

Test Intention:

In test 4692 we want to investigate the lifespan of our CF113.038.D in an e-chain with a 55mm radius.

Client:

Name: Christian Mittelstedt

Team: chainflex®

Date: 20.11.2012

Order-Info:

Customer / No.: igus® GmbH, Spicher Str.1a 51147 Köln

Series / No: CF113.D

Installation type: horizontal, short way

Customer test: Yes No

Development test: Yes No

Technical data

Target & Examination

e-chain® type: 2400.05.055.0

Target [strokes]: **Lifespan**

e-chain® radius [mm]: 55

Optical check:

Stroke [m]: 0,8

Function check:

Ambient temperature [°C]: approx. 25°C

Standard measuring:

Cable length [m]: 4,0

AutΩMeS:

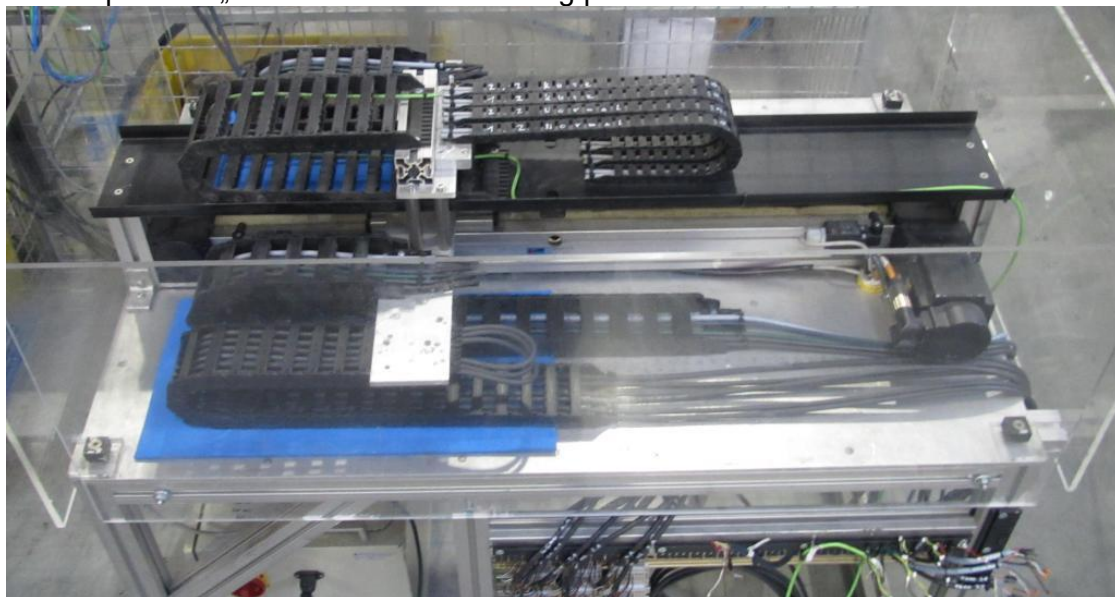
Experimental setup

Checklist for the experimental preparations

- additional inscription/label at all wires
- strain reliefs at both ends of the chain
- correct electrical connection of all wires
- radius was marked at the cables and the energy chain

1. Construction:

This test is built up on the „kleine Bahr“. The following picture shows the test structure:



2. Cable and hose packages:

No. 1: **1x CF113.038.D** with the cable marking

*05121m igus chainflex CF113.038.D (3x(2x0,14)+(2x0,34))C E310776 E cRUus AWM Style 20236
VW-1 AWM I/II A/B 80°C 30V FT-1 CE E O/ED DESINA RoHS-II conform www.igus.de*

3. Description of the cable construction:

Standard igus chainflex® catalogue cable

4. Remarks:

To detect broken conductor or shielding wires we will measure the ohmic resistance of these cable elements. The cores of the samples are connected in series and one core is connected with the shielding to measure the ohmic resistances.

The following chart gives an overview regarding the test parameters:

Cable no.	Cable type	E-chain radius [mm]	Outer diameter [mm]	Bending factor [xd]	Bending factor catalogue [xd]
1.1	CF113.038.D	55	7,2	7,6	10,0

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after ... strokes
		... mounting	... demounting		
1.1	CF113.038.D	68.019.214	100.601.950	32.582.736	32.582.736

Test-order was checked by ... [Rainer Rössel or Martin Göllner and further employee]

Date:	20.11.2012	Name:		Name:	C. Mittelstedt
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Result

Start report 20.11.2012:

At the 20.11.2012 we started the test 4692 with a counter reading 68.019.214, we will measure the ohmic resistance regularly.

