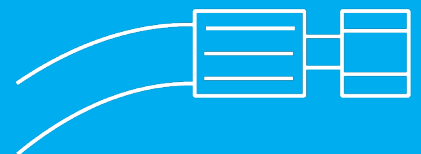


***F*flexion™**

FLEXION ENDURO Isobaric

**Multispiral Hose**

**ERIKS**



## Benefits of the **FLEXION ENDURO Isobaric** hose range standard ISO 18752

Traditional hydraulic multispiral hoses follow the well known international standards like EN 856 4SP/4SH and SAE 100R13/100R15. These standards have strict dimensional diameter tolerances and dictate the type and number of reinforcement layers. The more recent international standard ISO 18752 leaves out these restrictions and allows the development of more compact and lighter hoses, leading to strongly improved performance.



## ENDURO Isobaric multispiral hose

Clear benefits from the new hose constructions are;

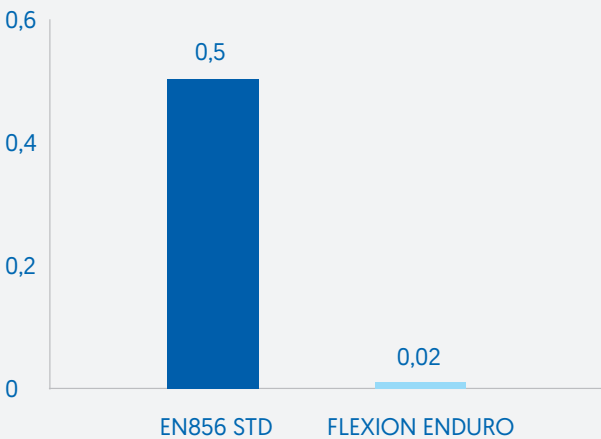
- More compact, lighter weight per meter
- Smaller bend radius can be applied
- Uses less meters on a machine at a lower weight/meter; more economical and double weight saving
- Improved flexibility for easy handling and easy installation
- Overall; allows for lower weight, compact and economical hydraulic equipment designs, without compromising technical performance – on the contrary

For our FLEXION assortment we have decided to add these hoses to our upgraded ENDURO family of “problem solvers”, offering the best field service life even under extremely harsh conditions;

- Cover abrasion resistance 25 times better than standard (old ENDURO was 10 times standard)
- Cover ozone resistance 10 times better than standard
- Dynamic impulse pressure life of 1 million when tested to ISO 6803 for hoses with Interlock fitting
- The new hoses have been qualified in a rigorous test program, using the same Zinc-Nickel plated hose fittings as before, only for 6 hoses new crimp ferrules were introduced
- Old style FLEXION 4SP and 4SH did not have ENDURO performance
- We keep the full NBR inner tube material for excellent (bio)oil resistance
- Now we have a perfect match with our braided hose types H204E and H104E, and can cover all pressure circuits on a machine with high performing ENDURO hoses

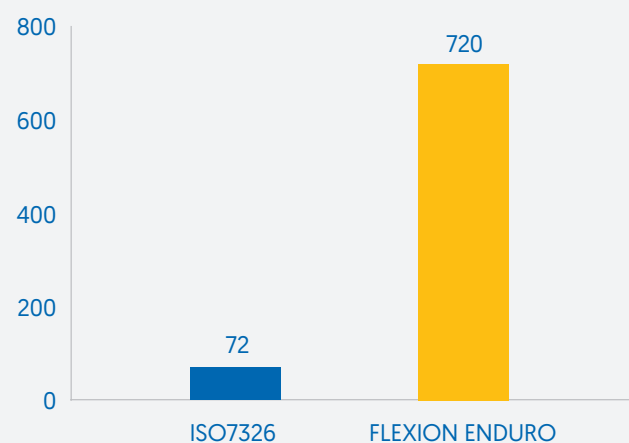
### Abrasion resistance

Gram weight loss 25N/2000cycles



### Ozone resistance

Hours to the red corrosion



## ENDURO Isobaric multispiral hose

### The new FLEXION ENDURO ISOBARIC hose and fitting assortment

The ISO 18752 specifies several ranges of ISOBARIC multispiral hoses, divided into constant pressure classes. This is similar to SAE 100R13/100R15, only in this case the pressure classes are expressed in BAR instead of PSI. For instance a 420 BAR isobaric hose range is called ISO CLASS 420. The new FLEXION ISOBARIC range according to ISO 18752 consists of the following hoses and matching FLEXION crimp fittings;

