

## Test Intention:

In test 3841a we want to investigate the condition of the actuator cable from the Fast HIWIN.

## Client:

Name: Christian Mittelstedt      Team: chainflex®      Date: 15.08.2012

## Order-Info:

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

Series / No: CF21.25.15.02.02.UL

Installation type: horizontal, short way

Customer test:      Yes  No

Development test:      Yes  No

## Technical data

## Target & Examination

e-chain® type: E6.29.040.100.0

Cable length [m]: 5,0

e-chain® radius [mm]: 100

Target [Strokes]: **Lifespan**

Stroke [m]: 0,8

Optical check:

Acceleration **a** [m/sec<sup>2</sup>]: 3,5

Function check:

Velocity **v** [m/s]: 2,0

Standard measuring:

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

AutΩMeS:

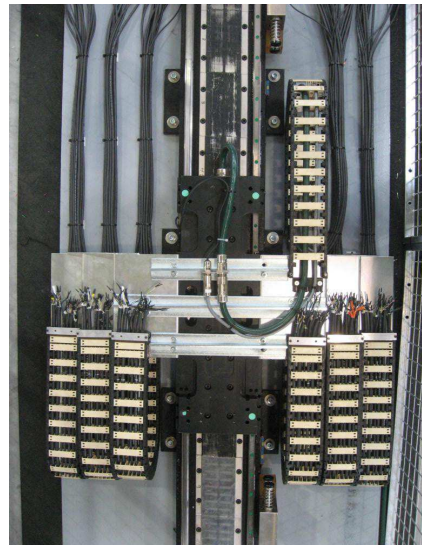
## Experimental setup (Sketch, Photo ...)

### 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:

This test is built up on the „Fast HIWIN“. The following picture shows the test structure:



## 2. Cable and hose packages:

No. 1: **1x CF21.25.15.02.02.UL** with the cable marking  
*igus CHAINFLEX CF21.25.15.02.02.UL 4x2,5+2x(2x1,5) E48408 CRJus AWM Style 2570 AWM  
 I/II A/B 80 °C 1000V FT1 CE*

## 3. Description of the cable construction:

Actuator cable for the Fast HIWIN  
 Standard igus chainflex® catalogue cable. Construction details see catalogue 04/ 2010 page 170 and follow.

## 4. Remarks:

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 |
|-----------|---------------------|---------------------|---------------------|---------------------|--------------------------|
| 1.1       | CF21.25.15.02.02.UL | 100                 | 16,3                | 6,1                 | 7,5                      |

| Cable no. | Cable type          | Counter reading |                | Effectively tested Strokes | Cable okay after ... Strokes |
|-----------|---------------------|-----------------|----------------|----------------------------|------------------------------|
|           |                     | ... mounting    | ... demounting |                            |                              |
| 1.1       | CF21.25.15.02.02.UL | 0               | 53.759.440     | 53.759.440                 | 53.759.440                   |

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

|       |                   |       |  |       |                        |
|-------|-------------------|-------|--|-------|------------------------|
| Date: | <b>14.10.2010</b> | Name: |  | Name: | <b>Ch. Mittelstedt</b> |
|-------|-------------------|-------|--|-------|------------------------|

## **Result**

### **Start report 14.10.2010**

At the 14.10.2010 we started the test 3841 at counter reading 0

### **Interim Report 14.06.2012:**

At the 14.06.2012 we demounted the CF21.UL after 53.759.440 strokes, during the modification of the test machine.

## Evaluation

### Dissection report:

The following pictures show the dissected elements of the cable

### The condition of the cable no. 1.1 (CF21.25.15.02.02.UL) after 53.759.440 strokes



|                             |            |
|-----------------------------|------------|
| Strokes                     | 53.759.440 |
| Condition outer jacket      | Ok         |
| Condition overall shielding | Ok         |
| Condition inner jacket      | Ok         |
| Condition core insulation   | Ok         |
| Condition conductor         | Ok         |
| Condition element shielding | Ok         |
| Condition element jacket    | Ok         |
| Condition element conductor | Ok         |

Name: **Ch. Mittelstedt**

Date: **16.08.2012**

QM-2-201-F/  
Ch. Mittelstedt/Versuch/11.10.2011

**For internal  
use only**

The managing data show the results of the accomplished examinations. With all data it still acts neither around one or more warranties of certain characteristics around one or more warranties regarding the suitability of a product for a certain targeted application, since the examinations on laboratory conditions took place. The warranty of certain characteristics of the products and/or their suitability for a certain application requires writing in the confirmation of order. Finally we recommend user-specific measurements under genuine operating conditions.

Original → CF D&T  
Copy 1 → Test Lab  
Copy 2 → Client