

INSPECTION CERTIFICATE NO
1405

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	BAC35	53964	C45E	EN 10083-2	35	f7	140,16	23	1.057,98	ORDER 686 FOR MAY
2	BAC35	53972	C45E	EN 10083-2	35	f7	139,84	23	1.055,56	ORDER 686 FOR MAY
3	BAC90	53145	C45E	EN 10083-2	90	f7	7,11	1	354,8	ORDER 686 FOR MAY
4	BAC90	53145	C45E	EN 10083-2	90	f7	21,3	3	1.062,88	ORDER 686 FOR MAY
5	BAC90	53700	C45E	EN 10083-2	90	f7	21,33	3	1.064,38	ORDER 686 FOR MAY
6	BAC90	53700	C45E	EN 10083-2	90	f7	21,36	3	1.065,87	ORDER 686 FOR MAY
7	BAC90	53700	C45E	EN 10083-2	90	f7	21,3	3	1.062,88	ORDER 686 FOR MAY
8	BAC100	53112	C45E	EN 10083-2	100	f7	14,2	2	874,93	ORDER 686 FOR MAY
9	BAC35	53972	C45E	EN 10083-2	35	f7	18,27	3	137,91	ORDER 686 FOR MAY
10	BAC95	52045	C45E	EN 10083-2	95	f7	6,62	1	368,19	ORDER 686 FOR MAY
11	BAC110-C45E	ST-48060	C45E	EN 10083-2	110	f7	6	1	447,43	ORDER 686 FOR MAY
12	BAC110-C45E	ST-50469	C45E	EN 10083-2	110	f7	18,04	3	1.345,27	ORDER 686 FOR MAY
13	BAC130-C45E	LS-D65697	C45E	EN 10083-2	130	f7	6	1	625	ORDER 686 FOR APR
14	BAC130-C45E	LS-D65697	C45E	EN 10083-2	130	f7	6	1	625	ORDER 686 FOR MAY
Total weight									11.148,08	

BAC hard chrome plated steel bars C45E

- Surface roughness: Ra-max. 0.20µm (average of the measured values 0.05-0.15 µm)
- Chrome layer thickness:
≥ Ø20= min. 20 µm.
- Chrome layer hardness: min.900HV 0,1
- Straightness:
> Ø 16 ≤ 0.2 mm/1000 mm
- 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	BATC30	13845TC	C45E	EN 10083-2	30	f7	17,7	3	98,16	ORDER 687 FOR MAY
2	BATC30	13845TC	C45E	EN 10083-2	30	f7	43,05	7	238,75	ORDER 687 FOR MAY
Total weight									336,91	

- Surface roughness: Ra-max. 0.20µm (average of the measured values 0.05-0.15 µm)
- Chrome layer thickness:
≥ Ø20= min. 20 µm.
- Chrome layer hardness: min.900 HV 0,1
- HRC Superficial hardness Min.55
- Hardening depth (mm) 0,5-3,5 depending on diameter from **BATC** (induction hardened and hard chrome plated steel bars C45E)
- Straightness:
> Ø 16 ≤ 0.2 mm/1000 mm
- 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								
53964	C45E	35	0,46	0,65	0,24	0,004	0,011	403	665	22
53972	C45E	35	0,44	0,62	0,27	0,010	0,010	381	659	22
53145	C45E	90	0,43	0,63	0,24	0,014	0,015	371	632	22
53700	C45E	90	0,43	0,60	0,26	0,017	0,016	369	652	24
53112	C45E	100	0,44	0,63	0,23	0,018	0,012	425	672	24
52045	C45E	95	0,42	0,63	0,23	0,018	0,013	348	609	20
ST-48060	C45E	110	0,44	0,63	0,26	0,019	0,009	373	657	20
ST-50469	C45E	110	0,44	0,67	0,21	0,018	0,006	394	629	18
LS-D65697	C45E	130	0,48	0,70	0,25	0,023	0,011	403	704	24
13845TC	C45E	30	0,43	0,76	0,20	0,005	0,010	469	704	27

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' 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: 30.05.2014