

## SKÝRSLA

### ÞYKKTARMÆLING OG SEGULSVIÐSSKÖNNUM Á OLÍUGEYMI 1 Á NESKAUPSTAÐ

ULTRASONIC THICKNESS & MAGNETIC FLUX LEAKAGE MEASUREMENT

UTM SKÝRSLA NR: TM-MFL-233211-GEYMIR-1-T0056-SEPT-23



**SEPTEMBER 2023**

**FASTANÚMER: T0056**

**MÆLINGAR FRAMKVÆMDAR , STAÐUR: NESKAUPSTAÐ**

**EIGANDANÚMER: 740.01.00**

HD EHF

[www.hd.is](http://www.hd.is)  
[gisli@hd.is](mailto:gisli@hd.is)  
+354 8440313

Samgöngustofa 



### **Framkvæmd mælinga**

Þykktarmælingu og segulsviðsskönnun framkvæmdi Gísli A. Guðmundsson og Andre Sandö hjá HD ehf í Kópavogi. Upplýsingar varðandi aðstæður, notkun geyma o.fl. veitti Ari Elísson hjá Olíudreifingu ehf.

Framkvæmd þykktarmælinga, segulsviðsskönnunar og sjónskoðunar á geyminum fóru fram í september mánuði 2023. Geymirinn er standandi stálgeymir og var botn hans mældur ásamt neðsta umfari.

### **Þykktarmælingar**

Varðandi staðsetningu mælistaða og niðurstöður þykktarmælinga á geyminum er hér vísað á meðfylgjandi teikningar (1 stk.). Allar gólfplötur eru mældar á svipaðan hátt þ.e.a.s. miðast er við að hafa mælinguna í miðri plötu, aðeins var tekin einn punktur í plötu. Sökum tæringar var bætt við mælingum.

### **Segulsviðsmælingar**

Gólfskanninn er kvarðaður á 6mm plötu, 8, 10, 14 og 18mm göt eru boruð í plötuna þar til 3mm efnisþykkt er eftir. Hugbúnaðurinn er stilltur þar til götin gefa rautt/appelsínugult merki á skjá. Gólfskannanum er rennt yfir alla fleti sem hann kemst yfir. Svelgir, rör eða ójafn botn geta gert gólfskannanum ókleift til mælingar.

### **Sjónskoðun**

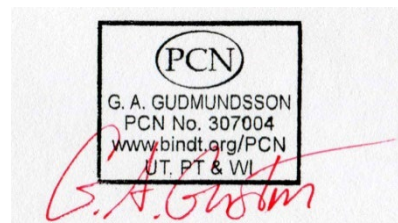
Farið er um allan geyminn með sterkt ljós og því haldið rétt við yfirborðið svo pyttir og misfellur sjáist betur. Kverksuða geymis er skoðuð sérstaklega vel ásamt öðrum suðum innanvert í geymi. Þá eru svelgir einnig skoðaðir mjög vel ásamt þeim stöðum þar sem gólfskanni kemst ekki.

### **Niðurstöður**

Geymir er ómálaður að hluta að innan. Geymir er í þokkalegu ásigkomulagi að innanverðu, gólf er tært að innan og víða má finna pytti að 1-2mm að dýpt. Efnisþykkt gólfs hefur líklega verið um 9,0mm í upphafi. Neðsta umfar lítur vel út Sjá teikningar og ljósmyndir. Eigandi geymis var látin vita. Sjá meðf. niðurstöður mælingar. Öll uppgefin mál á teikningum eru í mm.

Akureyri, 29 sept 2023

Virðingarfyllst.



Gísli Arnar Guðmundsson



## STAÐFESTING ÞYKKTARMÆLINGA

**SKÝRSLA NR.:** TM-MFL-233211-GEYMIR-1-T0056-SEPT-23  
**DAGS. SKÝRSLU:** 29 september 2023  
**EIGANDI GEYMIS:** Olíudreifing ehf  
**REKSTRARAÐILI:** Olíudreifing ehf  
**DAGS. FRAMKV.:** 15 september 2023  
**STAÐUR** Neskaupstaður  
**HVAÐ MÆLT:** Geymir 1  
**FASTANÚMER:** T0056  
**EIGENDANÚMER:** 740.01.00  
**SMÍÐAÁR:** 1956  
**MÆLIBÚNAÐUR:** MFE MK IV Tank Floor Scanner. Serial No.MK4-0016-A-TFS  
Olympus 45MG. 5 Mhz Serial nr: 130177407, skoðað og vottað þann 07.09.2023  
Stilliklossar (Calibration blocks): 3mm, 6mm 9mm 12mm og 18mm.  
Meðf. er vottorð mælíbúnaðar (Statement of Calibration).

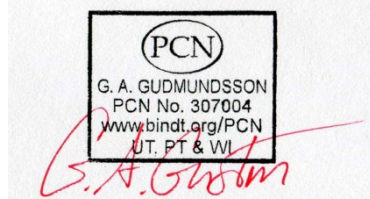
**FRAMKV. MÆLINGA:** Gísli Arnar Guðmundsson & Andre Sandö

**SKÍRTEINI (CERTIFICATE):** Ultrasonic Inspection – Level II  
PCN 307004. E021S6242877  
01/04/2022 - 31/03/2027  
Ultrasonic Inspection – Level II  
PCN 347274. E022S62428731  
01/12/2022 - 30/11/2027

Hér staðfestist að framkvæmdar hafa verið þykktarmælingar á ofangreindum geymi, í eigu og rekstri Olíudreifingar ehf, að ósk rekstraraðila. Niðurstöður mælinga eru skráðar á meðfylgjandi blaðsíður ( teikningar ) og eru öll mál í mm. Alls eru þar skráðar 69 niðurstöður. Þykktarmælir og nemar tengdir búnaðinum voru sannreyndir og prófaðir með mælingum á stilliklossum fyrir, á meðan og að loknum mælingum.

Skoðað/dags./af: 29/09/2023

Samþykkt/dags./af:



HD EHF

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Samgöngustofa



## Myndir frá geymi 1



Mynd 1: Mannop geymis.



Mynd 2. Gólf geymis er óvarið og markað af tæringu. ( 1-2mm djúpir pyttir )

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[gisli@hd.is](mailto:gisli@hd.is)  
+354 8440313





Mynd 3. Undirstöður eru ekki heilsoðnar við gólf.



