Test-Report chainflex®

Test No.: 5299

Test Intention:
In this test we want to investigate the lifespan of our CF35.UL.25.04 in an e-chain with a 63mm radius.

Client:		
Name: C. Mittelstedt	Team: chainflex®	Date: 04.06.2018

Order-Info:	
Customer / No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CF35.UL	Installation type: horizontal
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐

Technical data		Target & Examination	
e-chain® type:	E4.28.100.063.0	Target [strokes]:	Lifespan
e-chain® radius [mm]:	63	Optical check:	☒
Stroke [m]:	1,6	Fluke DTX-ELT:	☐
Cable length [m]:	3,0	Standard measuring:	☒
Ambient temperature [°C]:	approx. 25°C	AutΩMeS:	☐

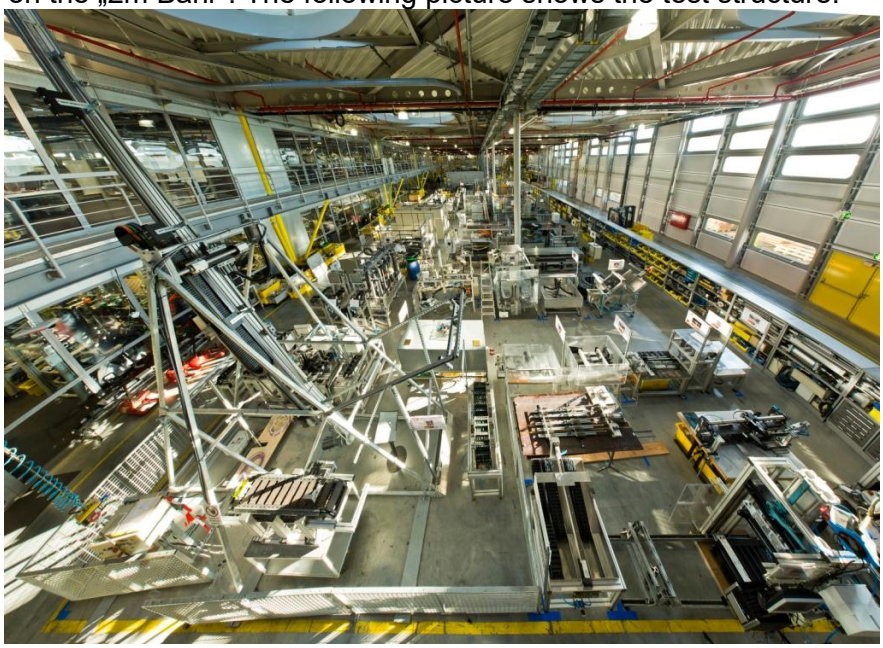
Experimental setup

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



2. Cable and hose packages:

No. 1: **3x CF35.UL.25.04** with the cable marking
04714m igus chainflex CF35.UL.25.04 (4G2,5)C 600/1000V E310776 N cRUus AWM Style 21184 VW-1 AWM I/II A/B 80°C 1000V FT1 DNV-GL 61 938-14 HH EAC / CTP CE N U/BC 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	CF35.UL.25.04	63	10,8	5,8	7,5

Cable no.	Cable type	Counter reading		Effectively tested strokes	Cable okay after … strokes
		… mounting	**… demounting**		
1.1	CF35.UL.25.04	74.990.325	89.033.375	14.043.050	14.043.050
1.2	CF35.UL.25.04	74.990.325			
1.3	CF35.UL.25.04	74.990.325			