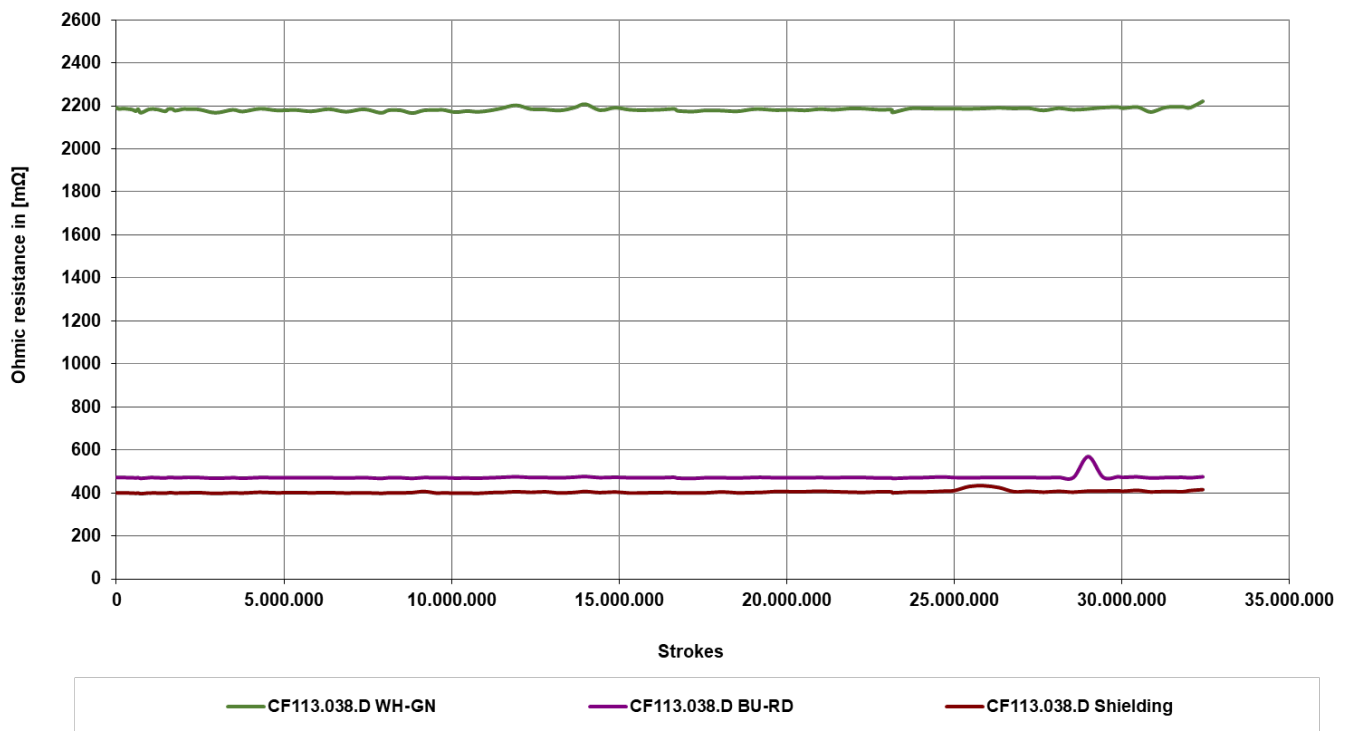
Interim report 03.06.2014:

At the 03.06.2014 we demounted the cable 1.1 after 32.582.736 strokes, because we want to check the condition of the cable elements.

The following diagrams show the trend of the ohmic resistances during the test:



Trend of the ohmic resistances

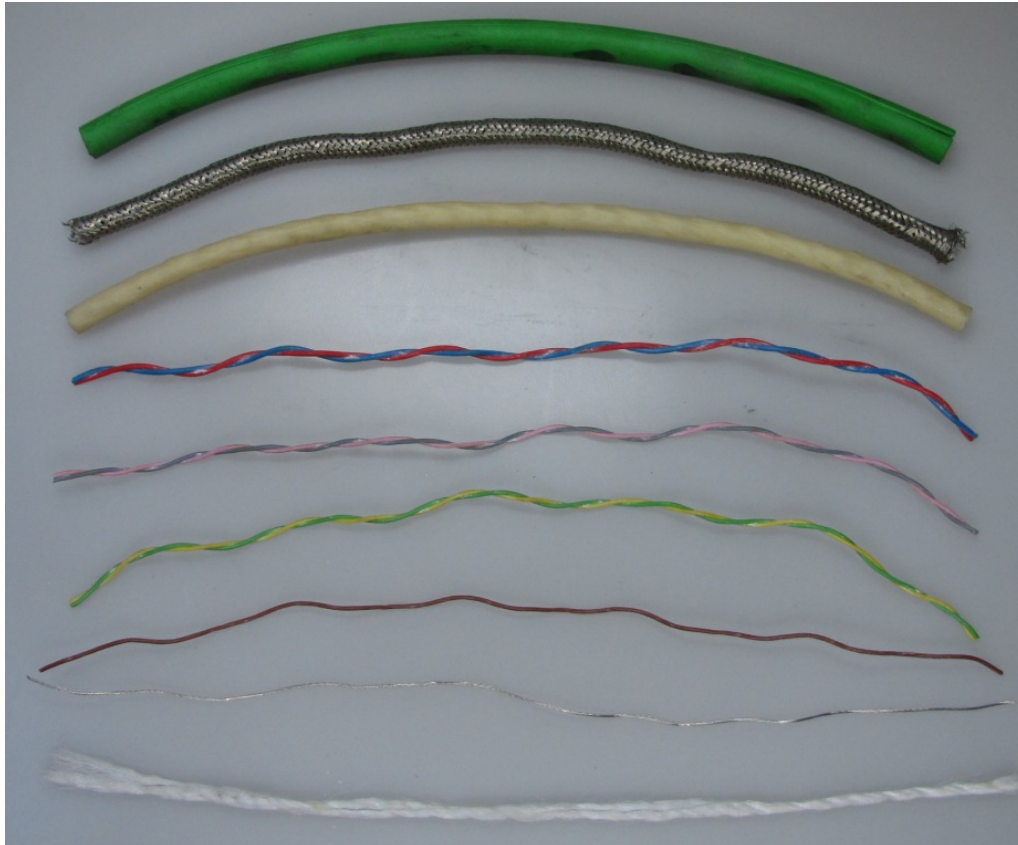


Evaluation

Dissection report:

The following pictures show the dissected elements of the cables

The condition of the cable no.1.1 (CF113.038.D) after 32.582.736 strokes



Strokes	32.582.736
Condition outer jacket	Slightly abrasion
Condition overall shielding	O.K.
Condition inner jacket	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.
Condition centre element	O.K.

Name: **C. Mittelstedt**

Date: **03.06.2014**