RETLIF TESTING LABORATORIES

Are you compliant? The new European EMC Directive (2014/30/EU) deadline was April 20th

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What We'll Cover

- General Provisions of the Directive
- Essential Requirements
- Obligations of Economic Operators
- Presumption of Conformity
- Harmonized Standards
- Conformity Assessment Procedures
  - Internal Production Control
  - EU-Type Examination
  - Fixed Installations
- Application of Annex II – Internal Production Control
- Declaration of Conformity

General Provisions

- The Directive regulates the electromagnetic compatibility of equipment.
- The Directive is applicable to ‘equipment’ which is defined in Chapter 1 Article 3 of the directive.

Exclusions

- The EMC Directive does not apply to:
  - Equipment covered by the R&TTE (1999/5/EC) or from June 13, 2016 the new Radio Equipment Directive (RED) (2014/53/EU).
  - Aeronautical products, parts or appliances referred to in Regulation (EC) No 216/2008.
  - Amateur Radio Equipment.

Making Available / Putting Into Service

- Member states are required to take all appropriate measures to ensure that equipment placed in service or made available complies with the Directive.

Display and /or Demonstration

- Members State cannot create any obstacles to display and/or demonstration at trade fairs, exhibitions etc.

Annex I
Essential Requirements

1. **General requirements**

   Equipment shall be so designed and manufactured, having regard to the state of the art, as to ensure that:

   a) the electromagnetic disturbance generated does not exceed the level above which radio and telecommunications equipment or other equipment cannot operate as intended.

   b) it has a level of immunity to the electromagnetic disturbance to be expected in its intended use which allows it to operate without unacceptable degradation of its intended use.

2. **Specific requirements for fixed installations**

   Installation and intended use of components

   A fixed installation shall be installed applying good engineering practices and respecting the information on the intended use of its components, with a view to meeting the essential requirements set out in point 1.

Obligations of Economic Operators

- The directive defines the obligations of:
  - Manufacturers
  - Authorized Representatives
  - Importers
  - Distributors

Obligations of Manufacturers

- Design
- Documentation
- Conformity assessment
- Declaration and Labeling
- Instructions
- On going

Obligations of Authorized Representatives

- The authorized representative cannot assume responsibility for:
  - Ensuring the design and manufacture of the apparatus in accordance with the Directive.
  - Drawing up the required technical documentation.

Obligations of Importers

- Shall ensure that only compliant equipment is placed on the market.
- Prior to placing on the market, shall ensure that the appropriate conformity. assessment procedure has been carried out by the manufacturer.

Obligations of Distributors

- Obligations of distributors are identical to those of importer, with the exception that they do have to place their name and postal address with the equipment.

Harmonized Standards Published in the Official Journal of the European Union

ESO (1)	Reference and title of the standard (and reference document)	Reference of superseded standard	Date of cessation of presumption of conformity of superseded standard Note 1
(1)	(2)	(3)	(4)
	EN 617:2001+A1:2010 Continuous handling e requirements for the s silos, bunkers, bins	EN 617:2001 Note 2.1	Date expired (30.6.2011)
CEN	EN 618:2002+A1:2(Continuous handling requirements for equipment except fixed belt conveyors EMC materials	EN 618:2002 Note 2.1	Date expired (30.6.2011)

CEN
CENELEC
ETSI

European Standardisation Organization

Harmonized Standards Published in the Official Journal of the European Union

ESO ([1])	Reference and title of the standard (and reference document)	Reference of superseded standard	Date of cessation of presumption of conformity of superseded standard Note 1
	(2)	(3)	(4)
CEN	+A1:2010 handling equipment and systems — Safety and EMC for the equipment for the storage of bulk materials i silos, bunkers, bins and hoppers	EN 6	pired 1)
CEN	EN 618:2002+A1:2010 Continuous handling equipment and systems — Safety and requirements for equipment for mechanical handling of bulk mat except fixed belt conveyors		11)

Now EN

Reference and Title of Standard (Now EN)

