Test-Report chainflex®

Test No.: 5042

Test Intention:
In test 5042 we want to investigate the lifespan of a CF891.25.04 in an e-chain with a 125mm radius

Client:		
Name: C. Mittelstedt	Team: chainflex®	Date: 18.09.2015

Order-Info:	
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CF891	Installation type: horizontal
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐

Technical data		Target & Examination	
e-chain® type:	E4.28.100.125.0	Target [Strokes]:	Lifespan
e-chain® radius [mm]:	125	Optical check:	☒
Stroke [m]:	2,1	Fluke DTX-ELT:	☐
Cable length [m]:	5,0	Standard measuring:	☐
Ambient temperature [°C]:	approx. 25°C	AutΩMeS:	☒

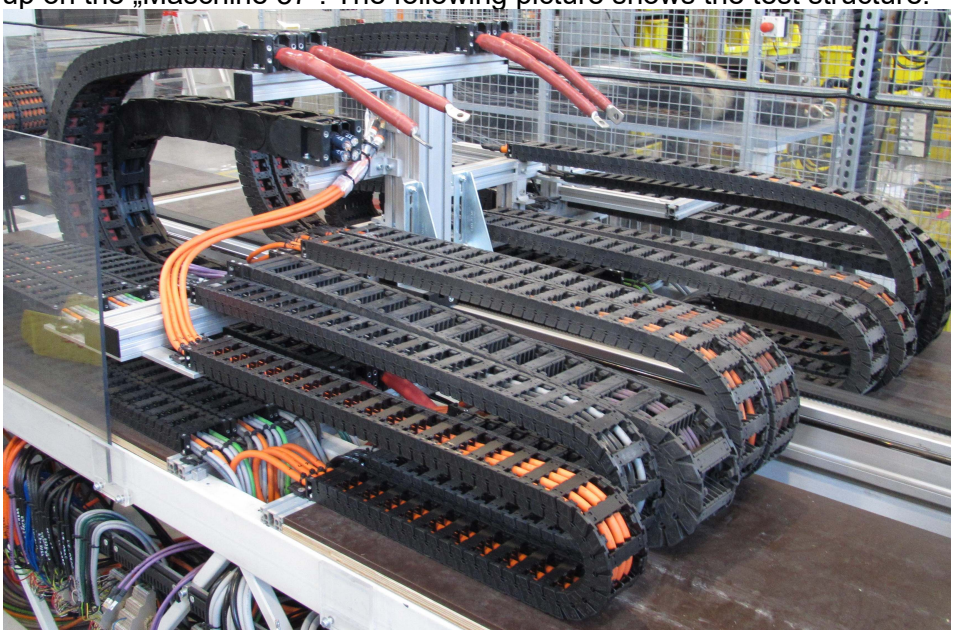
Experimental setup

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 57“. The following picture shows the test structure:



2. Cable and hose packages:

No. 1: **3x CF891.25.04** with the cable marking
75426m igus chainflex M CF891.25.04 (4G2,5)C 300/500V E310776 H cʀUus AWM Style 20940 VW-1 AWM I/II A/B 80°C 600V FT1 CE H R/DH RoHS-II conform www.igus.de

3. Description of the cable construction:

The cables are 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	CF891.25.04	125	11,8	10,6	12,5

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after … strokes
		… mounting	… demounting		
1.1	CF891.25.04	40.862.454	55.329.388	14.466.934	14.466.934

