

INSPECTION CERTIFICATE NO 1630

ACCORDING TO: EN 10204 – 3.1

Customer: **HIDROAN HIDROLIK&PNOMATIK LTD.**

Manufacturer: **CROMSTEEL INDUSTRIES SA**

Product: **STEEL BARS**
A. Extent of material delivery

Bundle No.	Product code	Heat No.	Steel grade	Standard of Norm	Dimension and tolerances			Pieces No.	Net weight (kg)	Order
					OD (mm)	Tol	Quantity (m)			
1	BAC45	53739	C45E	EN 10083-2	45	f7	30,6	5	381,84	ORDER 686 FOR MAY
2	BAC45	53739	C45E	EN 10083-2	45	f7	85,71	14	1.069,51	ORDER 686 FOR MAY
3	BAC45	53739	C45E	EN 10083-2	45	f7	85,4	14	1.065,64	ORDER 686 FOR MAY
4	BAC45	53739	C45E	EN 10083-2	45	f7	30,5	5	380,59	ORDER 686 FOR MAY
Total weight									2897,58	

BAC hard chrome plated steel bars C45E

1. Surface roughness: Ra-max. 0.20µm (average of the measured values 0.05-0.15 µm)

2. Chrome layer thickness:

≥ Ø20= min. 20 µm.

3. Chrome layer hardness: min.900HV 0,1

4. Straightness:

> Ø 16 ≤ 0.2 mm/1000 mm

5. Roundness: (IT)/2

The products mentioned above were controlled according to our procedures ISO-9001

A. Extent of material delivery

Bundle No.	Product code	Heat No.	Steel grade	Standard of Norm	Dimension and tolerances			Pieces No.	Net weight (kg)	Order
					OD (mm)	Tol	Quantity (m)			
1	BATC80	54244	C45E	EN 10083-2	80	f7	28,41	4	1.120,27	ORDER 687 FOR APR
2	BATC80	54244	C45E	EN 10083-2	80	f7	28,68	4	1.130,92	ORDER 687 FOR APR
3	BATC80	54244	C45E	EN 10083-2	80	f7	14,34	2	565,46	ORDER 687 FOR APR
4	BATC80	54244	C45E	EN 10083-2	80	f7	14,34	2	565,46	ORDER 687 FOR MAY
5	BATC80	54244	C45E	EN 10083-2	80	f7	21,48	3	847,01	ORDER 687 FOR MAY
6	BATC80	54244	C45E	EN 10083-2	80	f7	6,85	1	270,12	ORDER 687 FOR MAY
7	BATC80	54244	C45E	EN 10083-2	80	f7	28,64	4	1.129,34	ORDER 687 FOR MAY
8	BATC100	53650	C45E	EN 10083-2	100	f7	21,06	3	1.297,60	ORDER 687 FOR MAY
9	BATC100	53120	C45E	EN 10083-2	100	f7	7,1	1	437,47	ORDER 687 FOR MAY
Total weight									7.363,65	

1. Surface roughness: Ra-max. 0.20µm (average of the measured values 0.05-0.15 µm)

2. Chrome layer thickness:

≥ Ø20= min. 20 µm.

3. Chrome layer hardness: min.900 HV 0,1

4. HRC Superficial hardness Min.55

5. Hardening depth (mm) 0,5-3,5 depending on diameter from **BATC** (induction hardened and hard chrome plated steel bars C45E)

6. Straightness:

> Ø 16 ≤ 0.2 mm/1000 mm

7. Roundness: (IT)/2

The products mentioned above were controlled according to our procedures ISO-9001

B. Chemical composition of cast (%)**C. Mechanical properties**

Heat No.	Steel grade	Diameter (mm)	C	Mn	Si	S	P	Yield Point Rp0,2 (N/mm ²)	Tensile Strength Rm (N/mm ²)	A ₅ (%)
		OD								
53739	C45E	45	0,44	0,64	0,30	0,012	0,014	383	640	22
54244	C45E	80	0,43	0,66	0,24	0,013	0,015	368	647	16
53650	C45E	100	0,43	0,61	0,24	0,019	0,013	381	626	22
53120	C45E	100	0,43	0,63	0,28	0,016	0,013	401	685	20

D. Corrosion salt test spray results

TEST CONDITIONS					RATING FINAL VALUES	
CHROMIUM WALL THICKNESS (µm)	Standard	Solution	Ph	Temp (°C)	Standard	200 h
min 20	ISO 9227	NSS	6,5–7,2	35±2	ISO 10289	9

≥ Ø20 = RATING 9/200 H

The values of chemical analysis and mechanical properties for each heat number correspond to the producer's original certificates, controlled by us and managed, preserved in our archive for 3 years.

Other Tests / Inspections

Dimensional and visual inspection: ACCEPTED.

We hereby certify that the material described above has been tested and complies with the order.

This document was prepared by means of electronic data processing and is valid without signature.

Made out by / Intocmit de

DRAGOS CURPAN

Verified by / Verificat de

IOANA STEFAN

MAGDA MERDA

DATE / DATA: 23.06.2014