BRITISH STANDARD

BS EN
1504-6:2006

Products and systems for the protection and repair of concrete structures — Definitions, requirements, quality control and evaluation of conformity —

Part 6: Anchoring of reinforcing steel bar

The European Standard EN 1504-6:2006 has the status of a British Standard

ICS 91.080.40

BSI
British Standards

National foreword

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A list of organizations represented on B/517/8 can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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This European Standard was approved by CEN on 19 July 2006.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 1504-6:2006) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2007, and conflicting national standards shall be withdrawn at the latest by December 2008.

It has been developed by sub-committee 8 "Products and systems for the protection and repair of concrete structures" (Secretariat AFNOR).

This Part of EN 1504 does not supersede any other European Standard.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Construction Products Directive (89/106/EC).

For the relationship with the EU Directive, see informative Annex ZA, which is an integral part of this document.

This Part of EN 1504 includes an informative Annex A dealing with factory production control and an informative Annex B dealing with release of dangerous substances.

This Part of this European Standard is one of the Parts of this standard on products and systems for the repair and protection of concrete structures. The other parts are listed below:

— *EN 1504-1, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 1: Definitions.*

— *EN 1504-2, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 2: Surface protection systems for concrete.*

— *EN 1504-3, Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 3: Structural and non-structural repair.*

— *EN 1504-4, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 4: Structural bonding.*

— *EN 1504-5, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 5: Concrete injection.*

— *EN 1504-7, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 7: Reinforcement corrosion protection.*

— *EN 1504-8, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 8: Quality control and evaluation of conformity.*

— *ENV 1504-9* [1)]*, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity – Part 9: General principles for the use of products and systems.*

— *EN 1504-10, Products and systems for the protection and repair of concrete structures – Definitions, requirements, quality control and evaluation of conformity - Part 10: Site application of products and systems and quality control of the works.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1) ENV 1504-9 will be modified when adopted as EN according to finalisation of this European Standard

1 Scope

This Part of EN 1504 specifies requirements for the identification, performance (including durability) and safety of products and systems to be used for the anchoring of reinforcing steel (rebar) as used for structural strengthening to ensure the continuity of reinforced concrete structures.

This Part of EN 1504 covers the fields of application in accordance with repair method 4.2 of ENV 1504-9:1997.

NOTE It is assumed that a proper structural assessment of the structural elements to be subjected to repair is carried out by qualified engineers and that the choice of the products and systems to be used as well as the design are based on this assessment.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1015-17, *Methods of test for mortar for masonry — Part 17: Determination of water-soluble chloride content of fresh mortars*

EN 1504-1:2005, *Products and systems for the protection and repair of concrete structures — Definitions, requirements, quality control and evaluation of conformity — Part 1: Definitions*

EN 1504-8:2004, *Products and systems for the protection and repair of concrete structures — Definitions, requirements, quality control and evaluation of conformity — Part 8: Quality control and evaluation of conformity*

ENV 1504-9:1997, *Products and systems for the protection and repair of concrete structures — Definitions, requirements, quality control and evaluation of conformity — Part 9: General principles for the use of products and systems*

prEN 1544, *Products and systems for the protection and repair of concrete structures — Test methods — Determination of creep under sustained tensile load for synthetic resin products (PC) for the anchoring of reinforcing bars*

EN 1767, *Products and systems for the protection and repair of concrete structures — Test methods — Infra-red analysis*

EN 1877-1, *Products and systems for the protection and repair of concrete structures — Test methods — Reactive functions related to epoxy resins — Part 1: Determination of epoxy equivalent*

EN 1877-2, *Products and systems for the protection and repair of concrete structures — Test methods — Reactive functions related to epoxy resins — Part 2: Determination of amine functions using the total basicity number*

prEN 1881, *Products and systems for the protection and repair of concrete structures — Test methods — Testing of anchoring products by the pull out method*

EN 12190, *Products and systems for the protection and repair of concrete structures — Test methods — Determination of compressive strength of repair mortar*

EN 12192-1, *Products and systems for the protection and repair of concrete structures — Granulometry analysis — Part 1: Test method for dry components of premixed mortar*

EN 12614, *Products and systems for the protection and repair of concrete structures — Test methods — Determination of glass transition temperatures of polymers*

EN 13294, *Products and systems for the protection and repair of concrete structures — Test methods — Determination of stiffening time*

EN 13395-2, *Products and systems for the protection and repair of concrete structures — Test methods — Determination of workability - Part 2: Test for flow of grout or mortar*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN ISO 9514, *Paints and varnishes — Determination of the pot life of multicomponent coating systems — Preparation and conditioning of samples and guidelines for testing (ISO 9514:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1504-1:2005, EN 1504-8:2004, ENV 1504-9:1997 and the following apply.

