U. S. Steel Košice, s.r.o.
A Subsidiary of United States Steel

CE

DECLARATION OF PERFORMANCE NO. USSK USSK-06/2017

1. Unique identification code for product type:	**Flat hot rolled structural steel products of steel grades:** **acc. to EN 10025-2:2004/AC:2005[1,2]:** **S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2** Produced in thickness 1,8 – 12,7 mm **steel grades S355M, S420M acc. to EN 10025-4:2004** Produced in thickness 2,0 – 4,09 mm **steel grade S355J0WP acc. to EN 10025-5:2004[1)]** Produced in thickness 2,0 – 12,0 mm *[1)] applies also for the delivery condition: +AR, +N* *[2)] supplied also with the designation C - suitable for cold forming, with the exception of S355JR*
2. Intended use for construction product:	For use in metal structures or in composite metal and concrete structures.
3. Producer:	U. S. Steel Košice, s. r. o. Vstupný areál U. S. Steel 044 54 Košice Slovak Republic Producing plant: Hot Rolling Mill Division Plant
4. Authorized representative:	not relevant
5. Assessment system and verification for constancy of performance:	EN 10025-1:2004, Annex ZA, system 2+
6a. Harmonized standard:	EN 10025-1:2004 Hot rolled products of structural steels. Part 1: General technical delivery conditions.
The notified subject:	Strojírenský zkušební ústav, s.p. Hudcova 424/56b 621 00 Brno Czech Republic **Identification number:** 1015 Issued: ***Certificate of conformity of the factory production control No. 1015-CPR-E-30-20419-15***

7. Declared performance:

Essential characteristics	Performance		Technical specification
Tolerances on dimensions and shape	*Tolerances on dimensions and shape according to standards EN 10029 and EN 10051*		EN 10029:2010 EN 10051:2010
Minimum elongation *A* *(in transversal direction)*	**S235JR**	17 % [a)] 18 % [b)] 19 % [c)] 24 % [d)]	EN 10025-2:2004 Art. 7.3.1, Tab. 7
	S235J0		
	S235J2		
	S275JR	15 % [a)] 16 % [b)] 17 % [c)]	
	S275J0		

	S275J2	21 % [d]	
	S355JR	14 % [a] 15 % [b] 16 % [c] 20 % [d]	
	S355J0		
	S355J2		
	S355K2		
	S355M	22 % [d] [k]	EN 10025-4:2004 Art. 7.3.1, Tab.5
	S420M	19 % [d] [k]	EN 10025-4:2004 Art. 7.3.1, Tab.5
	S355J0WP	14 % [a] 15 % [b] 16 % [c] 20 % [d]	EN 10025-5:2004 Art. 7.3.1, Tab. 4

[a] at nominal thickness ≤ 2 mm
[b] at nominal thickness > 2 mm and ≤ 2,5 mm
[c] at nominal thickness > 2,5 mm and < 3 mm
[d] at nominal thickness ≥ 3 mm
[k] at nominal thickness < 3 mm elongation value should be agreed

Minimum upper yield strength R_{eH}	S235JR	235 MPa	EN 10025-2:2004 Art. 7.3.1, Tab. 7
	S235J0		
	S235J2		
	S275JR	275 MPa	
	S275J0		
	S275J2		
	S355JR	355 MPa	
	S355J0		
	S355J2		
	S355K2		
	S355M	355 MPa	EN 10025-4:2004 Art. 7.3.1, Tab.5
	S420M	420 MPa	EN 10025-4:2004 Art. 7.3.1, Tab.5
	S355J0WP	355 MPa	EN 10025-5:2004 Art. 7.3.1, Tab.4

Tensile strength R_m	S235JR	360 to 510 MPa	EN 10025-2:2004 Art. 7.3.1, Tab. 7
	S235J0		
	S235J2		
	S275JR	430 to 580 MPa [e] 410 to 560 MPa [f]	
	S275J0		
	S275J2		
	S355JR	510 to 680 MPa [e] 470 to 630 MPa [f]	
	S355J0		
	S355J2		
	S355K2		
	S355M	470 to 630 MPa	EN 10025-4:2004 Art. 7.3.1, Tab. 5

