

**LISBOA 2010**  
MAY 25/28  
**16th World Meeting**

# European regulation and worldwide positioning

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# Regulation in Europe

- **Principle**

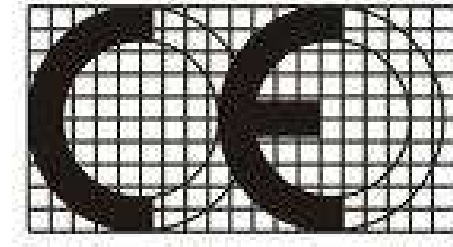
Declaration by the manufacturer that equipment fulfils the requirements of all relevant EU directives.

- **Marking and information**

- CE marking
- CE declaration of conformity
- Instruction handbook

# European regulation

- **Directives applicable to road building machinery**
  - Safety of machinery 2006/42/EC
  - Electromagnetic compatibility 2004/108/EC
  - Outdoor noise 2000/14/EC
- **Directive applicable to engines**
  - Exhaust emissions 97/68/EC as amended



This regulation → Strength or opportunity

# Safety of machinery

## ● Principle

To integrate safety at design level → risk analysis

### 3 Steps in the following order

- To avoid risk
- To add protection systems
- To inform



❖ opportunity

# Safety of machinery

## Visibility

- Shape of the machinery
- Large glazed surfaces
- Mirrors, camera (rear vision)



# Safety of machinery

## Ergonomics

- Controls (Joysticks)
- Anti vibrating seats
- Cabins with air conditioning



# Safety of machinery

## ROPS

Overturning  
protective  
structure



# Safety of machinery

## Standardisation

Machinery directive defines

- Essential health and safety requirements in broad terms

Objective to reach



Standards give technical solutions to achieve health and safety requirements for each family of machine.



# Harmonised standards

**Generally European (EN) or international (ISO)**

Approved by vote after discussion between stakeholders

**Their references are published in EU Official Journal**

**Give presumption of conformity to directive**

Not necessarily indicated in declaration of conformity

**Revised or confirmed every 5 years**

# Harmonised standards

## Mobile road construction machinery

### EN 500-1 : General



### EN 500-2 : Milling machines



### EN 500-6 : Asphalt pavers



### EN 500-3 : Soil Stabilizers



### EN 500-4 : Compactors

# Electromagnetic compatibility

## ● Principle

Electric and electronic circuit shall not

- Be disturbed by the environment
- Disturb the environment.

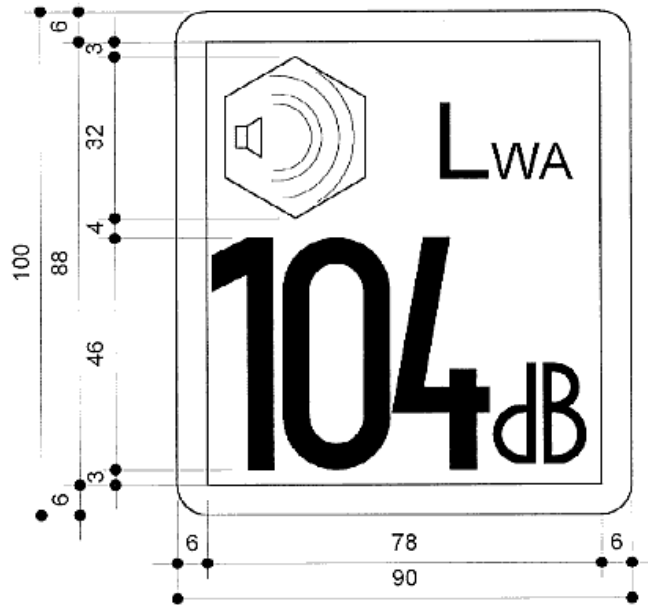
❖ opportunity



# Outdoor noise emissions

- **Principle**

To reduce noise emissions from the machinery itself to a minimum (process noise not taken into account)



**Guaranteed  
sound power  
level as  
indicated on  
machine**



❖ **opportunity**

# Noise directive

## Mobile road construction machinery



Milling machines



Asphalt pavers



Compactors

Graders



# Countries outside Europe

- **Safety of machinery**

European standards are used as basis for ISO standards under development

- **Noise emissions**

Various countries are developing new regulation



❖ opportunity



**Sharing the road**  
16th  
World Meeting  
International Road Federation

**Thanks for your attention**

**Merci de votre attention**