Mynd 4. Víða um gólf geymis má sjá víða grunna pytti. 1-2mm djúpa

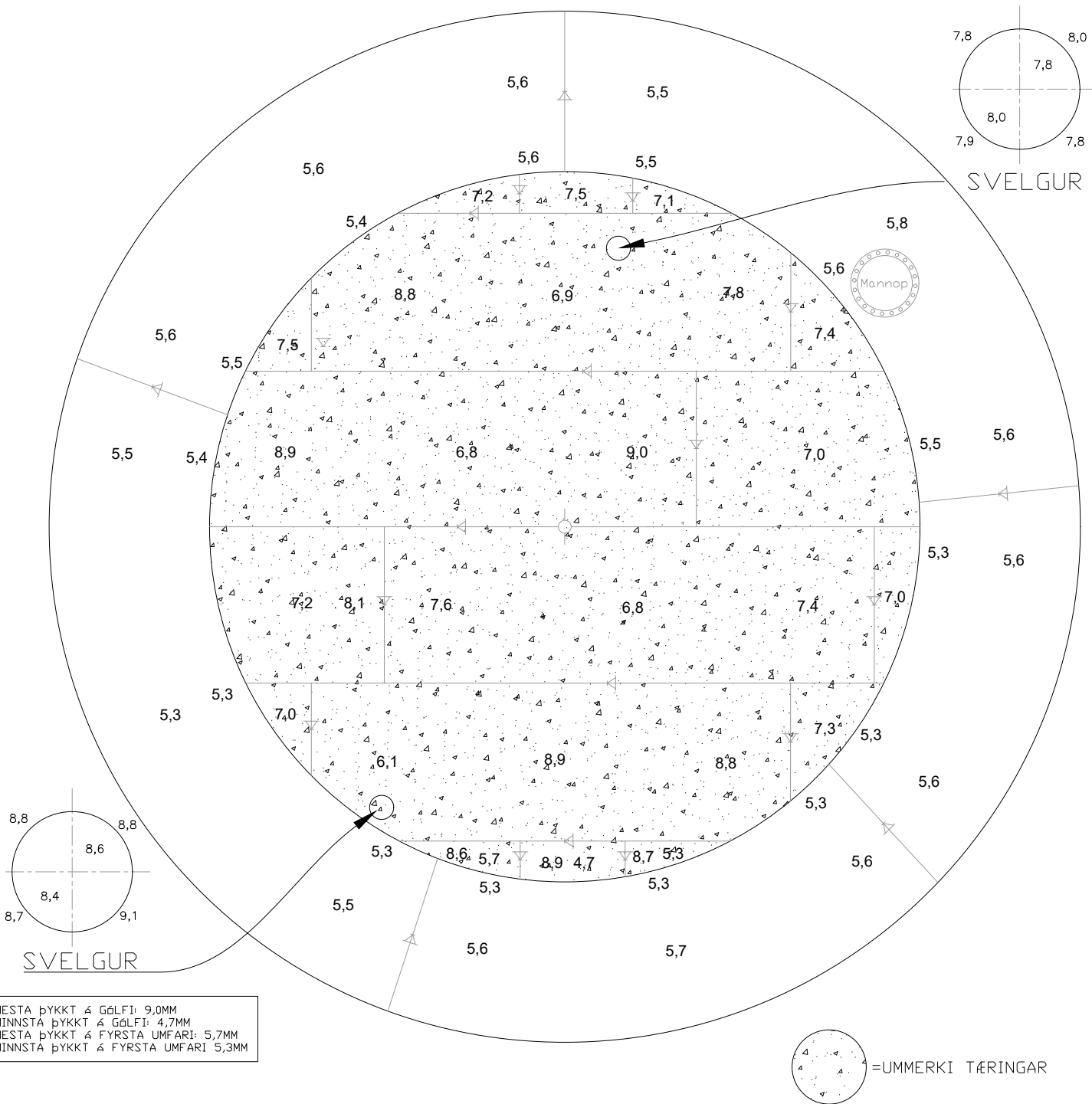




Myndir 5 & 6. Svelgir.

# ÞYKKTARMÆLING & SKÖNNUN

## GEYMIR - NEDSTA UMFAR & GÓLF



MESTA ÞYKKT Á GÓLFI: 9,0MM  
MINNSTA ÞYKKT Á GÓLFI: 4,7MM  
MESTA ÞYKKT Á FYRSTA UMFARI: 5,7MM  
MINNSTA ÞYKKT Á FYRSTA UMFARI: 5,3MM

TEIKNING NR. 1 AF 1 TEIKNINGU



ÞYKKTARMÆLINGAR (UTM)

REKSTRARAÐILI: OLÍUDREIFING

TILVÍSUN OKKAR: 233211

MÆLINGAR FRAMKV: 15 SEPTEMBER 2023

STAÐUR: NESKAUPSTAÐUR

HLUTUR MÆLDUR: OLÍUGEYMIR

FASTANÚMER: T0056

TEIKNING ER EKKI Í MÆLIKVARÐA





**ENTERPRISES  
INCORPORATED**



# MFE Scan Survey Report



**SKÝRSLA NR: TM-MFL-233211-GEYMIR-1-T0056-SEPT-23**

**Umsjónaraðili:** Olíudreifing  
**Unnið af:** Gísli Arnar Guðmundsson  
**Fyrirtæki:** HD ehf

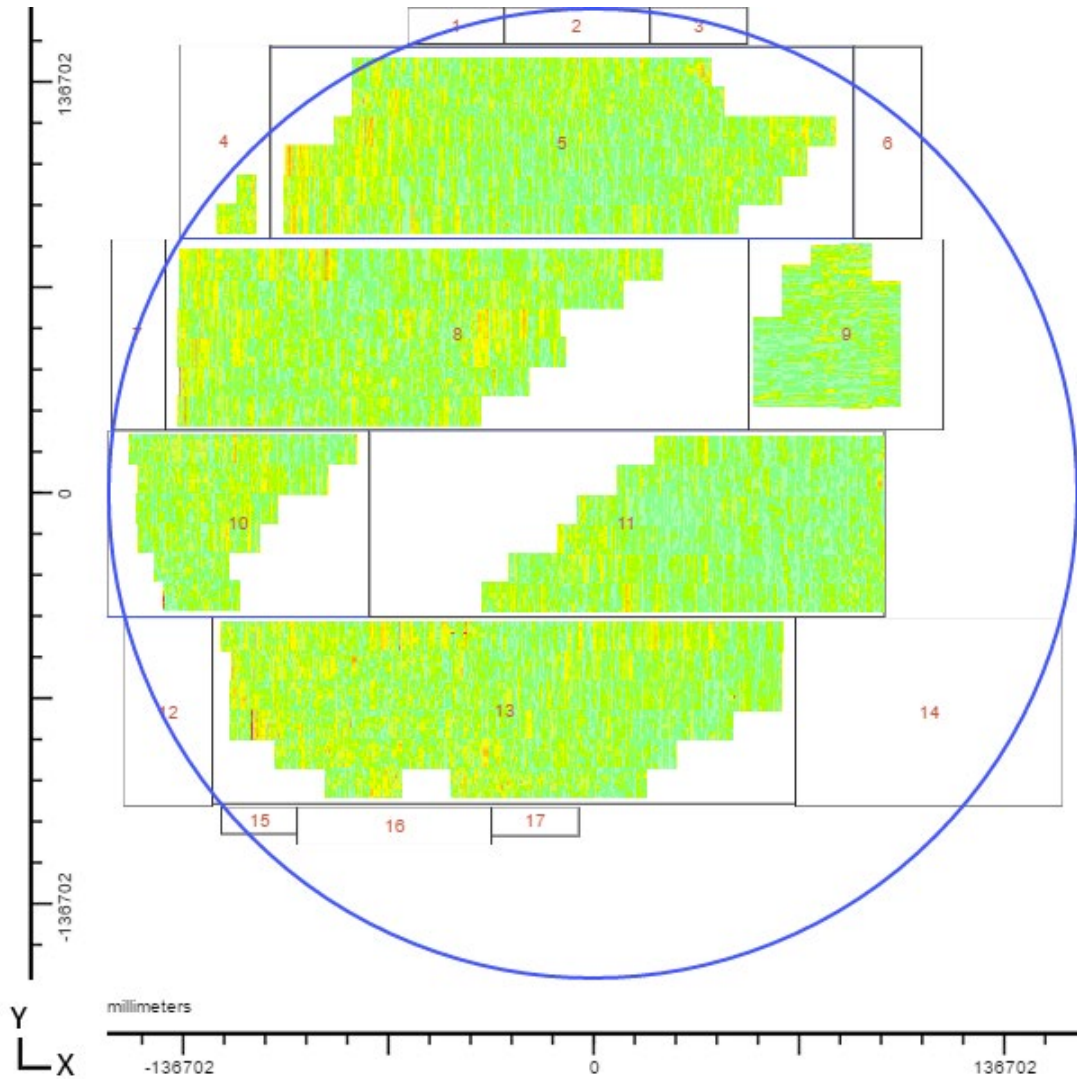
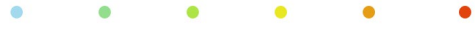
**Dags.skoðanna:** 15 Sept 2023  
**Dags.skýrslu:** 29 Sept 2023  
**Umbeðið af:** Ari Elísson





