

<u>SKÝRSLA</u>

<u>ÞYKKTARMÆLING Á OLÍUGEYMI 2 Í GRÍMSEY</u>

<u>ULTRASONIC THICKNESS MEASUREMENT</u>



JÚNÍ 2024

FASTANÚMER: T2001

UTM SKÝRSLA NR: TM-241651-T2001-24-MAY-2024

MÆLINGAR FRAMKVÆMDAR, STAÐUR: GRÍMSEY

EIGANDANÚMER: 611.02.00



OLÍUDREIFING EHF B/t.: Jón Haraldsson Hólmaslóð 8-10 101 Reykjavík



Framkvæmd mælinga

Þykktarmælingu framkvæmdi Andre Sandö hjá HD ehf í Kópavogi. Upplýsingar varðandi aðstæður, notkun geyma o.fl. veitti Jón Haraldsson stöðvarstjóri hjá Olíudreifingu ehf og Loftur Jónsson hjá Mars ehf.

Framkvæmd þykktarmælingar og sjónskoðunar á geyminum fóru fram í maí mánuði 2024. Geymirinn er liggjand stálgeymir og var belgur hans mældur ásamt endalokum.

Þykktarmælingar

Varðandi staðsetningu mælistaða og niðurstöður þykktarmælinga á geyminum er hér vísað á meðfylgjandi teikningar (1 stk.). Allar plötur eru mældar á svipaðan hátt þ.e.a.s. miðast er við að hafa mælingar við enda plötu,teknir voru 10 punktar í plötu. Mælt var c.a. frá miðju belgs hvoru megin og undir. (sjá teikn)

Sjónskoðun

Farið er um allan geyminn með sterkt ljós ef birta er ekki nægileg og því haldið rétt við yfirborðið svo pyttir og misfellur sjáist betur. Samsuður geymis er skoðaðar sérstaklega vel ásamt öðrum suðum utanvert á geymi.

Niðurstöður

Geymir lítur vel út að utan. Geymir er málaður að utan. Blettir í gólfi mælast 0,5 – 2,0 mm djúpir. Breidd svæðis er u.þ.b 400 mm breitt og nær eftir allri lengd tank T2001. Einnig eru tæringar í suðum geymirs á sömu svæðum.

Sjá teikningar og ljósmyndir. Eigandi geymis var látin vita. Sjá meðf. niðurstöður mælingar. Öll uppgefin mál á teikningum eru í mm.

Akureyri, 19 júní 2024

Virðingarfyllst.

G. A. GUDMUNDSSON
PCN No. 307004
Www.bindt.grg/PCN
UT. Pf & WU

Gísli Arnar Guðmundsson





STAÐFESTING ÞYKKTARMÆLINGA

SKÝRSLA/*REPORT NO*: TM-241651-T2001-27-MAY-24

DAGS.PRÓF./DATE OF TEST: 24/05/2024

DAGS SKÝRSLU/Date Report: 19/06/2024

EIGANDI/CLIENT: Olíudreifing

HLUTUR/STRUCTURE: Olíugeymir T2001

STAÐS./LOCATION OF TEST: Þórshöfn

TÆKI/EQUIPMENT: Pykktarmælir, Gel, Málband/ UT meter Gel, Meas.tape.

TÆKNIM./TECHNICIAN: Andre Sandö

SKÍRTEINI/CERTIFICATION: Ultrasound Inspection – Level II

PCN: E012S3320978. 01/04/2022 - 31/03/2027

Course held at LAVENDER. Penistone, West Yorkshire. UK

Magnetic Particle Inspection - Level II

PCN: V019S22121689. 19/09/2019 – 18/09/2024 Course held at TALON. Aberdeen. Scotland

Dye Penetrant Inspection – Level II

PCN: F013S5523747. 19/09/2019 - 20/11/2023

Course held at TALON. Blackpool UK

Weld Inspector – Level II

PCN: E016S3228258. 05/02/2016 - 04/02/2021 Course held at LAVENDER. Penistone. UK

Vibration Analyser - CAT II

PCN: SCM94300 28/02/2017 - 27/02/2022

Course held at RMS RELIABILITY. Colchester.

