


Industry & Facilities Division		
Inspection Report N°: SOF/16/9288	Date of issuance: 12/07/2016	Page 1 of 12
<input type="checkbox"/> Initial	<input type="checkbox"/> Initial	<input type="checkbox"/> Interim
<input checked="" type="checkbox"/> Final	<input checked="" type="checkbox"/> Final	<input type="checkbox"/> Interim
Rev. n°: n/a	Reason of revision: n/a	

Inspection requested by: Institute of Metal Science, Equipment and Technologies with Hydro and aerodynamics Centre "Akad. A. Balevski" – BAS (IMSETHC-BAS)

BV Inspection performed as Recognized Authority: No Yes (....specify what recognition...)

P/o nr: (client to BV)	P/o nr: (client to Manufacturer)
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Inspection performed on: 12/07/2016	Location: Institute of Metal Science, Equipment and Technologies with Hydro and aerodynamics Centre "Akad. A. Balevski" laboratory
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Previous Inspection: (Date) N/A	Next Inspection: (Date)N/A
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MATERIAL / SUPPLY / SUBJECT OF INSPECTION	ITEM / TAG Nr	QTY
Seismic sensor SS-05	SS-05 S/N 0002 ID 72	1
Seismic sensor SS-05	SS-05 S/N 0004 ID 74	1
Seismic sensor SS-05	SS-05 S/N 0006 ID 76	1
Seismic sensor SS-05	SS-05 S/N 0007 ID 77	1

REFERENCE DOCUMENTS: See continuation sheet for additional documents: Yes No

Title	Reference n°	Rev.	Approved by	Date
SS-05 Seismic sensor Technical requirements	CC 00.00.00.00 ТИ	n/a	Prof. d-r Stoychev	04/14/16
SS-05 Seismic sensor Methodology for climatic laboratory	SS-05 00.00.00.00.00 MK	n/a	Prof. d-r Stoychev	12/07/16
SS-05 Seismic sensor Climatic laboratory program	SS-05 00.00.00.00.00 ПК	n/a	Prof. d-r Stoychev	12/07/16
SS-05 Seismic sensor Methodology for mechanical laboratory vibration	SS-05 00.00.00.00.00 MB	n/a	Prof. d-r Stoychev	12/07/16
SS-05 Seismic sensor Program for mechanical laboratory vibration	SS-05 00.00.00.00.00 ПБ	n/a	Prof. d-r Stoychev	12/07/16

INSPECTION RESULT

Satisfactory **Unsatisfactory: Non Conformities Raised** (Total number of NCR :.....)

BV Inspector: Aleksandar Pandov	BV Coordinator: Tane Tanev
BV Office: BV SOF	Attachments: <input checked="" type="checkbox"/> Yes (Total number of pages: 40) <input type="checkbox"/> No
Distribution: <input checked="" type="checkbox"/> CLIENT <input type="checkbox"/> MANUFACTURER <input checked="" type="checkbox"/> BV <input type="checkbox"/> OTHER (specify)	

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Rev. n°: n/a

Reason of revision: n/a

Stage of inspection : Before manufacturing During manufacturing Final Packing**Type of inspection :** Pre-inspection meeting Document and QC record review Visual examination, checks Witnessing tests Manufacturing progress status Vendor assessment Final inspection Packing**Stamping :** No**Results of inspection :** Satisfactory Unsatisfactory**Non Conformities Reports (NCR):** NCR's issued during reported period : NO List of outstanding NCR's : N/A**Main Conclusions & Remarks:** (for details see continuation sheet)**Next visit scheduled:** NO**INSPECTION DETAILS:****ATTENDEES :** See continuation sheet for additional documents: Yes No

Name	Company	Title (*)	Note
Vencislav Pehlivanski	IMSETHC-BAS	Gl. As., PhD, M. Sc.	
Stilyan Goergiev	IMSETHC-BAS	PhD	
Hristo Kolev	IMSETHC-BAS	As.prof.	
Vladimir Varbanov	IMSETHC-BAS	PhD	
Stoimen Balinov	IMSETHC-BAS	M. Sc.	

(*) specify if BV inspector has role as supervisor or mentor (e.g. "BV Inspector – supervisor –")

MEASURING EQUIPMENT USED: See continuation sheet for additional documents: Yes No

Equipment Type	Equipment Identity n°	Last Calibration date	Expiry date
Piezo electric accelerometer	61389	01/28/2016	01/2019

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MEASURING EQUIPMENT USED: See continuation sheet for additional documents: Yes No

Vibration meter Robotron	71021	01/28/2016	01/2019
Digital thermohygrometer	02/QC73	01/14/2016	01/2019
Digital Frequency Counter	DVM13MFC2	02/01/2016	02/2019

LIST OF NON CONFORMITIES ISSUED:

NC identification n°	Description of the Anomaly
NC01	n/a
...	

