

# Technical

# Documentation

## Public lighting poles

Steel or aluminum,  
straight or with brackets

CE

EN 40 standard and CE labeling  
Regulatory obligations and  
fitting instructions

**FILE**

Prepared by the  
manufacturers  
of external  
public lighting,  
members of  
the Lighting  
Union.

## CPD & the EN40 standard

The Construction product directive (1) is applicable to public lighting. The order dated 20/12/2005 (2) imposes that from February 2005, lighting columns in steel or aluminum that are commercialized must bear the "CE" label, attesting that these products are in conformity with the EN40 standard, under the control of a third party organization authorized by the member states of the European Union.(3)

## EN40 Standard

It refers to a series of European standards relating to public lighting columns. They replace the French NV 65(4) & CM 66(5) standards.

### The EN40 standards

EN40 1 March 1992
Lighting columns – Part 1: definitions and terms
EN40 2 May 2005
Public lighting columns – Part 2: Dimensions and tolerances
EN40 3-1 April 2000
Public lighting columns-Part 3-1: design and verification - specifications for characteristic loads
EN40 3-2 April 2000
Public lighting columns- Part 3-2: design and verification- verification by trials
EN40 3-2 April 2000
Public lighting columns- Part 3-3: design and verification- verification by calculation
EN40-5 October 2002
Public lighting columns- Part 5: Requirements for public lighting columns in steel
EN40-6 October 2002
Public lighting columns- Part 6: Requirements for public lighting columns in aluminum
EN40-7 April 2004
Public lighting columns- Part 7: Specifications for lighting columns in fiber-reinforced composites

## Which products should be labeled CE?

It only refers to products in steel and aluminum:

- straight poles, lantern supports up to 20m;
- poles with brackets and lantern supports up to 18m;
- straight lighting columns with projector supports less than 15m.

In France straight poles with projector supports over 15m are designed according to the recommendations of the CTICM concerning 'high masts'

Poles in composite, concrete or wood are not currently subjected to CE labeling requirements. In addition catenaries and line supports are also not concerned by these regulations. Manufacturers of these poles are able to carry out their own resistance calculations according to the subjected load and installation conditions.

## CE labeling

It is made up of two indissociable elements:

- Simplified labeling on the product, including as a minimum the name or trade name of the manufacturer, the product code and year of manufacture. It may also include the CE logo, the reference of the standard, the number of the authorized third party organization, etc.
- The associated commercial document on which the general information relating to the standard is shown in addition to the conventional declared values relating to the calculation of conformity.

## Organizations concerned by labeling

- Industrial, the manufacturer or OEM responsible for the initial commercialization ensures and assumes the CE labeling on the finished package (steel or aluminum lighting column, straight or with brackets)

Distributor: the distributor buys lighting columns that are straight or with brackets that are labeled and sells them in the same state.

Installer: company or local authority: they must install products that are labeled CE. They are responsible for the work carried out. They must verify that the material responds to the criteria of the EN40 standard for the specificity of the installation site.



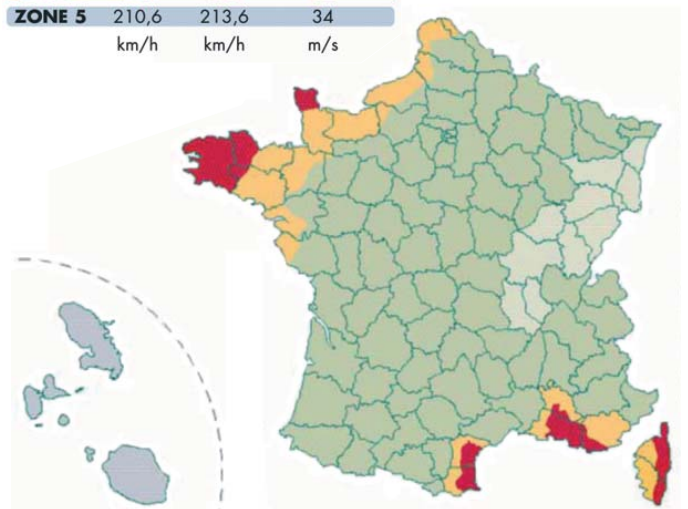
## What are the important parameters of the EN 40 standard?

### Wind belts and wind speed

Wind belts are defined in the Eurocode 1 part 2-4: Actions on the structures, Action of the wind – Annex A: Metrological conditions and national wind map (or NF EN 1991-1-4) Their geographical limits remain unchanged in relation to the old reference (NV65):

Four zones for mainland France and a fifth one for overseas territories. Each wind belt is associated with an average reference wind speed.

