Test-Report chainflex®

Test No.: **3105**

Test Intention:
In test 3105 we want to investigate the lifespan of the new chainflex® LWL cable for torsion applications.

Client:		
Name: Rainer Rössel	Team: chainflex®	Date: 24.09.2008

Order-Info:	
Customer/ No.: igus® GmbH, Spicher Str.1a, 51147 Köln	
Series / No: CFROBOT5	Installation type: ±180°
Customer test: Yes ☐ No ☒	Development test: Yes ☒ No ☐

Technical data		**Target & Examination**	
e-chain® type:	TRC.100.145.0	Cable length [m]:	50,0
e-chain® radius [mm]:	145	Target [cycles]:	**Lifespan**
Cycle [°/m]:	±180	Optical check:	☒
Acceleration **a** [°/s]:	60	Function check:	☒
Velocity **v** [m/s]:	0,5	Standard measuring:	☐
Ambient temperature [°C]:	approx. 25°C	AutΩMeS:	☐

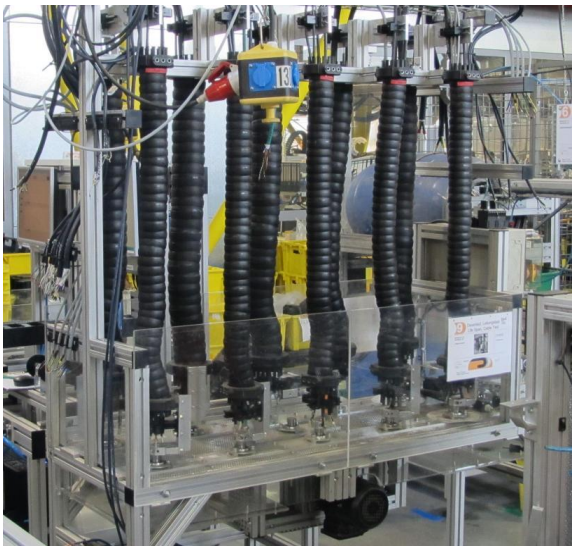
Experimental setup (Sketch, Photo ...)

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:

The following pictures show the test laboratory and test machine, the „10fach-Torsion“.



2. Cable and hose packages:

No. 1: **2x CFROBOT5.501** with the cable marking
igus CHAINFLEX CFROBOT5.501 2x50/125 CE RoHS conform www.igus.de

3. Description of the cable construction:

Standard igus chainflex® catalogue cable.

4. Remarks:

The following chart gives an overview regarding the test parameters:

Cable no.	Cable type	E-chain radius [mm]	Outer diameter [mm]	Torsion [°/m]
1.1	CFROBOT5.501	145	8,2	±180
1.2	CFROBOT5.501	145	8,2	±180

Cable no.	Cable type	Counter reading		Effectively tested cycles	Cable okay after … cycles
		… mounting	… demounting		
1.1	CFROBOT5.501	4.422.361	31.964.575	27.542.214	27.542.214
1.2	CFROBOT5.501	4.422.361	31.964.575	27.542.214	27.542.214

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

Date:	26.10.2008	Name:		Name:	Frank Schorn

Result

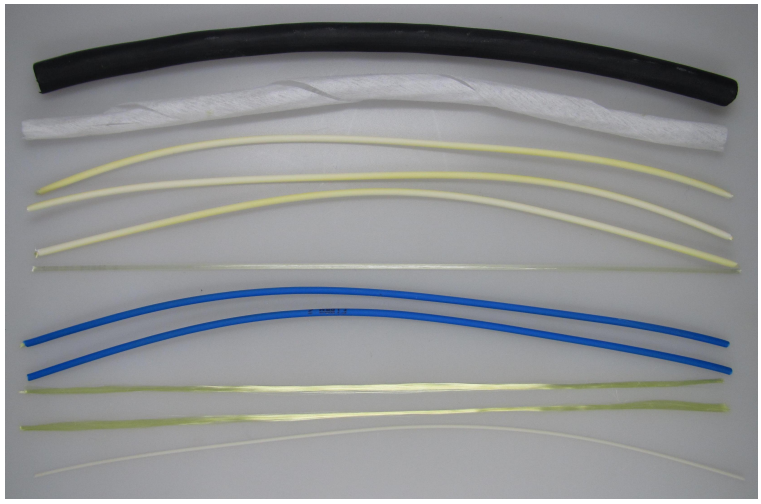
Start Report 27.10.2008:
At the 27.10.2008 we started the test 3105 at counter reading 4.422.361, we will make a function check regularly.

Interim Report 09.02.2012:
At the 09.02.2012 we demounted the cables after 27.542.214 cycles to finalize the test.