LIST OF NON CONFORMITIES CLOSED:

NC id number	Ref report n°	Issued on	Description
n/a			

LIST OF ATTACHEMENTS

Type of document	Identification number	Description
Technical requirements	Attachment 1	SS-05 Seismic sensor Technical requirements
Testing methodology	Attachment 2	SS-05 Seismic sensor Methodology for climatic laboratory
Testing program	Attachment 3	SS-05 Seismic sensor Climatic laboratory program
Testing methodology	Attachment 4	SS-05 Seismic sensor Methodology for mechanical laboratory vibration
Testing program	Attachment 5	SS-05 Seismic sensor Program for mechanical laboratory vibration
Communication codes	Attachment 6	Communication codes
Testing methodology (English)	Attachment 7	SS-05 Seismic sensor Methodology for climatic laboratory
Testing program (English)	Attachment 8	SS-05 Seismic sensor Climatic laboratory program
Testing methodology (English)	Attachment 9	SS-05 Seismic sensor Methodology for mechanical laboratory vibration
Testing program (English)	Attachment 10	SS-05 Seismic sensor Program for mechanical laboratory vibration
Calibration certificates	Attachment 11	Calibration certificates of measurement devices

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Reason of revision: n/a

LIST OF ATTACHEMENTS

Type of document	Identification number	Description
Test protocol	Attachment 12	Protocol N 2 from Climatic laboratory
Test protocol	Attachment 13	Protocol N 1 from Vibration laboratory
Test protocol	Attachment 14	Protocol N 3 from Climatic laboratory

Description of the inspections carried out :

1. Health and safety comments. All safety rules when working with electrical equipment are complied. There are no remarks or obstructions.

2. Manufacturing Progress Status (Quantities). The tested devices were manufactured from **IMSETHC-BAS**.

3. Details of inspection activities carried out with respect to scope of work (Visual examination, witnessing NDT, dimensional checks, material identification...)

The inspection was carried out in accordance with points 5.5 and 5.10 of the technical requirements (att. 1), test methodologies (att. 2 and 4) and test programs (att. 3 and 5) provided by the client.

The team performed the tests is as follows: - Chairman Head Ass, PhD, M.Sc.Vencislav Pehlivanski, PhD Stiliyan Goergiev, As. prof. Hristo Kolev, PhD Vladimir Varbanov and M.Sc Stoimen Balinov from IMSETHC-BAS.

The test was carried out in two successive stages.

Stage 1 - Verification of the efficiency of the sensor at vibration of 5 and 10 Hz for 20 minutes each. They were performed in the laboratory of the client with calibrated measuring devices, as shown in the section MEASURING EQUIPMENT USED of this report. The results of measurements are shown in pic. 2 to 27. They are documented in protocol att.13. The measured values correspond to those of point 5.10 of the technical requirements (att. 1).

Stage 2 - Verification of the efficiency of the sensor at low temperatures of -30 degrees +/- 2 for 2 hours. Verification of the efficiency of the sensor at high temperatures of +60 +/- 2 degrees for 2 hours. They were performed in the laboratory of the client with calibrated measuring devices, as shown in the section MEASURING EQUIPMENT USED to this report. The results of measurements are shown in pic. 28 to 42. They are documented in protocols att.12 and 14. The measured values correspond to those of point 5.5 of the technical requirements (att. 1).

Inspection was conducted in the full range of client technical requirements (att.1) points 5.5 and 5.10. Results are documented according client requirements in 3 protocols (att. 12 to 14).

4. Results of Inspection

The result of inspection is positive. The measured values correspond to those of points 5.5 and 5.10 of the technical requirements (att. 1). They were made with calibrated measuring devices, as shown in the section MEASURING EQUIPMENT USED of this report.

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5. Problems pending. No problems were observed during the inspection.