	NV 65	CTICM	EUROCODE 1
<b>ZONE 1</b>	136,1	137,9	24
<b>ZONE 2</b>	149,1	151,0	26
<b>ZONE 3</b>	166,6	168,9	28
<b>ZONE 4</b>	182,5	185	30
<b>ZONE 5</b>	210,6	213,6	34
	km/h	km/h	m/s





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## The sites

The sites previously referred to as "protected"; normal; exposed" have been replaced by four categories of land.

New name	Definition	Previous name
Category 1	Seaside (coastline to a depth of 6km) edge of a lake with a length exposed to the wind of at least 5km. Flat even land without obstacles	Exposed site
Category 2	Fenced off cultivated land, some small farm buildings, houses or trees	Normal site
Category 3	Industrial or suburban zones and permanent forests	Protected site
Category 4	Urban perimeters with at least 15% of the surface built on and/or on which the average height of buildings exceeds 15m	

Because of swirling winds, categories 3 and 4 are not adapted to lighting columns and must not be used, except if otherwise indicated in Particular technical specifications.

## Incidences on the mechanical resistance on lighting columns

Due to changes in the taking into account of mechanical constraints relating to torsion and deformation, use limits of these products may have been modified. Admissible surfaces of some lighting columns have been reduced.

## Admissible surfaces and conventional declared values

Use limits are defined by the admissible surfaces at the mast head according to the wind belt and the category of land. They are provided by the manufacturer that takes into consideration the configuration of the product to be installed.  
The conventional declared value is a characteristic of the support calculated according to the following parameters: lantern of 18kg, wind at 24 m/s, category of land n°2. It is an indicative value which ignores the real conditions of use; it does not therefore allow the verification of the good performance of a structure for a defined site.

## Fitting instructions and the upkeep of public lighting supports

- Lighting columns are calculated to resist at a given and known load, taking into consideration the constraints linked to a geographical location or a site. Important: the pole manufacturer must be consulted for any addition of accessories (decorative lights, various signs, flower presentations etc.) providing the precise characteristics of the accessories.
- It is recommended that public lighting poles with base plates be installed directly on the concrete foundation if it is possibly flat and smooth. If this is not the case it is possible to use a semi-rigid device capable of ensuring the verticality of the support in addition to a correct bed for the base plate. Assembly with a bolt system is allowed if the space under the base plate is completely filled with mortar.
- If the base plate of the pole must be covered, it is strongly advised to ensure that these materials are not aggressive; otherwise it is necessary to ensure insulation material between the base plate and the covering material.
- The presence of a device to insulate the bolt/base plate to avoid steel/aluminum electrolytic couples is obligatory for aluminum lighting columns, except if this insulation is already provided by the manufacturer.
- To avoid corrosion and ensure the longevity of the lighting columns, it is strongly recommended to install a groove or drain for the evacuation of internal condensation water and protect the heads of bolts and nuts with caps filled with grease.

For additional information refer to the brochure "maintenance of exterior public lighting" available from the Lighting Union on [www.syncicat-ecclairage.com](http://www.syncicat-ecclairage.com)

## On site verification

There is no obligation to carry out good performance tests on site for new installations. However, if trials must be carried out, the verifying organization must take into account the hypothesis and calculation methods used during the installation (torsional moment, bending moment, standards or rules of calculation etc.)

