

Inspeksjonsrapport

Overvåkende kontroll 2022 – Roth MultiPex Rørsystem

SINTEF Teknisk Godkjenning nr. 2556

VERSJON

1

DATO

2022-08-16

FORFATTER

Dag Fredrik Nedberg

OPPDRAGSGIVER

Roth Norge AS, Billingstadsletta 19, 1396 Billingstad,
Norge

OPPDRAGSGIVERS

REFERANSE

Audun Martinsen

PROSJEKTNUMMER

102000250-1

ANTALL SIDER

6 + 1 vedlegg

SAMMENDRAG

SINTEF Community har på oppdrag fra Roth Norge AS utført stikkprøvekontroll i henhold til kontrollbeskrivelsen tilhørende SINTEF Teknisk Godkjenning nr. 2556.

Prøving er utført i henhold til SINTEF Test Method no. 2 "Pipe in tube systems", Punkt. 6.4 og 6.5.

Resultat: **Bestått**

UTARBEIDET AV

Dag Fredrik Nedberg

SIGNATURE



KONTROLLERT AV

Bjørn-Roar Krog


SIGNATURE



GODKJENT AV

Lars-Erik Fiskum

SIGNATURE



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RAPPORTNUMMER

2022:00822

GRADERING

Fortrolig

GRADERING DENNE SIDE

Fortrolig

Innholdsfortegnelse

1	Innledning	3
2	Prøvemethoder	3
3	Prøveobjekt og uttak	3
4	Prøvemethoder og resultat	5
4.1	Kvalitetsstyringssystem.....	5
4.2	Typeprøving, prøvetaking og overvåkende prøving	5

VEDLEGG

1. Testrapport nr. NO22423 fra Norner AS

1 Innledning

SINTEF Community har 2022-05-19 utført uttak av vareprøver for årlig kontroll hos Roth Norge AS. Stikkprøvekontrollen er gjennomført i henhold til kontrollbeskrivelsen tilhørende SINTEF Teknisk Godkjenning nr. 2556.

Forut for inspeksjonen har undertegnede inspektør/rapportforfatter vurdert sin upartiskhet og uavhengighet i saken, herunder også sin habilitet. Med signaturen på forrige side bekreftes det at disse forhold er funnet å være innenfor kravene gitt i SINTEF sitt styringssystem, og gjeldende standard for virksomheten.

2 Prøvemethoder

Prøvingen er utført iht. SINTEF Test Method no. 2 "*Pipe in tube systems*", pkt. 6.4 og 6.5. Prøvingen er utført av Norner AS, organisasjonsnummer NO898736032MVA. Se prøverapport i Vedlegg 1.

3 Prøveobjekt og uttak

SINTEF Community har gjort uttak av varerør fra Roth Norge AS for stikkprøvekontroll. Det testede varerøret ble levert til SINTEF Community 2022-05-19 og var i normal tilstand ved mottak. Det testede varerøret er vist i Tabell 3.1 og Figur 3.1.

Tabell 3.1: Prøveobjekt

Produkt:	Roth MultiPex RIR 12/20 mm, 60 m
NRF-nummer:	5083701
Dimensjon:	20 mm
Farge:	Svart med hvite striper
Merking:	Roth 16/20 mm
Produsent:	Becker Plastics GmbH



Figur 3.1 Roth MultiPex varerør, 20 mm

4 Prøvemeter og resultat

Stikkprøvekontrollen for 2022 er bestått. Se Tabell 4.1 og prøverapport i vedlegg 1.

Tabell 4.1: Oppsummering av resultater

Kapittel	Punkt i SINTEF Test Method no. 2	Resultat	
		Bestått	Ikke bestått
4.1	6.4 Macroscopic investigation	X	
4.2	6.5 Microscopic investigation	X	

4.1 Macroscopic investigation (SINTEF Test Method no. 2, Clause 6.4)

Method: Macroscopic investigation of the outside surface of the tube is performed by stereo microscopy.

Requirements: Characteristics and requirements according to Tabell 4.2.