Harmonized Standards Published in the Official Journal of the European Union

Reference of Superseded Standard

		Reference of superseded standard	Date of cessation of presumption of conformity of superseded standard Note 1
	(2)	(3)	(4)
CEN	EN 617:2[illegible]:2010 Continuous handling equipment and systems — Safety and EMC requirements for the equipment for the storage of bulk materials in silos, bunkers, bins and hoppers	EN 617:2001 Note 2.1	
CEN	EN 618:2002+A1:2010 Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors	EN 618:2002 Note 2.1	Date expired (30.6.2011)

In this case, A1:2010 has been adopted

Harmonized Standards Published in the Official Journal of the European Union

Date of Cessation of Presumption of Conformity of Superseded Standard

ES		rence of rseded standard	Date of cessation of presumption of conformity of superseded standard Note 1
(1)		(3)	(4)
CEN	EN 617:2001+A1: Continuous handling equipment and systems — Safety and EMC requirements for the equipment for the storage of bulk materials in silos, bunkers, bins and hoppers	EN 617:2001 Note 2.1	Date expired (30.6.2011)
CEN	EN 618:2002+A1:2010 Continuous handling equipment and systems — Safety and EMC requirements for equipment for mechanical handling of bulk materials except fixed belt conveyors	N 618:2002 Note 2.1	Date expired (30.6.2011)

In this case June 30 2011

(1)	(2)	(3)	(4)
Cenelec	EN 61000-3-11:2000 Electromagnetic compatibility (EMC) — Part 3-11: Limits — Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems — Equipment with rated current <= 75 A and subject to conditional connection IEC 61000-3-11:2000	Relevant generic standard(s) Note 2.3	Date expired (1.11.2003)
Cenelec	EN 61000-3-12:2011 Electromagnetic compatibility (EMC) — Part 3-12: Limits — Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and <= 75 A per phase IEC 61000-3-12:2011 IEC 61000-3-12:2011/IS1:2012	EN 61000-3-12:2005 Note 2.1	Date expired (16.6.2014)
Cenelec	EN 61000-6-1:2007 Electromagnetic compatibility (EMC) — Part 6-1: Generic standards — Immunity for residential, commercial and light-industrial environments IEC 61000-6-1:2005	EN 61000-6-1:2001 Note 2.1	Date expired (1.12.2009)
Cenelec	EN 61000-6-2:2005 Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments IEC 61000-6-2:2005		
	EN 61000-6-2:2005/AC:2005		

The 61000-4-X series of standards are not published in the OJ

Conformity Assessment Procedures

- Compliance shall be demonstrated by either of the following conformity assessment procedures:
  - Internal production control (Annex II).
  - EU type examination followed by conformity to type based on internal production control (Annex III).

Internal Production Control

- Electromagnetic Compatibility Assessment
- Technical Documentation
- Manufacturing

Annex III – Part A
EU – Type Examination

- A Notified Body examines the technical design of an apparatus and verifies and attests that the TECHNICAL DESIGN of the apparatus meets the essential requirements.

Annex III – Part A
EU – Type Examination

- The manufacturer lodges an application for EU-type examination with a single notified body.
- The application must specify the aspects of the essential requirements which are requested to be examined.
- Role of the Notified Body
- Manufacturers Obligation after EU-type examination

EU Declaration of Conformity and CE Marking

- The manufacturer shall draw up a written EU declaration of conformity for an apparatus model and keep it together with the technical documentation.
- The manufacturer shall affix the CE marking to each individual apparatus that complies.

Fixed Installations

- For fixed installation, many of the detailed requirements are not mandatory.
- Documentation must:
  - Identify the fixed installation
  - Its electromagnetic compatibility characteristics
  - Indicate precautions
  - Include the good engineering practices referred to in point 2 of the essential requirements

Application of Annex II Internal Production Control

- Electromagnetic Compatibility Assessment
  - Selecting the appropriate standards
  - Applying the appropriate test methods
  - Operating conditions
  - Configurations
  - Performance criteria

