OD-FPAS

Contact patch analysis system

OD-FPAS is a combined optical and tactile measurement system. It consists from a watertight container, which will be integrated into the pavement of a test track. The container is topped with a rigid glass-plate, which is optimized to be used for orthoscopic recording or photographing of overrunning objects from underneath. The glass-plate itself is mounted in either single- or multi-component load cells to measure the actual load of an overrunning object, as long as it is in contact with the glass-plate. Multi-component load cells allow the measurement of lateral and longitudinal forces as well as the corresponding moments.

A camera system which may consist of a high speed video or a photo camera is catching the scene triggered by a laser gauge. A special LED lighting system illuminates the scenery.

- Footprint analysis
- Driving under dry and wet conditions
- Defined water depth
- Optical tread mapping
- Photo or High speed camera video systems
- Special high contrast lightening
- PC/ LT version 3.500 daN
- TBR version 10.000 daN Fz; 8.000 daN Fx, Fy
- Customized systems with higher load
- Max. Travelling speed 200kph.

It is highly recommended to have the installation done underneath a shading/ roof to avoid sunlight reflections and overheating conditions.

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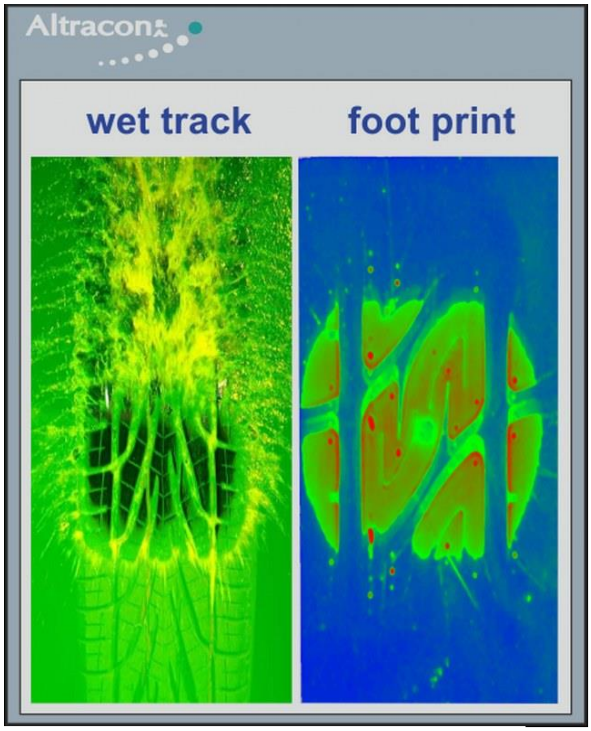
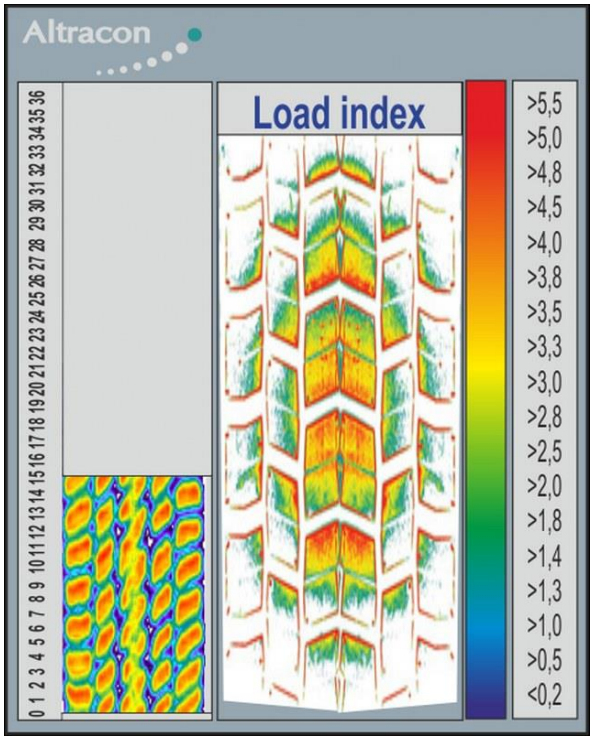
Analysis Examples



