

# CE marking

Nordisk vägmarkeringskonferens,  
Finland

Rovaniemi 8.-9.2.2011

# Timeframe

- Draft standards sent to UAP
  - Deadline supporting standards 2011-03-21
  - Deadline product standards 2011-07-01
- Next WG2 meeting in September/October
- Final approval of standards xx-xx-xx
- Publication of new standards xx-xx-xx
- Co-existence of standards 2 years
- CE markings mandatory - Earliest 2014-01-01\*

# Various product standards in WG2

- EN 1871 - Paint, thermoplastic and cold plastic materials — Specifications
- EN 1790 - Preformed road markings
- EN 1423 – Drop-on materials
- EN 1463 – Road studs
- XXX - pre-Work Item - Active Road Studs

# Terminology in EN 1790

## **3.2 preformed road marking**

a factory produced road marking system (or product), in sheet or roll form, capable of being applied to the substrate with adhesive, primer, pressure, heat or a combination of them

### **3.2.1 tape**

a preformed multilayer road marking, capable of adapting itself to the texture of the substrate, which may be precoated with pressure-sensitive adhesive, capable of being stuck to the substrate without heating the material. Photometric, colorimetric and skid resistance characteristics are not significantly modified during application.

### **3.2.2 preformed cold plastic road marking**

a preformed road marking made of cold plastic marking material as defined in EN 1871, applied to the substrate by means of an adhesive. Photometric, colorimetric and skid resistance characteristics are not significantly modified during application

### **3.2.3 preformed thermoplastic road marking without drop-on materials**

a “pre-beaded” preformed road marking made of thermoplastic marking material as defined in EN 1871, applied to the substrate by heating the material at melting temperature and without addition of any retroreflective and/or anti-skid materials during application.

### **3.2.4 preformed thermoplastic road marking with drop-on materials**

a preformed road marking made of thermoplastic road marking material as defined in 1871, applied to the substrate by heating the material at melting temperature and with addition of retroreflective and/or anti-skid materials during application

# Terminology in EN 1871

## **3.1 paint**

liquid product containing binders, pigments, extenders, solvents and additives. It can be supplied in single or multi-component systems. When applied it produces a cohesive film by the process of solvent/water evaporation and/or a chemical reaction.

## **3.2 thermoplastic**

solvent-free marking substance supplied in block, granular or powder forms. It is heated to a molten state and then applied. It forms a cohesive film by cooling.

## **3.3 cold plastic**

viscous products supplied in multi-component forms (at least one main component and a hardener system) and free from solvents. The cohesive film is formed after mixing of all components only by a chemical reaction. Following the reaction, the cold plastic becomes a solid.

## **3.4 base road marking material**

base road marking material, for the purpose of this European Standard is a paint, a thermoplastic or a cold plastic with a unique identification complying with the definitions above and which may, or may not, include premix glass beads.

## **3.5 road marking assembly**

for the purpose of this European Standard is the base road marking material together with the precise application instructions including the identification of the manufacturer, dosages, types and proportions of drop-on materials and or premix glass beads needed to build up the applied road markings. Every change to these is a new assembly and it is identified with the name of the base road marking material followed by the word assembly and a correlative number (e.g. Thermo AX – Assembly 1; Thermo AX – assembly 2, etc)

### **3.5.1 structured road marking assembly**

is a road marking assembly without areas of regular dimensions and top surfaces. It has flat areas of a maximum width of 75,7 mm a maximum length of 125 mm at the top of the structure. The areas may be crossed by gaps that take up minimum 25% of the total surface area and have widths of minimum 5 mm. The areas may have ridges or edges of blocks with a height of minimum 1,2 mm.

