

## Test Intention:

In test 3479 we want to investigate the life span of a CF11.002.D in an e-chain with a75mm radius.

## Client:

Name: M. Göllner Team: chainflex® Date: 10.09.2009

## Order-Info:

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

Series / No: CF11.D Installation type: horizontal, short way

Customer test: Yes  No  Development test: Yes  No

## Technical data

## Target & Examination

e-chain® type: 255.07.075.0

Target [strokes]: **Lifespan**

e-chain® radius [mm]: 75

Optical check:

Stroke [m]: 1,2

Function check:

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

Standard measuring:

Cable length [m]: 5,0

AutΩMeS:

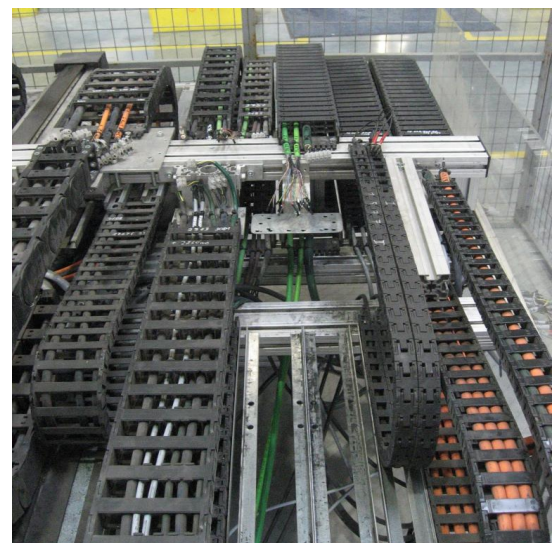
## Experimental setup

### 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 „2m Bahr“. The following picture shows the test structure:



## 2. Cable and hose packages:

No. 1: **1x CF11.002.D** with the cable marking  
01670m igus CHAINFLEX CF11.002.D 3x(2x0,14)/D+2x0,5/D)C CE DESINA RoHS conform  
www.igus.de

No. 2: **1x CF11.002.D** with the cable marking  
01023m igus CHAINFLEX CF11.002.D (3x(2x0,14)C+2x(0,5))C CE DESINA RoHS 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	CF11.002.D	75	10,5	7,1	10,0
2.1	CF11.002.D	75	10,5	7,1	10,0

Cable no.	Cable type	Counter reading		Effectively tested Strokes	Cable okay after ... Strokes
		... mounting	... demounting		
1.1	CF11.002.D	85.447.900	50.992.408	65.544.508	65.544.508
2.1	CF11.002.D	85.447.900	50.992.408	65.544.508	65.544.508

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

Date:	<b>11.09.2009</b>	Name:		Name:	<b>Ch. Mittelstedt</b>
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## Result

### Start Report 11.09.2009:

At the 11.09.2009 we started the test 3479 at counter reading 84.447.900, we will measure the ohmic resistance regularly.

