

INSTITUT FÜR FÖRDERTECHNIK UND LOGISTIK

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Stuttgart, 02/20/09

Testing and Certification report

Ordering party : Indra Pongpanich Co. Ltd.
74/29 Moo 10., Bangbon 3 Road
Bangbon, Bangkok 10150
THAILAND

Purpose : Testing and certification of a low stretch kernmantel rope according DIN EN 1891:1998 and UIAA 107

Date of instruction : 02/02/09

Date of goods receiving : 02/03/09

Order no. : 2879

1. Object of investigation

The low stretch kernmantel rope with the identification number

111200 – Static Rope 11 mm

is to be tested as a low stretch kernmantel rope, type A with reference to DIN EN 1891:1998 and UIAA 107.

2. Preparation of samples

The low stretch kernmantel rope identified above was properly conditioned prior to all tests. The conditioning was carried out exactly as described in DIN EN 1891:1998, 5.2.

3. Testing results

All testings carried out were performed exactly as described in DIN EN 1891:1998 and UIAA 107. The detailed results of these testings can be seen in the attached testing journal.

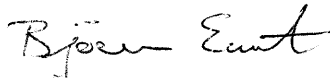
4. Summary

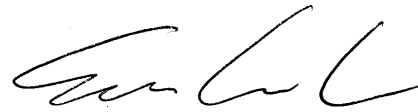
The low stretch kernmantel rope with identification number

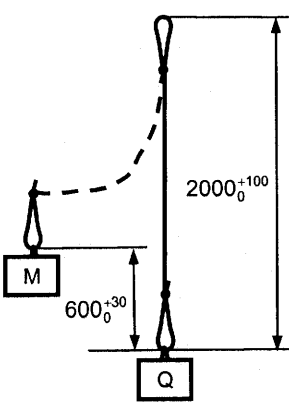
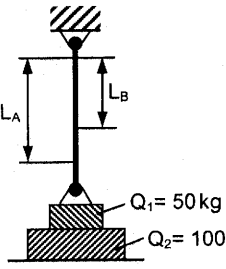
111200 – Static Rope 11 mm

fully and in whole satisfies all requirements of DIN EN 1891:1998 and UIAA 107 for use as a low stretch kernmantel rope, type A.

Stuttgart (Germany), 02/20/09


Dipl.-Ing. B. Ernst


Dipl.-Ing. S. Winter

Institut für Fördertechnik und Logistik Universität Stuttgart	Low stretch kern- mantel rope in accordance to EN 1891/6.98 / UIAA 107	Rope-No.: 1864											
		Rope designation.: 111200 Static Rope - 11mm											
Client: INDRA PONGPANICH	Date of order.: 2009/02/02	Date of Entrance: 09/02/02											
Rope manufacturer: INDRA PONGPANICH CO.,LTD		Entrance No.: 2879											
Rope diameter d= 11,5 mm	Type A: <input checked="" type="checkbox"/>	Type B: <input type="checkbox"/>											
Rope colour: white	Mass per unit Rope: M = 77,18 g/m Mantle: S_P = 43,6 % Core: C = 56,4 %												
Descriptor yarn/ mantle: 2 yarns black													
Descriptor yarn/ core: 1 yarn purple													
Climatisation: <input checked="" type="checkbox"/> Norm 20°C / 65%rel.	Construction: Kern-Mantel	Material: PA											
Static strength <ul style="list-style-type: none"> without terminations $F_B = 30,3$ kN Soll: Typ A = 22 kN Typ B = 18 kN with terminations, knots $F_B = 22,6$ kN with stitched terminations $F_B = --$ kN Target: Type A = 3 min/15 kN Type B = 3 min/12 kN 	Drop test: 	<table border="1"> <tr> <td rowspan="2">Fall arrest peak force F_f in kN Target: ≤ 6 kN</td> <td>Sample 1</td> <td>Sample 2 with stitched terminations</td> </tr> <tr> <td>5,3</td> <td>--</td> </tr> <tr> <td>Number of drops without breakage</td> <td>22</td> <td>--</td> </tr> <tr> <td>Breakage</td> <td>knot</td> <td>knot</td> </tr> </table>	Fall arrest peak force F_f in kN Target: ≤ 6 kN	Sample 1	Sample 2 with stitched terminations	5,3	--	Number of drops without breakage	22	--	Breakage	knot	knot
Fall arrest peak force F_f in kN Target: ≤ 6 kN	Sample 1	Sample 2 with stitched terminations											
	5,3	--											
Number of drops without breakage	22	--											
Breakage	knot	knot											
Elongation		Shrinkage											
 <ol style="list-style-type: none"> Pull the rope up to $Q_1 = 50$ kg 5 min holding time L_B marking the rope Pull the rope up to $Q_1 + Q_2 = 150$ kg without shock 5 min holding time with $Q_1 + Q_2 = 150$ kg L_B measure the distance 	<table border="1"> <tr> <td>$L_B = 1029$ mm</td> <td>Sample 1</td> </tr> <tr> <td>$E = 2,9$ %</td> <td>L_A 1000 mm</td> </tr> <tr> <td>Target: ≤ 5 %</td> <td>L_B 968 mm</td> </tr> <tr> <td></td> <td>R 3,2 %</td> </tr> </table>	$L_B = 1029$ mm	Sample 1	$E = 2,9$ %	L_A 1000 mm	Target: ≤ 5 %	L_B 968 mm		R 3,2 %				
$L_B = 1029$ mm	Sample 1												
$E = 2,9$ %	L_A 1000 mm												
Target: ≤ 5 %	L_B 968 mm												
	R 3,2 %												
Knotability PL = 2 m	Sheath slippage												
<ol style="list-style-type: none"> Pull the knot with 10 kg for 1 minute Reduce the pull down to 1 kg. Measure the inside diameter of the knot 	Sample 1: $V = -6$ mm $S_s = -0,3$ %												
Inside diameter of the knot in mm:	Target: S_s Type A ≤ 20 mm + 10 (D-9) mm Type B ≤ 15 mm												
<table border="1"> <tr> <th>Knot 1</th> <th>Knot 2</th> <th>Average</th> <th>K = Aver./d</th> <th>Targ.</th> </tr> <tr> <td>10,5</td> <td>11,0</td> <td>10,75</td> <td>0,9</td> <td>$\leq 1,1$</td> </tr> </table>	Knot 1	Knot 2	Average	K = Aver./d	Targ.	10,5	11,0	10,75	0,9	$\leq 1,1$			
Knot 1	Knot 2	Average	K = Aver./d	Targ.									
10,5	11,0	10,75	0,9	$\leq 1,1$									
The rope performs the conditions of the EN 1891/6.98 and UIAA 107 <input checked="" type="checkbox"/> yes <input type="checkbox"/> no													
Date: 09/02/02	Tester: Bakschan	Date: <i>02/20/08</i> Resp. Engineer: <i>Björn Ewert</i>											