Digital Pictures (with Legend)



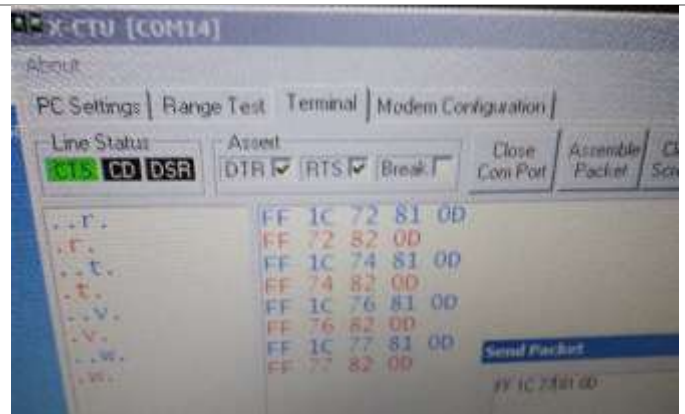
Pic 1 - The testing team



Pic 2 - Tested devices SS 05 ID 74 and 77



Pic 3 - Tested devices SS 05 ID 72 and 76



Pic 4 - The devices are working – successful communication

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Pic 5 – Calibration identification of Accelerometer



Pic 6 - Calibration identification of Frequency meter



Pic 7 - Calibration identification of Thermometer



Pic 8 - Calibration identification of Vibrometer



Pic 9 – Position of start



Pic 10 – Start time 5 Hz test

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Pic 11 - Start frequency 5 Hz test



Pic 12 – Start vibration 5 Hz test



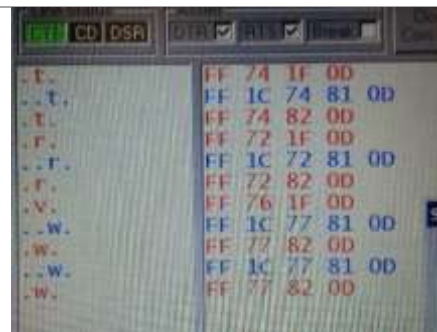
Pic 13 – End time 5 Hz test



Pic 14 - End frequency 5 Hz test



Pic 15 – End vibration 5 Hz test



Pic 16 – OK communication to the end of 5 Hz test



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Pic 17 – Devices to the end of 5 Hz test



Pic 18 - Devices to the end of 5 Hz test



Pic 19 - Start time 10 Hz test



Pic 20 - Start frequency 10 Hz test



Pic 21 - Start vibration 10 Hz test



Pic 22 - End time 10 Hz test

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Pic 23 – End frequency 10 Hz test



Pic 24 - End vibration 10 Hz test



Pic 25 - OK communication to the end of 10 Hz test



Pic 26 - Devices to the end of 10 Hz test



Pic 27 - Devices to the end of 10 Hz test



Pic 28 – Devices – start freezing



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Pic 29 – Start freezing time and temperature



Pic 30 – Start freezing OK communication



Pic 31 - Middle time and temperature - freezing



Pic 32 – Middle time freezing OK communication



Pic 33 - End time and temperature - freezing



Pic 34 – End time freezing OK communication



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Pic 35 – Devices – end freezing



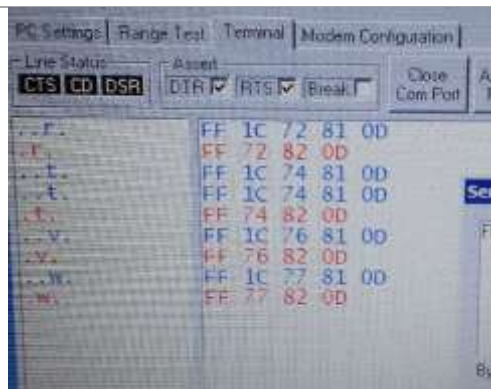
Pic 36 - Start time and temperature - heating



Pic 37 - Start time heating OK communication



Pic 38 - Middle time and temperature - heating



Pic 39 - Middle time heating OK communication



Pic 40 - End time and temperature - heating



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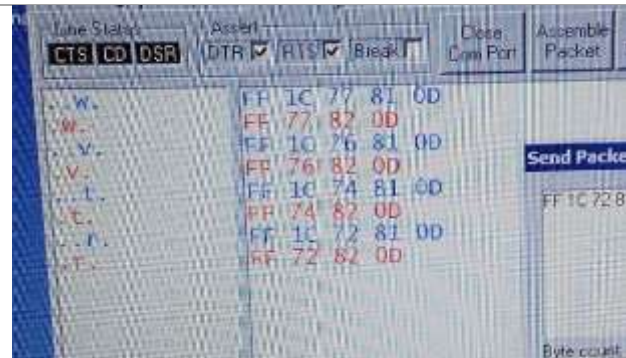
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Pic 41 - End time heating OK communication

Pic 42 - End time of heating - devices



Pic 43 - The testing team

END OF REPORT

Inspected by: Inspector Industrial Services

Name: Alexander Pandov

Signature:



Checked by: Bureau Veritas Bulgaria (IND)

Industry and Facility Development Manager

Name: Tane Tanev

Inspection Office: BV SOF

Supervision during performance No Yes