

DECLARATION OF PERFORMANCE NO. USSK-01/2022

1. Unique identification code for product type:	Flat hot rolled structural steel products of steel grades: acc. to EN 10025-2^{1,2)}: S235JR, S235J0, S235J2, S275JR, S275J0, S275J2, S355JR, S355J0, S355J2, S355K2 Produced in thickness 1,8 – 12,7 mm steel grades S355NL acc. to EN 10025-3: Produced in thickness 2,0 – 12,0 mm steel grades S355M, S420M acc. to EN 10025-4: Produced in thickness 2,0 – 4,09 mm steel grade S355J0WP, S355J2WP acc. to EN 10025-5¹⁾ 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:	DIN EN 10025-1:2005, Annex ZA, system 2+
6a. Harmonized standard:	DIN EN 10025-1:2005 Hot rolled products of structural steels. Part 1: General technical delivery conditions
The notified subject:	Technischer Überwachungsverein Thüringen e.V. Melchendorfer Straße 64 99096 Erfurt Germany Identification number: 0900 Issued: Certificate of conformity of the factory production control No. 0090-CPR-1178

7. Declared performance:

Essential characteristics	Performance	Technical specification														
Tolerances on dimensions and shape	<i>Tolerances on dimensions and shape according to standards EN 10029 and EN 10051</i>	EN 10029:2010 EN 10051:2010														
Minimum elongation A (in transversal direction)	<table border="1"> <tr> <td data-bbox="547 1742 751 1798">S235JR</td> <td data-bbox="759 1742 1166 1798">17 % ^{a)}</td> </tr> <tr> <td data-bbox="547 1798 751 1854">S235J0</td> <td data-bbox="759 1798 1166 1854">18 % ^{b)}</td> </tr> <tr> <td data-bbox="547 1854 751 1910">S235J2</td> <td data-bbox="759 1854 1166 1910">19 % ^{c)}</td> </tr> <tr> <td data-bbox="547 1910 751 1966">S275JR</td> <td data-bbox="759 1910 1166 1966">24 % ^{d)}</td> </tr> <tr> <td data-bbox="547 1966 751 2022">S275J0</td> <td data-bbox="759 1966 1166 2022">15 % ^{a)}</td> </tr> <tr> <td></td> <td data-bbox="759 2022 1166 2078">16 % ^{b)}</td> </tr> <tr> <td></td> <td data-bbox="759 2078 1166 2134">17 % ^{c)}</td> </tr> </table>	S235JR	17 % ^{a)}	S235J0	18 % ^{b)}	S235J2	19 % ^{c)}	S275JR	24 % ^{d)}	S275J0	15 % ^{a)}		16 % ^{b)}		17 % ^{c)}	EN 10025-2 Art. 7.3.1, Tab. 6
S235JR	17 % ^{a)}															
S235J0	18 % ^{b)}															
S235J2	19 % ^{c)}															
S275JR	24 % ^{d)}															
S275J0	15 % ^{a)}															
	16 % ^{b)}															
	17 % ^{c)}															

	S275J2	21 % ^{d)}	
	S355JR	14 % ^{a)} 15 % ^{b)} 16 % ^{c)} 20 % ^{d)}	
	S355J0		
	S355J2		
	S355K2		
	S355NL		22%
	S355M	22 % ^{d)k)}	EN 10025-4 Art. 7.3.1, Tab. 4
	S420M	19 % ^{d)k)}	EN 10025-4 Art. 7.3.1, Tab. 4
	S355J0WP	14 % ^{a)} 15 % ^{b)} 16 % ^{c)} 20 % ^{d)}	EN 10025-5 Art. 7.3.1, Tab. 4
	S355J2WP	14 % ^{a)} 15 % ^{b)} 16 % ^{c)} 20 % ^{d)}	EN 10025-5 Art. 7.3.1, Tab. 4
^{a)} at nominal thickness ≤ 2 mm ^{d)} at nominal thickness > 2,5 mm and < 3 mm ^{k)} at nominal thickness < 3 mm ^{b)} at nominal thickness > 2 mm and ≤ 2,5 mm ^{e)} at nominal thickness ≥ 3 mm elongation value should be agreed			

Minimum upper yield strength <i>R_{eH}</i>	S235JR	235 MPa	EN 10025-2 Art. 7.3.1, Tab. 6	
	S235J0			
	S235J2			
	S275JR	275 MPa		
	S275J0			
	S275J2			
	S355JR	355 MPa		
	S355J0			
	S355J2			
	S355K2			
	S355NL	355MPa		EN 10025-3 Art. 7.3.1, Tab. 4
	S355M	355 MPa		EN 10025-4 Art. 7.3.1, Tab. 4
	S420M	420 MPa		EN 10025-4 Art. 7.3.1, Tab. 4
	S355J0WP	355 MPa		EN 10025-5 Art. 7.3.1, Tab. 4
	S355J2WP	355 MPa		EN 10025-5 Art. 7.3.1, Tab. 4

