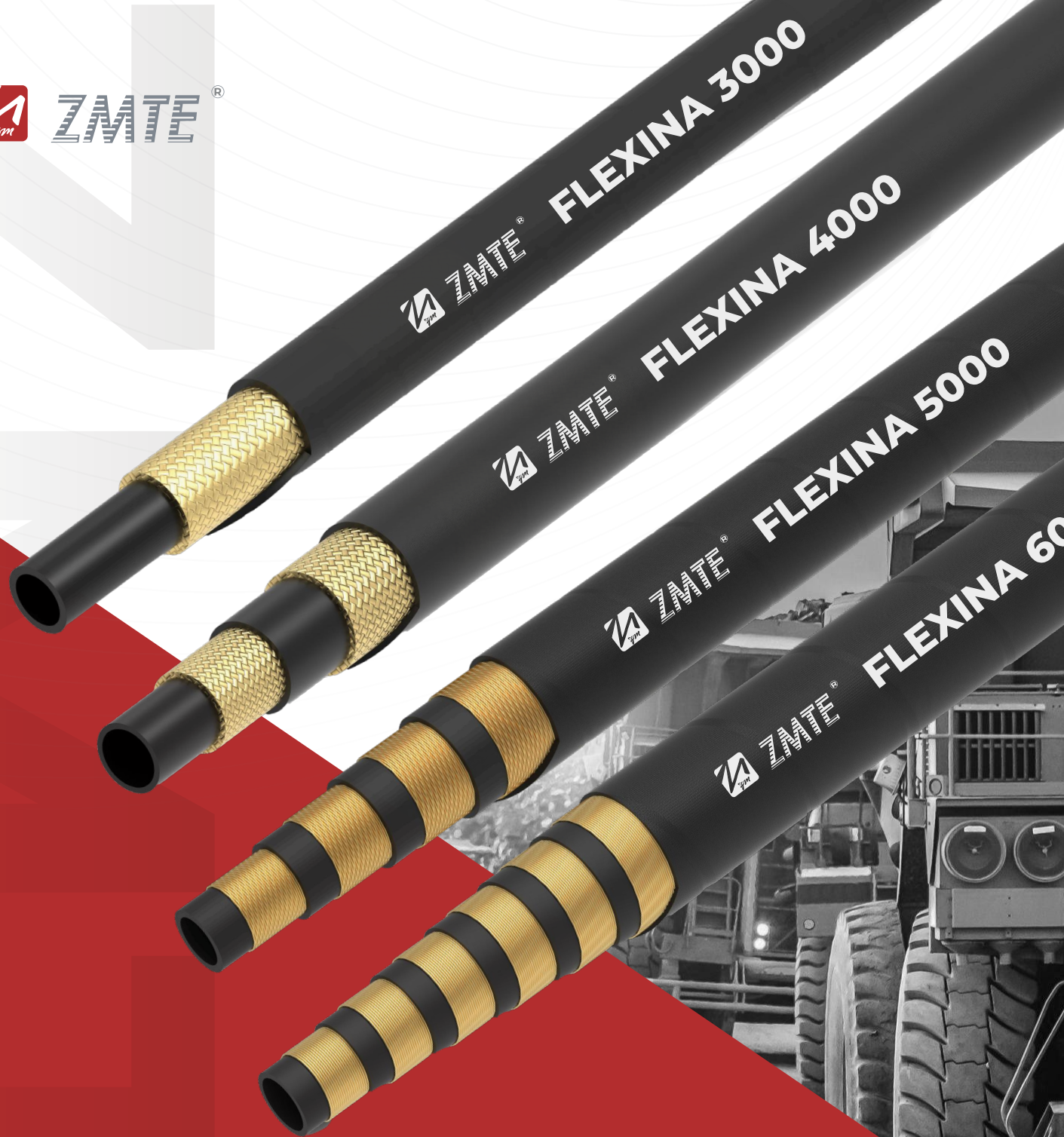




FLEXINA

HIGH PERFORMANCE ISOBARIC HOSES

PRODUCT MANUAL

ZMTE
V1 MAY. 2026

ISO 18752

REDEFINING FLUID CONNECTIONS: SIMPLER, STRONGER, MORE EFFICIENT

Built entirely on ISO 18752 standards.

