File E234162
Project 02CA9135

2003-08-20

REPORT

On

POSITIONING DEVICES

EGLI FISCHER & CO KG
Zurich, Switzerland

DESCRIPTION

PRODUCT COVERED:

USL Positioning Devices, Pipe Clamps, designated "Clic", followed by 1 to 3 digits representing the device size.

Note: USL - Indicates Investigated to US Standard for Positioning Devices, UL 1565, Fourth Edition.

GENERAL DESCRIPTION OF DEVICE:

The products covered by this report are cable pipe clamps intended for bundling and securement of cables and pipes.

GENERAL DESCRIPTION OF INVESTIGATION (NOT FOR FIELD REPRESENTATIVE USE):

Samples of the above cable clamps were subjected to tensile loading tests before and after various conditionings including environmental cycling and UV and water immersion.

RATINGS:

All clamps covered by this Report are rated 75°C, for indoor/[redacted] use and for the load rating as specified below.

TABLE I: Rated loads

Clic Size	Rated Maximum Load, N(lbs)	Clic Size	Rated Maximum Load, N (lbs)
8	450 (100)	40	1150 (254)
10	500 (110)	47	1300 (287)
12	550 (121)	51	1400 (309)
15	600 (132)	59	1600 (353)
17	650 (143)	63	1800 (395)
20	700 (147)	71	2200 (485)
22	750 (150)	80	2600 (575)
25	850 (187)	90	3000 (660)
28	900 (208)	101	3500 (770)
32	1000 (220)	113	4000 (880)
36	1100 (243)		

TEST RECORD NO. 2

GENERAL:

Test results relate only to the items tested.

SAMPLES:

Positioning devices designated "Clic" were submitted by the manufacturer and subjected to the following test program.

The test program was in accordance with UL Standard for Positioning Devices, UL 1565, Fourth edition.

TEST PROGRAM:

The following tests were considered necessary to add the use in air handling spaces.

Smoke and Heat Release Test

The above test Methods and Results were considered acceptable in accordance with UL 1565, the Standard for Wire Positioning Devices.

TEST RECORD SUMMARY:

The results of this investigation indicate that the products evaluated comply with applicable requirements and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Test Record by: Reviewed by:

GRACE D. MIJAREZ
Project Handler II

SHANNA VONDRAN
Senior Project Engineer

CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are judged to be eligible for Listing and Follow-Up Service. The manufacturer is authorized to use the UL Mark on such products which comply with the Follow-Up Service Procedure and any other applicable requirements of Underwriters Laboratories Inc. Only those products which properly bear the UL Mark are considered as Listed by Underwriters Laboratories Inc.

Report by:

J. P. ALBERTI
Staff Engineer

Reviewed by:

J. R. THIES
Staff Engineer

SPECIAL INSTRUCTIONS

FIELD REPRESENTATIVE:

GENERAL

Determine that the positioning devices are being marked in accordance with the "Marking" section of this Procedure and fabricated from the materials described in the "Construction Details" in this Procedure. Only those materials, and other details specified therein, may be used in the manufacture of positioning devices bearing the Listing Marking.

Technical data sheet clic® 8 – 64 mm

1. Manufacturer

Egli, Fischer & Co. Ltd.
Gotthardstrasse 6
P.O. Box
8022 Zurich
Switzerland

2. Product description

One-piece, self locking plastic pipe clamp for the indoor area

3. Application areas

- **Installation in the internal area**
- **Chemical industry**
- **Electrical installations (tubular cable protection)**
- **Sanitary installation (cold and hot water pipes)**
- **Swimming pools**

4. Features

- **Locking system without additional screws**
- **Clamping range 8 – 64 mm (0.31" to 2.51")**
- **Mounting with metrical or wood screws**
- **Very little moisture absorption**
- **Approved by KIWA®, UL® and IAPMO R&T/UPC®**