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

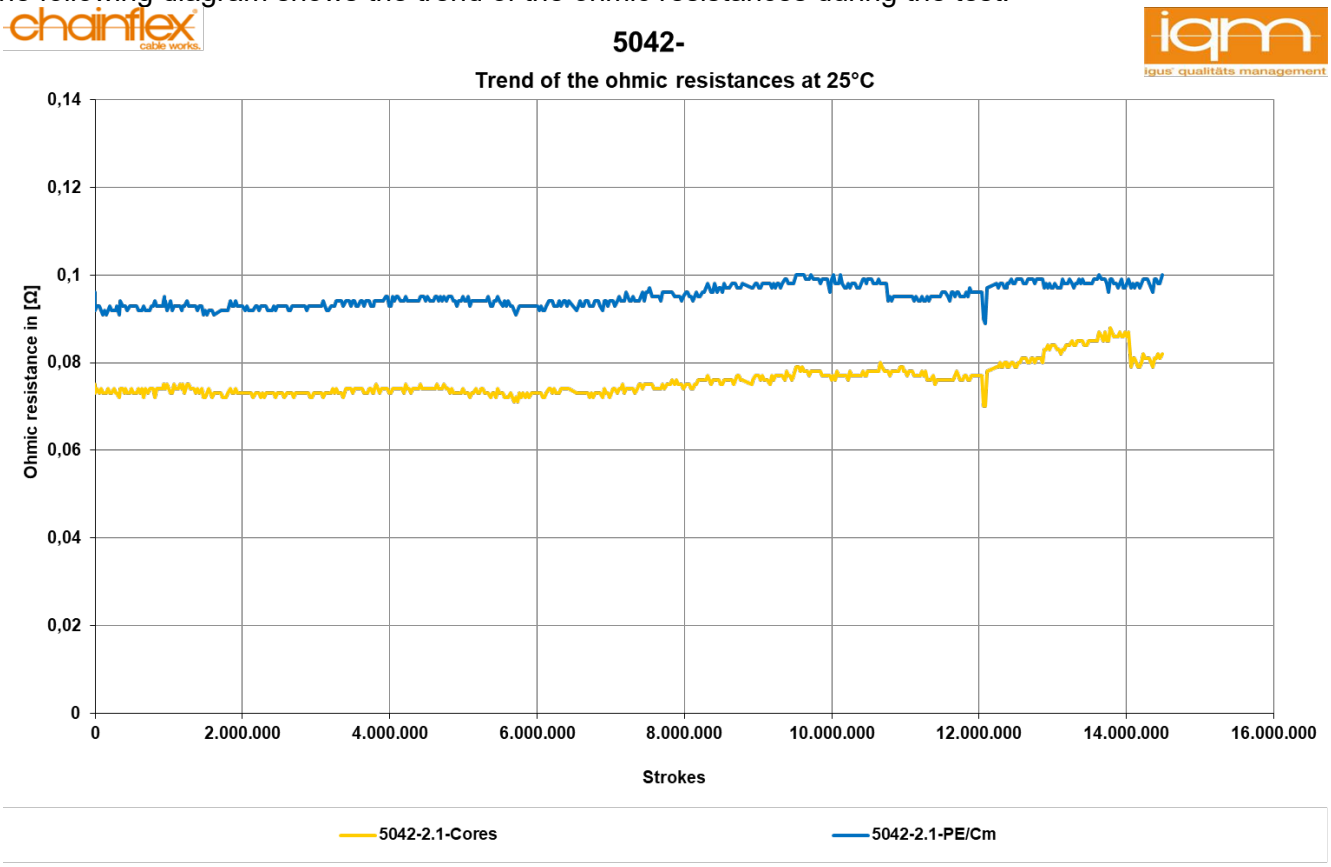
Date	24.09.2015	Name:		Name:	C. Mittelstedt

Result

Start report 25.09.2015:
At the 25.09.2015 we started the test 5042 at a counter reading of 40.862.454, we will measure the ohmic resistance regularly through AutΩMeS.

Interim report 08.12.2016:
At the 08.12.2016 we demounted the cable no. 1.1 after 14.466.934 strokes, because we want to check the condition of the cable elements.

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

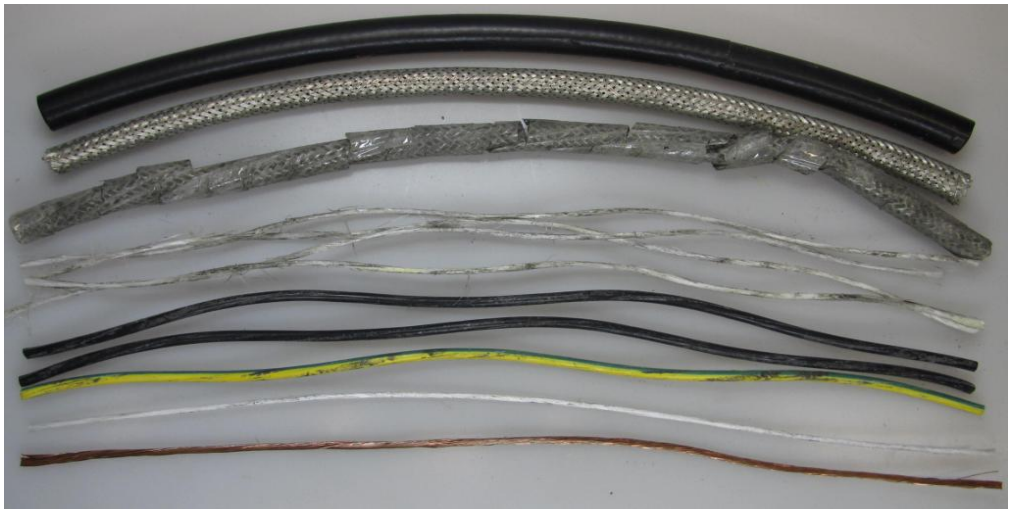


Evaluation

Dissection report:

The following pictures show the dissected elements of the cables

The condition of the cable no. 1.1 (CF891.25.04) after 14.466.934 strokes



Strokes	14.466.934
Condition outer jacket	O.K.
Condition overall shielding	O.K.
Condition banding	Ruptured
Condition filler	O.K.
Condition centre element	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.

Name:	R. Thoß	Date:	28.02.2017