Engineered to eliminate complexity and streamline modern hydraulic layouts.



SIMPLER



STRONGER



EFFICIENT





| OVERVIEW

In extreme modern industrial environments, conventional hydraulic hose selection makes engineering design and supply chains increasingly bloated. ZMTE proudly presents the FLEXINA series constant pressure hoses, breaking the traditional standard constraints where 'larger diameter means lower pressure.'



ZMTE offer four core constant pressure ratings—**3000, 4000, 5000, and 6000 PSI**. Within the full diameter range from 1/4" to 2", each hose maintains an absolutely uniform rated working pressure. FLEXINA is not just a hose; it is a system-level solution to streamline your supply chain and optimize equipment space.

| Why Constant Pressure?

● The Challenge:

Conventional SAE hoses suffer pressure drops as hose size increases, forcing engineers into complex selection traps and leaving OEMs with fragmented, high-cost inventory.



● The Solution:

FLEXINA offers four constant pressure ratings—3000, 4000, 5000, and 6000 PSI—maintaining uniform working pressure across all sizes from 1/4" to 2".



Design End	Shorter routing design cycles; zero matching errors.
Procurement End	Cuts hose SKUs by over 50% ; slashes overall warehousing costs.
Assembly End	Unified crimping system; simplifies frontline operator training.
Supply Chain	Concentrated procurement and reliable long-term strategic components.



| ISO 18752:

FLEXINA Hoses are designed to meet the requirements of isobaric specification **ISO 18752**. This describes hoses according to isobaric pressure levels, and grades them A, B, C or D according to their resistance to impulse pressure, temperature and minimum number of cycles.

These grades allow users to select the most appropriate hose and fitting solutions for their field of application.



● ISO 18752 PERFORMANCE GRADES AND TYPE

Grade	Type ^a	Resistance to impulse		
		Temperature °C	Impulse pressure (% of MWP ^b)	Minimum number of cycles
A	AS	100	133%	200 000
	AC			
B	BS	100	133%	500 000
	BC			
C	CS	120	133% and 120% ^c	500 000
	CC			
D	DC	120	133%	1 000 000

a - Standard or compact, e.g. CS is grade C and standard type. Standard types have larger outside diameters and larger bend radii and compact types have smaller outside diameters and smaller bend radii

b - Maximum working pressure

c - 120% of the MWP shall be used for classes 350, 420 and 560 instead of 133%

| Features & Advantages



● **Ultra-Compact Bend Radius:**

Far exceeds conventional standards (e.g., 45mm for 3000 PSI 1/4"; 395mm for 6000 PSI 2").

Benefit: 'Less hose, tighter routing.' Perfect for complex, narrow, and compact equipment spaces.



● **Tough Cover & Multi-Environment Protection:**

Specially modified ozone, UV, and abrasion resistant synthetic rubber. Benefit: Maximum protection and extended service life in high-friction environments.

● **Lightweight & High Flexibility:**

Optimized wire braiding and spiraling layout balances outer diameter and weight.

Benefit: Reduces overall equipment weight; ensures effortless, ergonomic field installation.



| Proven Engineering & Rigorous Testing

● Key Benchmarks:

Up to 1,000,000 Impulse Cycles & Strict 4:1 Safety Factor



● Up to 1,000,000 Impulse Cycles:

FLEXINA 3000/4000/5000/6000 (E93/E94/E95/E96) Wire Spiral series fully passes **1,000,000** high-pressure impulse cycles.

FLEXINA 3000/4000 (E73/E74) Wire Braided series is tested up to **600,000** cycles.

Proven reliable durability under continuous fluid shocks and heavy vibration.



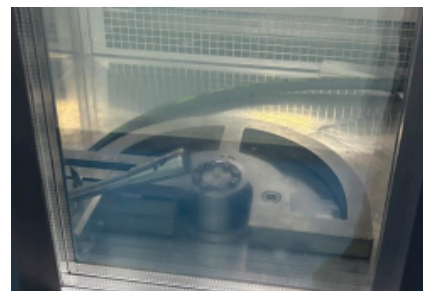
● Extreme Temperature Range:

Stable performance from **-40°F to +250°F (-40°C to +120°C)**; intermittent work up to **+125°C (+257°F)**. Maintains efficient fluid transfer from freezing outdoor mines to scorching hydraulic pump stations.