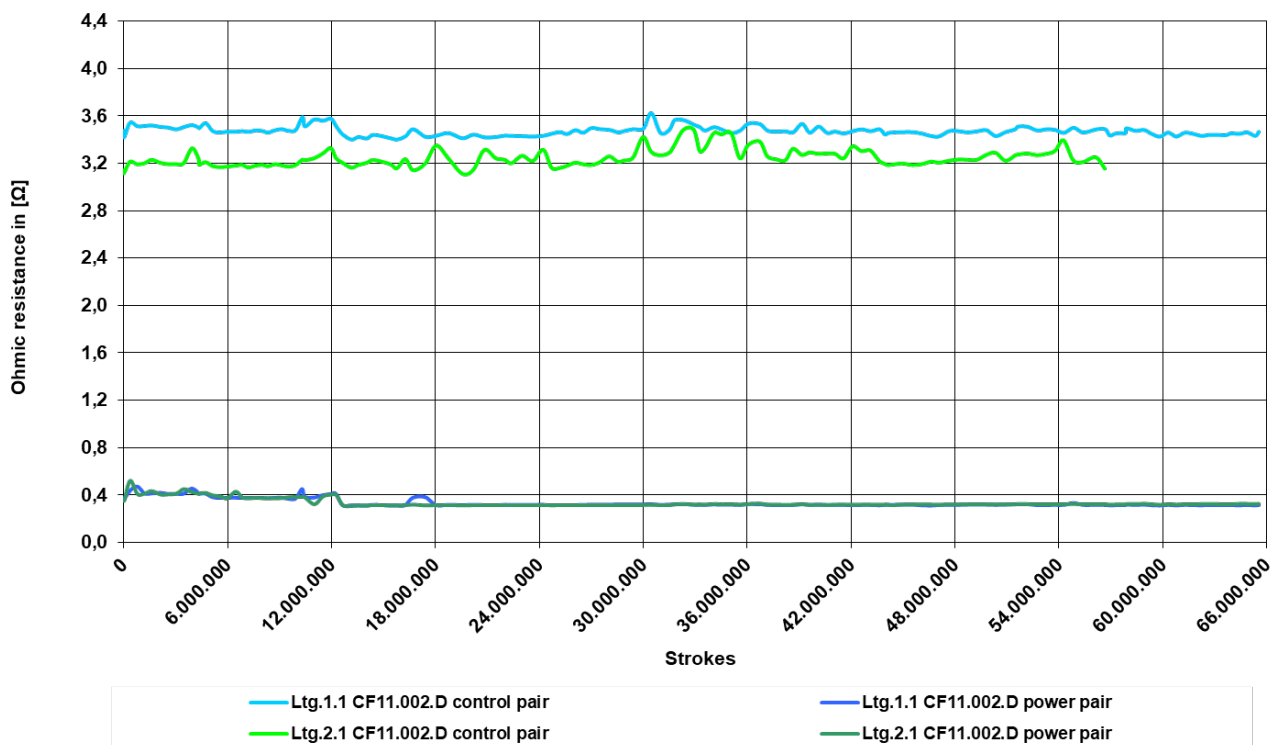
### Interim Report 03.12.2012:

At the 03.12.2012 we demounted the test after 65.544.508 strokes to finalize the test.