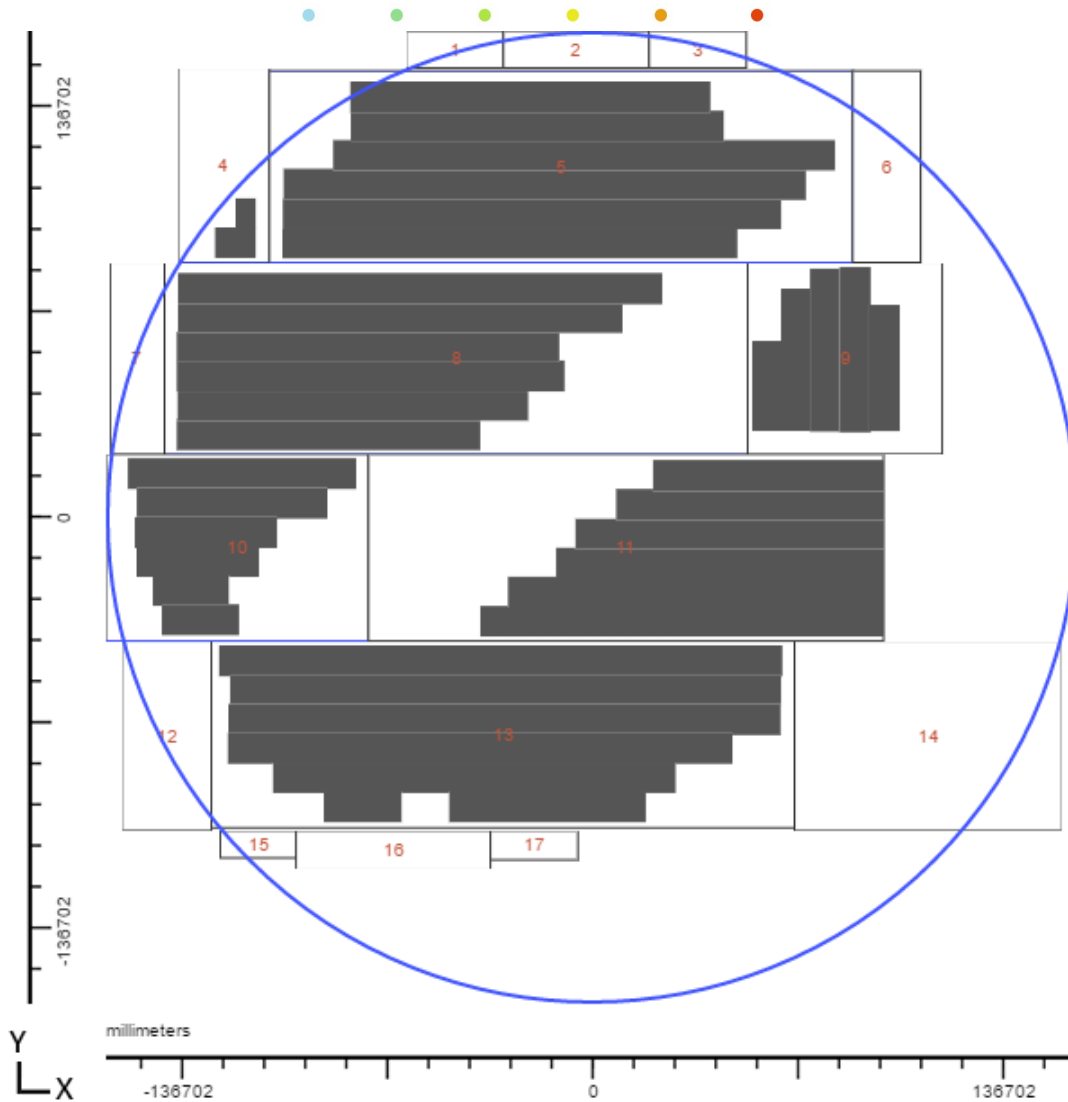


# Tank Overview





# Track Coverage Overview







**Plate Number 4**



**Max Signal:** 60%

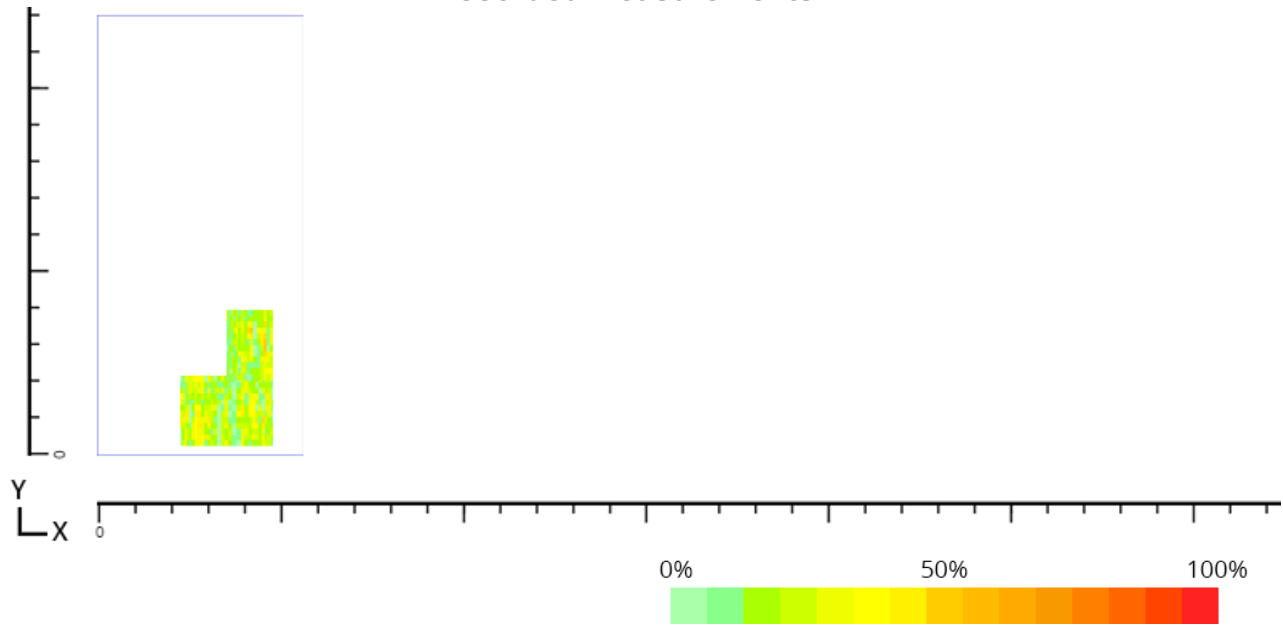
**Length (X):**  
94.01cm

**Width (Y):** 200cm

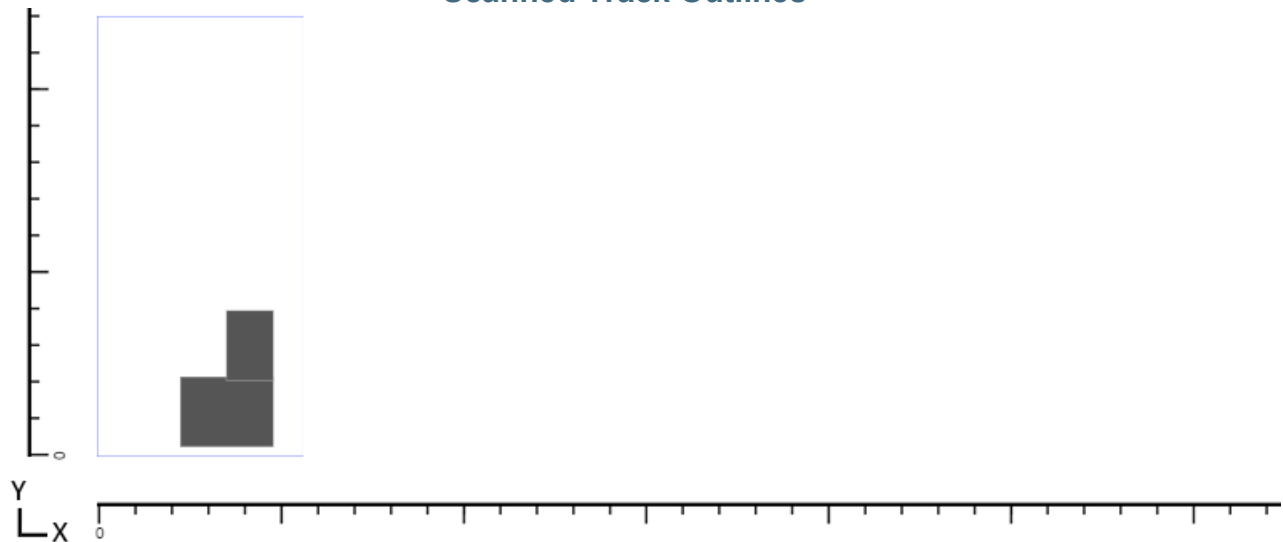
**Thickness:** 9,52  
mm

**Selected Signal Range:** 5 – 200 mV

**Recorded Measurements**



**Scanned Track Outlines**





**Plate Number 5**



**Max Signal: 86.7%**

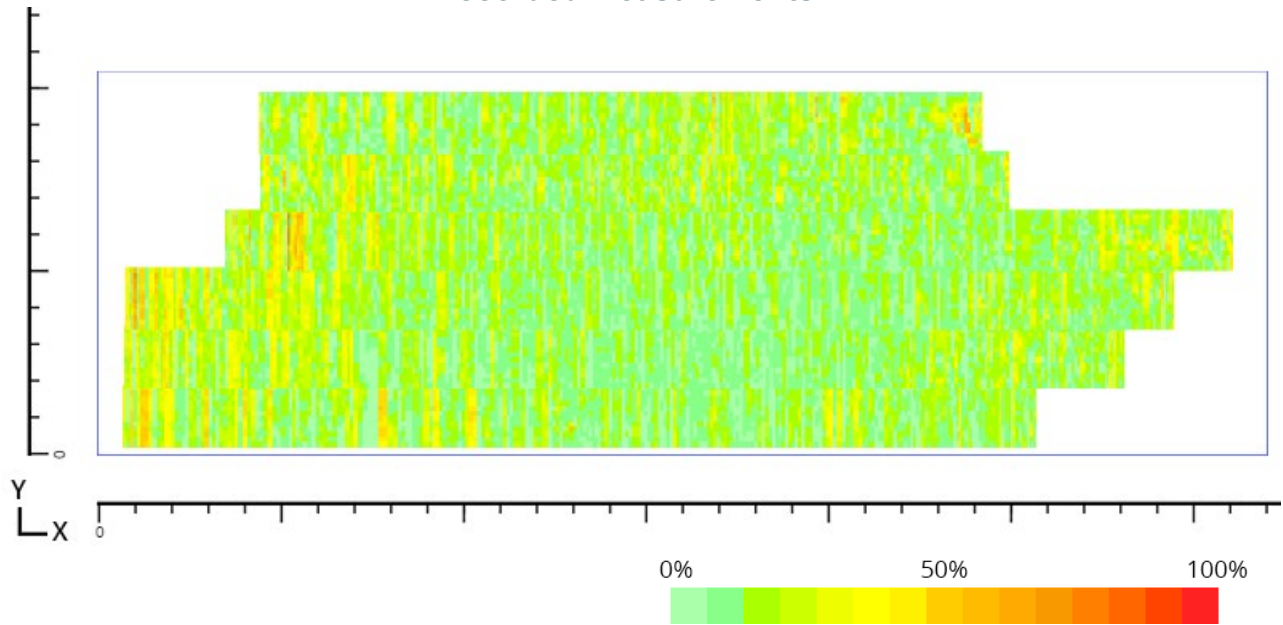
**Length (X): 600cm**

**Width (Y): 197cm**

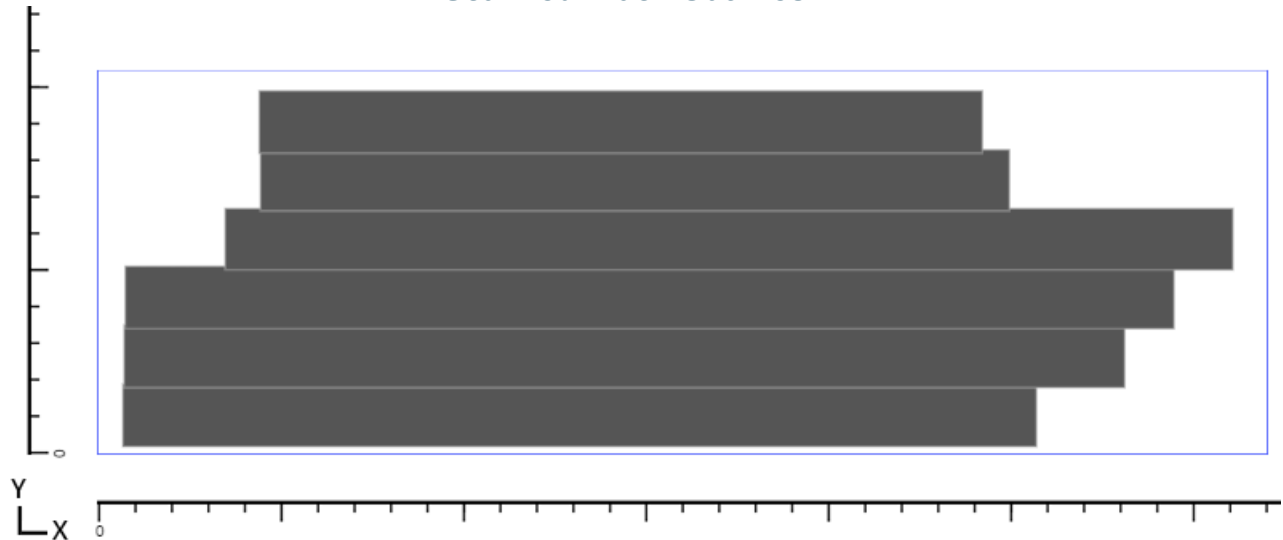
**Thickness: 9,52  
mm**

**Selected Signal Range: 3 – 200 mV**

**Recorded Measurements**



**Scanned Track Outlines**







**Plate Number 8**



**Max Signal: 93.3%**

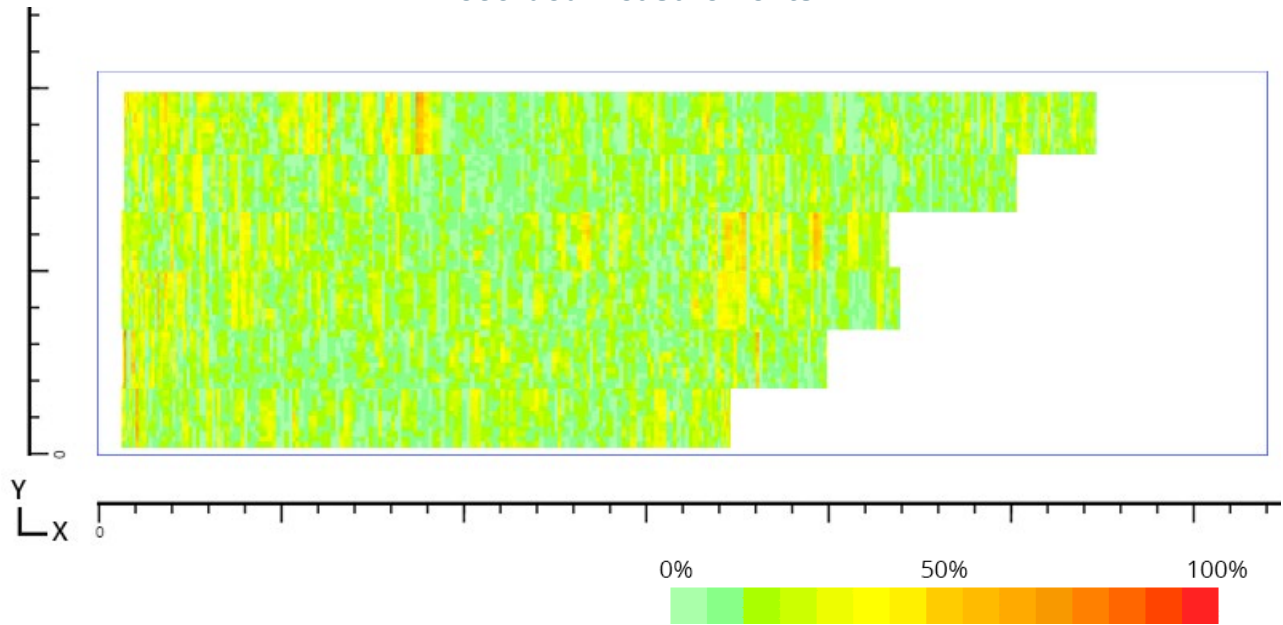
**Length (X): 600cm**

**Width (Y): 197cm**

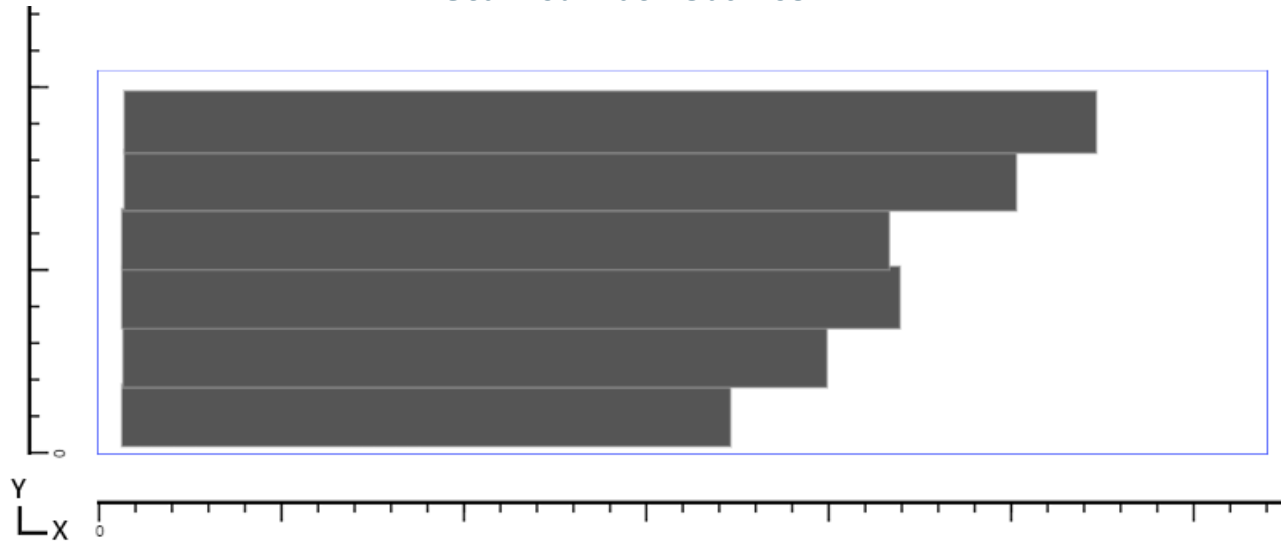
**Thickness: 9,52  
mm**

**Selected Signal Range: 3 – 200 mV**

**Recorded Measurements**



**Scanned Track Outlines**





**Plate Number 9**



**Max Signal:** 66.7%

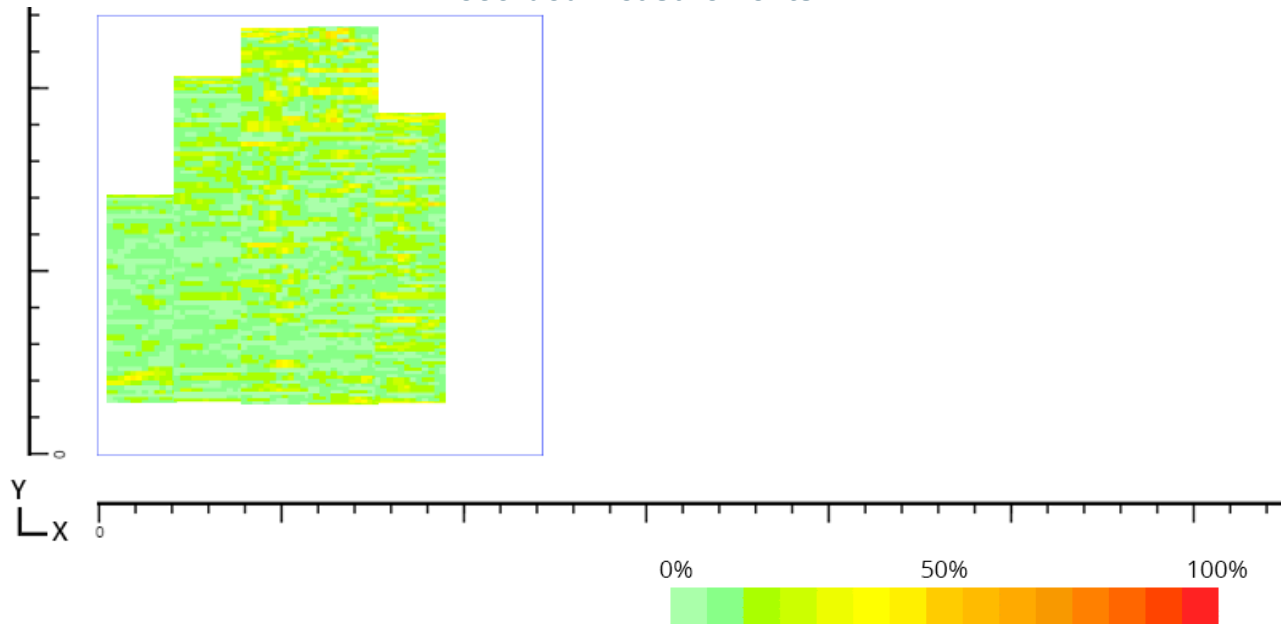