3.1
anchoring product
products based on hydraulic binders or synthetic resins or a mixture of these, installed at a fluid or paste consistency, to grout ribbed reinforcing steel bars (rebars) in hydraulic concrete structures

4 Performance characteristics for intended uses

Table 1 lists the performance characteristics of anchoring products which are required for anchoring of reinforcing steel bars (rebars) according to the “principles” and “methods” defined in ENV 1504-9.

Performance characteristics which are required for “all intended uses” are marked with ■.

Performance requirements are given in 5.2.

Table 1 — Performance characteristics of anchoring products for all intended uses

Performance characteristic	Repair principle
	Structural strengthening Installing rebar with anchoring product
Pull-out	■
Chloride ion content	■
Glass transition temperature [a]	■
Creep under tensile load [a]	■
[a] For polymers only. ■ For all intended uses.	

5 Requirements

5.1 Identification requirements

The manufacturer shall undertake selected representative initial identification tests for the product or system as specified in Table 2. These tests may be used to confirm the composition of the product at any time. Acceptable tolerances are given in Table 2. The manufacturer shall hold test records.

Table 2 — Identification requirements

Property	Test method	Tolerance on values supplied by manufacturer [a]
Granulometry of dry components	EN 12192-1	Manufacturers declared value and tolerances
Infra-red analysis [b]	EN 1767	Confirmed by comparison [d]
Compressive strength	EN 12190	Greater than 80 % of manufacturers declared value
Stiffening time	EN 13294	Manufacturers declared value and tolerances
Workability – Grout flow trough	EN 13395-2	Manufacturers declared value and tolerances
Epoxide equivalent [c]	EN 1877-1	± 5 %
Amine function [c]	EN 1877-2	± 6 %
Pot life [b]	EN ISO 9514	± 20 %

[a] Data to be supplied by the manufacturer.

[b] For PCs only.

[c] For epoxy resin products only.

[d] Check for signs of change in composition.

5.2 Performance requirements

The manufacturer shall undertake initial performance tests on anchoring products in accordance with Table 3 and the product shall comply with the requirements.

Table 3 — Performance requirements for anchoring products

Item N°	Performance characteristics	Test method	Requirement
(1)	Pull-out	prEN 1881	Displacement ≤ 0,6 mm at load of 75 KN
(2)	Chloride ion content	EN 1015-17	≤ 0,05 %
(3)	Glass transition temperature[a]	EN 12614	≥ 45 °C or 20 °C above the maximum ambient temperature of the structure in service, whichever is the higher
(4)	Creep under tensile load[a]	prEN 1544	Displacement ≤ 0,6 mm after continuous loading of 50 KN after 3 months
[a] For PC products only.			

5.3 Release of dangerous substances

Hardened anchoring products shall not release substances dangerous to health, hygiene and the environment. See Annex B (informative).

5.4 Reaction to fire

For anchoring products to be used in elements subject to fire requirements the manufacturer shall declare the reaction to fire classification of the anchoring product.

For anchoring products containing equal or less than 1 % by mass or volume (whichever is the most onerous) of homogeneously distributed organic materials the declaration may be fire Class A1 without the need to test.

Hardened anchoring products containing more than 1 % by mass or volume (whichever is the most onerous) of homogeneously distributed organic materials shall be classified in accordance with EN 13501-1 and the appropriate reaction to fire class declared.

6 Sampling

General requirements for sampling are set out in EN 1504-8.

7 Evaluation of conformity

7.1 General

General requirements for procedures for evaluation of conformity are set out in EN 1504-8.

7.2 Initial type testing

General requirements for initial type testing are set out in EN 1504-8.

7.3 Factory production control

The manufacturer shall operate a factory production control (FPC) system to ensure that production continues to meet the identification and performance requirements set out in 5.1 and 5.2 of this part of EN 1504.

For FPC, the manufacturer can select representative identification or performance tests or may select other test methods. Such other FPC test methods shall be correlated to the initial identification and performance test methods to ensure conformity of the product to the requirements of this standard. Such correlation shall be clearly documented in the FPC system.

The FPC shall be undertaken in accordance with EN 1504-8.

Guidance on the frequency of identification and performance tests for FPC is given in Annex A (informative). Frequencies may need to be increased during initial production or following an incident of non-conformity.

Any deviation from this guidance shall be justified by documented evidence which demonstrates equivalence.

7.4 Assessment, surveillance and certification of factory production control (informative)

Where required, provisions for the assessment, surveillance and certification of FPC are given in EN 1504-8:2004, Annex A (informative).