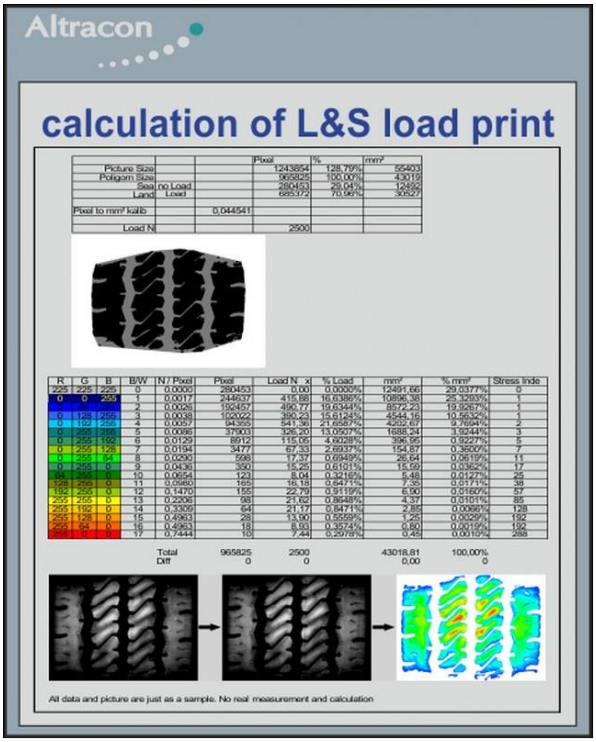
Water displacement and tread contact

- Visual footprint
- Dry and wet test analysis
- Acceleration and deceleration measurement
- Tread block deformation and stiffness measurement
- Grey scale load measurement
- Evaluation of land and sea area
- Force evaluation Fz, Fx, Fy line diagram

- Customized software solutions

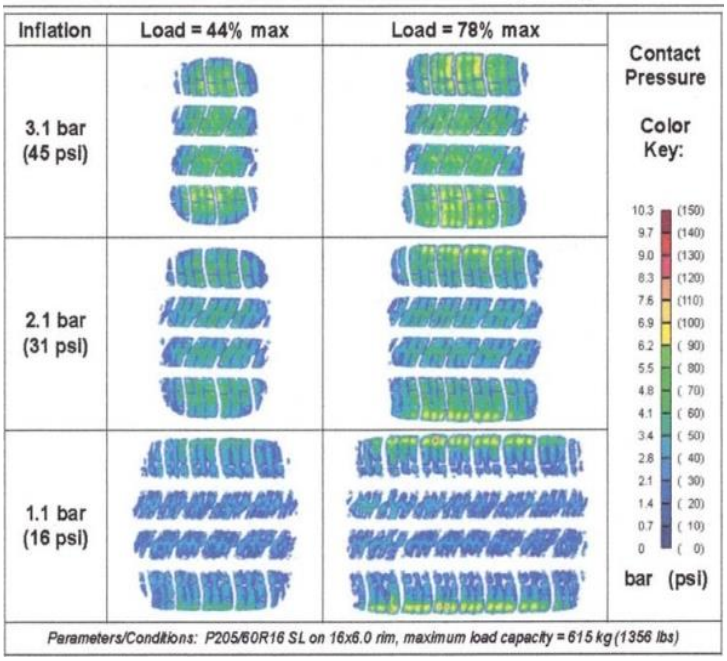


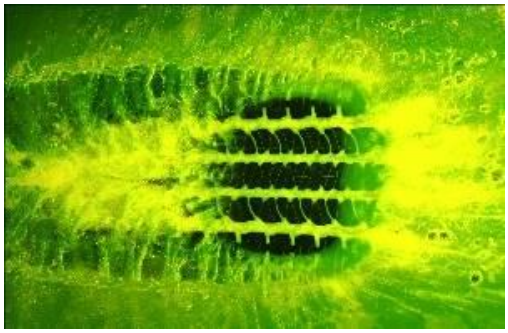
Load distribution

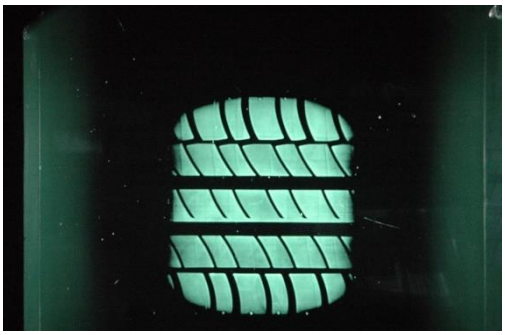


Land and Sea/ Load print Analysis

Flat surface contact conditions of a passenger tire







Technical Specification

Loading capacity of the glass-plate:

