Test-Report chainflex®

Test No.: **4826**

Test Intention:
In test 4826 we want to investigate the lifespan of our CF27.25.15.02.01.D in an e-chain with a 100mm radius.

Client:		
Name: R. Rössel	Team: chainflex®	Date: 30.04.2013
Order-Info:		
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln		
Series / No: CF27.D	Installation type: horizontal short way	
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐	

Technical data		**Target & Examination**	
e-chain® type:	E6.29.120.100.0	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 56“. The following picture shows the test structure:

2. Cable and hose packages:

No. 1: **1x CF27.25.15.02.01.D** with the cable marking

00687m igus chainflex CF27.25.15.02.01.D (4G2,5(2x1,5)C)C 600/1000 V E310776 N CSAus AWM Style 21223 VW-1 AWM I/II A/B 80°C 1000V FT-1 CE N P/AE 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.X	CF27.25.15.02.01.D	100	14,2	7,0	7,5

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after … strokes
		… mounting	**… demounting**		
1.1	CF27.25.15.02.01.D	24.906.673	52.903.137	27.996.464	27.996.464

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

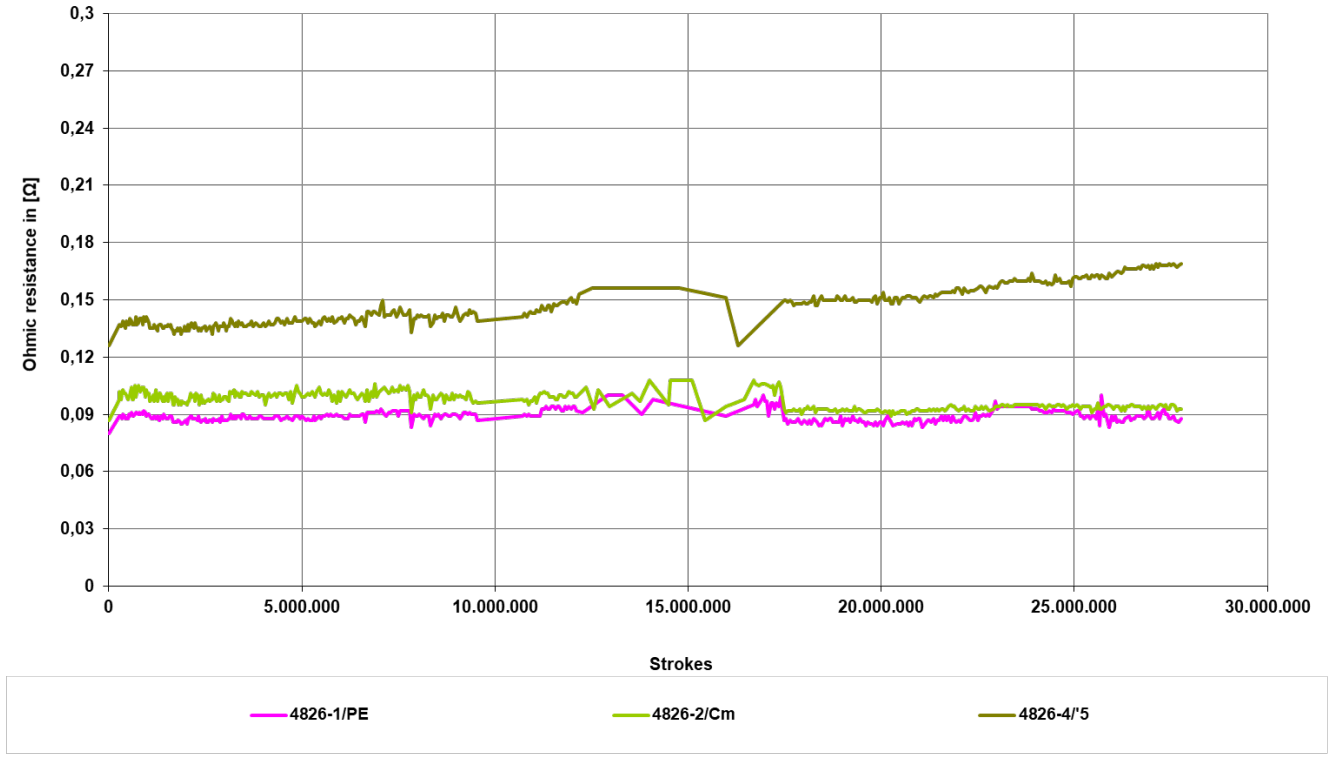
Date:	08.05.2013	Name:		Name:	C. Mittelstedt

Result

Start report 08.05.2013:
At the 08.05.2013 we started the test 4826 at counter reading 24.906.673, we will measure the ohmic with AutΩMeS.

Interim report 18.08.2015:
At the 18.08.2015 we demounted the cable after 27.996.464 strokes, because we want to finalize the test.

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

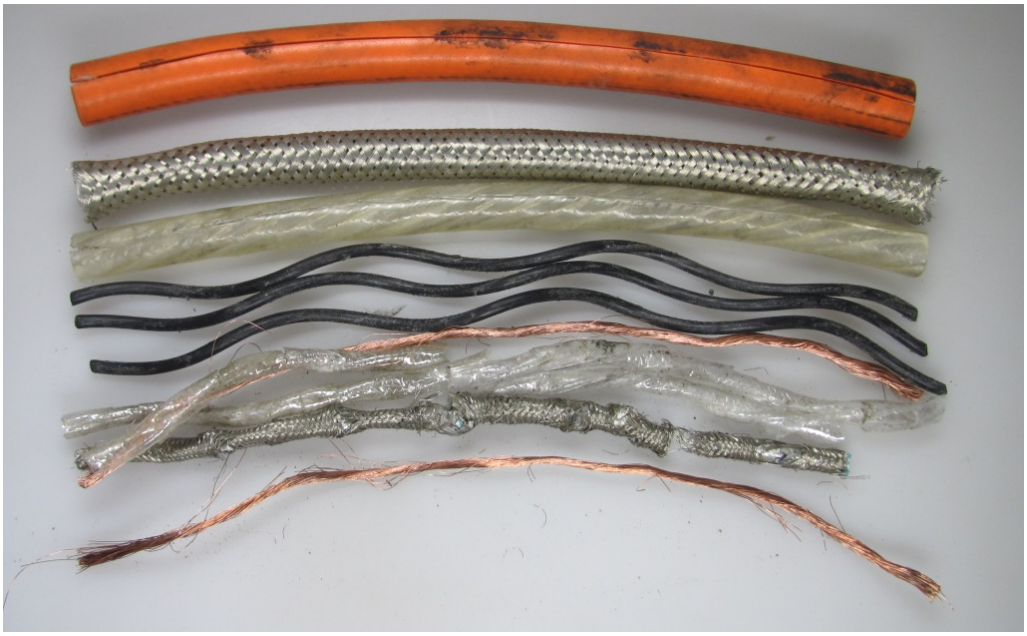


Evaluation

Dissection report:

The following pictures show the dissected elements of the cables

The condition of the cable no.1.1 (CF27.25.15.02.01.D) after 27.996.464 strokes



Strokes	27.996.464
Condition outer jacket	O.K.
Condition overall shielding	O.K.
Condition inner jacket	O.K.
Condition centre element	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.
Element cores	
Condition element banding	Ruptured
Condition element shielding	Ruptured
Condition core insulation	O.K.
Condition conductor	Single broken wires

Name:	Christian Mittelstedt	Date:	23.09.2015