### **3.5.2 non structured road marking assemblies**

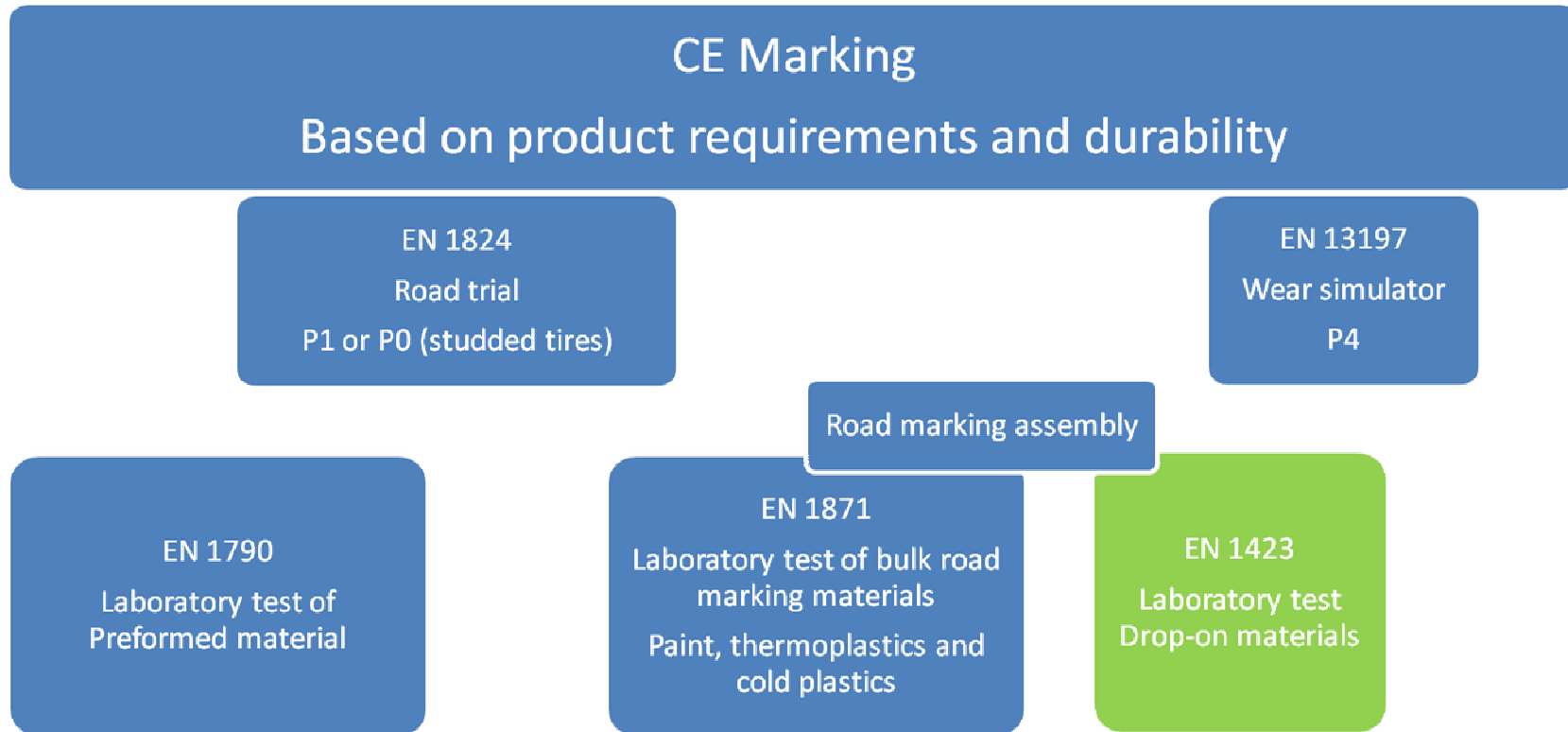
is a road marking assembly with areas of regular dimensions and top surfaces. It has flat areas of a minimum width of 75,7 mm and a minimum length of 125 mm at the top of the structure. The areas can be crossed by gaps that take up maximum 75% of the total surface area and have widths of maximum 5 mm. The areas can have ridges or edges of blocks with a height of maximum 1,2 mm.