**Length (X):** 200cm

**Width (Y):** 197cm

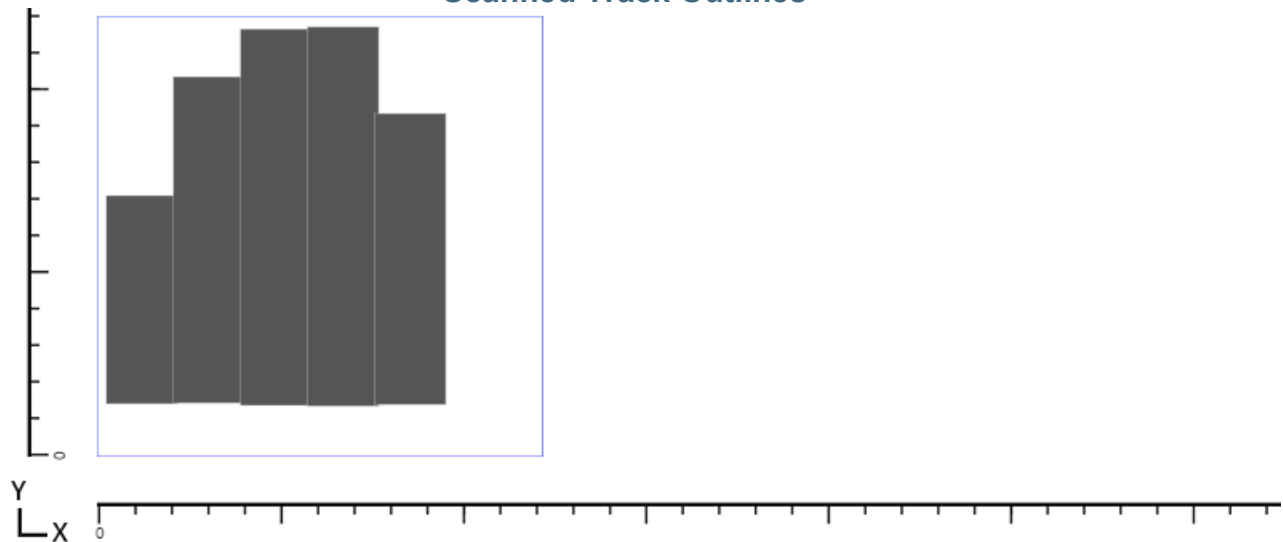
**Thickness:** 9,52  
mm

**Selected Signal Range:** 3 – 200 mV

**Recorded Measurements**



**Scanned Track Outlines**







**Plate Number 10**



**Max Signal:** 100%

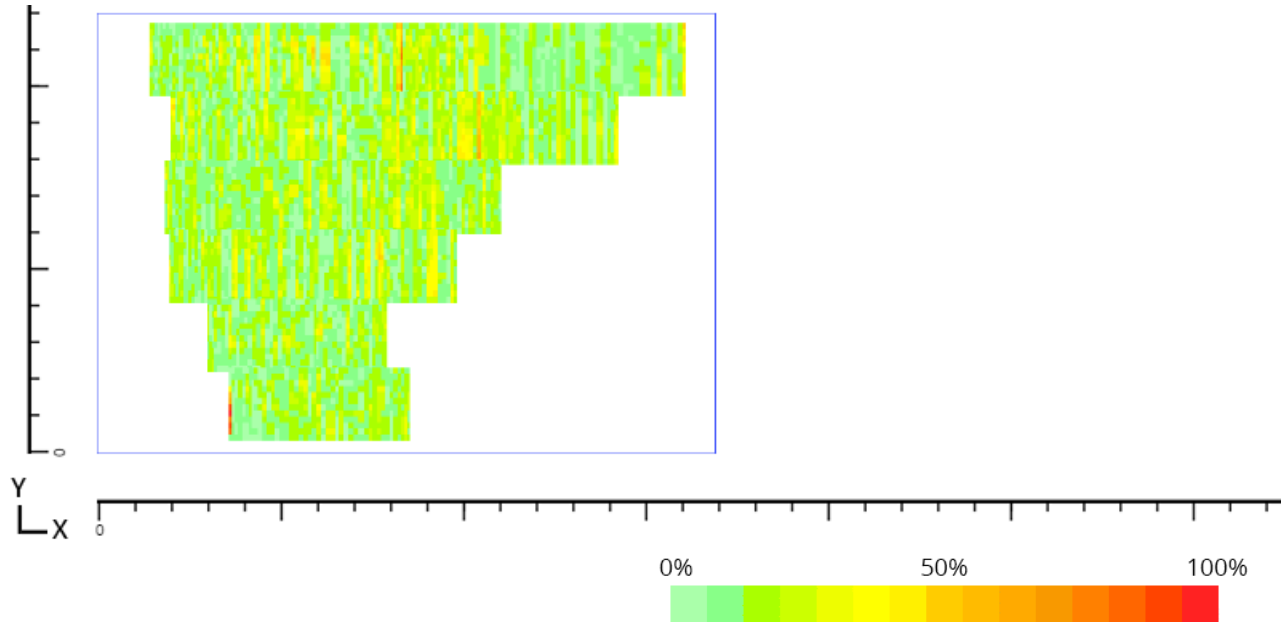
**Length (X):** 270cm

**Width (Y):** 192cm

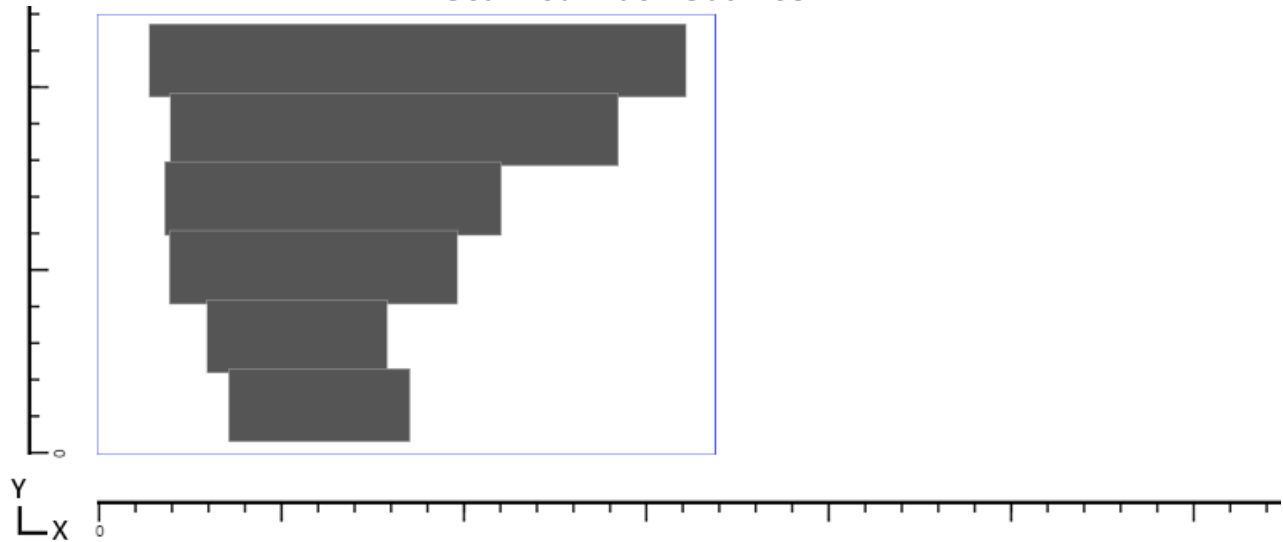
**Thickness:** 9,52  
mm

**Selected Signal Range:** 3 – 200 mV

**Recorded Measurements**



**Scanned Track Outlines**





**Plate Number 11**



**Max Signal:** 66.7%

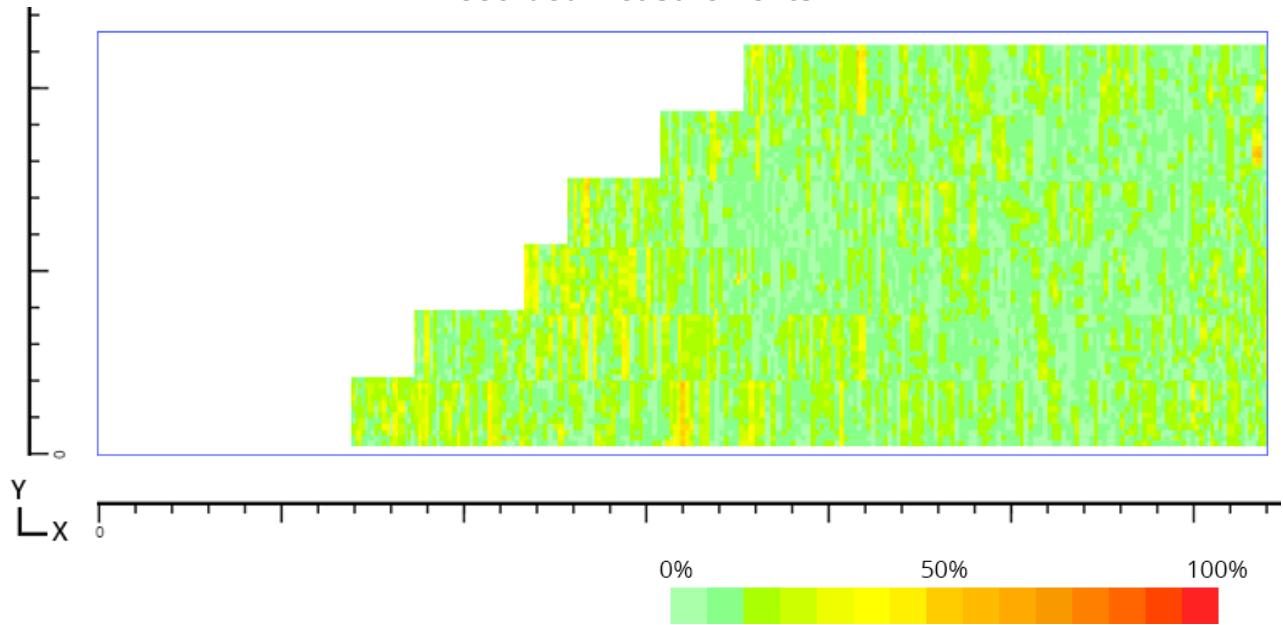
**Length (X):** 530cm

**Width (Y):** 192cm

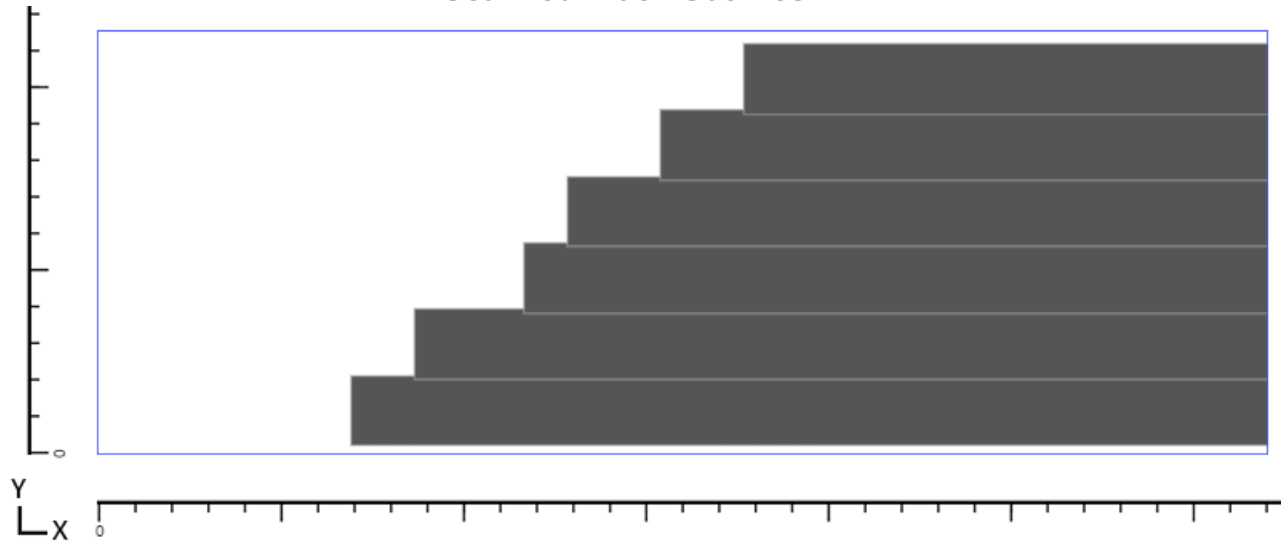
**Thickness:** 9,52  
mm

**Selected Signal Range:** 2 – 200 mV

**Recorded Measurements**



**Scanned Track Outlines**







**Plate Number 13**



**Max Signal: 100%**

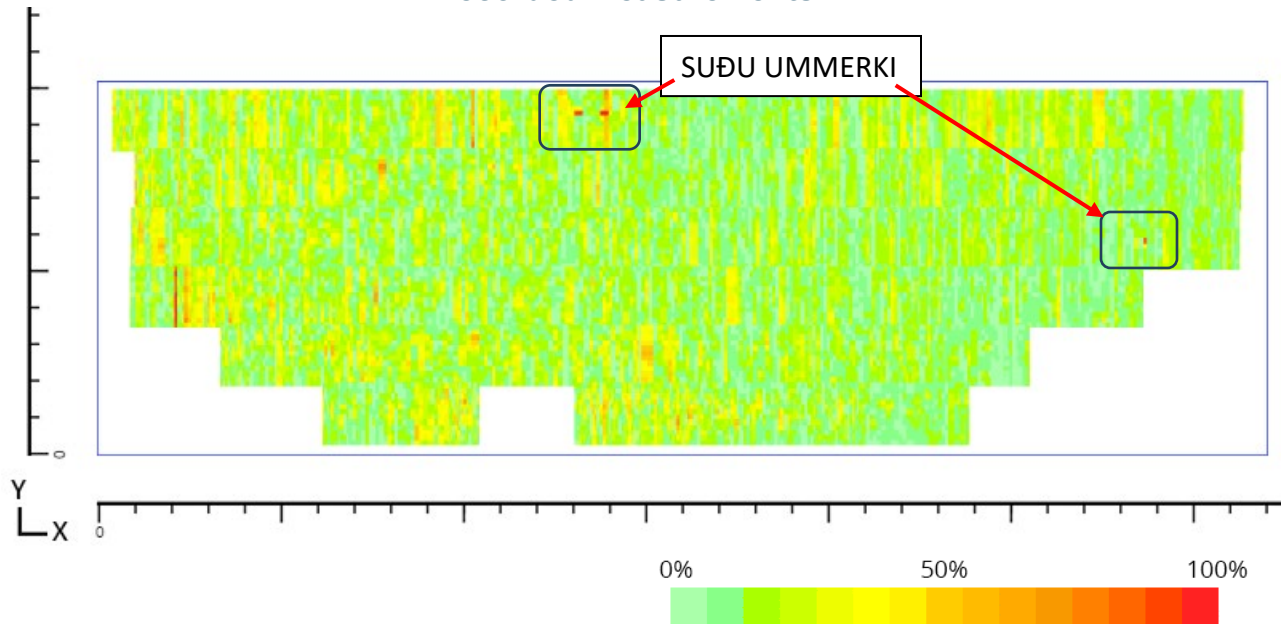
**Length (X): 600cm**

**Width (Y): 192cm**

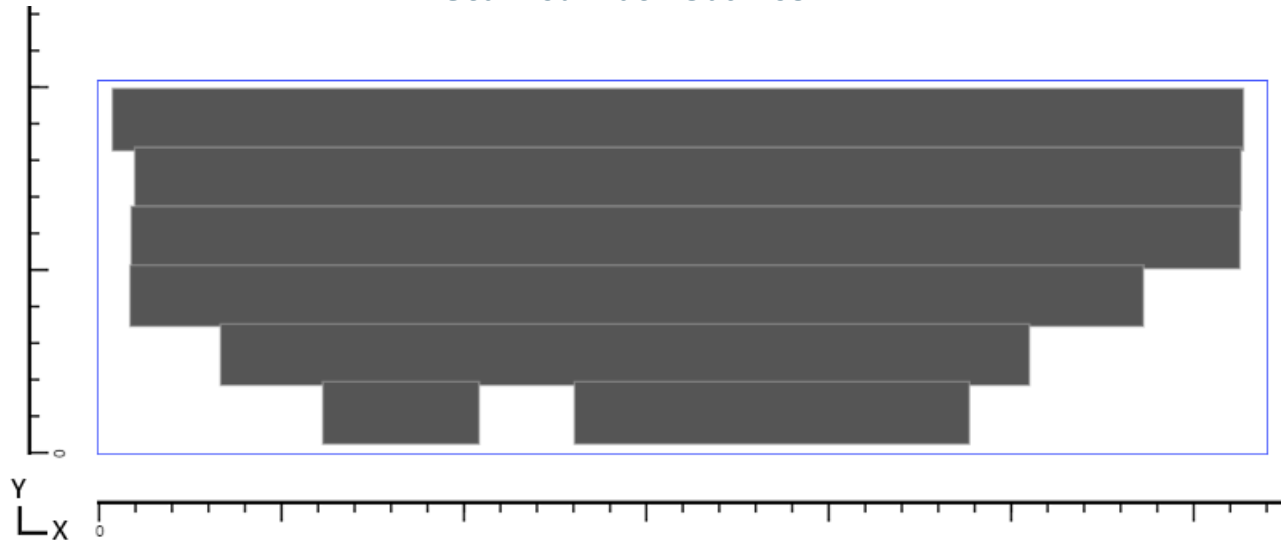
**Thickness: 9,52  
mm**

**Selected Signal Range: 3 – 200 mV**

**Recorded Measurements**



**Scanned Track Outlines**





**PART 1 - HOLDER'S DETAILS**

PCN NUMBER:  