Tensile strength <i>R_m</i>	S235JR	360 to 510 MPa	EN 10025-2 Art. 7.3.1, Tab. 6
	S235J0		
	S235J2		
	S275JR	430 to 580 MPa ^{e)}	
	S275J0	410 to 560 MPa ^{f)}	

	S275J2		
	S355JR		
	S355J0	510 to 680 MPa ^{e)}	
	S355J2	470 to 630 MPa ^{f)}	
	S355K2		
	S355NL	470 to 630 MPa	EN 10025-3 Art. 7.3.1, Tab. 4
	S355M	470 to 630 MPa	EN 10025-4 Art. 7.3.1, Tab. 4
	S420M	520 to 680 MPa	EN 10025-4 Art. 7.3.1, Tab. 4
	S355J0WP	510 to 680 MPa ^{e)} 470 to 630 MPa ^{f)}	EN 10025-5 Art. 7.3.1, Tab. 4
	S355J2WP	510 to 680 MPa ^{e)} 470 to 630 MPa ^{f)}	EN 10025-5 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 Art. 7.3.1, 7.3.2 Tab. 8
	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	
	S355NL	27 J at -50 °C	EN 10025-3 Art. 7.3.1, Tab. 5
	S355M	40 J at -20 °C	EN 10025-4 Art. 7.3.1, 7.3.2 Tab. 5
	S420M	40 J at -20 °C	EN 10025-4 Art. 7.3.1, 7.3.2 Tab. 5
	S355J0WP ^{h)}	27 J at 0 °C	EN 10025-5 Art. 7.3.1, 7.3.2, Tab. 5
	S355J2WP	27 J at -20 °C	EN 10025-5 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 10025-1:2005, 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 Art. 7.4.1
	Grades S355M and S420M are applicable for welding.	EN 10025-4 Art. 7.4.1
	The following applies to S355J0WP: Specific actions need to be taken in case of welding with high	EN 10025-5

	phosphorus content.	Art. 7.4.1, D.1
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	C	Si	Mn	P	S	N	Cu	Cr	Nb	V	Al	Ti	Ni	Mo	CEV
	max.	max.	max.	max.	max.	max.			max.	max.	min.	max.	max.	max.	max.
EN 10025-2; Article 7.2; 7.4.3															
Table 1															
															tab. 5
S235JR	0,17	-	1,40	max.0,035	0,035	0,012 ^{b)}	max.0,55	-	-	-	-	-	-	-	0,35
S235J0	0,17	-	1,40	max.0,030	0,030	0,012 ^{b)}	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 ^{b)}	max.0,55	-	-	-	-	-	-	-	0,40
S275J0	0,18	-	1,50	max.0,030	0,030	0,012 ^{b)}	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 ^{b)}	max.0,55	-	-	-	-	-	-	-	0,45
S355J0	0,20 ^{b)}	0,55	1,60	max.0,030	0,030	0,012 ^{b)}	max.0,55	-	-	-	-	-	-	-	0,45
S355J2	0,20 ^{b)}	0,55	1,60	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,45
S355K2	0,20 ^{b)}	0,55	1,60	max.0,025	0,025	-	max.0,55	-	-	-	-	-	-	-	0,45
EN 10025-3 Article 7.2, Table 1															
															tab. 3
S355NL	0,18	0,50	0,9 – 1,65	0,025	0,020	0,015	0,55	0,30	0,05	0,12	0,02	0,05	0,50	0,10	0,43
EN 10025-4 Article 7.2, Table 1															
S355M	0,14	0,50	1,60	max.0,025	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	0,16	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 Article 7.2, Table 2															
S355J0WP	0,12	0,75	1,00	0,06 - 0,15	0,035	0,009 ^{b)}	0,25 - 0,55	0,30 - 1,25	-	-	-	-	-	-	0,52
S355J2WP	0,12	0,75	1,0	0,06 - 0,15	0,030	-	0,25 - 0,55	0,30 - 1,25	-	-	-	-	-	-	0,52

^{b)} For grades suitable for cold roll forming max. 0,22 % C max.

^{d)} 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>

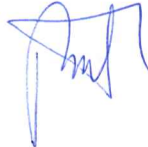
8. The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

The declaration of performance is valid since June 1, 2022

Name: Ing. Štefan Novák

Position: Director of Hot Rolling Mill DP

Signature:



Ing. Radomír Chovanec

Head of Department QMS