# Laboratory requirements of base materials in EN 1871

Characteristic		Requirement and Compliance criteria	Assessment method	No. of samples		
Characteristics of the base road marking material	PAINT	Chromaticity co-ordinates (x,y) and luminance factor $\beta$	4.2.1.1	5.2.1.1	1	
		Hiding power	4.2.1.2	5.2.1.2	1	
		Storage stability	4.2.1.3	5.2.1.3	1	
		UV ageing	4.2.1.4	5.2.1.4	1	
		Bleed resistance	4.2.1.5	5.2.1.5	1	
		Alkali resistance	4.2.1.6	5.2.1.6	1	
	THERMOPLASTIC	Before heating	Chromaticity co-ordinates (x,y) and luminance factor $\beta$	4.2.2.2.1	5.2.2.2.1	1
			Softening point	4.2.2.2.2	5.2.2.2.2	1
			Alkali resistance	4.2.2.2.3	5.2.2.2.3	1
			Cold impact resistance	4.2.2.2.4	5.2.2.2.4	1
			UV ageing	4.2.2.2.5	5.2.2.2.5	1
		After heating	Chromaticity co-ordinates (x,y) and luminance factor $\beta$	4.2.2.3.1	5.2.2.3.1	1
			Softening point	4.2.2.3.2	5.2.2.3.2	1
			Indentation	4.2.2.3.3	5.2.2.3.3	1
			Troger wear	4.2.2.3.4	5.2.2.3.4	1
			UV ageing (Xe arc)	4.2.2.3.5	5.2.2.3.5	1
			Troger wear after Xe arc	4.2.2.3.6	5.2.2.3.6	1
			COLD PLASTIC	Chromaticity co-ordinates (x,y) and luminance factor $\beta$	4.2.3.1	5.2.3.1
	Storage stability	4.2.3.2		5.2.3.2	1	
	UV ageing	4.2.3.3		5.2.3.3	1	
	Alkali resistance	4.2.3.4		5.2.3.4	1	
Tröger wear	4.2.3.5	5.2.3.5		1		
Tröger wear after UV ageing	4.2.3.6	5.2.3.6		1		

None of them are essential characteristics – No requirement to choose a class

# CE marking



The CE marking will be placed on the base product, but are tested on the assembly

# Durability



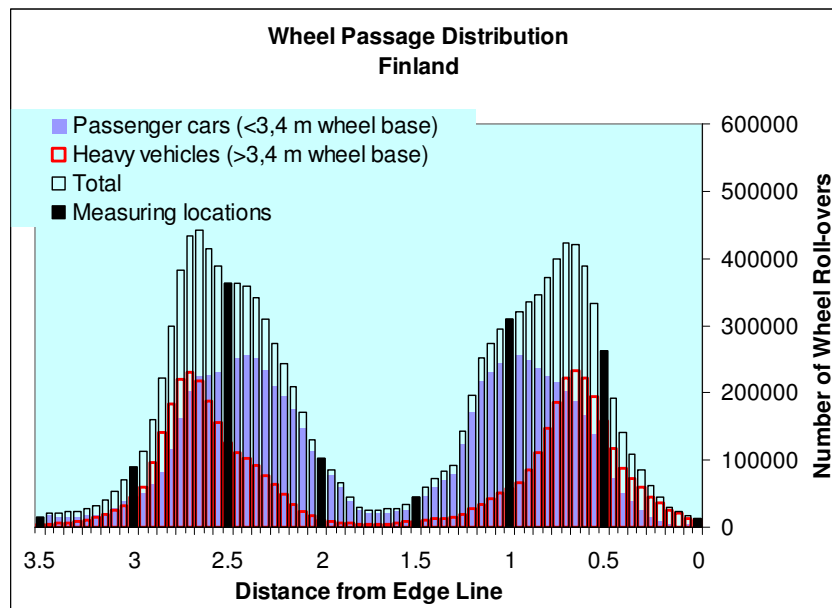
- Road trial
  - Studded tires P0 (<50 000)
  - Normal tires P1 (50-60000 wheel passes)
- Wear simulator P4 (500 000 wheel passes)