	S420M	520 to 680 MPa	EN 10025-4:2004 Art. 7.3.1, Tab. 5
	S355J0WP	510 to 680 MPa [e] 470 to 630 MPa [f]	EN 10025-5:2004 Art. 7.3.1, Tab. 4
[e] at nominal thickness < 3 mm *[f] at nominal thickness ≥ 3 mm*			

Impact strength *KV* [g] (min.)	**S235JR** [h]	27 J at +20 °C	EN 10025-2:2004 Art. 7.3.1, 7.3.2 Tab. 9
	S235J0	27 J at 0 °C	
	S235J2	27 J at -20 °C	
	S275JR [h]	27 J at +20 °C	
	S275J0	27 J at 0 °C	
	S275J2	27 J at -20 °C	
	S355JR [h]	27 J at +20 °C	
	S355J0	27 J at 0 °C	
	S355J2	27 J at -20 °C	
	S355K2	40 J at -20 °C	
	S355M	40 J at -20 °C	EN 10025-4:2004 Art. 7.3.1, 7.3.2 Tab. 6
	S420M	40 J at -20 °C	EN 10025-4:2004 Art. 7.3.1, 7.3.2 Tab. 6
	S355J0WP [h]	27 J at 0 °C	EN 10025-5:2004 Art. 7.3.1, 7.3.2 Tab. 5
[g] at nominal thickness < 6 mm the Charpy impact test is not performed, in as per EN 10025-1:2004, Article 7.3.2.1 *[h] The impact properties are verified only when specified at the time of the order.*			

Weldability	*Based on carbon equivalent CEV calculation the material is weldable.*		EN 10025-2:2004 Art. 7.4.1
	Grades S355M and S420M are applicable for welding.		EN 10025-4:2004 Art. 7.4.1
	The following applies to S355J0WP: Specific actions need to be taken in case of welding with high phosphorrus content.		EN 10025-5:2004 Art. 7.4.1, D.1

		C max.	Si max.	Mn max.	P	S max.	N max.	Cu	Cr	Nb max.	V max.	Al min.	Ti max.	Ni max.	Mo max.	CEV max.
		EN 10025-2:2004; Article 7.2; 7.4.3														
		Table 2														Table 6
Durability (chemical composition %)	***S235JR***	0,17	-	1,40	max.0,035	0,035	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,35
	S235J0	0,17	-	1,40	max.0,030	0,030	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,35
	S235J2	0,17	-	1,40	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,35
	S275JR	0,21	-	1,50	max.0,035	0,035	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,40
	S275J0	0,18	-	1,50	max.0,030	0,030	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,40
	S275J2	0,18	-	1,50	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,40
	S355JR	0,24	0,55	1,60	max.0,035	0,035	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,45
	S355J0	0,20 [i]	0,55	1,60	max.0,030	0,030	0,012 [j]	max.0,55	-	-	-	-	-	-	-	0,45
	S355J2	0,20 [i]	0,55	1,60	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,45
	S355K2	0,20 [i]	0,55	1,60	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,45

		EN 10025-4:2004 Article 7.2, Table 2														
	S355M	0,14	0,50	1,60	max.0,030	0,025	0,015	max.0,55	max.0,30	0,05	0,10	0,02	0,05	0,50	0,10	0,39
	S420M	016	0,50	1,70	max.0,030	0,025	0,025	max.0,55	max.0,30	0,05	0,12	0,02	0,05	0,80	0,20	0,43
		EN 10025-5:2004 Article 7.2, Table 2														
	S355J0WP	0,12	0,75	1,00	0,06 - 0,15	0,035	0,009[ii]	0,25 - 0,55	0,30 - 1,25	-	-	-	-	-	-	0,52

[i] *For grades suitable for cold roll forming max. 0,22 % C max.*
[ii] *The max. value for Nitrogen does not apply if the chemical composition shows a minimum total Al content of 0,020 % or alternatively sufficient other binding elements are present.*

The Declaration of performance for download: http://www.usske.sk/sk/produkty/ocel-valcovana-za-tepla/vyhlasenie-o-parametroch

8. The producer declares, on their own responsibility, that the properties of the above stated products are in conformance with attributes declared in the following table.

This declaration of parameters is developed in accordance with Regulation (EU) No. 305/2011 of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction product.

The declaration of performance is valid since od April 21, 2017

Name: Ing. Štefan Novák

Position: Director of Hot Rolling Mill DP

Signature:

Ing. Ferdinand Kóča

Head of QMS Department