### Technical data FLEXION ENDURO

ISO Pressure Class	FLEXION ENDURO Isobaric	Hose size		Outer Diameter	Max. Working Pressure	Min. Burst Pressure	Min. Bend Radius	Weight	FLEXION crimp ferrule
		DN	INCH	[mm]	[bar]	[bar]	[mm]	[kg/m]	
Class 280	H475E-16	25	1"	36.7	280	1120	150	1.62	ZFA4016
Class 280	H475E-24	38	1.1/2"	52.1	280	1120	250	2.95	ZHA4224
Class 280	H475E-32	51	2"	66.3	280	1120	315	4.45	ZHA4232
Class 350	H685E-10	16	5/8"	26.3	350	1400	100	0.94	ZFA4410
Class 350	H685E-12	19	3/4"	29.7	350	1400	120	1.13	ZFA4012
Class 350	H685E-16	25	1"	36.7	350	1400	150	1.62	ZHA4216
Class 350	H685E-20	31	1.1/4"	45.0	350	1400	210	2.45	ZHA4220
Class 420	H695E-06	10	3/8"	19.7	420	1680	65	0.66	ZFA4406
Class 420	H695E-08	12	1/2"	22.5	420	1680	90	0.77	ZFA4408
Class 420	H695E-10	16	5/8"	26.2	420	1680	100	0.94	ZHA4310
Class 420	H695E-12	19	3/4"	30.6	420	1680	120	1.39	ZHA4212
Class 420	H695E-16	25	1"	37.6	420	1680	150	1.94	ZHA4216
Class 420	H695E-20	31	1.1/4"	47.8	420	1680	210	3.46	ZHA6320
Class 420	H695E-24	38	1.1/2"	56.0	420	1680	250	4.42	ZHA6324
Class 420	H695E-32	51	2"	72.0	420	1680	600	6.89	ZHA6232

<b>Tube</b>	Oil resistant synthetic rubber, suitable for most common biological degradable oils
<b>Reinforcement</b>	Four or six layers of high tensile steel wire
<b>Cover</b>	Synthetic rubber, abrasion, ozone and weather resistant
<b>Temperature range</b>	-40°C to +120°C
<b>Standard</b>	ISO 18752 CC
<b>Fitting family</b>	ZFA or ZHA (see table)
<b>Ferrule type</b>	ZFA or ZHA (see table)
<b>Performance</b>	The ENDURO cover provides excellent abrasion resistance 25x better than standard and ozone resistance 10x better than standard. Hoses with ZHA interlock fittings achieve 2x the required impulse test cycles, reaching 1 million cycles.



### **Typical markets and applications for the the new FLEXION ENDURO ISOBARIC hose range**

Hydraulic multispiral reinforced hoses in general are suitable for the more heavy applications, both in mobile and industrial equipment.

#### **In this case heavy means**

- **High pressure, often combined with large bore - for high power transmission rates**
- **Demanding dynamic pressure applications with high amounts of pressure cycles**
- **Applications with long service hours – 8 hours per day or more**
- **Applications where a more rugged hose is required due to mechanical external loads such as pulling, kinking, pinching, etc.**
- **The premium FLEXION ENDURO performance adds to this;**
- **Exceptional resistance to external loads such as mechanical abrasion and ozone**
- **Improved dynamic impulse life when used with Interlock fittings**

This means that the FLEXION ENDURO hoses will perform better in heavy applications, achieving a longer service life and offering higher reliability when compared to standard multispiral hoses.