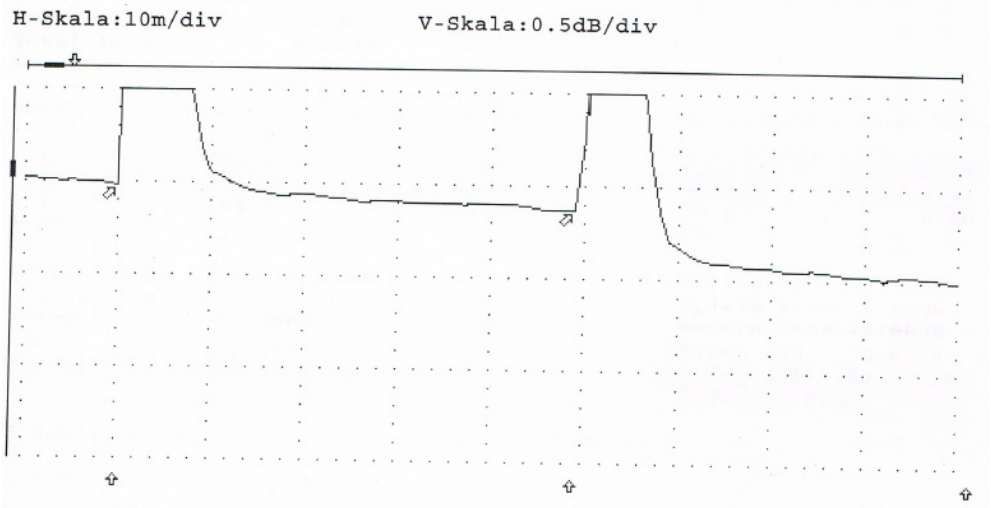
Evaluation

The following pictures show the dissected cable samples

The condition of the cable no. 1.1 (CFROBOT5.501) after 27.542.214 cycles

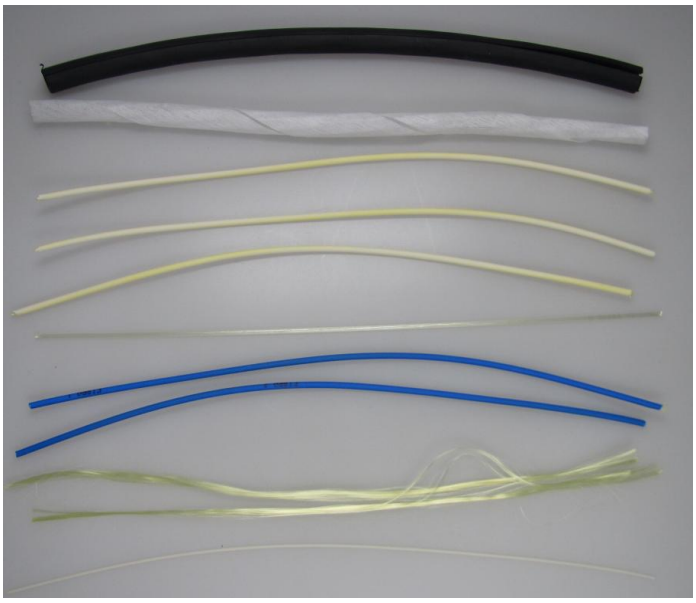


The following occurrence diagram shows exemplarily one direction of fibre no. 1:

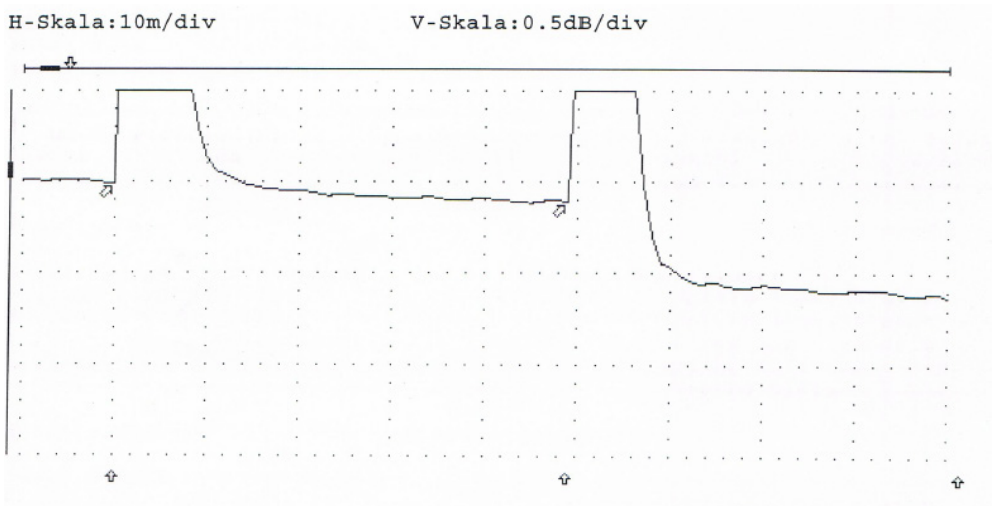


Measuring results after 27.542.214 cycles		Total loss [dB]
CFROBOT5.501	Fibre 1	0,34
CFROBOT5.501	Fibre 2	0,37

The condition of the cable no. 1.2 (CFROBOT5.501) after 27.542.214 cycles



The following occurrence diagram shows exemplarily one direction of fibre no. 1:



Measuring results after 27.542.214 cycles		Total loss [dB]
CFROBOT5.501	Fibre 1	0,31
CFROBOT5.501	Fibre 2	0,42

Name:	Ch. Mittelstedt	Date:	10.08.2012