

CERTIFICATE

CERTIFIÉ PAR AFCAB



ACIERS POUR BÉTON ARMÉ

Nr. **B19/330** REV. 2

Granted to

CODIMETAL INDUSTRIES

For the steels

CODIMETAL 500

Manufactured in the factory of

QUINTA DO ANJO - PALMELA (PT)

With this decision notified by **AFCAB**, **AFNOR** Certification grants the right to use the mark to this company, for the products mentioned above, according to the conditions detailed in the General rules of the **NF** mark and the certification rules **NF 139**.

Date of decision : 13/06/2023
Date of validity : 30/09/2026

On behalf of AFCAB,



The reader is invited to check the validity of this certificate (see fact sheet) by visiting the Web site www.afcab.org
This certificate consists of 4 pages including this one.

Bernard CRETON
Chairman of AFCAB.

AFCAB

ASSOCIATION FRANÇAISE DE CERTIFICATION DES ARMATURES DU BÉTON
28 rue de Liège 75008 Paris - France • Tél : + 33(0)1 44 90 88 80 • www.afcab.org • info@afcab.org

This document is a translation. The original certificate in French is reference in case of dispute.
No mention may be added or deleted of this certificate. Any offender may be sued for abusive use of the mark.

DESCRIPTION

VALIDITY OF THE CERTIFICATE

This certificate attests that the products here described comply with the NF A 35-080-1 standard and are manufactured in accordance with the requirements of quality management included in the  - **Aciers pour béton armé** - RCC03 certification rules in force. These products shall bear the  - **Aciers pour béton armé** mark.

This decision cancels and replaces any former decision. It is valid with reservation of the results of the continuous surveillance performed by **AFCAB**, which may make any decision of sanction according to the general rules of the  - **Aciers pour béton armé** - RCC03 certification rules in force. The reader may verify that the certificate is still valid on the Internet site of **AFCAB** : www.afcab.org rubric "Certificates".

The reader may verify that the product which is delivered, is covered by this certificate by verifying that the labels bear the  - **Aciers pour béton armé** logo and the number of this certificate.

HOLDER

Manufacturing plant	Commercial contact	Head offices
CODIMETAL INDUSTRIES Av. da Liberdade Lugar das Formas CCI n°13602 PT2950-673 QUINTA DO ANJO - PALMELA	NUNO SECO Phone : +(351) 21 213 75 00 E-mail : nuno.seco@codimetal.pt Web : www.codimetal.pt	CODIMETAL INDUSTRIES Apartado 41 PT2860-909 MOITA

CERTIFIED STEELS

Name of the steel :	CODIMETAL 500
Standard reference :	NF A 35-080-1
Grade :	B500A
Description :	CODIMETAL steel comes in the form of a round with three rows of inclined ribs separated by longitudinal ribs.

Diameters included in the standard only			
	Certified range of diameter	Ability of straightening after bending	Fatigue resistance
Rebars	-	-	-
Coils	5 à 16 mm	-	-



ASSOCIATION FRANÇAISE DE CERTIFICATION DES ARMATURES DU BÉTON
 28 rue de Liège 75008 Paris - France • Tél : + 33(0)1 44 90 88 80 • www.afcab.org • info@afcab.org

This document is a translation. The original certificate in French is reference in case of dispute.
 No mention may be added or deleted of this certificate. Any offender may be sued for abusive use of the mark.

Bond :

Diamètre	5	6	7	8	9	10	12	14	16
f_R	0,035	0,035	0,040	0,040	0,040	0,040	0,040	0,056	0,056

where f_R is calculated with formula $f_R = 0.56.h/c$

Marking : The distinctive mark of CODIMETAL 500 steel is given in the following scheme :



CERTIFIED CHARACTERISTICS

The steels that bear the **NF** - **Aciers pour béton armé** mark delivered by **AFCAB** :

were initially evaluated to establish that the product fulfils the requirements of the NF NF A 35-080-1 standard and the additional requirements included in the **NF** - **Aciers pour béton armé** - RCC03 certification rules in force :

- ▶ Yield strength : ≥ 500 MPa (characteristic value), ≥ 475 MPa (minimum value).
- ▶ $R_{e,act}/R_{e,nom}$ ratio : $\leq 1,30$ (characteristic value), $\leq 1,32$ (maximum value).
- ▶ R_m/R_e ratio : $\geq 1,05$ (characteristic value), $\geq 1,03$ (minimum value)*.
- ▶ A_{gt} : $\geq 2.5\%$ (characteristic value), $\geq 2\%$ (minimum value)*.
- ▶ Ability to bend (bend or rebend test).
- ▶ Linear mass : $\pm 4,5\%$.
- ▶ Bond : see table here above.
- ▶ Weldability, attested chemical composition (on cast) :

$$C \leq 0,22\% - P \leq 0,050\% - S \leq 0,050\% - N \leq 0,012\% - Cu \leq 0,80\% - C_{eq} = C + \frac{Mn}{6} + \frac{Cr+Mo+V}{5} + \frac{Ni+Cu}{15} \leq 0,50\%$$

* : reduced values for the diameter 5 mm

were manufactured in accordance to the quality management requirements of the **NF** - **Aciers pour béton armé** - RCC03 certification rules in force,

have an identifiable origin.

Warning : The values mentioned above are summarized. For a complete information, reference texts (especially the standard) shall be consulted.

ASSOCIATION FRANÇAISE DE CERTIFICATION DES ARMATURES DU BÉTON
28 rue de Liège 75008 Paris - France • Tél : + 33(0)1 44 90 88 80 • www.afcab.org • info@afcab.org

This document is a translation. The original certificate in French is reference in case of dispute.
No mention may be added or deleted of this certificate. Any offender may be sued for abusive use of the mark.

CERTIFIABLE OPTIONAL CHARACTERISTICS

See the table detailing the options certified by the holder in the chapter "certified steels" :

- ▶ Ability to straighten up after being bent once (see **AFCAB** procedure E4).
- ▶ Fatigue resistance: 2 million load cycles corresponding to a maximum stress of $\sigma_{max} = 60\%$ of the yield strength and a range of stress variation $2\sigma_a$ of 150 MPa, in accordance with §7.3.3. of standard NF A 35-080-1.



ASSOCIATION FRANÇAISE DE CERTIFICATION DES ARMATURES DU BÉTON
28 rue de Liège 75008 Paris - France • Tél : + 33(0)1 44 90 88 80 • www.afcab.org • info@afcab.org

This document is a translation. The original certificate in French is reference in case of dispute.
No mention may be added or deleted of this certificate. Any offender may be sued for abusive use of the mark.