Airborne Ultrasound - Level I

SNT-TC-1A (2006) 05/10/2015

Course held at SDT Ultrasound Solutions. Brussel. Belgium.

Magnetic Flux Leakage

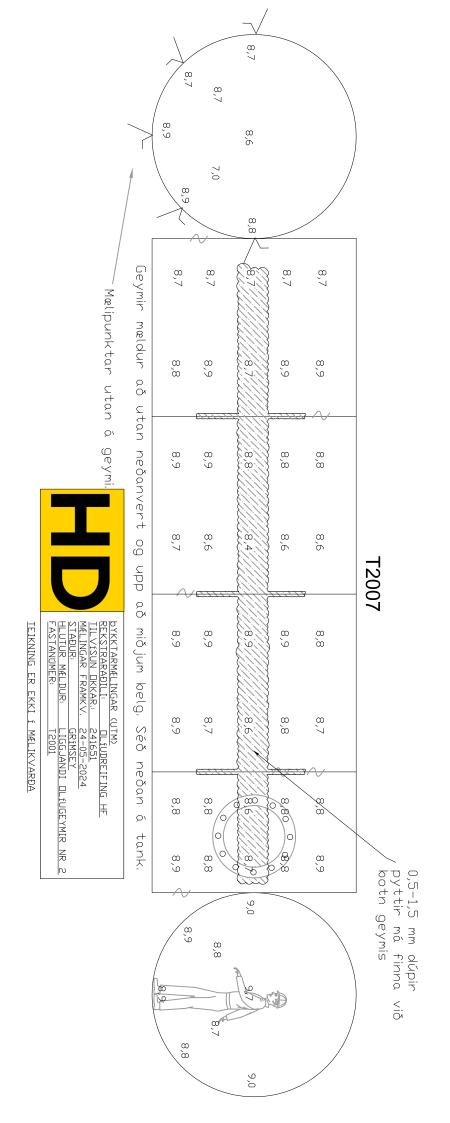
API 653 ANNEX G & SNT TC - 1A. 12/08/2017

Course held at MFE Enterprises, Inc. Texas. USA

CERT. VERIFIC: https://www.bindt.org/Certification/pcn-certificate-verification/



PCN Number 307004





MYNDIR FRÁ GEYMI T2001



Myndir 1-6. Loftið í geyminum er örlítið hrjúft ásamt því að smá tæring er komin í suðurnar neðst í geyminum, hugsanlega sökum þess að ekki hefur verið tappað vatninu undan geyminum reglulega. Tæringar skellur upp að tveim millimetrum er að finna víða neðst í geyminum







Myndir 7-12.





TANKUR AÐ UTAN



Myndir 13-20. Lögnin neðan að bryggju er farin að láta verulega á sjá og mælist 2,3 mm.







PART 1 - HOLDER'S DETAILS

PCN NUMBER: 347274

ISSUE DATE: 08/02/2023

ISSUE NUMBER:



Andre Sando Hamarstigur 37 600 Akureyri Akureyri 600 Iceland

Midsummer House, Riverside Way, Bedford Road, Northampton NN1 5NX, United Kingdom. E-mail: pcn@bindt.org Tel: +44 01604 438300 Fax: +44 01604 438301

available may be obtained from The Certification Services Department, British Institute of NDT.

RECORD OF PCN CERTIFICATION Further information on the scope of certification

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: 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

PRESSURE EQUIPMENT (SAFETY) REGULATIONS (PESR)

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 & in-service inspection sectors satisfies the Pressure Equipment (Safety) Regulations 2016: Guidance (GB).

