

Test Intention:

In the test 5123 we want to investigate the lifespan of a CF886.160.04 in an e-chain with a 250mm radius.

Client:

Name: C. Mittelstedt Team: chainflex® Date: 15.07.2016

Order-Info:

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

Series / No: CF886

Installation type: horizontal

Customer test: Yes No

Development test: Yes No

Technical data

Target & Examination

e-chain® type: E4.32.06.250.0

Target [strokes]: **Lifespan**

e-chain® radius [mm]: 250

Optical check:

Stroke [m]: 2,1

Fluke DTX-ELT:

Cable length [m]: 5,0

Standard measuring:

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

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 36“ The following picture shows the test structure:



2. Cable and hose packages:

No. 1: **1x CF886.160.04** with the cable marking
*00045m igus chainflex M CF886.160.04 (4Gx16.0)C 600/1000V E310776 H cJus AWM Style
 21179 VW1 AWM I/II 80°C 1000V FT-1 EAC / CTP CE H S/CE 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]	External diameter [mm]	Bending factor [xd]	Bending factor catalogue [xd]
1.X	CF886.160.04	250	22,3	11,3	15,0

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after ... strokes
		... mounting	... demounting		
1.1	CF886.160.04	20.201.277	30.328.481	10.126.714	10.126.714

Test-order was checked by ... [Martin Göllner or Christian Mittelstedt and further employee]

Date:	15.07.2016	Name:		Name:	Ch. Mittelstedt
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Result

Start report 15.07.2016:

At the 15.07.2016 we started the test 5123 at a counter reading of 20.201.277, we will measure the ohmic resistance regularly.

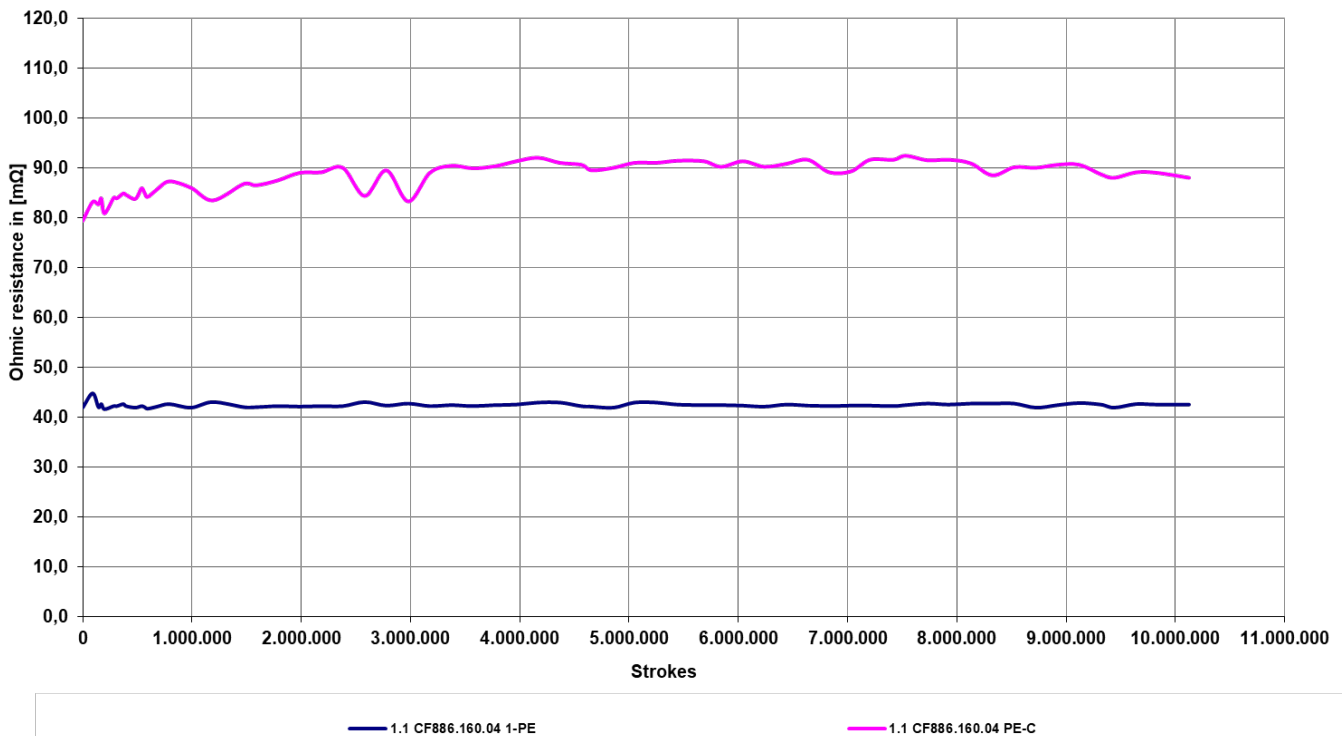
Interim report 17.08.2018:

