Test-Report chainflex®

Test No.: 4831

Test Intention:
In test 4831 we want to investigate the lifespan of a CF270.UL.D in an e-chain with 100mm radius on the short way.

Client:		
Name: Christian Mittelstedt	Team: chainflex®	Date: 23.05.2013

Order-Info:	
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CF270.UL.D	Installation type: horizontal, short way
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐

Technical data		Target & Examination	
e-chain® type:	E6.29.XXX.100.0	Target [strokes]:	Lifespan
e-chain® radius [mm]:	100	Optical check:	☒
Stroke [m]:	2,1	Function check:	☐
Ambient temperature [°C]:	approx. 25°C	Standard measuring:	☐
Cable length [m]:	5,0	AutΩMeS:	☒

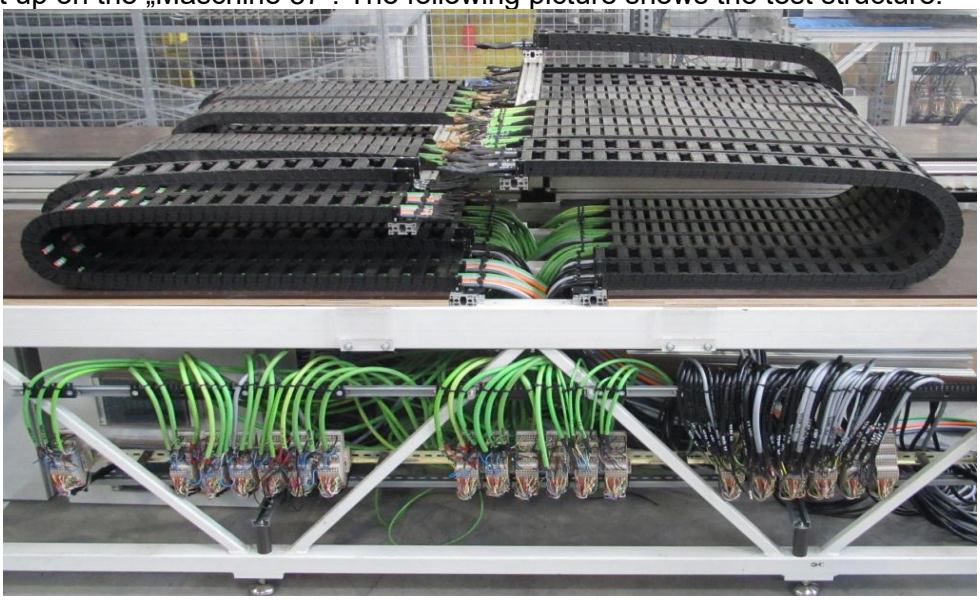
Experimental setup

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 „Maschine 57“. The following picture shows the test structure:



2. Cable and hose packages:

No. 1: **1x CF270.UL.25.04.D** with the cable marking
05461m igus chainflex CF270.UL.25.04.D (4G2,5)C 600/1000V E310776 T CSAUus AWM Style 21223 VW-1 AWM I/II A/B 80°C 1000V FT-1 CE T P/AG 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	CF270.UL.25.04.D	100	11,0	9,1	10,0

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after … strokes
		… mounting	… demounting		
1.1	CF270.UL.25.04.D	20.036.378	38.896.990	18.860.612	18.860.612

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

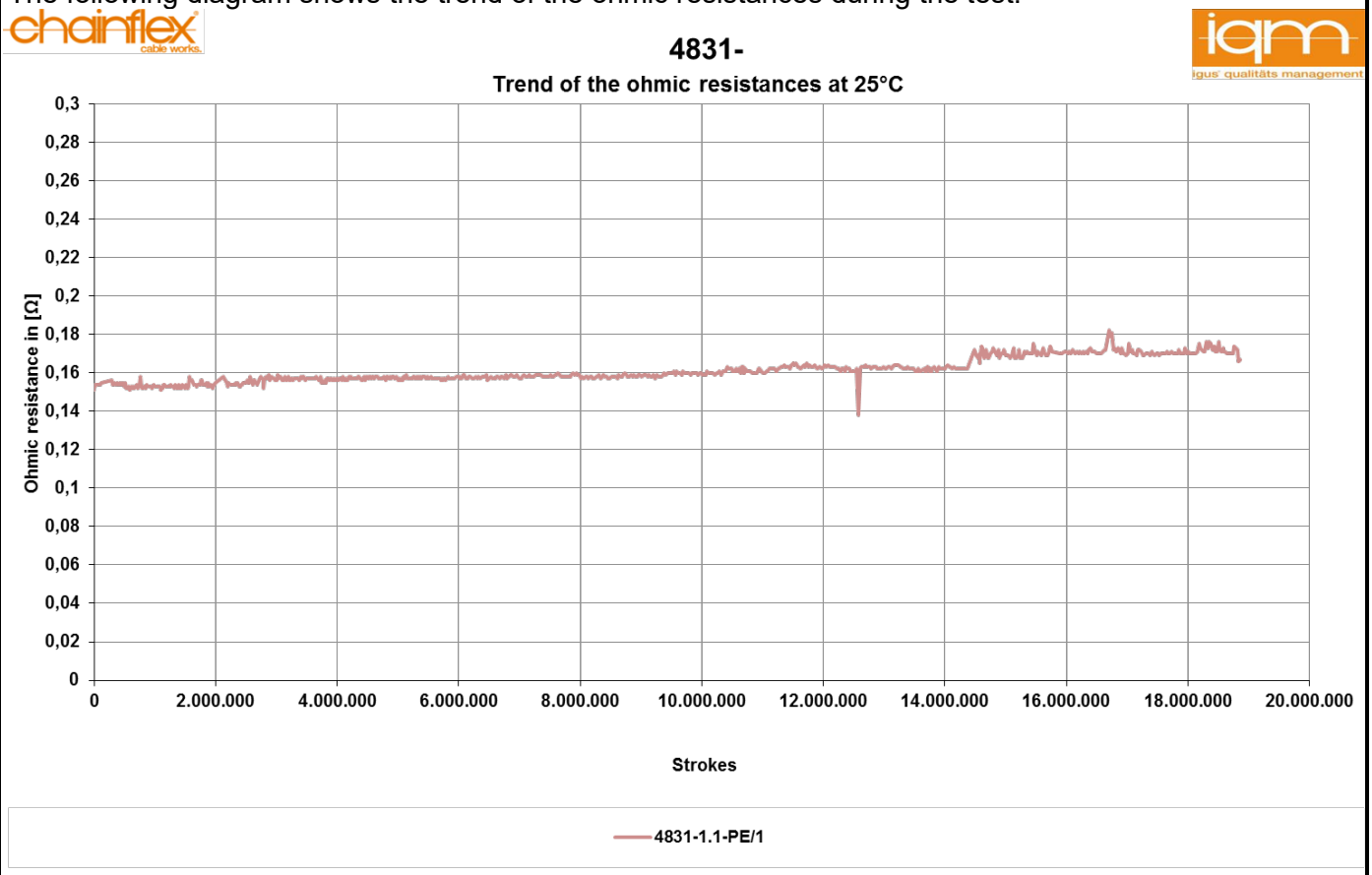
Date:	23.05.2013	Name:		Name:	Ch. Mittelstedt

