

**Test Intention:**  
In this test we want to investigate the lifespan of our new designed CF881.15.12 in an e-chain with a 125mm radius.

**Client:**  
Name: C. Mittelstedt      Team: chainflex®      Date: 14.05.2018

Order-Info:	
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CF881	Installation type: horizontal
Customer test:      Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Development test:      Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Technical data	Target & Examination
e-chain® type: E6.29.110.125.0	Target [strokes/cycles]: <b>Lifespan</b>
e-chain® radius [mm]: 125	Optical check: <input checked="" type="checkbox"/>
Stroke [m]: 2,1	Fluke DTX-ELT: <input type="checkbox"/>
Cable length [m]: 5,0	Standard measuring: <input checked="" type="checkbox"/>
Ambient temperature [°C]: approx. 25°C	AutΩMeS: <input type="checkbox"/>

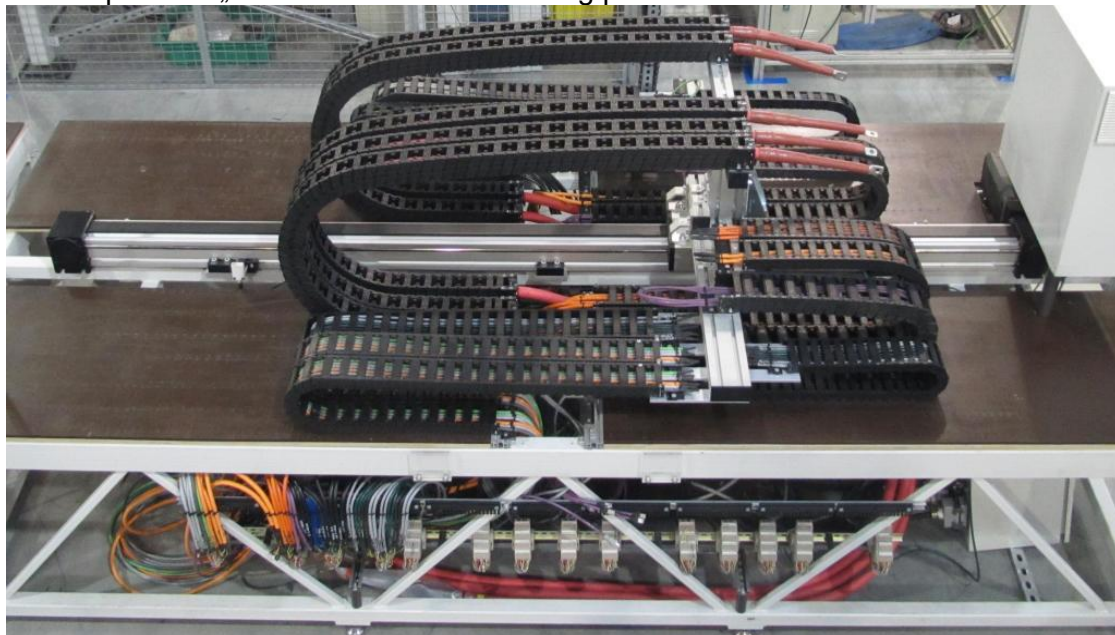
**Experimental setup**

**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 CF881.15.12** with the cable marking

*02099m igus chainflex CF881.15.12 (12G1,5)C 300/500V E310776 C cAJus AWM Style 2464  
VW-1 AWM I/II A/B 80°C 300V FT1 EAC/CTP CE I U/BF 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 test [xd]	Bending factor catalogue [xd]
1.X	CF881.15.12	125	12,3	10,2	12,5

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after ... strokes
		... mounting	... demounting		
1.1	CF881.15.12	62.744.582			
1.2	CF881.15.12	62.744.582			
1.3	CF881.15.12	62.744.582	75.602.734	12.858.152	12.858.152

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

Date:	<b>14.05.2018</b>	Name:		Name:	<b>C. Mittelstedt</b>
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## Result

### Start report 14.05.2018:

At the 14.05.2018 we started the test 5294 at a counter reading of 62.744.582, we will measure the ohmic resistance regularly.