## Obligations relative to products covered by the application field of the order dated December 20, 2002

Questions	Yes	No	Comments
1. Must we obligatorily use steel or aluminum lighting columns that are labeled CE	X		The order has made CE labeling obligatory on these products since 01/02/2005.
2. Does the NV65 standard still apply to lighting columns?		X	CE labeling implies the use of calculations according to the EN40 standard. This standard which is specific to lighting columns replaces French NV 65 rules (DTU P006) because all harmonized European standards replace the old national standards. It is not longer necessary to demand calculations according to NV65a
3. A pole labeled CE, installed in conformity with the manufacturer's instructions, with the hypothesis of the land and concrete used checked, provides me with an installation that responds to the requirements of the equivalent old NV 65 rules?	X		See response 2. The calculation according to EN40 leads to efforts transmitted to the ground which are superior to those obtained under the NV65 rules in all cases.
4. Does the conventional declared value guarantee the correct resistant of the product to the wind?		X	The conventional declared values accompanying the labeling may not correspond to the real conditions of use.
5. Do the dimensions of the concrete foundations in the manufacturer's catalogues guarantee the mechanical resistance of the structure?		X	The dimensions of the foundation are given as a guide for average pressure on the ground at 2 bars. The site manager must ensure the conformity of dimensions and that the work carried out is in conformity with good engineering practices taking into consideration the physical characteristics of the land.
6. Can we place the bracket anywhere we like in relation to the door?		X	The technical installation instructions provided by the manufacturer should be consulted to identify possible technical counter-indications
7. In the case of an existing lighting column in good condition on which the lantern must be changed, must we check the support according to the new norm?	X		Only if the new lantern is bigger and/or heavier than the previous one.
8. Must a damaged lighting column be obligatorily replaced by a lighting column in conformity with the new standard?	X		It is considered as a new installation and must therefore be carried out with a lighting column which corresponds to regulatory requirements
9. Are wall lighting and illuminated bollards also covered by this order?		X	They are not lighting columns, they are however covered by safety requirements laid out in order n° 95-1081 dated October 3 1995 and are labelled CE accordingly.
10. How should composed masts or multi-material packages be considered? Are they submitted to these regulations?		X	No, the order only concerns lighting columns in steel or in aluminum
11. Are traffic light supports covered by these regulations?		X	These products are not lighting columns, just like supports for flower presentations and sign and flag supports which do not have lighting equipment
12. Do sanctions exist for the non respect of this standard?			Sanctions range from a 5th class contravention (1500 €) to prison sentences according to the appreciation of the judge that will take into consideration multiple criteria: importance of the risk, bona fides or not of the offender...

### Useful addresses

**Syndicat de l'éclairage (Lighting Union)**  
11-17, rue de l'Amiral Hamelin  
75783 Paris cedex 16  
Tél. : 01 45 05 72 72  
Fax : 01 45 05 72 73  
[www.syndicat-eclairage.com](http://www.syndicat-eclairage.com)

**AFE (French lighting association)**  
11-17, rue de l'Amiral Hamelin  
75783 Paris cedex 16  
Tél. : 01 45 05 72 00  
Fax : 01 45 05 72 70  
[www.afe-eclairage.com.fr](http://www.afe-eclairage.com.fr)

The lighting union groups the following manufacturers of lamps, lights, lighting columns and components:  
3 E international – Abel – Aric – Arlus – Atéa – Atelier Sédap – Aubrilam – Comatélec – Conimast – Erco – Etap – GE lighting – GHM – Honeywell – I Guzzini – KRS – LEC – Legrand – Lledo France – Louis Poulsen – Ludec Se'lux – Mazda Eclairage – Optectron – Osram – Petitjean – Philips Eclairage – Radian – S.E.A.E. – Sammode – Sarlam – Scœem Amad – Sécurité – Sogexi – Targetti – Technilum – Thorn – Trato – TridonicAtco – Tilux – Valmont Serméto – Vossloh Schwabe – Waldmann Eclairage (List dated 15/06/2006.) Our thanks to the companies that have provided illustrations.

### Other publications

Downloadable and available free upon simple request on [www.syndicat-eclairage.com](http://www.syndicat-eclairage.com)  
Maintenance and exterior lighting

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- Public road, urban, illuminations and lifestyle, open spaces lighting: light correctly
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- Variation and lighting management
- Lighting of shops

### Notes

1/ Directive 89/106/CEE dated 21-12-1998 relating to the matching of legal, regulatory and administrative dispositions of member states concerning construction products, modified by the directive 93/68/CEE dated 22-07-1993 transposed in France by the order n° 92-647 dated July 8 1992 concerning the aptitude of use for construction products modified by order n°95-1051 dated 10-09-95.

2/ Order dated 20-12-2002 relating to public lighting columns in steel and aluminum from decree n°92-647 dated July 8 1992 concerning the aptitude of use for construction products modified by the decree n° 95 dated 10-09-95 and notice dated January 14, 2003 relating to its application.

3/ List available on the following address <http://europa.eu.int/comm/entreprise/nando-is/cpd/> click on "products" then "road lighting columns (for circulation areas)"

4/ Rules NV 65 accompanied by the modification n°2 from December 1999 (reference Afnor DTU P 06-002): rules defining the effects of snow and wind on constructions.

5/ French regulations CM 66 and the additive 1980 (Afnor reference DTU P 22.701): rules for the calculation of constructions in steel.