8 Marking and labelling

Requirements for marking and labelling are set out in EN 1504-8.

NOTE For CE marking and labelling ZA.3 applies.

Annex A
(informative)

Minimum frequency of testing for factory production control

Identification **characteristics/property**	**Cement-based products**	**Epoxy-resins**
Identification of the components		
General appearance and colour	A	A
Granulometry of dry components	B	B
Infra-red analysis [a, b]	D	C
Epoxy equivalent [b]	-	C
Amine function [b]	-	C
Volatile/non-volatile matter in liquid components	B	B
Identification of the fresh mixture or the hardened samples		
Stiffening time Workability Pot life (alternative)	B -	B A
Compressive strength and density	B	B

A Every batch, (as defined in EN 1504-8).

B Every 10 batches (as defined in EN 1504-8), every two weeks, or every 1 000 t, whichever is the sooner (that is, whichever requires the most frequent testing).

C Twice per year.

D Once per year.

[a] For PCs only .

[b] Documentation supplied by the raw material supplier will be deemed to satisfy this requirement.

Annex B
(informative)

Release of dangerous substances

In the absence of specific requirements relating to substances dangerous to health, hygiene and the environment in this standard, Annex ZA.1, paragraph “WARNING” applies.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/128 “Products related to concrete, mortar and grout” given to CEN by the European Commission and the European Free Trade Association.

The clauses of this and other European Standards shown in this annex meet the requirements of this Mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of anchoring products covered by this annex for the intended uses indicated herein: reference shall be made to the information accompanying the CE marking.

WARNING — Other requirements and other EU Directives, not affecting the fitness for intended uses, can be applicable to the construction product falling within the scope of this European Standard.

NOTE 1 There may be other requirements relating to dangerous substances applicable to the products falling within the scope of this standard (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction website on EUROPA (accessed through http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm).

This annex establishes the conditions for the CE marking of the anchoring products and systems intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

The annex has the same Scope as Clause 1 of this standard and is defined in Table ZA.1.

Table ZA.1 — Scope and relevant clauses

Construction products:	Anchoring products for strengthening concrete by installing reinforcing steel (rebars) as covered in the scope of this standard
Intended use:	In buildings and civil engineering works

Essential characteristics	Requirement clauses in this standard	Level(s) or class(es)	Notes: (expression of results)
Pull-out strength	5.2 Performance requirements Table 3 (1) Pull-out strength	None	Threshold value in mm
Chloride ion content	5.2 Performance requirements Table 3 (2) Chloride ion content	None	Threshold value, %
Glass transition temperature	5.2 Performance requirements Table 3 (3) Glass transition temperature		Declared value °C
Reaction to fire	5.4 Reaction to fire	Euroclasses	Declared class
Durability/ Creep under tensile load (only for products containing polymers)	5.2 Performance requirements Table 3. (4) Creep under tensile load	None	Threshold value in mm
Dangerous substances	5.3 Release of dangerous substances	None	See Note 1 in ZA.1 and note after Fig. ZA.1 Manufacturer's declaration

The requirement on a certain essential characteristic does not apply in those Member States where there are no regulations for such characteristic. In this case, manufacturers willing to place their products in the market of these Member States are not obliged to determine nor to declare the performance of their products with regard to this characteristic and the option "no performance determined" in the information accompanying the CE mark may be used.

ZA.2 Attestation of conformity

ZA.2.1 System(s) of attestation of conformity

The system of attestation of conformity for the products indicated in Table ZA.1, in accordance with the decision of the Commission 1999/469/EC as amended by 01/596/CE, as given for this product family in Annex III of the Mandate M/128 “Products related to concrete, mortar and grout”, is shown in Table ZA.2 for the indicated intended use:

Table ZA.2 — System of attestation of conformity

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Concrete protection and repair products	For uses with low performance requirements in buildings and civil engineering works	-	4
	For uses in buildings and civil engineering works	-	2+
Concrete protection and repair products	For uses subject to reaction to fire regulations	A1*, A2*, B*, C*	1
		A1**, A2**, B**, C**, D, E	3
		(A1 to E) ***, F	4

System 1: See CPD, Annex III.2(i), without audit-testing of samples.

System 2+ : See CPD Annex III.2 (ii) (First possibility, including certification of the factory production control by an approved body on the basis of initial inspection of factory and of factory production control as well as of continuous surveillance, assessment and approval of factory production control.

System 3: See CPD, Annex III.2(ii), Second possibility.

System 4: See CPD Annex III.2(ii), Third possibility.

* Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material).

** Products/materials not covered by footnote (*).

*** Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of class A1 according to the Decision 96/603/EC, as amended by Decision 2000/605/EC).

The attestation of conformity of the anchoring products in Table ZA.1 shall be based on the evaluation of conformity procedures indicated in Table(s) ZA.3a to ZA.3f resulting from the application of those clauses of this or other European Standards indicated therein.

Table ZA.3a — Assignment of evaluation of conformity tasks for anchoring products of Euroclasses A1*, A2*, B* or C*, intended for uses other than those with low performance subject to reaction to fire regulations (systems 2+ plus 1)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5 EN 1504-6:2006 7.3
	Further testing of samples taken at the factory	All relevant characteristics of Table ZA.1	EN 1504-8:2004, Clause 5
	Initial type testing	All relevant characteristics of Table ZA.1 except: Reaction to fire	EN 1504-8:2004, 5.2
Tasks for the notified body	Initial type testing	Reaction to fire	EN 1504-8:2004, 5.2
	Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1	EN 1504-8:2004, 5.5, EN 1504-6:2006, 7.3
	Continuous surveillance, assessments and approval of FPC	Parameters related to all characteristics of Table ZA.1, in particular: Reaction to fire	EN 1504-8:2004, 5.5 and Clause 7 EN 1504-6:2006, 7.3

Table ZA.3b — Assignment of evaluation of conformity tasks for anchoring products of Euroclasses A1*, A2*, B* or C*, intended for uses with low performance subject to reaction to fire regulations (systems 4 plus 1)

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5, EN 1504-6:2006, 7.3
	Further testing of samples taken at the factory	All relevant characteristics of Table ZA.1	EN 1504-8:2004, Clause 5
	Initial type testing	All relevant characteristics of Table ZA.1 except: Reaction to fire	EN 1504-8:2004, 5.2
Tasks for the notified body	Initial type testing	Reaction to fire	EN 1504-8:2004, 5.2
	Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1.	EN 1504-8:2004, 5.5, EN 1504-6:2006, 7.3
	Continuous surveillance, assessments and approval of FPC	Parameters related to all characteristics of Table ZA.1, in particular: Reaction to fire	EN 1504-8:2004, 5.5 and Clause 7 EN 1504-6:2006, 7.3

Table ZA.3c — A Assignment of evaluation of conformity tasks for anchoring products of Euroclasses A1, A2**, B**, C**, D or E intended for uses other than those with low performance subject to reaction to fire regulations (systems 2+ plus 3)**

Tasks			Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)		Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5 EN 1504-6:2006 7.3
	Further testing of samples taken at the factory		All relevant characteristics of Table ZA.1	EN 1504-8:2004, Clause 5
	Initial type testing by the manufacturer		All relevant characteristics of Table ZA.1 except: Reaction to fire	EN 1504-8:2004, 5.2
Task for the notified test body	Initial type testing by the notified test body		Reaction to fire	EN 1504-8:2004, 5.2
Tasks for the notified certification body	Certification of FPC by the FPC certification body on the basis of	Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1.	EN 1504-8:2004, 5.5 EN 1504-6:2006, 7.3
		Continuous surveillance, assessment and approval of FPC	Parameters related to all characteristics of Table ZA.1, in particular: Reaction to fire	EN 1504-8:2004, 5.5 and Clause 7 EN 1504-6:2006, 7.3

Table ZA.3d — Assignment of evaluation of conformity tasks for anchoring products of Euroclasses A1, A2**, B**, C**, D or E intended for uses with low performance subject to reaction to fire regulations (systems 4 plus 3)**

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5, EN 1504-6 :2006, 7.3
	Initial type testing by the manufacturer	All relevant characteristics of Table ZA.1 except: Reaction to fire	EN 1504-8:2004, 5.2
Tasks for the notified test body	Initial type testing by the notified test body	Reaction to fire	EN 1504-8:2004, 5.2

Table ZA.3e — Assignment of evaluation of conformity tasks for anchoring products for any intended uses other than those with low performance not subject to reaction to fire regulations or of Euroclasses (A1 to E)* or F intended for uses other than those with low performance subject to reaction to fire regulations (systems 2+ plus 4)**

Tasks			Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)		Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5, EN 1504-6:2006, 7.3
	Further testing of samples taken at the factory		All relevant characteristics of Table ZA.1	EN 1504-8:2004, Clause 5
	Initial type testing		All relevant characteristics of Table ZA.1	EN 1504-8:2004, 5.2
Tasks for the notified certification body	Certification of FPC on the basis of	Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1.	EN 1504-8:2004, 5.5, EN 1504-6:2006 7.3
		Continuous surveillance, assessment and approval of FPC	Parameters related to all characteristics of Table ZA.1, in particular: Reaction to fire	EN 1504-8:2004, 5.5 and Clause 7. EN 1504-6:2006 7.3