Result: **Passed**

Tabell 4.2: Characteristics, requirements and results – Macroscopic investigation

Surface characteristics	Requirements	Result	
		Passed	Not passed
Parting line from tool	Flash, which introduce notches, is not accepted	X	
Parting line displacement	A longitudinal or radial displacement, which introduce notches and decreases the wall thickness by more than 15 %, is not accepted	X	
Corrugated design	Systematically repeated bridges or extrusion failures are not accepted	X	

4.2 Microscopic investigation (SINTEF Test Method no. 2, Clause 6.5)

Method: Microscopic investigation on a cross section of the tube is performed by light microscopy. Minimum 12 microtome cross sections shall be investigated.

Requirements: Characteristics and requirements according to Tabell 4.3.

Result: **Passed**

Tabell 4.3: Characteristics, requirements and results – Microscopic investigation

Characteristics	Requirements	Result	
		Passed	Not passed
Wall thickness distribution, centring	$X \leq 25 \%$	X	
Wall thickness distribution, top / bottom curve	$Y \leq 40 \%$	X	
Curve radius – bottom curve	Radius – Minimum 0,1 mm	X	
Smoothness – top curve	Notch radius – Minimum 0,1 mm	X	
Distribution of pigments / additives	Not worse than B in accordance with ISO 18553	X	
Dispersion of pigments / additives	\leq grade 3 in accordance with ISO 18553	X	
Crystal morphology	No lines are accepted	X	
Plastification / inhomogeneity	\leq grade 1 in accordance with ISO 18553	X	

Oslo, 2022-08-16

SINTEF Community



Dag Fredrik Nedberg

Sivilingeniør, Rådgiver

Report ID.	Norner project no	Date	Classification
NO22423	10410486	15.08.2022	Confidential

Customer / Contact / Reference	Customer Responsible
Sintef Community Dag Fredrik Nedberg	Sven-Arve Halvorsen

Title
Yearly testing of protection pipe – Roth Norge AS – Black w/white stripes 20 mm – TG2556

Author(s)	Approved by
Sven-Arve Halvorsen	Kristen Kjeldsen

Background
<p>Testing of protection pipe according to test method: “Outer protection tube for pipe in tube systems”, Test method 01-2010, November 2011 – 4th edition</p> <p>Received date: 24.06.2022</p> <p>Pipe producer: Becker Plastics GmbH</p> <p>Dimension: 20 mm</p> <p>Color: Black w/white stripes</p>

Conclusions/Proposals
<p>The black w/white stripes pipe is approved according to requirements in chapter 6.4 and 6.5 in Test method no. 01-2010.</p>

Attachments

Legal notice

1. Samples and information

Testing of protection pipe according to test method: “**Outer protection tube for pipe in tube systems**”, **Test method 01-2010, November 2011 – 4th edition**

Received date: 24.06.2022

Pipe producer: Becker Plastics GmbH

Dimension: 20 mm

Color: Black w/white stripes

2. Experiment description and results of macroscopic investigation

Method: Macroscopic investigation of the outside surface of the tube is performed by stereo microscopy.

Requirements: According to test method, chapter 6.4

Table 1 - Macroscopic investigation results black w/white stripes pipe 20 mm

Surface characteristics	Figure	Method	Results (OK/NOK)
Parting line from tool	NA	Stereo microscopy	OK
Parting line longitudinal displacement	NA		OK
Corrugated design	NA		OK

3. Experiment description and results of microscopic investigation

Method: Microscopic investigation on a cross section of the tube is performed by light microscopy.

Requirements: According to test method, chapter 6.5

Table 2 - Microscopic investigation results black w/white stripes pipe 20 mm

Surface characteristics	Figure	Method	Results (OK/NOK)
Wall thickness distribution, top/bottom	NA	Light microscopy	OK
Wall thickness distribution, centering	NA		OK
Smoothness	NA		OK
Curve radius	NA		OK
Distribution of pigments / additives	NA		OK
Dispersion of pigments / additives	NA		OK
Crystal morphology	NA		OK
Plastification	NA		OK

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