FOR NOTIFICATION OF PERMANENT CHANGE OF HOLDER'S ADDRESS PLEASE REFER TO FORM PSL 18 AVAILABLE TO DOWNLOAD AT BINDT.ORG/CERTIFICATION

PART 2 - CERTIFICATION HELD (All certificates comply with EN ISO:9712 unless otherwise started) 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

N



PART 3 - IMPORTANT INFORMATION ABOUT PCN CERTIFICATION

PCN certification is issued by the British Institute of NDT (BINDT), a limited company (Reg No. 969051) and a Charity (Reg No. 260222), accredited by the United Kingdom Accreditation Service (UKAS). UKAS is signatory to recognition agreements with other national accreditation bodies. All PCN certification held by the individual named in Part 1 over leaf is listed in Part 3, together with a date of expiry.

The certified individual must recognise that personal integrity and professional competence are the fundamental principles on which their testing activities are founded. Accordingly, it is a condition of PCN certification that certificate holder shall undertake to comply with PCN form CP27 code of ethics for PCN certificate holders.

This document is re-issued upon each occasion when there is a change in the holder's certification details or home address.

The document must bear the image and usual signature of the certificate holder, the certificate holder's unique six-digit PCN number, issue number and issue date, along with PCN watermarking. Where there is no image of the certificate holder in part 1 of the certificate, then the identification of the certificate holder should be verified against the PCN holder's PCN ID card.

There are severe penalties for attempted forgery of certification. Regrettably, attempts to forge PCN certificates occasionally occur. Verification of certification on-line at www.bindt.org/PCN is strongly recommended. Further verification of the PCN holder's identification via other suitable methods should be considered.

BINDT is accredited by UKAS as complying with European standard EN ISO:17024 (General criteria for certification bodies operating certification of personnel), and issues certificates satisfying the criteria of EN ISO:9712 (Non-destructive testing - Qualification and certification of personnel).

The qualification requirements of the PCN Scheme (eyesight, periods of training and experience, and examination) also satisfy the provisions of a number of other widely accepted national and international standards and guidelines. Employers may find it convenient to utilise the PCN examinations within their internal NDT personnel certification programmes. Further guidance on any aspect of personnel or quality system certification may be obtained from the certification Services Division of BINDT.

BINDT is a signatory to and registered under a European Federation for Non-destructive Testing (EFNDT) Multilateral Mutual Recognition Agreement (MRA). PCN certificates are recognised by all EFNDT MRA signatory bodies. Specific details of the MRA may be obtained from BINDT.

The following Levels of Competence are covered by the PCN scheme:

Level 1. An individual certificated to level 1 is qualified to carry out NDT operations according to a written instructions and under the supervision of level 2 or level 3 personnel. PCN level 1 certificated personnel have demonstrated competence to set up equipment, carry out the test, record and classify the results in terms of written criteria, and to report the results. Level 1 Personnel have not demonstrated competence in the choice of test method or technique to be used, nor for the assessment, characterisation or interpretation of test results.

Level 1D. As above: distinction level.

Level 2. This level is qualified to perform and direct NDT according to established or recognised procedures and have demonstrated competence to: choose the technique for the test method used; set up and calibrate equipment; perform and supervise the test; interpret and evaluate results according to applicable standards, codes or specifications; define the limitations of application of testing method for which they are qualified; understand and transform NDT standards and specifications into practical testing instructions adapted to the actual working conditions; prepare written test instructions; carry out and supervise all level 1 duties; organise and report the results of non-destructive tests.

Level 2D. As above: distinction level.

Level 3. Personnel holding this, the highest level, are qualified to direct any NDT operation for which they are certificated and: assume full responsibility for a test facility and staff. Specifically, they are competent to; establish and/or validate NDT instructions or procedures; interpret codes, standards, specifications and procedures; designate the particular test methods, technique and procedures to be used. Level 3 personnel have demonstrated: a competence to interpret and evaluate test results in terms of existing codes, standards and specifications; the possession of the required level of knowledge in applicable materials, fabrication and product technology sufficient to enable the selection of methods and techniques, and to assist in the establishment of test criteria where none are otherwise available; a general familiarity with other NDT methods; the ability to guide personnel below level 3. Where level 3 duties regularly require the individual to apply routine NDT by method or methods, PCN strongly recommends that this person should hold and maintain level 2 certification in those methods.