Select the Appropriate Harmonized Product Family Standard

Cenelec	EN 61326-1:2006 Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 1: General requirements IEC 61326-1:2005	EN 61326:1997 + A1:1998 + A2:2001 + A3:2003 Note 2.1	Date expired (1.2.2009)
Cenelec	EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 1: General requirements IEC 61326-1:2012	EN 61326-1:2006 Note 2.1	Date expired (14.8.2015)
Cenelec	EN 61326-2-1:2006 Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 2-1: Particular requirements — Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications IEC 61326-2-1:2005	EN 61326:1997 + A1:1998 + A2:2001 + A3:2003 Note 2.1	Date expired (1.2.2009)
Cenelec	EN 61326-2-1:2013 Electrical equipment for measurement, control and laboratory use — EMC requirements — Part 2-1: Particular requirements — Test configurations, operational conditions and performance criteria for sensitive test and measurement equipment for EMC unprotected applications IEC 61326-2-1:2012	EN 61326-2-1:2006 Note 2.1	Date expired (6.11.2015)

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61326-1

January 2013

ICS 17.220; 19.080; 25.040.40; 33.100

English version

Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements

(IEC 61326-1:2012)

Matériel électrique de mesure, de commande et de laboratoire - Exigences relatives à la CEM - Partie 1: Exigences générales (CEI 61326-1:2012)

Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen - Teil 1: Allgemeine Anforderungen (IEC 61326-1:2012)

Immunity Requirements Derived from EN 61326-1 Table 1

Port	Phenomenon	Basic standard	Test Value	Performance criterion
Enclosure	Electrostatic discharge (ESD)	IEC 61000-4-2	4 kV contact discharge	B
			8 kV air discharge	B
	Electromagnetic Field	IEC 61000-4-3	3 V/m (80 MHz to 1 GHz)	A
			3 V/m (1.4 GHz to 2.0 GHz)	A
			1 V/m (2.0 GHz to 2.7 GHz)	A
	Power frequency magnetic field	IEC 61000-4-8	3 A/m (50Hz, 60 Hz)[f]	A
AC power	Voltage dip	IEC 61000-4-11	0 % during half cycle	B
			0 % during 1 cycle	B
			70 % during 25/30 cycles[e]	C
	Short interruptions	IEC 61000-4-11	0 % during 250/300 cycles[e]	C
	Burst	IEC 61000-4-4	1 kV (5/50 ns, 5 kHz)	B
	Surge	IEC 61000-4-5	0.5 kV[a] / 1 kV[b]	B
	Conducted RF	IEC 61000-4-6	3 V (150 kHz to 80 MHz)	A
I/O signal/control (including functional earth)	Burst	IEC 61000-4-4	0.5 kV[d] (5/50 ns, 5 kHz)	B
	Surge	IEC 61000-4-5	1 kV[b, c]	B
	Conducted RF	IEC 61000-4-6	3 V[d] (150 kHz to 80 MHz)	A

a Line to line
b Line to ground
c Only in the case of long distance lines (See 3.10)
d Only in the case of lines > 3 m
e For example "25/30 cycles" means "25 cycles for 50 Hz test" or "30 cycles for 60 Hz test"
f Only to magnetically sensitive equipment

Emissions Limits

- Derived from Clause 7.2 of EN 61326-1:2013

The equipment shall be classified and respective information provided per the applicable group and class as specified within CISPR 11:2009.

For Class A equipment, the limits, the measuring methods and provisions of CISPR 11 apply.

For Class B equipment, the limits, the measuring methods and provisions of CISPR 11, IEC 61000-3-2 and IEC 61000-3-3 apply.

Normative References

Preview courtesy BSI. Full Standard available at: http://shop.bsigroup.com/ProductDetail/?pid=000000000030291592

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the editio
references, the latest edition of the referenced document (including any am

NOTE When an international publication has been modified by common modifications, in
applies.

