



275/2013. Govern. decree
Nr.20

ÉMI NON-PROFIT LIMITED LIABILITY COMPANY FOR QUALITY
CONTROL AND INNOVATION IN BUILDING
TECHNICAL DIRECTORATE
CONFORMITY ASSESSMENT CENTER
CERTIFICATION OFFICE

H-2000 Szentendre, Dózsa György út 26. Postal address: H-2001 Szentendre, Pf : 180.
Phone: +36 (26) 502 300 E-mail: tanusitas@emi.hu WEB: http://www.emi.hu

CERTIFICATE OF CONSTANCY OF PERFORMANCE

20-CPR-125-(C-12/2011)

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
ArcelorMittal Zenica d.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

ArcelorMittal Zenica d.o.o.

Bulevar Kralja Tvrtka No. 17, BIH-72000 Zenica, Bosnia-Herzegovina

and produced in the manufacturing plant:

ArcelorMittal Zenica d.o.o.

Bulevar Kralja Tvrtka No. 17, BIH-72000 Zenica, Bosnia-Herzegovina

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in **National Technical Assessment no. A-120/2015 dated at 07.03.2019** under system (1+) are applied and that

the product fulfils all the prescribed requirements set out above.

This certificate was first issued* on 19.10.2015 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!

Issue: 3.

Dated at Szentendre, 1st April 2019



Molnár Ágnes
Head of Certification Office

* certificate was issued first on 30th November 2011 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)
Bendability - bending test 180 degrees, without crack	$d \leq 16$ 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_p), minimum (individual)	$8 \text{ mm} \leq d \leq 12 \text{ mm}$: 0,040 $d > 12 \text{ mm}$: 0,056
Weldability (C_{eq} or CEV):	$C_{eq} \leq 0.52$
Weld metal bend test for 150°, without cracks in the transition zone	$d \geq 16$ mm: 3d mandrel
Impact strength on 0 °C-on, KV (J) $d \geq 16$ mm	average ≥ 28 individual value ≥ 21 (75%)
Durability (product analysis)	$C \leq 0.24$; $S \leq 0.055$; $P \leq 0.055$; $N_2 \leq 0.014$; $Cu \leq 0.85$
Fatigue:	$\sigma_{max} = 300$ 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 ($R_{p0,2}$)	

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