ÉMI ÉPÍTÉSÜGYI MINŐSÉGELLENŐRZŐ INNOVÁCIÓS NONPROFIT KORLÁTOLT FELELŐSSÉGŰ TÁRSASÁG
H-2000 Szentendre, Dózsa György út 26. Levélcím: H-2001 Szentendre, Pf : 180.
Telefon: +36 (1) 372-6100 Fax: +36 (1) 386-8794
E-mail: info@emi.hu Honlap: http://www.emi.hu

Építésügyi Minőségellenőrző Innovációs Nonprofit Kft.
275/2013. Korm.rend.
Nr. 20.

CERTIFICATE OF CONSTANCY OF PERFORMANCE

20–CPR–115–(C-4/2007)

In compliance with Government decree no. 275/2013. (issued on 16th July) this certificate applies to the construction product

Weldable, ribbed, hot rolled reinforcing steel in bars made by Celsa Huta Ostrowiec Sp. z.o.o. in steel quality B500B (DIN 488-1:2009 and MSZ/T 339:2012.03) with R_{eH} = 500 MPa declared yield strength calculated from nominal cross-section

with product performance and intended use shown in the annex as page 2/2 of this certificate and produced by

CELSA Huta Ostrowiec Sp. z. o. o.
ul Samsonowicza 2; 27-400 Ostrowiec Świętokrzyski, Poland

and produced in the manufacturing plant:

CELSA Huta Ostrowiec Sp. z. o. o.
ul Samsonowicza 2; 27-400 Ostrowiec Świętokrzyski, Poland

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in **National Technical Assessment no. A-221/2015 dated at 01.10.2015.** under system (1+) are applied and that

the product fulfils all the prescribed requirements set out above.

This certificate was first issued* on 09.10.2015. and will remain valid as long as the test methods and/or factory production control requirements included in the National Technical Assessment, used to assess the performance of the declared characteristics, do not change, and the product, and the manufacturing conditions in the plant are not modified significantly.

This certificate consists of 2 pages!

Dated at Szentendre, on 9th October 2015

P.H.

Pataki Erika
Head of Certification Office
Certification Office
of ÉMI Non-profit Ltd.

* certificate was issued first on **11th December 2007** within the period of validity of joint Ministerial Decree No. 3/2003. (25th January) BM-GKM-KvVM of Ministry of Interior, Ministry of Economy and Transport, and Ministry of Environment Protection and Water Management.

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ANNEX

Nominal diameters:
Ø8, Ø10, Ø12, Ø14, Ø16, Ø18, Ø20, Ø22, Ø25, Ø28 and Ø32 mm

Intended use of the product:

The steel bars may be used as reinforcement of concrete structures according to EN 10080:2005, in steel quality B500B (DIN 488-1:2009 and MSZ/T 339:2012.03).

The reinforcing steel bars can be taken into account with the parameters of reinforcing steels made from B60.50 (MSZ 339:1987) by performing diagnostic works on building designed in accordance with withdrawn standards series no. MSZ 15022:1986 and no. MSZ 15022:1986/1M:1992.

The reinforcing steel bars can be taken into account as product in ductility class B with R_{eH} = 500 MPa declared yield strength calculated from nominal cross-section at design works and strength calculations, according to Annex C of standard no. EN 1992-1-1:2010 (EUROCODE 2).

Essential characteristics	Performance
Yield or proof strength (R_{eH} or $R_{p0,2}$) [1)]	*≥ 500 MPa (characteristic)* *≥ 485 MPa (individual)*
Tensile strength (R_m)	*≥ 580 MPa (characteristic)* *≥ 563 MPa (individual)*
Stress ratio, R_m / R_{eH}	*≥ 1,08 (characteristic)* *≥ 1,06 (individual)*
Yield ratio, $R_{e,act}$ / $R_{e,nom}$	*≤ 1,30 (individual)*
Extension (A_{gt})	*≥ 5,0 % (characteristic)* *≥ 4,5 % (individual)*
Elongation (A_5)	*≥ 18,0 % (average)*
Bendability	*180 degrees:* *d ≤ 16 mm: 3d mandrel* *d > 16 mm: 6d mandrel*
Tolerances from nominal cross-section	*d = 8 mm: ± 6,0* *d > 8 mm: ± 4,5*
Bonding strength (f_R)	*8 mm ≤ d ≤ 12 mm: 0,040* *d > 12 mm: 0,056*
Weldability (C_{eq} or CEV):	*C_{eq} ≤ 0,52*
Durability (product analysis)	*C ≤ 0,24; S ≤ 0,055; P ≤ 0,055;* *N_2 ≤ 0,014; Cu ≤ 0,85*
Fatigue:	*σ_{max} = 300 MPa; $2\sigma_A$ = 150 MPa* *n = $2 \cdot 10^6$*
[1)] Upper yield strength (R_{eH}), when real yield phenomena occurs, otherwise proof strength ($R_{p0,2}$)	

Dated at Szentendre, on 9th October 2015.

ÉMI ÉPÍTÉSÜGYI MINŐSÉGELLENŐRZŐ INNOVÁCIÓS NONPROFIT KFT.