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

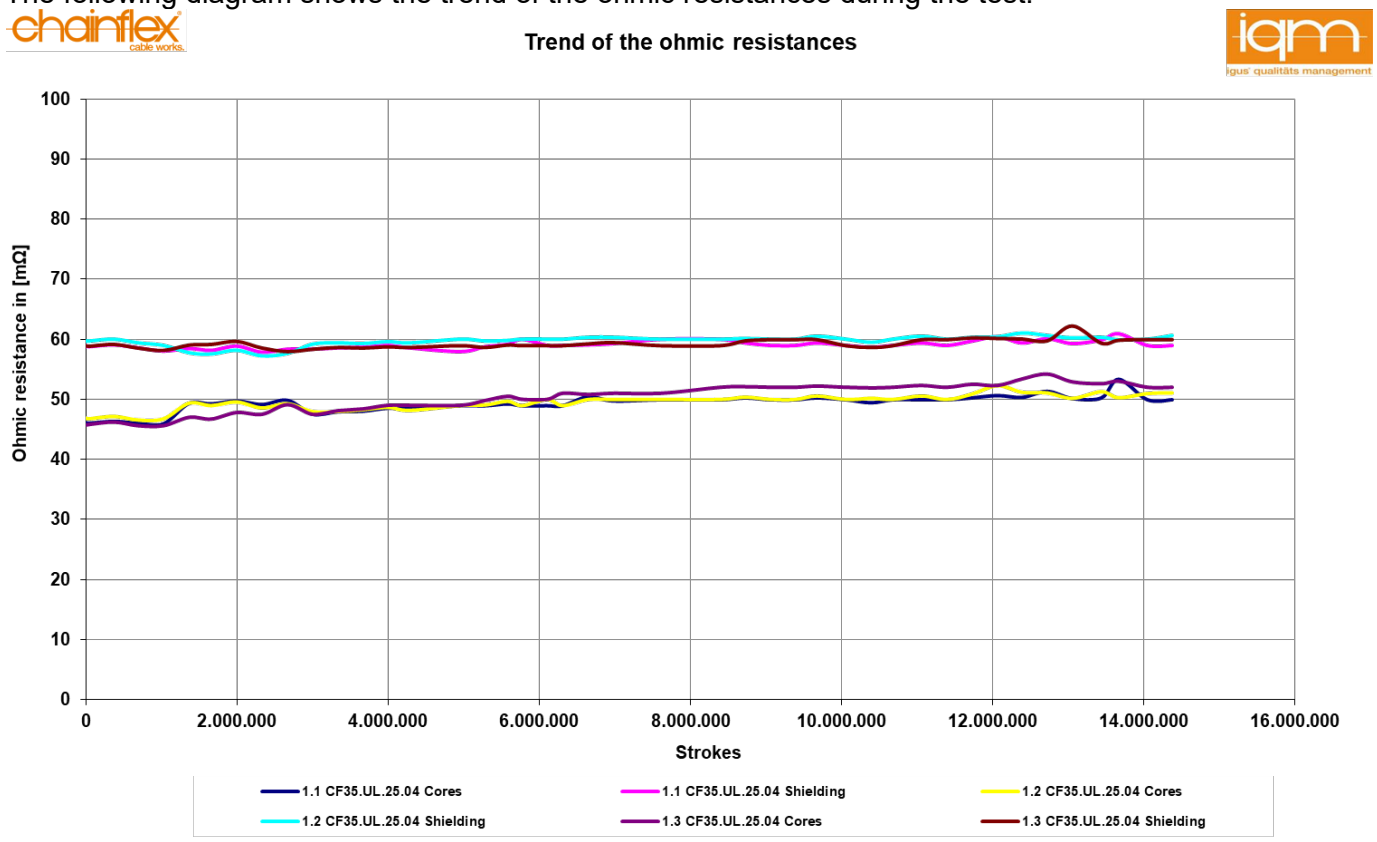
Date:	25.06.2018	Name:		Name:	C. Mittelstedt

Result

Start report 25.06.2018:
At the 25.06.2018 we started the test 5299 at a counter reading of 74.990.325, we will measure the ohmic resistance regularly.

Interim report 09.05.2019:
At the 09.05.2019 we demounted the cables no. 1.1 after 14.043.050 strokes, to check the inner structure of the cable elements.

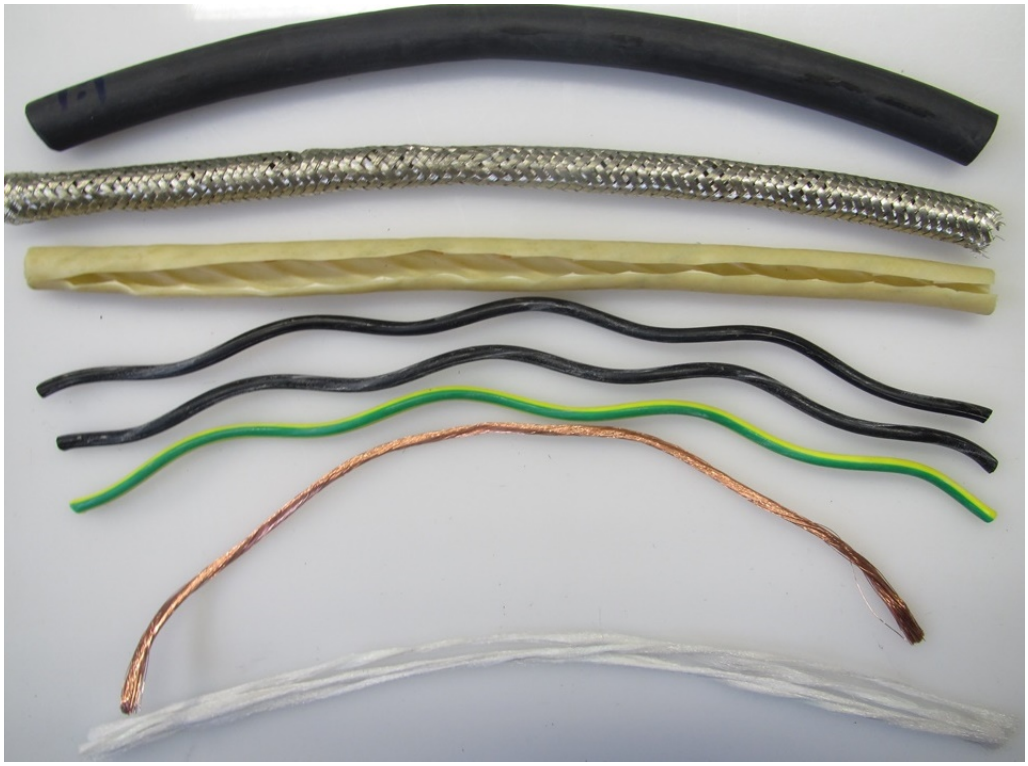
The following diagram shows the trend of the ohmic resistances during the test:



Evaluation

Dissection report:
The following pictures show the dissected elements of the cables

The condition of the cable no. 1.1 (CF35.UL.25.04) after 14.043.050 strokes



Strokes	14.043.050
Condition outer jacket	Slightly abrasion
Condition overall shielding	O.K.
Condition core insulation	O.K.
Condition conductor	O.K.

Name:	P. Piskalla	Date:	12.07.2021