

# chainflex<sup>®</sup> cable guarantee



# igus<sup>®</sup>.eu

[www.chainflex.eu](http://www.chainflex.eu) ... plastics for longer life<sup>®</sup> ...

# chainflex® cable guarantee ...

**We are confident to give a guarantee because...**

**...we conduct more than 2 billion test strokes and 1.4 billion electrical measurements per year.**

Our customers often give system guarantees to end users give complete confidence in their safety and reliability.

However, this poses a commercial risk for system manufacturers. With our guarantee we now offer security to system manufacturers. This guarantee is different from a standard guarantee. In Germany, quality and durability guarantees are used.

*"In the case of guarantee claim, the buyer is entitled to the rights under the guarantee as per the terms set down in the guarantee statement vis-à-vis the person who has given the guarantee, regardless of the legal claims (Section 443 I BGB)."*

Many customers do not need an extended warranty period but instead want a binding statement about lifetime. We fully support this by offering our chainflex® cable guarantee.

## **Predictable reliability**

Our customer ask for statements about lifetime. For over 20 years, we have been conducting tests in what is now the largest test laboratory for cables and energy chains®. Based on our series of tests, we are now able to offer clear statements allowing cable users to plan more effectively with regard to service life.



**Analysis of the measuring data: igus® "AutQMeS" system**



**Quality assurance: constant batch testing to ensure quality**

# ... unique!

## Double stroke selection tables – guaranteed service life

All chainflex cable series have a "lifetime calculation table expressed in double strokes". This gives the technical parameters for using the cable. For the guarantee to be valid, the cables must be used in accordance with the parameters shown in the table.

**1** Temperature, from/to [°C]

**2** v max. unsupported/gliding [m/s]

**3** a max. [m/s<sup>2</sup>]

**4** Travel [m]

**5** Min. bending radius [factor x d] at 5, 7.5 or 10 million double strokes

Example: Selection table "guaranteed lifetime" for CF9 cable

Double strokes*		<b>3</b>	<b>4</b>	5 million	7.5 million	10 million
Temperature, from/to [°C]	v max. [m/s] Unsupported    Gliding	a max. [m/s <sup>2</sup> ]	Travel [m]	R min. [Factor x d]	R min. [Factor x d]	R min. [Factor x d]
-35 / -25				6,8	7,5	8,5
<b>1</b> -25 / +90	10 <b>2</b> 6	100	> 400	5	6	<b>5</b> 7
+90 / +100				6,8	7,5	8,5

\* Higher number of double strokes possible

### Example:

A cable with a diameter of 12 mm in an energy chain® with a radius of 100 mm results in a bending factor of 8.3 (100 mm/12 mm).

To calculate the guaranteed service life identify the technical parameters shown in areas 1-4. Area 5 shows that because the effective bending factor of 8.3 is above the limit of 7, the guaranteed service life is 10 million double strokes. If the temperature is higher or lower the guaranteed service life falls to 7.5 million double strokes.

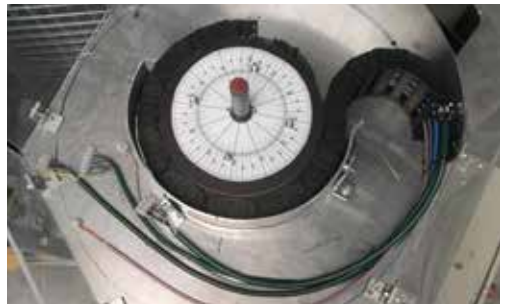
This very clear statement enables you to specify the correct cable for your application.

# igus® test labs

1,750 m<sup>2</sup> lab... more than 700 parallel cable tests...  
2 billion test cycles... reliability through experience...



All types of chainflex® cables are tested in moving applications in e-chains®



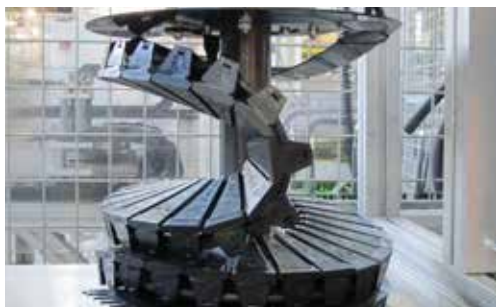
Special designs for special solutions



**Tests for complex movements:** simulation of complex motions in robot applications



**Media tests:** test of the durability in adverse chemical effects in motion



**Rotating motion tests:** demanding chain applications with small radii



**Cold tests** on cables and energy chains at -40°C

# Technology training

Training at your company ...



Technical training



Content from other product areas such as readychain® – assembled e-chain® modules



Tutorials on online tools (e.g. cable life time calculator, product finders etc.)



Training certificate for your employees

We will come to your premises and train your employees free of charge.

Subjects include cable installation, inspection and optimisation. In this way we work with you to achieve continuous improvements and find the best solutions for your business using igus products. Employees from the purchasing, engineering, quality and commissioning are welcome.

Technical training can be customised to include any required subjects. We would also be happy to combine the training with an in-house exhibition.

# Clear savings and benefits

Highly diverse product range offers cost-optimised solutions

PUR servo cable – 7.5 x d



Approx. 32% saving



PVC servo cable – 7.5 x d



Approx. 26% saving



PVC servo cable – 10 x d



Approx. 33% saving



PVC servo cable – 15 x d



The large product range makes it easy to get exactly the product you require. The combination of the clearly stated service life information and the guarantee enables you to minimise risk.

## Example:

In space restricted high cycling applications a high quality PUR cable with a bend radius of 7.5 x d and guaranteed service life of many millions of double strokes may be required. If PVC can be used instead of PUR a saving of around 30% is possible. If the bend radius can be increased to 10 x d a further saving of around 25% is achieved. If an even larger radius can be used then a further saving in excess of 30% can be possible.

Ultimately what matters is to achieve the target lifetime at the best possible price.

# igus®.eu/8pm

Ordering and deliveries weekdays from 7.00 am to 8.00 pm, Saturday from 8.00 am to 12.00 noon. No minimum order quantities, no surcharges. Fast delivery.

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Buy online – 24h!

# /9001.2008 /16949:2009

igus® is certified to DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of energy chains® with cables and harnessing, as well as plastic bearings.

# /readychain®

Also ask about fully harnesses and preassembled readychains® and quickly increase your cash-flow and profits. [www.readychain.eu](http://www.readychain.eu)

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Subject to technical alterations. MAT0072184.20 Issue 03/2015

# chainflex®