275/2013. Govern. decree
Nr.20

ÉMI NON-PROFIT LIMITED LIABILITY COMPANY FOR QUALITY CONTROL AND INNOVATION IN BUILDING ENGINEERING SERVICES 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-366-(C-11/2019)

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

Ferriera Valsabbia S.p.A. made ribbed, hot rolled, weldable reinforcing steel in bars in steel quality B500B (MSZ EN 10027-1:2017)

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

Ferriera Valsabbia S.p.A.
25076 Odolo (BS) Via Marconi 13., Italy

and produced in the manufacturing plant:

Ferriera Valsabbia S.p.A.
25076 Odolo (BS) Via Marconi 13., Italy

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in **National Technical Assessment no. A-21/2019 dated at 14.06.2022** under system (1+) are applied and that

the product fulfils all the prescribed requirements set out above.

This certificate was first issued on 12.08.2020 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: 2.
Dated at Szentendre, 31.08.2022

P.H.

Ágnes Molnár
Head of Certification Office

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

275/2013. Govern. decree
Nr.20

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-366-(C-11/2019)

ANNEX

Nominal diameters: Ø8 – Ø32 mm

Intended use of the product:

The steel bars may be used as reinforcement of concrete structures.

The reinforcing steel bars can be taken into account as product in ductility class B with R_e (f_{yk}) = 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).

The steel bars can be taken into account with the tensile performances of B60.50 (MSZ 339:1987) reinforcing steels.

Essential characteristics			Performance
Yield strength, R_e [MPa] [1) 2)]			≥ 500 (characteristic value) ≥ 485 (individual value)
Stress ratio, R_m / R_e [1)]			≥ 1,08 (characteristic value) ≥ 1,06 (individual value)
Yield ratio, $R_{e,act}$ / $R_{e,nom}$ [1)]			≤ 1,30 (individual value)
Extension, A_{gt} [%]			≥ 5,0 (characteristic value) ≥ 4,0 (individual value)
Tensile strength, R_m [MPa] [2)]			≥ 590 (individual value)
Elongation, A_5			≥ 18,0 % (average value)
Rib geometry		- a_m [mm]	0,03·d – 0,15·d
		- β [°]	between 35° and 75°
		- Σei [mm]	≤ d·π/4
		- c [mm]	0,4·d – 1,5·d
		- fR, minimum (individual value)	d ≤ 6 mm: 0,035 6 mm < d ≤ 12 mm: 0,040 d > 12 mm: 0,056
Bending performance [3)]		- bending test 180 degrees, without crack	d ≤ 16 mm: 3d d > 16 mm: 6d with max mandrel diameter
		- bending test 90 degrees, re-bending 20 degrees, without crack	d ≤ 16 mm: 5d 16 < d ≤ 25: 8d 25 < d: 10d with max mandrel diameter
Bar manufacturing length tolerance			+100 / –0 mm
Cross-section / mass per metre, deviance from nominal value [%]			d ≤ 8 mm: ± 6,0 d > 8 mm: ± 4,5
Carbon equivalent value [a)], C_{eq} [%] - cast analysis - product analysis			 ≤ 0,50 ≤ 0,52
Chemical composition performance values	Cast analysis	C[a)]; S; P; N_2 [b)]; Cu	≤ 0,22; ≤ 0,050; ≤ 0,050; ≤ 0,012; ≤ 0,80
	Product analysis	C[a)]; S; P; N_2 [b)]; Cu	≤ 0,24; ≤ 0,055; ≤ 0,055; ≤ 0,014; ≤ 0,85
Reaction to fire			A1

[1)] Re = R_{eH} (upper yield strength), or R_e = $R_{p0,2}$ (proof strength) in case if upper yield strength (ReH) does not occur.
[2)] Calculated with nominal cross section.
[3)] Evaluation was made with 180° bending test.

[a)] It is allowed to exceed the highest allowed mass percentage value of carbon by 0,03, if carbon equivalent value is reduced by 0,02 mass percentage.
[b)] Higher nitrogen content is acceptable, if content of nitrogen-fixing elements is sufficient.

Issue: 2.
Dated at Szentendre, 31.08.2022