



Methods and tools for testing SPORt
FLOORs with a RObotic gait simulator

SPOFLORO



K.H. Kempen University College

Project Details

Project coordinator	MOBILAB - K.H. Kempen University College
Sector	<ul style="list-style-type: none">• Biomedical and Rehabilitation Technology, Health Care Innovation• Robotics• Materials research• Sports biomechanics
Call of Interest	<input type="checkbox"/> CORNET
Proposal summary:	Methods and tools for testing sport floors with a robotic gait simulator. <ul style="list-style-type: none">•Simulation of movements of different sports•Calculation of relevant parameters of sports floors
Advantages for SMEs, trade or industry:	<ul style="list-style-type: none">• Possibility to objectively test and optimize sports floors
Profile of partners sought:	<ul style="list-style-type: none">• Research groups with relevant and complementary expertise.• SMEs with hands-on knowledge in sports floors or robotic industry.• Relevant associations



TESTING PROPERTIES OF SPORTS FLOORS: CURRENT SITUATION

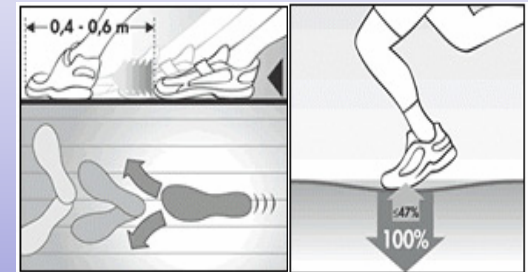
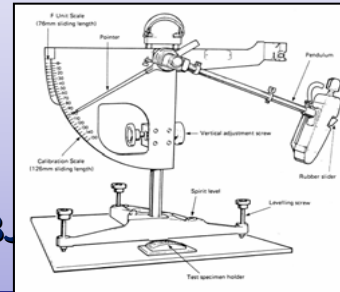
TESTING WITH TESTING DEVICES

=> No natural human unroll of the foot

TESTING WITH A TEST BATTERY OF SUBJECTS

=> Time consuming

=> Expensive



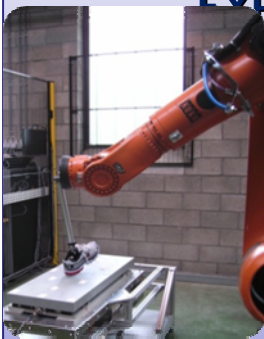
SOLUTION: ROBOTIC GAIT SIMULATOR

EXPERTISE

- Simulation of the natural behavior of human unroll of the foot with an artificial foot

METHOD

- Simulation of movements of different sports
- Calculation of relevant parameters of sports floors



EXPECTED RESULTS

•OBJECTIVE METHOD FOR TESTING PROPERTIES OF SPORTS FLOORS

- Friction/ Traction
- Shock absorptoin
- ...

•ADVICE ON THE USE OF SPORTS FLOORS IN DIFFERENT SITUATIONS

•ADVICES FOR COMBINATIONS OF SPORTS, SHOES AND FLOORS



TECHNOLOGY AND APPLICATION FIELD

- Sports floors
- Sports biomechanics
- Robotics
- Gait analysis
- Biomechanical research



MAJOR OBJECTIVES AND OUTCOMES

- **OBJECTIVE METHOD FOR TESTING PROPERTIES OF SPORTS FLOORS**
 - Friction/ Traction
 - Shock absorptoin
 - ...
- **ADVICE ON THE USE OF SPORTS FLOORS IN DIFFERENT SITUATIONS**
- **ADVICES FOR COMBINATIONS OF SPORTS, SHOES AND FLOORS**

ACTORS OF THE PROJECT



www.mobilab-khk.be

BENEFITS FOR NEW PARTNERS (SMES, ASSOCIATIONS)

- Possibility to objectively test and optimize sports floors
- Transfer of technology and knowledge to create future commercial products



ESTIMATED COSTS AND DURATION

- 3 year
- 500.000 Euro



innovation for SME



transnational funding opportunities for European SME

MOBILAB

K.H. Kempen University College
Kleinhoefstraat 4
2440 Geel – BELGIUM

www.mobilab-khk.be



Wim.Dewindt@khk.be
Louis.Peeraer@khk.be
Eveline.De.Raeve@khk.be