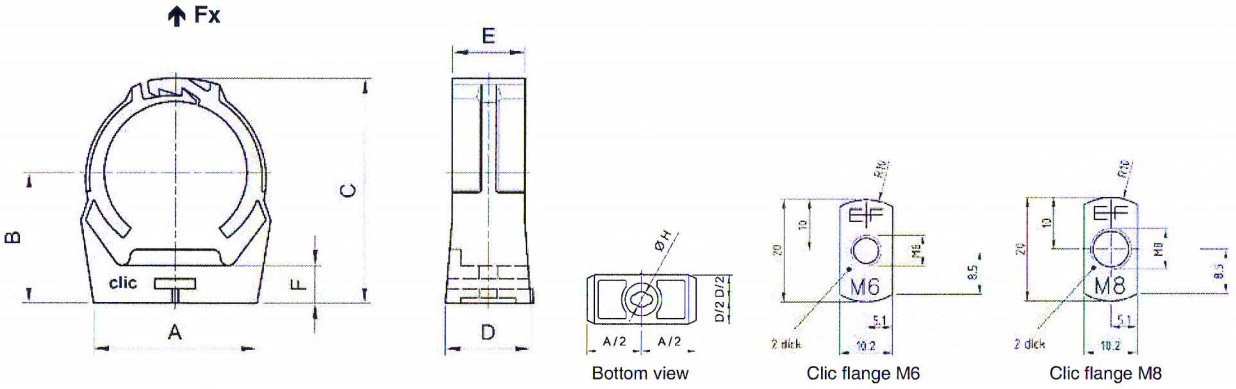
5. Technical data

Material quality	Polymerblend
Density at +20 °C	1,21 g/cm^3
Elongation at yield	5 %
E-Modulus in tension	2100 MPa
Water absorption at 23 °C	0,50 %
Moisture absorbtion (23 °C / 50 % R.H.)	0,15 %
Shore hardness D	82
Dielectric strength	33 kV/mm
Weather proof	–25 °C up to +90 °C
Mounting temperature	down to –10 °C
Maximum service temperature short term	+120 °C
Maximum service temperature long term	+75 to +90 °C
Flammability	HB according to UL 94
Fire class	B2 according to DIN 4102
Halogen	halogen free as per IEC 754-2
Petrol, diesel, oil	resistant
Corrosion	resistant
Weather-proof	no decomposition with correct use
UV	UV-stabilized as per ISO 4892-2
Standard colours	light grey (RAL 7035)
Special colours	on request

6. CLIC product choice

Type	Steel		Copper	Cast iron	PE	PVC	Cable-ducts metric measures	Coaxial cable	Certification			Breaking load [N]
	mm	inch	mm	mm	mm	mm	M	inch	Kiwa	UPC	UL	Fx**
8							8			✓	✓	500
10			10				10		✓	✓	✓	550
12	13,5	1/4"	12				12		✓	✓	✓	550
15			15			16	16	1/2"	✓	✓	✓	650
17	17,2	3/8"	18						✓	✓	✓	700
20	21,3	1/2"				20	20	5/8"	✓	✓	✓	750
22			22						✓	✓	✓	800
25	26,9	3/4"				25	25		✓	✓	✓	900
28			28					7/8"	✓	✓	✓	950
32	33,7	1"	35		32	32	32		✓	✓	✓	1100
36								1 ¼"	✓	✓	✓	1200
40	42,4	1 ¼"	42		40		40		✓	✓	✓	1350
47	48,3	1 ½"		48	50	50	50	1 ⅝"	✓	✓	✓	1400
51			54						✓	✓	✓	1500
59	60,3	2"	64			63				✓	✓	1600