Level 3D. As above: distinction level.

Certificates, which are issued following success in thoroughly searching examination conducted at authorised independent test centres, are valid for five years. PCN document CP16 details the requirement for level 1 and 2 renewal and certification, while CP17 and CP17A details requirements for level 3 renewal and recertification. These documents are subject to periodic revision, and certificate holders are urged to ensure that they have the current version before applying for renewal or recertification.

Regrettably, attempts to forge PCN Certificates occasionally occur. Verification of certification on-line at www.bindt.org/PCN is strongly encouraged.

PART 4 - KEY TO CODES USED TO DEFINE SCOPE OF CERTIFICATION

Code 1 2 3 8 Code 4 5 6 7 16 Code 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 48	Sectors (Industry) Aerospace Pre and in-service inspection Railway maintenance Radiation Sectors (product) Castings Forgings and wrought products Weldments Tubes and pipe In-Service Inspection NDT Methods & Techniques Eddy Current Magnetic Particle Testing Liquid Penetrant Testing Visual testing Ultrasonic Testing Radiography ACFM TOFD Phased Array Computer Radiographic Testing Guided Wave Weld Inspection Radiography (Neds) Aero Radiography (Neds) Aero Radiography (Neds) Aero Radiographic Interpreter Computer Radiographic Interpreter Digital Radiographic Interpreter Phased Array Interpretation Basic Radiation Safety Radiation protection Railway Axles Rail (INR/055) Rail UT Weld Thickness measurement & corrosion monitoring	Scopes of Competence X-rays Gamma rays Dye penetrants Fluorescent penetrants Fixed installations Portable equipment Composite materials Materials and components Structures Light metals Dense metals Plate Bars and billets General Forgings Condenser Tubes NDT instruction writing Critical defect sizing Single frequency Multiple frequency Butt welds in plate Butt welds in pipe 'T' joint welds Nozzle welds Nozele welds Node welds Wavemaker Teletest MSS ISO 20807 Inspection of Wrought Plate Steel components Profile Tangential Weld inspection 'complies with PCN WI 01'
49	Advanced Radiation Safety	

Scan the QR code to verify online





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

JCook

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

Approval is subject to continuous validity being maintained within the limits of the existing Certification Body NDT Approval Scheme and the LRQA-CASL PD CEN / TR 15589 Route B Certification Scheme.

NOTE! All BINDT/PCN NDT certificate holders will need to sign up to the WQ-iC NDT Operator Scheme Terms and Conditions prior to their approval being confirmed

Disclaimer: Note! This is a web based reproduction of the original certification. The original certification is retained by LRQA-CASL. In case of any dispute the certificate retained by LRQA-CASL is considered to be the original. Named individuals can contact LRQA-CASL for replacement certificates – subject to confirmation of identity.

END USERS! if you need to verify the content it can be checked here: https://LRQA-CASL.com/ndt-operator-certs/ or alternatively e-mail LRQA-CASL at Office@wq-ic.eu

Terms and conditions of contract applicable to the issuing and use of all certificates and services provided by LRQA-CASL

Rules on the use and misuse of certificates and logos

- only the original certificate as issued by LRQA-CASL is acceptable as evidence of certification under the scheme
- The certificate remains the property of LRQA-CASL.
- The certificate holder is the party to whom the certificate is issued.
- · Certificate holders are responsible for the safe keeping of certificates issued by LRQA-CASL.
- · Certificates shall not be modified / altered or tampered with in any way. Doing so invalidates the certificate.
- The Certificate signatory is responsible for informing LRQA-CASL of any matters arising that may affect the ability of their individual capability to continue the full certification requirements.
- The holder of the certification can only operate within the range of qualification shown on the certificate.
- When applicable, the holder shall ensure any ongoing evidence required to maintain the validity of the certificate for the applicable standard selected shall be made available on request.
- The certificate is only valid if the requirements of chosen qualification standard are adhered to in full.
- The certificate issued by LRQA-CASL is only valid up to the date shown on the certification issued.
- · The certificate is only valid if signed by an approved signatory of LRQA-CASL and the holder
- o Should LRQA-CASL be required to investigate the misconduct of a certified person or a third party raises a grievance with a certified person, LRQA-

CASL shall reserve the right to suspend, withdraw this certificate or refuse re certification of an individual.

