSy®

Grontmij | Carl Bro Pavement Consultants is the largest supplier of Asset and Pavement Management Systems (RoSy®) in Europe. RoSy® is applied in more than 20 countries and in Europe alone the system is implemented in more than 500 end-users.

## Falling weight deflectometers

Internationally the interest in the technology is increasing rapidly. This is not least due to an increasing amount of inquiries for supply and implementation of our unique equipment for bearing capacity measurements and advanced evaluation processes on airfield pavements. Our range of falling weight deflectometers is internationally known under the names of PRIMAX and PRIMA100. The equipment is in operation in more than 65 countries worldwide.

## Consultancy services

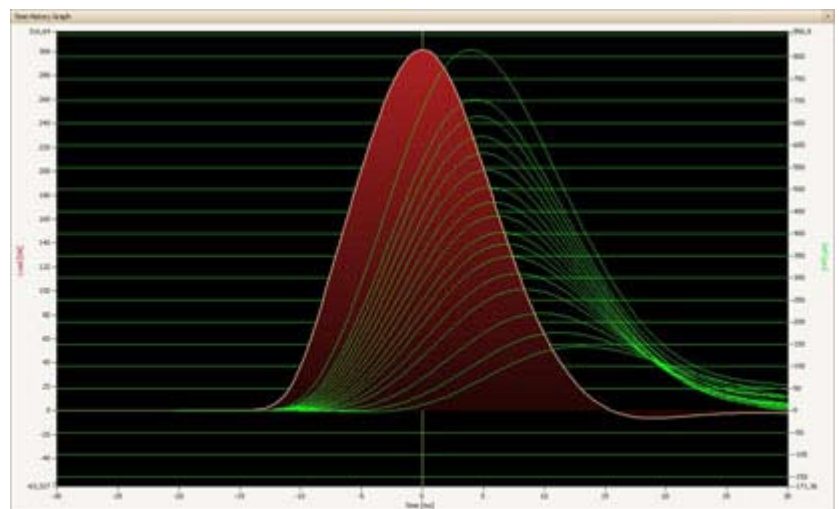
Being a professional supplier of worldwide consultancy services and advanced measuring equipment Grontmij | Carl Bro Pavement Consultants is

leading with in the sphere of this technology. We are experts in testing airfield pavements. In our consultancy work we use falling weight deflectometers in combination with other sorts of equipment such as radar and profiler. This provides our customers with high-quality data and a reliable basis to make the right strategic decisions with regard to maintenance and construction work.

## A circle of experts

Our staff consists of a circle of experts within the fields of pavements:

- Pavement technology
- Pavement evaluation
- Asset and pavement management
- IT and GIS
- Condition surveys
- Surveying/measuring equipment
- Training, education and institution building
- Tendering and contract management
- Strategic maintenance
- PPP and BOT



# Grontmij | Carl Bro Pavement Consultants Airport projects



## Profound experience behind our solutions

Over the last 25 years Grontmij | Carl Bro has carried out projects for airport authorities throughout the world. These comprise international, national and military airports.

Airfield measurements comprise bearing capacity measurements with Falling Weight Deflectometers (SHWD 7 - 300 kN) and calculation of PCN/ACN values, determination of service life and necessary reinforcement.

Other services are visual condition surveys, special tasks such as designs for widening of paved shoulders, development of new asphalt products, quality assurance and supervision.

## Billund International Airport

Billund International Airport has been the scene of a very special project. The purpose of the project was to lay out a new overlay on the runway in order to extend the service life with another 10 years. Measurements were conducted within 3 days without any interruptions of the air traffic.

The project was conducted in a partnering collaboration between Billund International Airport, the contractor and Grontmij | Carl Bro A/S as a consultant.

- Start-up of a partnering project
- Planning of the work
- Development of new asphalt products
- Quality assurance and control



## Bangkok International Airport

Bangkok International Airport is another airport which was measured with a super heavy weight deflectometer using 17 geophones. The data are used for design calculations, calculation of PCN/ACN values and determination of service life and necessary reinforcement needs.

## RAF Lossiemouth Airport

The pavement material condition of the secondary runway was investigated and a surface treatment was carried out in order to extend the surface life of the pavement. Special consequential calculations were made in order to determine the extended service life.

Over time Grontmij | Carl Bro has measured more than 120 airports from from the Arctic to the Tropics and we have gained experience with pavement types and their development under very varying climatic conditions.