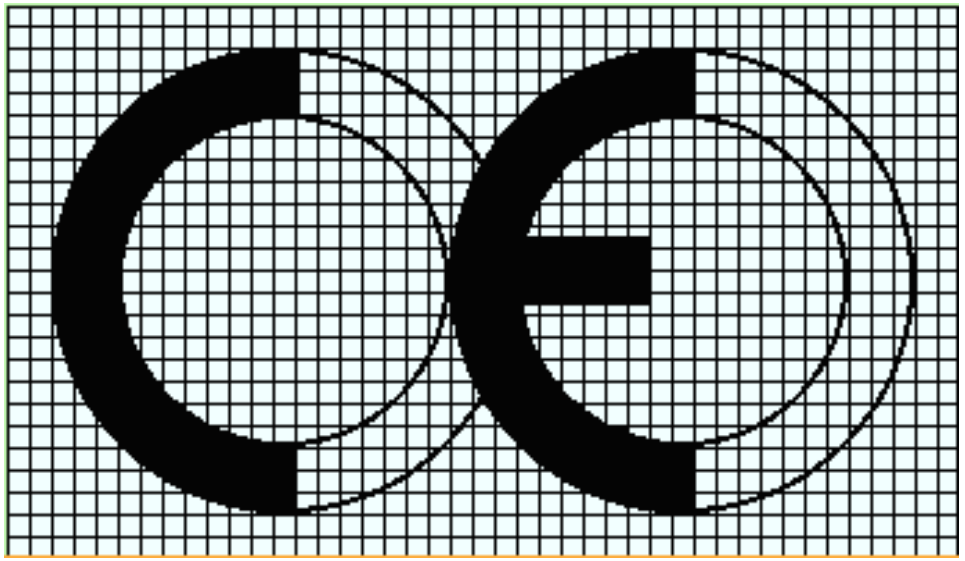
Publication	Year	Title		
IEC 60050	Series	International Electrotechnical Vocabulary		
IEC 61000-3-2 + A1 + A2	2005 2008 2009	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A p phase)		
IEC 61000-3-3	2008	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection		
IEC 61000-3-11	2000	Electromagnetic compatibility (EMC) - Part 3-11: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems - Equipment with rated current ≤ 75 A and subject to conditional connection	EN 61000-3-11	2000
IEC 61000-3-12	2011	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase	EN 61000-3-12	2011
IEC 61000-4-2	2008	Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test	EN 61000-4-2	2009
IEC 61000-4-3 + A1 + A2	2006 2007 2010	Electromagnetic c Part 4-3: Testing a techniques - Radi electromagnetic fi		
IEC 61000-4-4 + corr. June + A1	2004 2007 2010	Electromagnetic c Part 4-4: Testing a techniques - Elec immunity test		
IEC 61000-4-5 + corr. October	2005 2009	Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement	EN 61000-4-5	2006

For dated references, only the edition cited applies.

IEC 61000-4-4: 2012

Application of Annex II Internal Production Control

- Establish Technical Documentation.
- Ensure manufacturing processes.
- CE Mark



Example of an EU Declaration of Conformity for products covered by the EMC-Directive 2014/30/EU

EU Declaration of Conformity (DoC)

We

Company name:	Name of manufacturer or authorised representative
Postal address:	Any street
Postcode and City:	Postcode Any city
Telephone number:	Telephone number
E-Mail address:	E-Mail@anyway.com

declare that the DoC is issued under our sole responsibility and belongs to the following product:

Apparatus model/Product:	Apparatus
Type:	Type
Batch:	Batch
Serial number:	Serial number

Object of the declaration (identification of apparatus allowing traceability; it may include a colour image of sufficient clarity where necessary for the identification of the apparatus):

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:
Directive 2004/108/EC (until 19th April, 2016) and Directive 2014/30/EU (from April 20th, 2016)

...
e.g. Low Voltage Directive (LVD) 2006/95/EC
e.g. Ecodesign Directive 2009/125/EC

The following harmonised standards and technical specifications have been applied:

Title:	Date of standard/specification
e.g. EN 55014	2006 + A1:2009 + A2:2011
...	...
...	...
...	...
...	...
...	...

Notified body (where applicable):

Name of notified body	4 digit notified body number
Reference number of the certificate of notified body	

Additional information:

Additional information

Signed for and on behalf of:

Place and date of issue	
Place and date of issue	Name, function, signature

Summary

- The new Directive provides 2 paths to conformity.
- Harmonized standards are still the primary means to demonstrate compliance.
- Specific labeling and user information requirements defined.
- DoC and Technical Documentation must be completed and held, made available to authorities on request.
- Questions?

Thanks for attending!

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