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



Trend of the ohmic resistances

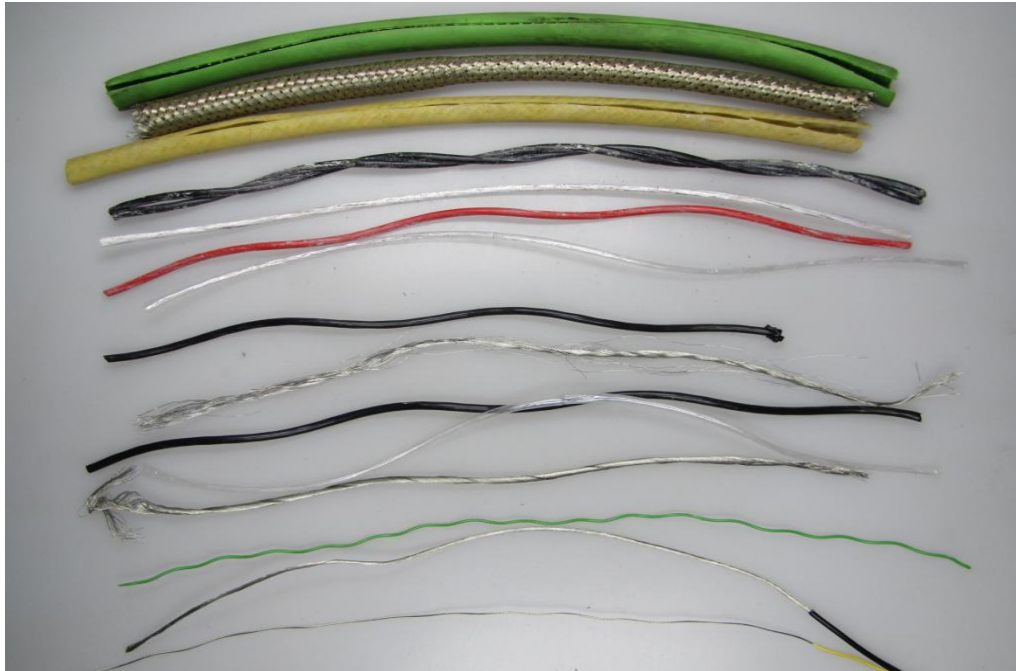


## Evaluation

### Dissection report:

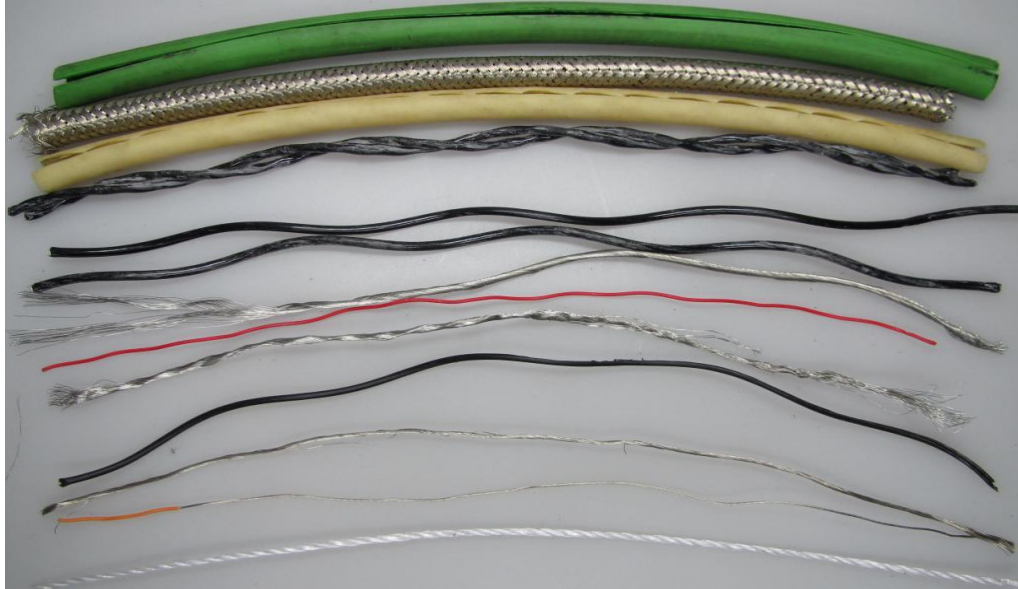
The following pictures show the dissected elements of the cables

#### The condition of the cable no.1.1 (CF11.002.D) after 65.544.508 strokes



Strokes	65.544.508
Condition outer jacket	O.K.
Condition overall shielding	O.K.
Condition inner jacket	O.K.
Condition centre element	O.K.
<b>3x(2x0,14mm<sup>2</sup>)</b>	
Condition element jacket	O.K.
Condition element shielding	O.K.
Condition core insulation	O.K.
<b>2x0,5mm<sup>2</sup></b>	
Condition core insulation	O.K.
Condition conductor	O.K.

## The condition of the cable no. 2.1 (CF11.002.D) after 65.544.508 strokes



Strokes	65.544.508
Condition outer jacket	O.K.
Condition overall shielding	O.K.
Condition inner jacket	O.K.
Condition centre element	O.K.
<b>3x(2x0,14mm<sup>2</sup>)</b>	
Condition element jacket	O.K.
Condition element shielding	O.K.
Condition core insulation	O.K.
<b>2x0,5mm<sup>2</sup></b>	
Condition core insulation	O.K.
Condition conductor	O.K.

Name: **Ch. Mittelstedt**

Date: **03.12.2012**