

8.4.2022

480628

Customer's order number 022154		Manufacturer's order number 169875 1		
Customer/consignee Ovako Metals Oy Ab Tuotekatu 3 33840 Tampere		Buyer Ovako Metals Oy Ab Tuotekatu 3 33840 Tampere		
Customer reference number 022154-5130/96-733020				
Product Round bar As rolled Hot rolled, reeled		Steel grade HYDAX 15		
		Specification IS 2720.12.04		
Charge 46032	Abbreviation EN7	Diameter/dimensions 70,00 mm	Tolerance type N	Reduction ratio 29,82 :1

## CAST ANALYSIS

	C	SI	MN	P	S	CR	NI	MO	
	%	%	%	%	%	%	%	%	
Min		0,15	1,00		0,090				
Result	0,17	0,27	1,23	0,006	0,111	0,19	0,10	0,02	
Max	0,20	0,55	1,60	0,035	0,150				
	V	TI	CU	ALS	AS	SN	B	CA	
	%	%	%	%	%	%	%	%	
Min								0,0020	
Result	0,05	0,0009	0,14	0,008	0,008	0,009	0,0004	0,0042	
Max	0,09								
	N	NB	CO	PB	W	SB	CEV		
	%	%	%	%	%	%	%		
Min									
Result	0,012	0,004	0,025	0,0003	0,006	0,002	0,44		
Max							0,47		

## CHARPY V2/-20 °C EN ISO 148-1

	KV1	KV2	KV3	KV	AVER
	J	J	J	J	
Min				27	
Result	30	29	159	73	
Max					

## TENSILE TEST FROM 1/3 RADIUS EN ISO 6892-1

	Rp0.2	Rm	A 5	Z
	MPa	MPa	%	%
Min	335	490	21,0	45
Result	427	584	21,2	51
Max		630		

Steel production process: Electric Arc Furnace, Vacuum Degassing and Continuous Casting

The products supplied are in compliance with the requirements of the order

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This certificate is issued electronically and is valid without a signature

Takala Esa  
Authorized Representative

All of Ovako's operations are carbon neutral beginning January 1, 2022.