347274



ISSUE DATE:  
08/02/2023

ISSUE NUMBER:  
1

NAME & ADDRESS:  
Andre Sando  
Hamarstigur 37  
600 Akureyri  
600  
Iceland

**RECORD OF PCN CERTIFICATION**

Further information on the scope of certification available may be obtained from The Certification Services Department, British Institute of NDT, Midsummer House, Riverside Way, Bedford Road, Northampton NN1 5NX, United Kingdom.  
E-mail: [pcn@bindt.org](mailto:pcn@bindt.org)  
Tel: +44 01604 438300 Fax: +44 01604 438301

Valid only when signed on behalf of BINDT and incorporating stamp below:



This document may be withdrawn or revoked in part or in total at any time.

NORMAL SIGNATURE: *Andre Sando*

This part may be used by the employer to signify that the certificate holder is authorised to carry out NDT on behalf of the employing company.

COMPANY STAMP	SIGNATURE & NAME OF PERSON AUTHORISING	DATE
<p><b>PRESSURE EQUIPMENT (SAFETY) REGULATIONS (PESR)</b></p> <p>The Pressure Equipment (Safety) Regulations 2016 implemented Directive 2014/68/EU on pressure equipment and assemblies. The British Institute of Non-Destructive Testing is a Recognised Third-Party Organisation accredited by UKAS, under Pressure Equipment (Safety) Regulations 2016; Guidance (GB) which implement the provisions of Directive 2014/68/EU concerning pressure equipment. The scope of the appointment is for the approval of personnel to carry out Non-Destructive tests on permanent joints for pressure equipment in categories III and IV in accordance with section 22 of Schedule 2 to the Regulations. All PCN certification valid for the welding and pre &amp; in-service inspection sectors satisfies the Pressure Equipment (Safety) Regulations 2016; Guidance (GB).</p>		

**FOR NOTIFICATION OF PERMANENT CHANGE OF HOLDER'S ADDRESS PLEASE REFER TO FORM PSL 18 AVAILABLE TO DOWNLOAD AT [BINDT.ORG/CERTIFICATION](http://BINDT.ORG/CERTIFICATION)**

**PART 2 - CERTIFICATION HELD** (All certificates comply with EN ISO:9712 unless otherwise stated) **D= Distinction** (80% or above average)

CERTIFICATE NUMBER	ISSUE	LEVEL	SECTOR	METHOD	SCOPE OF CERTIFICATE (see over for key to codes)	ISSUES DATE	EXPIRY
E022S62428731	1	2	6	24	Butt Welds in Plate, NDT Instruction Writing, Plate	01/12/2022	30/11/2027

PCN Record of Certification issue 1 dated 08/02/2023

Verification of current certification status is strongly encouraged and is available at [www.bindt.org/PCN](http://www.bindt.org/PCN) or by post, telephone, fax or e-mail quoting the unique PCN Number or full name shown in Part 1

Licensed to [andre.sando@icloud.com](mailto:andre.sando@icloud.com)



**EU CERTIFICATE OF APPROVAL OF NDT PERSONNEL In accordance with the requirements of the Pressure Equipment Directive 2014/68/EU**

TO WHOM IT MAY CONCERN:

LRQA Certification and Assurance Services Limited, a Recognised Third-party Organisation as described in the European Pressure Equipment Directive 2014/68/EU, Article 20, has approved the following NDT personnel to carry out the specified non-destructive tests of permanent joints for pressure equipment in categories III and IV (2014/68/EU, Annex I, section 3.1.3 refers)

The approval is granted in accordance with the LRQA-CASL PD CEN / TR 15589 Route B Certification Scheme.