● 4:1 Safety Factor:

Strict adherence to a **4:1** safety margin. For example, the **6000** PSI series has a working pressure of **420** Bar, while its minimum burst pressure reaches a massive **1680** Bar (**24,000** PSI), building an unshakeable safety line.



| Target Applications



● Construction Machinery

Excavators, wheel loaders, concrete pumps, and rotary drilling rigs with heavy impulse systems.



● Mining Equipment

Hydraulic supports, shearers, and heavy underground tunneling vehicles (MSHA compliant).



● Agricultural Machinery

Combine harvesters and high-horsepower tractors with advanced central hydraulic setups.



● Oil & Gas

Onshore/offshore drilling rigs and coiled tubing surface equipment.



● Marine & Offshore

Deck machinery, offshore cranes, and steering gears requiring high salt-spray resistance.



● Industrial Automation

Heavy forging presses, injection molding machines, and high-pressure responsive closed-loop systems.

| System Integrity: Hoses + Fittings



● Zero-Leakage Guarantee:

Total system reliability depends on connection integrity. FLEXINA is strictly engineered to pair seamlessly with ZMTE proprietary fittings.

● Matched Solution:

Optimized for GM Series / GMS Series High-Pressure Fittings. Precision-controlled tolerances ensure no blow-offs and zero leakage under extreme pressure spikes.

● Need exact crimping specifications?

Contact our online fluid engineers for a custom hose assembly solution.

Hoses	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32	Standard ISO 18752
210 Bar/3,000 psi	E73	E73	E73	E73	E73	E73	E73	E93	E93	E93	Grade C+ / Grade D
280 Bar/4,000 psi	E74	E74	E74/E94	E74/E94	E74/E94	E74/E94	E94	E94	E94	E94	Grade C+ / Grade D
350 Bar/5,000 psi			E95	E95	E95	E95	E95	E95	E95	E95	Grade D
420 Bar/6,000 psi			E96	E96	E96	E96	E96	E96	E96	E96	Grade D

Fittings	-4	-5	-6	-8	-10	-12	-16	-20	-24	-32	
210 Bar/3,000 psi	GM	GM	GM	GM	GM	GM	GM	GM	GM	GM	
280 Bar/4,000 psi	GM	GM	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GMS	GMS	GMS	GMS	
350 Bar/5,000 psi			GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	
420 Bar/6,000 psi			GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	GM/GMS	

FLEXINA 3000 (E73)

ISO 18752 Grade C+



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

One / two braids of high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to +120°C), (Max +125°C intermittent)

// Fittings:

GM Series

// Impulse cycles tested up to 600,000 cycles

// Cover on Request

 ZMTE® E73-04 1/4 DN 06	ISO 18752	 210 BAR (3000 PSI)	 -40°C to +120°C -40°F to +250°F	 1R
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Max W.P.		Min B.P.		Min B.R.	Weight	
	In	mm	mm	Bar	psi	Bar	psi	mm	kg/m	
E73-04-06	1/4	6.6	12	210	3000	840	12000	45	0.2	1R
E73-05-08	5/16	8.2	13.5	210	3000	840	12000	50	0.24	1R
E73-06-10	3/8	9.9	15.7	210	3000	840	12000	60	0.28	1R
E73-08-13	1/2	13.2	19	210	3000	840	12000	80	0.36	1R
E73-10-16	5/8	16.3	24.2	210	3000	840	12000	95	0.62	2R
E73-12-19	3/4	19.5	28.2	210	3000	840	12000	115	0.85	2R
E73-16-25	1	25.8	35.5	210	3000	840	12000	150	1.23	2R

*Dimensions shown may be changed without prior notice

FLEXINA 3000 (E93)

ISO 18752 Grade D



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

Four alternating layers of spiral high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to +120°C), (Max +125°C intermittent)

// Fittings:

GM Series

// