

EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

Mr. N. Anselmann  
DG Entreprise SC 15 2/147  
Rue de la Science 15  
1040 BRUSSELS

Ref: HP/CORR/125/adc

2004-03-09

Subject: M/120 Amended mandate response

Dear Mr. Anselmann,

Please find herewith the amended answer of CEN/TC 132 "Aluminium and aluminium alloys" to the mandate M/120 "Structural metallic products" for your acceptance. The original response was sent to the Commission Services by our letter referenced EC Mandates/1876 dated 2000-07-20.

As agreed with the Commission Services, you will also find attached the comments of Mr. Stephen Rein, Consultant, on the answer of CEN/TC 132.

Yours sincerely,

Hugues Plissart  
Director  
Standards Development

c.c. Mr. V. Leoz Arguëlles  
Mrs. C. Vanden Schrieck

*Stephen J Rein M.C.I.O.B., M.Inst.C.E.S.*

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9<sup>th</sup> January 2004

Amilcar DaCosta  
Project Manager  
CEN  
Rue de Stassart, 36,  
B-1050 BRUXELLES  
BELGIUM

Dear Amilcar,

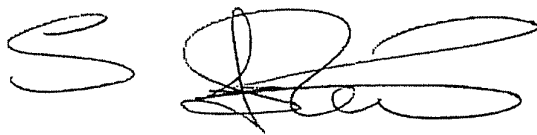
**TC 132 Amended mandate response – [M120]**

I confirm that CEN/TC 132 N 1181 dated 2003-12-10 is an appropriate amendment to the original answer of TC 132 to mandate M120.

Having liaised with the TC during the preparation of this amendment I have no comments other than to confirm that the change to an umbrella standard is a sensible solution and that the characteristics identified as not relevant appear to remain technically justified.

The actual standard is on program with the dates of availability given.

Kind regards

A handwritten signature in black ink, appearing to be 'S J Rein', written in a cursive style.



Secrétariat CEN/TC 132

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## CEN/TC 132 N 1181

Le comité membre français :

le : 2003-12-10



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**TITLE :**

**Mandates under the CPD** Construction  
Products Directive and aluminium alloys –  
Amendment to the answer to the  
mandate/Work programme

**SOURCE :**

CEN/TC 132 Secretariat

**NOTE:**

For information

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**CEN/TC 132**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Aluminium and aluminium alloys**

Secretariat: AFNOR

**Mandate M 120 on  
"Structural metallic products and ancillaries"  
under the Construction Products Directive CPD 89/106/EC  
—  
Amendment from CEN/TC 132 dated 2001**

This draft response deals with aluminium parent materials, described as product family "I) Structural metallic sections" in M 120, and is an amendment to the response from December 2001. The draft is intended to be issued to CEN and the EU Commission/ Standing Committee on Construction SCC for acceptance

Document identification:

Technical Committee TC 132

Date: 2003-11-24

Documents	Reference number	Date of issue
Mandate number	M 120	
Original answer to the Mandate	CEN/TC 132 N 1011	December 2001
Commission's acceptance		2002-02-12
1 <sup>st</sup> amendment of the answer to the mandate	CEN/TC 132 N 1181	2003-09-24

## Changes

The CEN/TC 132 plenary meeting of CEN/TC 132 decided in April 2001 (see document CEN/TC 132 N 1011) to add Annexes to the main material standards EN 485-1, EN 485-2, EN 485-3, EN 485-4, EN 1386, EN 1396, EN 1706, prEN 12020-1 and prEN 12020-2 in order to answer the conformity requirements.

The CEN/TC 132 analysed and reconceived the situation around the Construction Products Directive CPD together with the European Aluminium Association, the EAA, and concluded to make an essential change in the proceeding. In early 2002, the CEN/TC 132 plenary meeting agreed to install a new working group 14 "General Support" to take care of environmental aspects in standards and the implementation of the CPD (Resolution No 7 from document CEN/TC 132 N 1037). Later that year, the plenary meeting held on 14<sup>th</sup> November 2002 accepted the proposal from WG 14 to develop a harmonised product standard answering all requirements outlined in the Mandate M 120, instead of adding Annexes to existing well established material standards (Resolution No 2 and No 3 from document CEN/TC 132 N 1113).

Consequently, CEN/TC 132 is not going to follow its first response to add Annexes to the listed European Standards, which shall be taken from the track list as candidate harmonised product standards.

This umbrella European Standard now works with, and replaces the nine standards included in the original response to the mandate.

**0) General comments from CEN/TC 132 related to the answer to the mandate M 120**

**0.1) Request for clarification on the scope of the mandate concerning the products and allocation of work:**

CEN/TC 132 considers the mandate cover castings and semi-finished products of aluminium and aluminium alloys for load-bearing structural construction works. It is specified under the mandate as Subfamily I), named structural metallic sections/profiles.

This standard does not apply to products after machining or joining operations, which can be found in other European Standards, in particular in AluComp prEN 1090-1 under development by CEN/TC 135/WG 1.

**0.2) Requests for clarification on the intended use:**

TC 132 consider the intended use of the aluminium and aluminium alloys for building and civil engineering works with examples of end use in buildings, bridges, masts, towers, silos, i.e. any type of aluminium structure except curtain walling, windows and railway applications which are not within the scope of this mandate.

**0.3) Information on products under the scope of the mandate, which are the subject of other CEN/TCs – Information on the organisation of the work between TCs.**

CEN/TC 132 will make normative reference to product requirements from other CEN/TCs.

These are:

- CEN/TC 135 Execution of steel structures and aluminium structures
- CEN/TC 250/SC 9 Design of aluminium structures

**0.4) Information on issues concerning the scope and intended uses included in the mandate, for which no work has yet been started in the TC, or for which the TC cannot provide a standard:**

**0.5) Specific requests for additions to the mandate of products, materials, intended uses, essential characteristics, etc.:**

Some of the performance characteristics given in the mandate relate to subjects that are specified during the design of the building component, based on the function of the building component as a product for direct use or as a product for inclusion in a structure. Some or all the performance characteristics might apply to an aluminium or aluminium alloy, depending on the specified requirements for the particular product. In the cases where the country of intended destination has no regulation the option "no performance determined npd" may be used.

**0.6) Liaison with other TCs for certain horizontal tests - Information on the organisation of the work between the TCs:**

CEN/TC 132 has liaison to the following TCs:

- CEN/TC 135
- CEN/TC 250

**0.7) Other issues which the TC considers necessary for the comprehension of the answer to the mandate:**

**A. Aluminium and aluminium alloys**

## A.1 Harmonised product standard for aluminium and aluminium alloys for construction works

prEN AluParent, WI xxxxxxxx (pending)

Time schedule:

Stage		Dates of availability
32	Working documents circulated to TC	December 2003
40	Document available for CEN UAP	June 2004

The dates proposed assume that the supporting standards will be available.

i) Title: Aluminium and aluminium alloys – Structural products for construction works – Technical conditions for inspection and delivery

ii) Scope: This European Standard specifies requirements on castings and of semi-finished products of aluminium and aluminium alloys for load-bearing structural construction works.

joining This standard does not apply to products after machining or operations, which can be found in other European Standards, in particular in AluComp prEN 1090-1 under development by CEN/TC 135/WG 1.

windows, This standard excludes products for curtain walling and systems suspended ceilings, rails and sleepers for use in railway and any other railway applications.

iii) Intended use: Internal and external load-bearing structural construction works (building and civil engineering structures)

iv) The essential characteristics according to the Mandate M 120 which will be dealt with in the above standard will be:

Essential Requirement	Characteristics	Note
1	Tolerances on dimension and shape	
1	Elongation	
1	Tensile strength	(tensile yield strength)
1	Yield strength	(tensile yield strength)
1	Fatigue strength	
1	Impact strength	This characteristic is not relevant see A.2
1	Fracture toughness / brittle strength	This characteristic is not relevant see A.2



1	Bendability	
1	Weldability	
1	Cold / warm formability	This characteristic is not relevant see A.2
3	Release of cadmium	
3	Emission of radioactivity	

v) Durability: Corrosion protection and consideration during the selection of the parent material (see prEN 1999-1-1, EN ISO 1519)

vi) Other aspects: The harmonised product standard will also contain:

- A reference to the Commission's Decision on attestation of conformity;
- Clauses on the evaluation of conformity, including Factory Production Control;
- Guidance on the characteristics to be stated in the labelling accompanying the CE marking and on the way of

expressing

the determined values of these characteristics.

