No. 02/2020-DoP

DECLARATION OF PERFORMANCE

1. **Unique identification code of the product-type:**

   Weldable, ribbed, hot rolled reinforcing steel in bars in steel quality B500SP (PN-H-93220:2018 and MSZ/T 339:2012.03) with $R_e \geq 500$ MPa declared yield strength calculated from nominal cross-section, in nominal diameters Ø8, Ø10, Ø12, Ø14, Ø16, Ø20, Ø25, Ø28 and Ø32 mm

2. **Type, batch or serial number or any other element allowing identification of the construction product according to government decree no. 275/2013 (issued on 16th July):**

   Rolling mark applied on the product: 1-17

3. **Intended use or uses of the construction product, in accordance with the relevant technical approval, as foreseen by the manufacturer:**

   The reinforcing steel products may be used as reinforcement of concrete structures according to EN 10080:2005, in steel quality B500SP (PN-H-93220:2018 and MSZ/T 339:2012.03).

   The steel bars can be taken into account with the parameters of B 60.50 (MSZ 339:1987) steel by performing diagnostic works on building designed in accordance with withdrawn standards no. MSZ 15022:1986 and no. MSZ 15022:1986/1M:1992.

   The steel bars can be taken into account as product in ductility class C 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 1992-1-1:2004 + EN 1992-1-1:2004/ AC:2010 (EUROCODE 2).

4. **Name, registered trade name or registered trade mark and contact address of the manufacturer:**

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

5. **System or systems of assessment and verification of constancy of performance of the construction product:**
   System (1+)

6. **ÉMI Non-profit Ltd. for Quality Control and Innovation In Building, H-2000 Szentendre, Dózsa György út 26, Hungary, who issued the National Technical Assessment no. A-80/2017 dated at 29.07.2019 is designated body who performed:**
   - **the determination of product type**
   - **the audit tests of random chosen samples,**
   - **the initial inspection of the factory and factory production control,**
   - **the continuous surveillance, verification and assessment of the factory production control**

   in System (1+), and issued the Certificate of Conformity for the product with no. 20-CPR-248-(C-4/2007), dated at 05.02.2020.

7. **Declared performance**

Essential characteristics	Performance		Applied test and product standard	Technical specification
	B500SP	B500C		
Yield or proof strength R_{eH} or $R_{p0,2}$, (MPa)	*500÷625 (characteristic)*	*≥ 500 (characteristic)* *≥ 485 (individual)*	*MSZ EN 1992-1-1:2010* *MSZ EN 10080:2005* *MSZ/T 339:2012.03* *MSZ 339:1987* *PN-H-93220:2018* *EN ISO 15630-1:2019* *MSZ EN ISO 6892-1:2010*	*National Technical Assessment no. A-80/2017 dated at 29.07.2019*
Tensile strength R_m, (MPa)	-	*≥ 600 MPa (characteristic)* *≥ 582 MPa (individual)*		
Stress ratio, R_m/R_e	*1,15÷1,35 (characteristic)*	*1,15÷1,35 (characteristic)* *1,13÷1,38 (individual)*		
Elongation, A_{gt} (%)	*≥ 8 (characteristic)*	*≥ 7,5 (characteristic)* *≥ 6,75 (individual)*		
Elongation, A_5 (%)	*≥ 16 (average)*	*≥ 18 (average)*		
Bonding strength (fR) (Geometry of ribs)	*h [mm] = 0,03·d – 0,15·d* *β_1 [°] ≤ 75°* *β_2 [°] ≥ 45°* *$\beta_1 - \beta 2$ [°]≥ 10°* *c (mm) 0,4·d – 1,2·d* *f_R, minimum* *d = 8 mm: 0,045* *8 mm < d ≤ 10 mm: 0,052* *d > 10 mm: 0,056*	*h [mm] = 0,03·d – 0,15·d* *β [°] 35° ÷ 75°* *c (mm) 0,4·d – 1,2·d* *f_R, minimum* *8 mm < d ≤ 12 mm: 0,040* *d > 12 mm: 0,056*		
Bendability	*bending 90 degrees, re-bending 20 degrees* *d ≤ 12: 5d; 12 < d ≤ 16: 6d;* *d > 16: 8d*	*bending 180 degrees, without crack* *d ≤ 16: 3d* *d > 16: 6d*		
Reaction to fire	*A1*			
Tolerance of production length (mm)	*+100 / -0*			

Essential characteristics	Performance		Applied test and product standard	Technical specification
	B500SP	B500C		
Tolerances from nominal cross-section (%)	*d ≤ 8: ± 6,0* *d > 8: ± 4,5*		*MSZ EN 1992-1-1:2010* *MSZ EN 10080:2005* *MSZ/T 339:2012.03* *MSZ 339:1987* *PN-H-93220:2018* *EN ISO 15630-1:2019* *MSZ EN ISO 6892-1:2010*	*National Technical Assessment no.* A-80/2017 dated at 29.07.2019
Fatigue	*n ≥ 2·106* *σmax (MPa) = 300* *2σA (MPa) = 150*			
Cycling tests	*n ≥ 3* *f [Hz] = 0,5 – 3*			
Weld metal bend test for150°, without cracks in the transition zone	-	*d ≥ 16 mm:* *3d mandrel*		
Impact strength on 0 °C-on, KV (J) *d ≥ 16 mm*	-	*avarage ≥ 28* *individual value ≥ 21 (75%)*		
Weldability (C_{eq}) *- cast analysis* *- product analysis*	-	*≤ 0,50* *≤ 0,52*		
Cast analysis *C; S; P; N2; Cu*	-	*≤ 0,22; ≤ 0,050; ≤ 0,050; ≤ 0,012; ≤ 0,80*		
Product analysis *C; S; P; N2; Cu*	-	*≤ 0,24; ≤ 0,055; ≤ 0,055; ≤ 0,014; ≤ 0,85*		

8. **The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7.**

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Dyrektor ds. Jakości ZWW

Stanisław Klusek

Ostrowiec Świętokrzyski, 05.02.2020 .....

(Stanisław Klusek)
(Quality Manager of RPP)