Test-Report chainflex®

Test No.: 4844

Test Intention:
In test 4844 we want to investigate the lifespan of our new CF211.PUR.02.14.02 on the short way.

Client:		
Name: Christian Mittelstedt	Team: chainflex®	Date: 14.06.2013

Order-Info:	
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CF211.PUR	Installation type: horizontal, short way
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐

Technical data		Target & Examination	
e-chain® type:	E6.40.075.150.0	Target [strokes]:	Lifespan
e-chain® radius [mm]:	75	Optical check:	☒
Stroke [m]:	1,5	Function check:	☐
Ambient temperature [°C]:	approx. 25°C	Standard measuring:	☒
Cable length [m]:	3,0	AutΩMeS:	☐

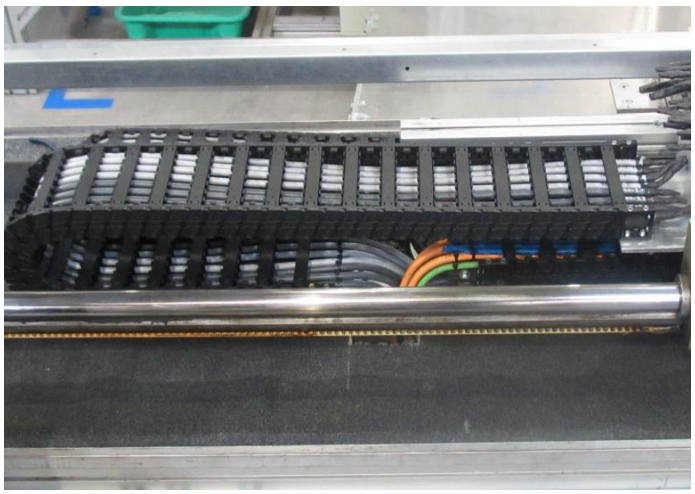
Experimental setup

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 „Zollern“. The following picture shows the test structure:



2. Cable and hose packages:

No. 1: **1x CF211.PUR.02.14.02** with the cable marking
09685m igus chainflex CF211.PUR.02.14.02 (14x(2x0,25))C E310776 F CSAus AWM Style 20233 VW-1 AWM I/II A/B 80°C 300V FT-1 CE F P/CC 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	CF211.PUR.02.14.02	75	11,1	6,7	7,5

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after … strokes
		… mounting	**… demounting**		
1.1	CF211.PUR.02.14.02	92.980.000	117.767.400	24.787.400	24.787.400

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

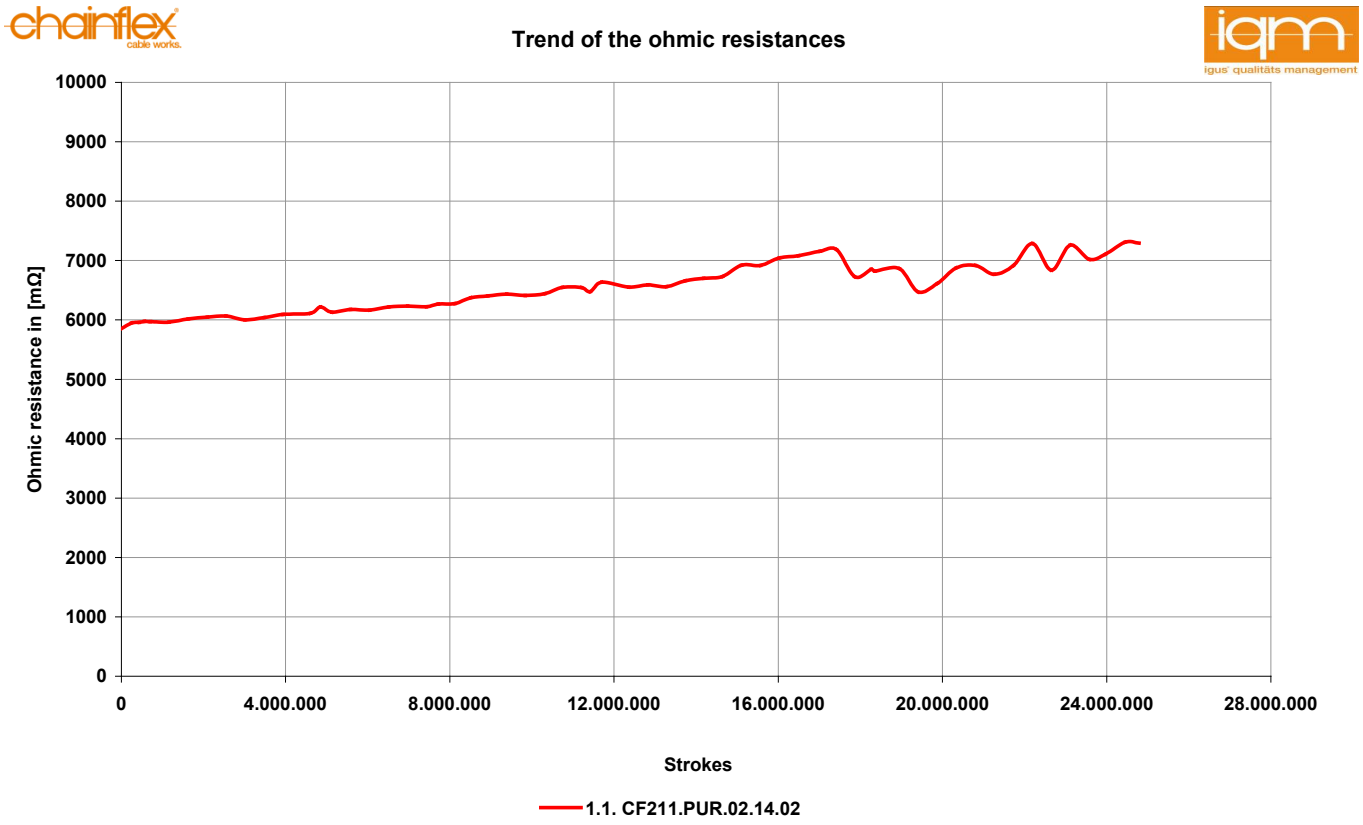
Date:	17.06.2013	Name:		Name:	Ch. Mittelstedt

Result

Start report 24.06.2013:
At the 24.06.2013 we started the test 4844 at a counter reading of 92.980.000, we will measure the ohmic resistance regularly.

Interim report 15.09.2014:
At the 15.09.2014 we demounted the cable no. 1.1 after 24.787.400 strokes, 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 (CF211.PUR.02.14.02) after 24.787.400 strokes

Strokes	24.787.400
Condition outer jacket	Ruptured
Condition overall shielding	Ruptured
Condition banding	Ruptured
Condition centre element	O.K.
Condition core insulation	O.K.
Condition conductor	Single broken wires

Name:	Christian Mittelstedt	Date:	04.10.2013