Table ZA.3f — Assignment of evaluation of conformity tasks for anchoring products intended for uses with low performance not subject to reaction to fire regulations or of Euroclasses (A1 to E)* or F intended for uses with low performance subject to reaction to fire regulations (system 4)**

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all characteristics in Table ZA.1	EN 1504-8:2004, 5.5, EN 1504-6:2006 7.3
	Initial type testing by the manufacturer	All relevant characteristics of Table ZA.1	EN 1504-8:2004, 5.2

ZA.2.2 EC Certificate and Declaration of conformity

Anchoring products under system 2+ plus 1 or under system 4 plus 1: When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

— name, address and identification number of the certification body;

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

— description of the product (type, identification, use .....);

— provisions to which the product conforms (Annex ZA of EN 1504-6);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions, etc);

— the number of the certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and positions held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up a declaration of conformity (EC Declaration of conformity) including the following:

— name and address of the manufacturer, or his authorised representative established in the EEA;

— name and address of the certification body;

— description of the product (type, identification, use, ...) and a copy of the information accompanying the CE marking;

— provisions to which the product conforms (Annex ZA of EN 1504-6);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions, etc);

— number of the accompanying EC Certificate of conformity;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

Anchoring products under system 2+ plus 3 or under system 4 plus 3: When compliance with the conditions of this annex is achieved, and once the notified body has drawn up the certificate mentioned below, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity, which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and the place of production;

— description of the product (type, identification, use, ...), and copy of the information accompanying the CE marking;

— provisions to which the product conforms (Annex ZA of EN 1504-6);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions, etc);

— the number of the accompanying factory production control certificate (for system 2+ plus 3);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative;

— name and address of the notified laboratory.

The declaration shall be accompanied by a factory production control certificate (for system 2+ plus 3 only), drawn up by the notified body, which shall contain, in addition to the information above, the following:

— name and address of the notified body;

— the number of the factory production control certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

Anchoring products under system 2+ plus 4 or under system 4: When compliance with this annex is achieved, the manufacturer of his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and the place of production;

— description of the product (type, identification, use, ...), and copy of the information accompanying the CE marking;

— provisions to which the product conforms (Annex ZA of EN 1504-6);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions, etc);

— the number of the accompanying factory production control certificate;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

The declaration shall be accompanied by a factory production control certificate (for system 2+ plus 4 only), drawn up by the notified body, which shall contain, in addition to the information above, the following:

— name and address of the notified body;

— the number of the factory production control certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

The above mentioned EC Declarations and EC Certificate shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The affixing of the CE marking and the relevant information will be done preferably on the packaging (when not possible it shall be done on the accompanying label or on the accompanying documents e.g. delivery note).

NOTE The manufacturer or his authorised representative established within the EU or EFTA is responsible for the affixing of the CE marking.

The CE conformity symbol to affix shall be in accordance with Directive 93/68/EEC and shall be accompanied by the following information:

— Identification number of the certification body (only for products under system 1 or 2+).

— Name or identifying mark of the producer.

— Registered address of the producer.

— The last two digits of the year in which the marking is affixed.

— Number of the EC Certificate (for products under system 1) or Certificate of factory production control (for products under system 2+).

— Reference to this European Standard.

— Description of the product: generic name, material, dimensions and intended use.

— Information on those relevant essential characteristics listed in Tables ZA.1 which are to be declared presented as:

  — declared values and, where relevant, level or class (including “pass” for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in “Notes” in Tables ZA.1, and;

  — “No performance determined” option for characteristics where this is relevant.

Figure ZA.1 gives an example of the information accompanying the CE marking.

CE 0123-CPD-0001	CE conformity marking consisting of the CE symbol given in Directive 93/68/EEC Identification number of the notified body (for products under systems 1 or 2+)
AnyCo Ltd, PO Bx 21, B-1050 06	Name or identifying mark and registered address of the producer Last two digits of the year in which the marking was affixed
0123-CPD-0456 EN 1504-6 Anchoring product Pull-out strength displacement $\leq$ 0,6 mm at load of 75 KN Chloride ion content 0,03 % Glass Transition temperature 55 °C Reaction to fire Euroclass B Creep under tensile load Displacement $\leq$ 0,6 mm after continuous loading of 50 KN for 3 months Dangerous substances comply with 5.3	Number of the EC Certificate (for products under system 1) or the FPC certificate (for products under system 2+) No of European Standard Description and information on product and on regulated characteristics

Figure ZA.1 — CE marking information

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

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