** with screw DIN 96 at +20 °C, safety factor must be considered!



Bottom view | Clic flange M6 | Clic flange M8

Type	Clamping range [mm]		A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	H*		Breaking load [N]
	min.	max.							wood [mm]	metric	Fx**
8	7,8	9,5	17,1	17,5	26,4	17,1	14,5	7,5	3,5	M6	500
10	9,5	11,8	17,1	17,5	26,2	17,1	14,5	7,5	3,5	M6	550
12	11,8	14,3	20,2	19,5	28,3	17,2	14,5	7,5	3,5	M6	550
15	14,3	16,8	20,6	18,8	32,0	17,1	14,5	7,5	3,5	M6	650
17	16,8	19,5	22,5	23,7	35,4	19,5	16,0	7,8	4,5	M6	700
20	19,5	21,8	24,8	24,9	39,4	20,0	16,3	7,8	4,5	M6	750
22	21,8	24,8	27,8	26,0	42,0	20,0	16,5	7,8	4,5	M6	800
25	24,8	27,8	30,4	28,0	45,1	20,0	17,0	8,8	4,5	M6	900
28	27,8	31,2	33,4	31,7	48,9	20,2	17,0	8,8	4,5	M6	950
32	31,2	35,5	38,0	34,5	54,4	21,0	17,5	9,0	4,5	M6 / M8	1100
36	35,5	39,5	41,8	36,5	59,4	21,0	18,0	9,1	4,5	M6 / M8	1200
40	39,5	43,5	46,2	38,2	64,2	21,0	18,6	9,4	4,5	M6 / M8	1350
47	46,5	50,5	53,5	43,0	72,8	22,0	19,5	9,8	4,5	M6 / M8	1400
51	50,5	55,5	58,6	46,8	78,7	23,0	20,0	10,2	4,5	M6 / M8	1500
59	58,5	64,0	66,3	52,0	88,2	23,2	21,0	10,7	4,5	M6 / M8	1600

* H = screw diameter; wood screw (wood) / metal screw (metric)

** with screw DIN 96 at +20 °C, safety factor must be considered!

9. Chemical resistance

Material	Concentration	Resistance at +23 °C		Material	Concentration	Resistance at +23 °C
Acetic acid	5%	●●		Heating oil		●●●
Acetone		●		Heptane, Hexane		●●●
Acetylene		●●●		Hydraulic oil		●●
Ammonia	liquid	●●		Hydrochloric acid	10%	●●●
Benzine		●●●		Hydrogen fluoride		●●
Brake fluid		●●●		Inert gas		●●●
Butane		●●●		Iso-octane		●●●
Butanol		●●		Isopropanol		●●●
Butyl acetate		●●		Ketone aliphatic		●
Carbon monoxide		●●●		Lacquer		●●●
Carbon tetrachloride		●		Methanol		●●●
Carbonic acid		●●●		Methylene chloride		●
Caustic potash	10%	●		Mineral oil		●●●
Chlorbenzene		●		Naphthaline		●●
Chlorine gas		●		Nitric acid	10%	●●
Chloroform		●		Nitrohydrochloric acid		●
Citric acid	10%	●●●		Oleum		●
Decalin		●●		Ozone		●
Dibutylphthalate		●●		Paraffin		●●●
Diesel fuel		●●●		Perchloric acid		●
Dimethyl formamide		●		Petroleum ether		●●●
Dimethylether		●●		Phosphoric acid	10%	●●●
Dioctylphthalate		●●		Potassium hypochlorite		●●●
Dioxan		●		Silicon oils		●●●
Engine oil		●●●		Sodium hydroxide	10%	●
Ethanol		●●●		Soldering water		●●
Ethyl acetate		●●		Sulphuric acid	10%	●●●
Ethyl ether		●●●		Styrol		●●
Ethylene oxide		●●●		Tetrahydrofurene		●
Fatty acid		●●		Toluene		●●
Fatty alcohol		●●●		Transmission oil		●●●
Formic acid	10%	●●●		Trichlorethane		●
Glycerine		●●●		Trichlorethylene		●
Glycol		●●●		Turpentine		●●
Glysantine		●●●		Turpentine oil replacement		●●
				Xylene		●●

●●● resistant, none or little change of weight
●● limited resistance, contact short-term possible
● not resistant

The recommendations and data given are based on our experience to date. No liability can be assumed in connection with their usage and processing.