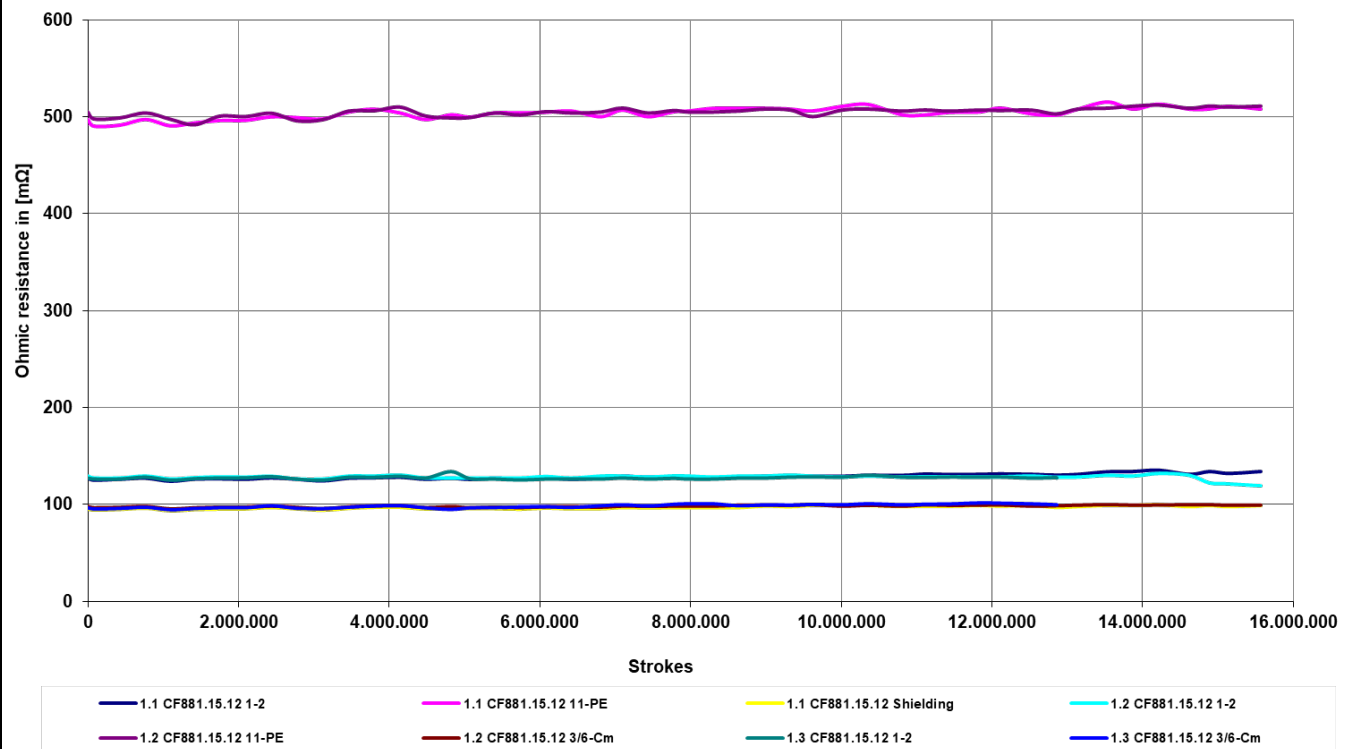
### Interim report 20.02.2019:

At the 20.02.2019 we demounted the cable no. 1.3 after 12.858.152 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:



Trend of the ohmic resistances

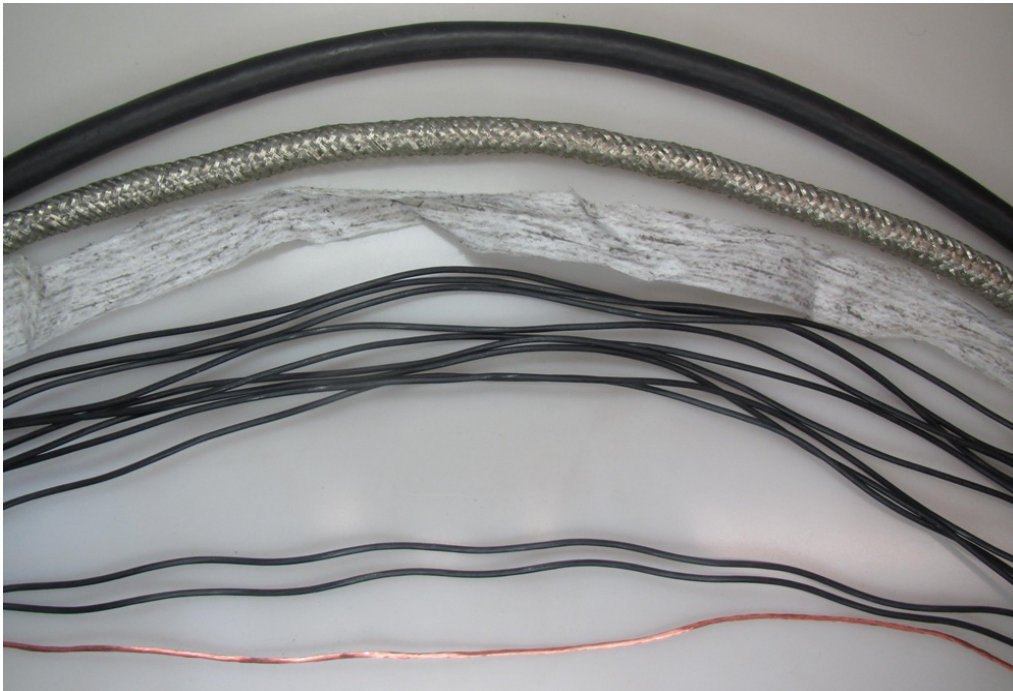
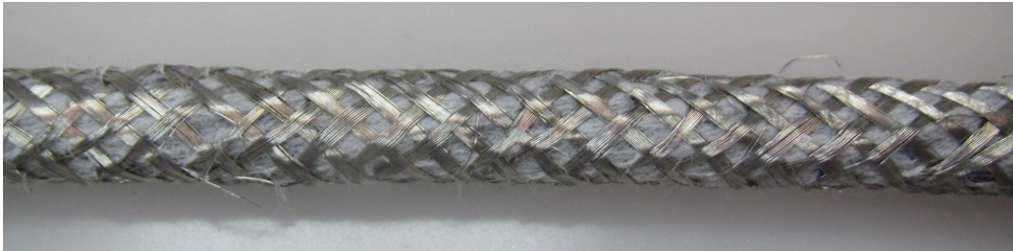


## Evaluation

### Dissection report:

The following pictures show the dissected elements of the cables

#### The condition of the cable no. 1.3 (CF881.15.12) after 12.858.152 strokes



Strokes	12.858.152
Condition outer jacket	O.K.
Condition overall shielding	Single broken wires
Condition banding	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.

Name: **C. Mittelstedt**

Date: **20.11.2018**