## A.2 Supporting standards

The following ENs, prENs and WIs are proposed as test, calculation methods or tabulated data for the determination of the essential characteristics required by the mandate and indicated in clause A.1 (iv) above:

### - Tolerances on dimension and shape

#### - Elongation

#### - Bendability

prEN AluParent will make normative reference to individual EN and ISO standards, which contains tolerance/ elongation requirements for castings and wrought products, and bendability requirements for rolled products, or a test/ classification scheme will be part of the product standard.

(see EN 485-3, EN 485-4, EN 586-3, EN 754-3, EN 754-4, EN 754-5, EN 754-6, EN 754-7, EN 754-8, EN 755-3, EN 755-4, EN 755-5, EN 755-6, EN 755-7, EN 755-8, EN 755-9, EN 1301-3, EN 1386, EN 1396, EN 1592-3, EN 1592-4, EN 12020-2, prEN ISO 8062-1, prEN ISO 8062-2)

### - Tensile strength

#### - Yield strength

prEN AluParent will make normative reference to individual EN and ISO standards, which contains strength requirements for castings and wrought products.

(see EN 485-2, EN 586-2, EN 754-2, EN 755-2, EN 1301-2, EN 1386, EN 1592-2, EN 1706, EN 12020-2)

### - Fatigue strength

Fatigue strength is not relevant for the majority of aluminium and aluminium alloys. The commonly used aluminium and aluminium alloys are well documented in prEN 1999-1-3.

If fatigue might be relevant as for a small number of applications either reference

will be made to prEN 1999-1-3 or a test scheme will be part of the product standard, e.g. for not documented aluminium alloys. The product standard will not deal with this requirement concerning casting, because it seems not to be possible to formulate a common test procedure for casting under cyclic loading/ fatigue. The fatigue properties specified in the test scheme will be used for qualification purposes only and can be significantly different from values in the recommended design codes, as for instance prEN 1999-1-3.

#### **- Impact strength**

Impact strength is not relevant for aluminium products in structural building applications. The resulting values exceed the strength values, achieved by normal test methods.

In addition, confusion could be caused due to different interpretations of this characteristic, quod vide the letter from CEN/TC 135 to the EU Commission proposing the deletion of this characteristic for structural steel and aluminium components, respectively the inclusion of accidental actions into the characteristic "load bearing capacity".

#### **- Fracture toughness / brittle strength**

Fracture toughness is not relevant for aluminium, as opposed to steel where the criteria for selection of steel type is considering the requirement to fracture toughness, governed by the working temperature of the structural component and the thickness of the steel material.

An inherent property of aluminium is the improvement in ductility with lowering temperatures. Therefore, there is no technical necessity to address fracture toughness/ brittle strength in addition to the characteristics already addressed. Such a performance characteristic will consequently not be dealt with for the aluminium parent material.

#### **- Weldability**

Weldability is dealt in prEN 1999-1-1.

#### **- Cold / warm formability**

Formability is not a relevant characteristic with regard to the essential requirement 1 "mechanical resistance and stability" ER 1 as outlined into the Interpretative Document ID No 1. Consulted experts from CEN/TC 250/SC 9 "Eurocode Aluminium" were also not in the position to identify a relation between the above-mentioned characteristic and ER 1. It was proposed to consider the fact, that the for the construction sector relevant part of the aspect formability is the already covered mandated characteristic "bendability".

#### **- Release of cadmium, Emission of radioactivity**

These characteristics will be dealt with reference to the chemical composition and scrap standards of the aluminium and aluminium alloys.  
(see EN 573-3, EN 1706, EN 13920-1)

The harmonised standard will also provide clauses for

- Evaluation of Conformity (ITT and FPC)
- Make reference to the Commission Decision on Attestation of Conformity AoC
- Provide guidance on the application of CE Marking