For technical advice please contact our sales engineers. We will be happy to provide further assistance.

Technical data sheet clic® 63 – 127 mm

1. Manufacturer

Egli, Fischer & Co. Ltd.
Gotthardstrasse 6
P.O. Box
8022 Zurich
Switzerland

2. Product description

One-piece, self locking plastic pipe clamp for the indoor area

3. Application areas

- **Installation in the internal area**
- **Chemical industry**
- **Electrical installations (tubular cable protection)**
- **Sanitary installation (cold and hot water pipes)**
- **Swimming pools**

4. Features

- **Locking system without additional screws**
- **Clamping range 63 – 127 mm (2.51" to 4")**
- **Mounting with metrical or wood screws**
- **Very little moisture absorption**
- **Approved by KIWA®, UL® and IAPMO R&T/UPC® (in process)**

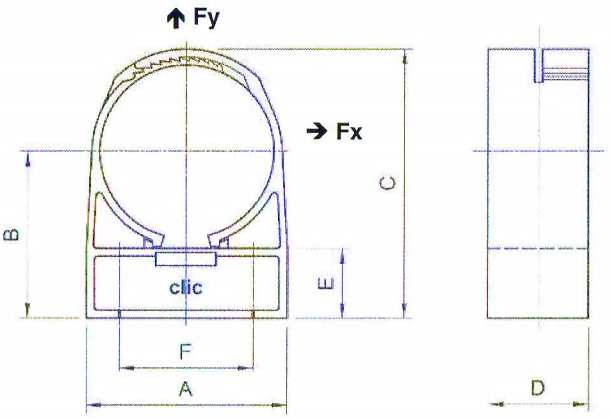
5. Technical data

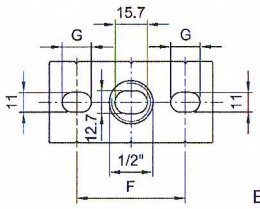
Material quality	High quality PP homopolymere
Density at +20 °C	0,91 g/cm^3
Tensile strain at yield	9 %
E-Modulus in tension	1500 MPa
Hardness, Rockwell	98
Weather proof	0 °C up to +90 °C
Maximum service temperature short term	+130 °C
Maximum service temperature long term	+90 °C
Melt temperature	+230 °C
Halogen	halogen free as per IEC 754-2
Petrol, diesel, oil	resistant
Corrosion	resistant
UV	non resistant
Standard colours	light grey (RAL 7035)
Special colours	on request

6. CLIC product information

Type	Steel		Copper	Cast iron	PE	PVC	Cable ducts metric measures	Coaxial cable	Certification		Breaking load [N]	
	mm	inch	mm	mm	mm	mm		inch	UPC	UL	Fy*	Fx*
63					63		63		✓	✓	1440	800
71	76,1	2 ½"	76	78	75	75			✓	✓	1760	1040
80	88,9	3"	89						✓	✓	2080	1280
90					90				✓	✓	2400	1520
101			108	110	110	110			✓	✓	2800	1760
113	114,3	4"	114		125	125			✓	✓	3200	2000

* with 2 screws DIN 571 at +20 °C, safety factor must be considered!





Bottom view

Type	Clamping range [mm]		A	B	C	D	E	F	G	Breaking load [N]	
	min.	max.	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	Fy*	Fx*
63	63	71	78	72	115	40	31	52	11	1440	800
71	71	80	87	77	124	40	31	58	15	1760	1040
80	80	90	98	83	136	40	31	66	16	2080	1280
90	90	101	110	89	148	40	31	76	16	2400	1520
101	101	113	124	96	163	40	31	86	17	2800	1760
113	113	127	139	105	180	40	31	102	17	3200	2000

* with 2 screws Ø 8 mm DIN 571 at +20 °C, safety factor must be considered!

7. CLIC mounting examples