- This certificate shall be suspended if LRQA-CASL have not had funds paid due to them for the certification issued. WQ-iC shall make publicly available sponsors / individuals names on the LRQA-CASL web site and associated certificate numbers that have been suspended.
- The certified person shall not use the INAB logo in any form whatsoever.
- The certified person may use the LRQA-CASL scheme logo as shown on the front of the scheme rules.
- Any misuse of logos shall be dealt with an appropriate manner as outlined in the scheme rules.

Limitation of liability:

LRQA-CASL's total aggregate liability for all loss or damage arising under or in connection with this agreement and all services provided towards the holder of the certificate whether based in contract, tort (including negligence) strict liability, indemnity or otherwise shall not exceed 100% of the fees paid by the holder.

Neither party shall be liable in contract, tort (including negligence), strict liability, indemnity or otherwise for loss of profit or anticipated profit, loss of use, loss of contract, loss of production, loss of savings, loss of revenue, business interruption or increased cost of working, loss of capital or any indirect, special, consequential or exemplary damages howsoever caused regardless of whether any such losses were foreseeable by the parties at the time of entering into this contract. This contract shall be governed by the laws of England and Wales, and any disputes shall be resolved exclusively by the courts of England.

The holder of this certificate must sign and date below to confirm that they have accepted that the certification process has been followed in accordance with the scheme and that they will abide by the applicable scheme rules of LRQA-CASL and in doing so accept the terms and conditions shown above.

Name of Certificate Holder	Signature	Date

Baugh & Weedon NDE Ltd. 11-16 Burcott Business Park, Burcott Road, Hereford, HR4 9JQ.

Tel: +44 (0)1432 267671 Email: sales@bw-nde.com Web: www.bw-nde.com



Calibration Certificate No.	PS7923-1	
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Customer	Acceptance	Pass	
Gisli Gudmundsson	Date of Calibration	07.09.23	
Customer Purchase Order No.	Date of Expiry	07.09.24	
N/A	Adjustment	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			
Remarks	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 31st May 2025)

Test Conditions Temperature (20 +/- 2 °C) & Humidity (50 +/- 20%)

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.

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

Calibrated By	P. Stimson Calibration Manager	Approved Signatory	M
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Baugh & Weedon NDE Ltd. 11-16 Burcott Business Park, Burcott Road, Hereford, HR4 9JQ.

Tel: +44 (0)1432 267671 Email: <u>sales@bw-nde.com</u> Web: www.bw-nde.com



Calibration Certificate No.

PS7923-1

Gustomer Requirements

None supplied.

			,				
Results							
Note	Any accept	y acceptances indicated as 'OOS' are outside of specification.					
Mofe	Any accept	ances inc	licated as 'OOCR' are outs	de of customer require	ments.		
Work In	struction No.	CAL-WI	032 Issue 1	Procedure	CAL-WI	014 Issue 1	
Test	Nominal Thi	ickness	Ref. Test Equipment	Customer Equipme	nt		
Block	(mm)		Actual Thickness (mm)	Measured Thicknes	s (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	

Calibrated By	P. Stimson Calibration Manager	Approved Signatory	B
Page 2 of 2		LITG Issue 4 (CAL)	



Starfsleyfi til þykktarmælinga á skipum

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

Nafn:

Heimili:

Sveitarfélag:

Kt.:

HD ehf.

Vesturvör 36

200 Kópavogi

431298-2799

- 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

4.11.2022

Staður

Dagsetning

Undirskrift og stimpill