At the 17.08.2018 we demounted the cables after 10.126.714 strokes, because we wanted to finalize the test.

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



Trend of the ohmic resistances

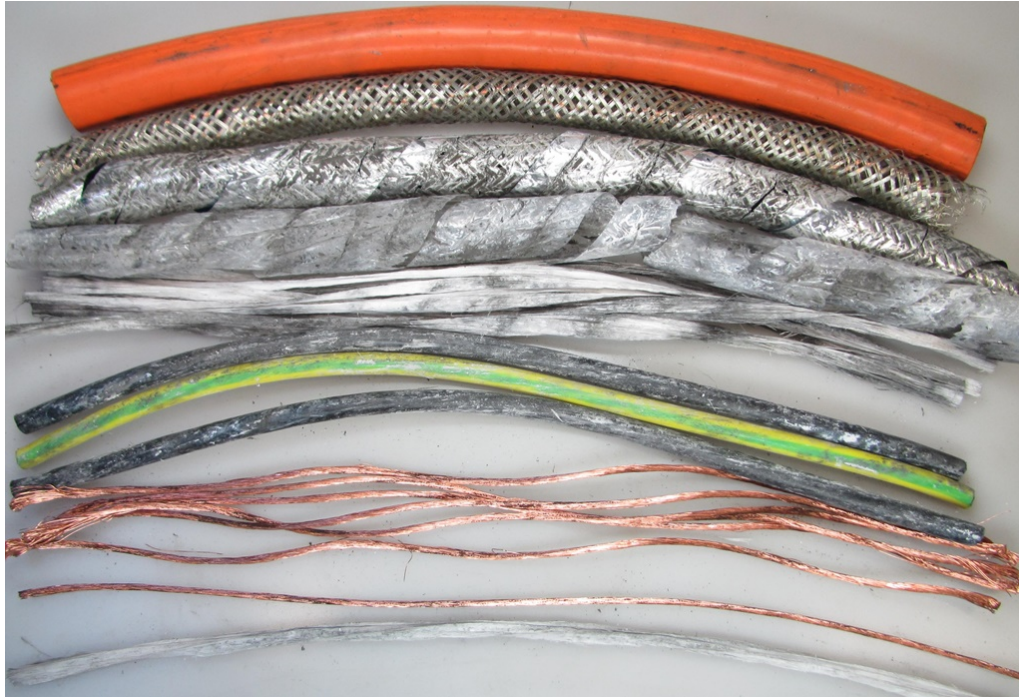


Evaluation

Dissection report:

The following pictures show the dissected elements of the cables

The condition of the cable no. 1.1 (CF886.160.04) after 10.126.714 strokes



Strokes	10.126.714
Condition outer jacket	O.K.
Condition overall shielding	Broken single wires
Condition banding	Ruptured
Condition filler	O.K.
Condition centre element	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.

Name: **C. Mittelstedt**

Date: **10.09.2018**