This is a low degree of wear

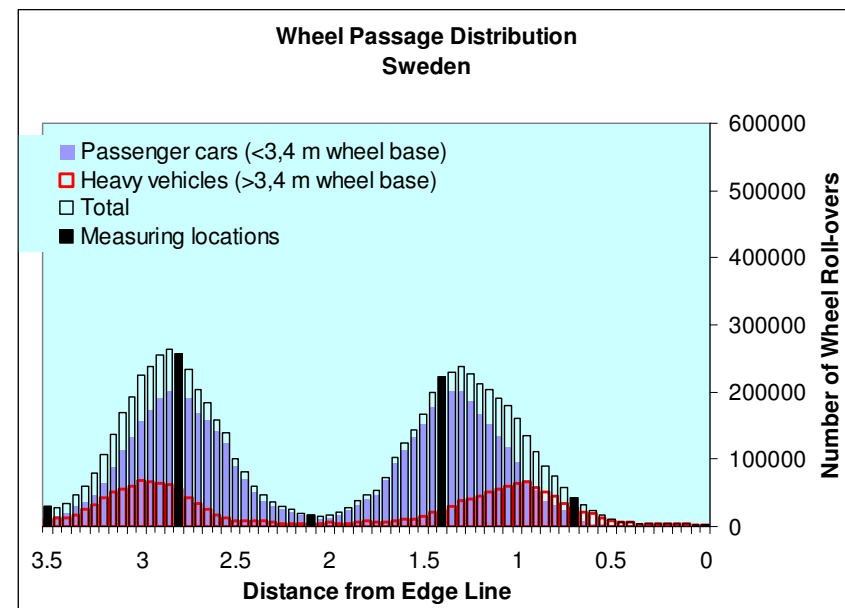


# Durability project (2004/2005)

## ADT 4500



## ADT 2660



# Performance

## Essential characteristics

			White	Yellow		
Characteristics of the road marking assembly	Night-time visibility	Retroreflection under headlamp illumination	Coefficient of retroreflected luminance $R_L$ on dry	Min R2	Min R1	1
			Coefficient of retroreflected luminance $R_L$ during wetness	4.3.2.b	5.3.2.b	1
			Coefficient of retroreflected luminance $R_L$ during rain	4.3.2.c	5.3.2.c	1
	Daytime visibility	Reflection in daylight or under road lighting:	Coefdficient under diffuse illumination $Q_d$	Min Q2	Min Q1	1
			Luminance factor $\beta$	Min B2	Min B1	1
			Chromaticity co-ordinates (x,y)	4.3.4	5.3.4	1
	Skid Resistance		SRT units	Min S1	Min S1	1
	Durability		Road trials: (Roll over class)	4.4.2	5.4.1	1
		Wear simulator: turntable (Traffic class)	4.4.3	5.4.2	1	

# Theoretical combinations

- Many available combinations in EN 1824
  - Texture (4)
  - Köppen climate zone (10)
  - Studded tires (2)
- Changes in chemistry (new raw materials, change of %)
- Changes in physical properties (viscosity, hardness, whiteness etc)
- Changes in assemblies (thickness, application, drop-on)
- Higher requirements (P-class and/or performance on the road)

# Comments CE marking

- CE marking will not be a quality mark – only a pass to trade
  - Recommend to use a simplified approach
- Big room for interpretation and questions on how users of products will be checked
  - Must do surveillance that CE marked products are used, otherwise it will be unfair competition
- Extra administration for countries with performance requirements
  - What will be specified in tenders/regulations in the future?
- Weaker system for countries with national homologation
  - Since fingerprint is weaker and that manufacturer choose notifying body, countries using homologation will find new ways to create barriers
  - All invested money in current certificates will disappear

# Comments CE marking

- The industry will get more costs for certification, factory visits and surveillance during application
- The industry don't know the interpretation/what requirements from road authorities when starting the CE marking procedure
- Extra costs will in the end need to be sent to the end customer
- It will lead to fewer manufacturers/fewer available products and/or worse quality and/or less performance measurements

# Thanks for your attention

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