### Typical heavy mobile applications

- Earth moving machinery
- Heavy drilling and hammering equipment
- Self-driving agricultural equipment
- Mining equipment
- Offshore lifting and handling equipment

### Typical heavy industrial applications

- Steel industry
- Large size injection molding equipment
- Large presses and cutting/stamping equipment
- Testing and simulation equipment



### Problem-solving FLEXION CABLE ISOBARIC multispiral hose

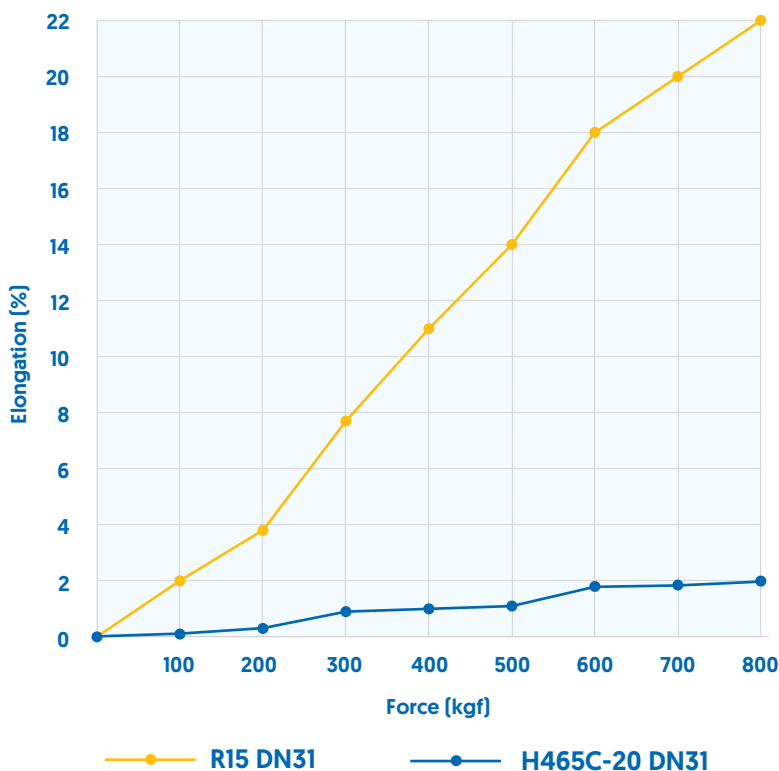
Within the range of new ISOBARIC multispiral hoses we offer the unique problem solver FLEXION CABLE for specific applications where long lengths of hose are being used under mechanical pull tension.

Pull tension is caused by the own weight of a free hanging hose including the oil inside, often in combination with a tension from the constant torque drive of a hose reel. A typical application where this occurs is on trenching equipment for creating diaphragm walls, going to typical depths of 80m or more.

A regular hydraulic hose which is not pressurised will stretch considerably when subjected to such pull tensions. Depending on the free hanging length and the hose reel torque tension the elongation might exceed 20%. This elongation is further increased by bending when the hose runs over a small diameter pulley like often used in the top of the boom.

As a solution the FLEXION CABLE hose was developed, showing a considerably reduced elongation when subjected to external pulling forces. See elongation graph below. This special product solves all problems related to hose stretching, extending the service life and improving the reliability of both the hose itself and of the hose reel system.

Elongation test H465C-20 vs standard R15 DN31



### Technical data FLEXION CABLE

ISO Pressure Class	Hose size		Outer Diameter	Max. Working Pressure	Min. Burst Pressure	Min. Bend Radius	Weight	FLEXION crimp ferrule
	DN	INCH	[mm]	[bar]	[bar]	[mm]	[kg/m]	
H465C-20	31	1.1/4	49.6	420	1680	350	3.70	ZHA6620
H465C-24	38	1.1/2	56.4	420	1680	400	4.45	ZHA6624

- Tube** Oil resistant synthetic rubber, suitable for most common biological degradable oils
- Reinforcement** Six layers of high tensile steel wire
- Cover** Synthetic rubber, abrasion, ozone and weather resistant
- Temperature range** -40°C to +120 °C
- Standard** Performs to ISO 18752 CC / SAE 100R15
- Fitting family** ZHA interlock
- Ferrule type** ZHA66
- Performance** The CABLE cover provides excellent abrasion resistance 25x better than standard and ozone resistance 10x better than standard.  
Max. elongation under 800 kgf pull force 2%.



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