Result

Start report 24.05.2013:
At the 24.05.2013 we started the test 4831 at counter reading 20.036.378 and we will measure the ohmic resistance regularly.

Interim report 06.03.2017:
At the 06.03.2017 we demounted the cable no. 1.1 after 18.860.612 strokes, because we want to finalize the test.

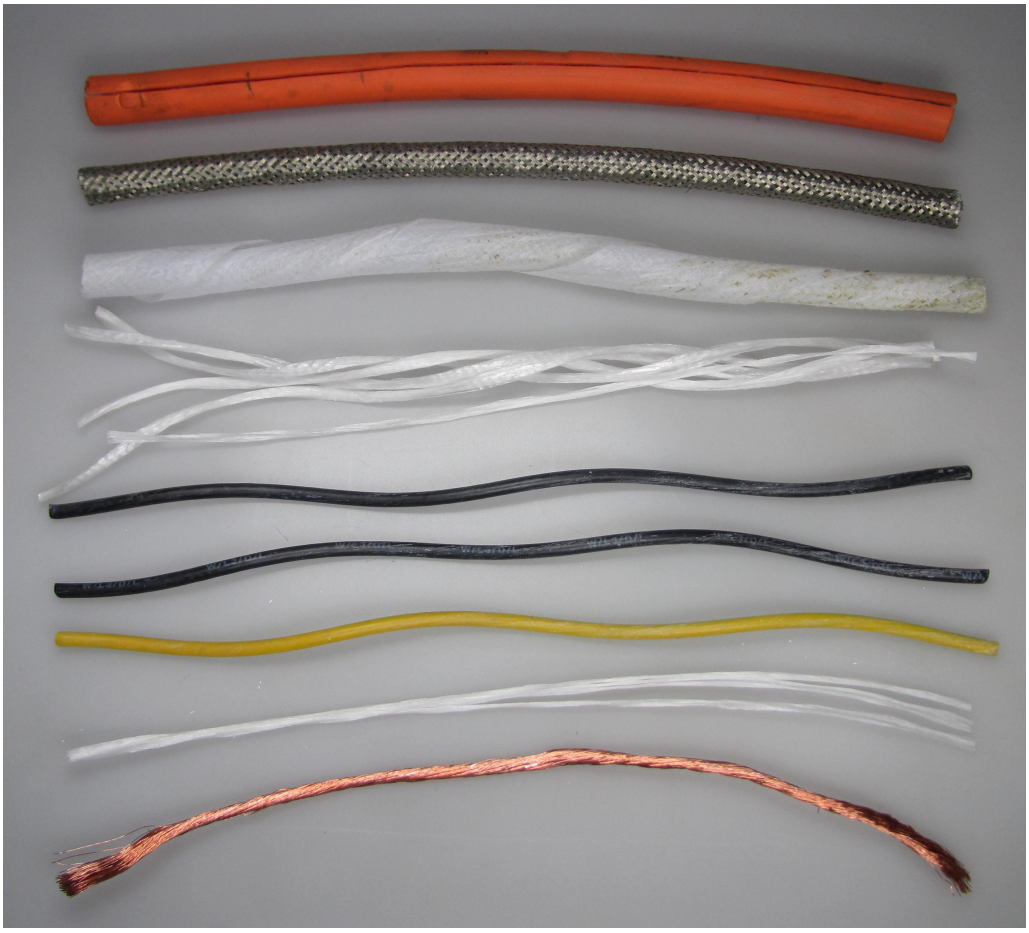
The following diagram shows the trend of the ohmic resistances during the test:



Evaluation

Dissection report:
The following pictures show the dissected elements of the cables

The condition of the cable no. 1.1 (CF270.UL.25.04.D) after 18.860.612 strokes



Strokes	18.860.612
Condition outer jacket	Abrasion
Condition overall shielding	Single broken wires
Condition 1st banding	O.K.
Condition filler	O.K.
Condition centre element	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.

Name:	A. Finke	Date:	07.03.2017