PC/ LT tire set-up	Fz (max):	3.500daN	
TBR tire set-up	Fz (max):	10.000daN	*(higher loads on request)*

Measuring capability:

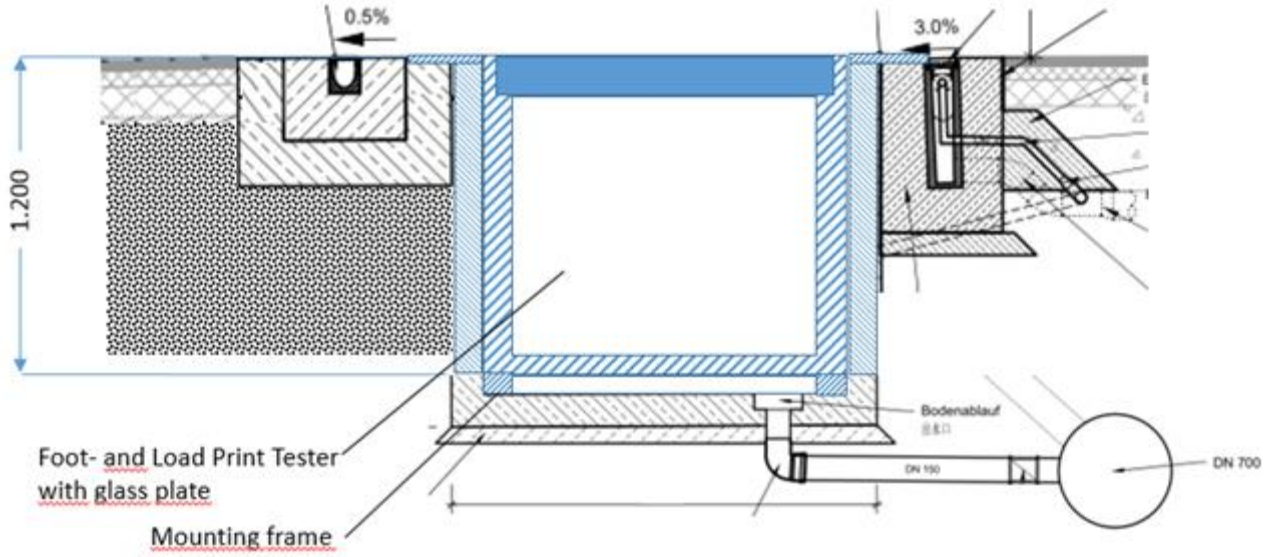
PC/ LT:	**TBR:**
Standard:	
Fz (max): 3.500daN	Fz (max): 10.000daN

Optional with multi comp. force measurement:

Fx (max): 2.500daN	Fx (max): 8.000daN
Fy (max): 2.500daN	Fy (max): 8.000daN

Parameter:

Travelling speed of test-vehicle max.:	150kph (optional 200kph with high speed data acquisition system)
Speed/ acceleration measurement:	3 point 50 kHz laser guard
Sensor size:	800 x 800 mm (standard PC/ LT) *(other sizes on request)*
Measurement rate:	20 kHz (optional 200 kHz)
Picture resolution:	1.216 x 1.216 pixles (optional 1.920 x 1.080 pixles)
Recording speed :	1.000 fps (optional up to 10.000 fps)
LED high speed strobe light:	10.000 Hz
Quartz force sensor:	0,25 % FSO
Load amplifier:	20 kHz (optional 200 kHz)
Wet surface control:	2 – 15mm; +/-1mm
Power supply:	80 – 240V (LiMH battery)



Set-up proposal in a track