**Recognised Certification Body:** BINDT/PCN

**Certification Body Address:** Midsummer House Riverside Way Bedford Road Northampton, NN1 5NX  
(Accredited to ISO/IEC 17024:2012 to provide certification of persons against EN ISO 9712:2012)

Signed for and on behalf of LRQA-CASL

PCN Number 347274

NAME OF APPROVED PERSON	PCN NUMBER	METHOD	SECTOR	LEVEL	CERTIFICATE NUMBER	ISSUES DATE	EXPIRY
Andre Sando	347274	Ultrasonic Testing	Weldments	2	E022S62428731	01/12/2022	30/11/2027

PCN Record of Certification issue 1 dated 08/02/2023

Verification of current certification status is strongly encouraged and is available at [www.bindt.org/PCN](http://www.bindt.org/PCN) or by post, telephone, fax or e-mail quoting the unique PCN Number or full name shown in Part 1

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12/08/17

# MFE Enterprises, Inc.

## THIS CERTIFIES THAT Gisli Gudmundsson

HAS SUCCESSFULLY COMPLETED 40 HOURS OF TRAINING AND PASSED THE STANDARDS  
PER API 653 ANNEX G AND SNT TC-1A

Scanner Equipment	MFE Mark IV Mapping
Plate Thickness (T)	.250 Inch
Coating Thickness (tc)	.005 Inch
% of Defects found	100% Passed
I < .050	90% Passed
.050 in. < I < 1/2T	100% Passed
1/2T < I < 2/3T	100% Passed
General Corrosion	100% Passed

Critical Equipment Settings Function Test Check	Per Manufacturer Per Manufacturer
Hours of MFL Training	40
Final Written Test Grade	92%
Final Result	Passed



DYLAN DUKE, DIRECTOR OF TRAINING



BILL DUKE, PRESIDENT





Baugh & Weedon NDE Ltd.  
 11-16 Burcott Business Park,  
 Burcott Road, Hereford, HR4 9JQ.  
 Tel: +44 (0)1432 267671  
 Email: [sales@bw-nde.com](mailto:sales@bw-nde.com)  
 Web: [www.bw-nde.com](http://www.bw-nde.com)



<b>Calibration Certificate No.</b>	PS7923-1
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<b>Customer</b>	<b>Acceptance</b>	Pass
Gisli Gudmundsson	<b>Date of Calibration</b>	07.09.23
<b>Customer Purchase Order No.</b>	<b>Date of Expiry</b>	07.09.24
N/A	<b>Adjustment</b>	No

Item	Description of Customer Equipment Under Test	Serial No. & Reference No.
1	Olympus 45MG Ultrasonic Thickness Gauge	8440313
1a	Olympus D7910 5MHz Ultrasonic Thickness Probe	1394385
<b>Remarks</b>	The readings obtained by the equipment under test, are within tolerance, of those given by the traceable test equipment.	

**Conclusion & Specification**

It is hereby certified that the whole of the equipment specified has been calibrated and conforms to an accuracy of +/- 0.1mm.

The calibration has been completed by using; equipment traceable to National Standards (NPL), the general principles of BS EN ISO 16809:2019 and our latest work instruction and procedure documents.

In accordance with ISO 9001:2015 - The quality management system applies to; the service, repair, and calibration of non-destructive test equipment. (Certificate No. AVQ5007104 which expires on 31<sup>st</sup> May 2025)

<b>Test Conditions</b>	Temperature (20 +/- 2 °C) & Humidity (50 +/- 20%)
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Reference Test Equipment Used	Serial No.	Certificate No.
B&W Thickness Test Block 200mm	B18	51156 - UKAS
B&W Thickness Test Block 50-75mm	B29	51157 - UKAS
B&W Thickness Test Block 1.5-20mm	B202	51159 - UKAS

The above equipment is traceable to NPL and was calibrated by a UKAS accredited Calibration Laboratory.

<b>Test Equipment Uncertainty</b>	The uncertainties are based on a probability of a 95% level of confidence.
<b>Measurement Uncertainty</b>	B18 +/-0.014, B29 +/- 0.014, B202 +/- 0.021

<b>Calibrated By</b>	P. Stimson Calibration Manager	<b>Approved Signatory</b>	
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Baugh & Weedon NDE Ltd.  
 11-16 Burcott Business Park,  
 Burcott Road, Hereford, HR4 9JQ.  
 Tel: +44 (0)1432 267671  
 Email: [sales@bw-nde.com](mailto:sales@bw-nde.com)  
 Web: [www.bw-nde.com](http://www.bw-nde.com)



<b>Calibration Certificate No.</b>	PS7923-1
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<b>Customer Requirements</b>
None supplied.

<b>Results</b>
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<b>Note</b>	Any acceptances indicated as 'OOS' are outside of specification.
	Any acceptances indicated as 'OOCR' are outside of customer requirements.

<b>Work Instruction No.</b>	CAL-WI032 Issue 1	<b>Procedure</b>	CAL-WI014 Issue 1
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Test Block	Nominal Thickness (mm)	Ref. Test Equipment	Customer Equipment	
		Actual Thickness (mm)	Measured Thickness (mm)	Acceptance
B202	1.5	1.5	1.46	Pass
B202	2.5	2.5	2.45	Pass
B202	5	5.0	4.99	Pass
B202	10	10.0	9.98	Pass
B202	15	15.0	14.96	Pass
B202	20	20.0	19.94	Pass
B29	50	50.0	49.96	Pass
B29	75	75.0	74.92	Pass
B18	100	100.0	99.97	Pass
B18	200	200.0	199.97	Pass

<b>Calibrated By</b>	P. Stimson Calibration Manager	<b>Approved Signatory</b>	
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# MFE Enterprises, Inc.

07/18/2017

## Verification Certificate

Scanner ID#  
Model:  
Standard Name:  
Range:  
Resolution:

MK4-0016-A-TFS  
Tank Floor Scanner  
MFE-TFSE1  
0-23"  
0.024"

Scan #	Encoder Start Point	Encoder End Point	Distance Traveled (Encoder Ep-Sp)
1 (Forward)	0.000	22.752	22.752
2 (Reverse)	22.752	-0.098	22.850
3 (Forward)	-0.098	22.752	22.850
4 (Reverse)	22.752	-0.098	22.850
5 (Forward)	-0.098	22.752	22.850
6 (Reverse)	22.752	-0.098	22.850

Scan #	Measured Start Point	Measured End Point	Distance Traveled (Measured Ep-Sp)
1 (Forward)	24.188	1.375	22.813
2 (Reverse)	1.375	24.188	22.813
3 (Forward)	24.188	1.375	22.813
4 (Reverse)	1.375	24.188	22.813
5 (Forward)	24.188	1.375	22.813
6 (Reverse)	1.375	24.188	22.813

Scan #	Distance Traveled (Encoder Ep-Sp)	Distance Traveled (Measured Ep-Sp)	Deviation +/-	Tolerance +/-	PASS/FAIL
1 (Forward)	22.752	22.813	-0.061	0.125"	PASS
2 (Reverse)	22.850	22.813	0.037	0.125"	PASS
3 (Forward)	22.850	22.813	0.037	0.125"	PASS
4 (Reverse)	22.850	22.813	0.037	0.125"	PASS
5 (Forward)	22.850	22.813	0.037	0.125"	PASS
6 (Reverse)	22.850	22.813	0.037	0.125"	PASS

Measurement Tool:  
MK4-TM001

Encoder Data Log#:  
stream\_data\_170718122200

Inspector Name:  
William Duke

Date of Inspection:  
July 18, 2017

Certificate Expires:  
July 18, 2018

WILLIAM DUKE, DIRECTOR OF OPERATIONS



## Starfsleyfi til þykktarmælinga á skipum

Starfsleyfið er veitt samkvæmt heimild í lögum um Samgöngustofu, stjórnarsýslustofnun samgöngumála, nr. 119/2012 og Skipalögum nr. 66/2021

Nafn:	Heimili:	Sveitarfélag:	Kt.:
<b>HD ehf.</b>	<b>Vesturvör 36</b>	<b>200 Kópavogi</b>	<b>431298-2799</b>
- Gísli Arnar Guðmundsson	Sómatúni 18	600 Akureyri	251172-4639

Með starfsleyfi þessu er ofanrituðum veitt heimild til að annast þykktarmælingar á skipum og bátum, skýrslugerð og innfærslu í skipaskrá vegna þeirra.

Um framkvæmd þykktarmælingar, skýrslugerðar og innfærslu í skipaskrá skal hafa samráð við starfsmenn Samgöngustofu. Fylgja skal ákvæðum í lögum, reglugerðum og verklagsreglum um þykktarmælingar, sjá VIN – 2142 *Þykktarmæling á skipum sem smíðuð eru úr stáli og áli.*

Gildi starfsleyfis er m.a. bundið því skilyrði að HD ehf. og starfsmenn fyrirtækisins sé samþykkt af viðurkenndu flokkunarfélagi til að framkvæma þykktarmælingar á flokkuðum skipum.

Starfsleyfið gildir til: **4. nóvember 2027**

Fella má starfsleyfið úr gildi ef ekki er farið í einu og öllu eftir settum reglum og leiðbeiningum þar um.

F.h. Samgöngustofu

Reykjavík  
Staður

4.11.2022  
Dagsetning

  
Undirskrift og stimpill

## STATEMENT OF CALIBRATION

**Statement of calibration of inspection, measuring or test equipment, not owned by DNV GL.**

**Name of company: NDT ehf**

I confirm that the following equipment has been calibrated within the period required by the instruction book for the equipment, or within the last 12 months.

Date of calibration: 2020-09-14

<u>Type of equipment</u>	<u>S/N</u>	<u>Used for survey of</u>
Olympus 45MG	191446208	Ultrasonic thickness measurement
Olympus 45MG	130177407	Ultrasonic thickness measurement

Hafnarfjörður, Iceland

2020-09-14



Hafsteinn Gunnar Jónsson

DNV GL surveyor

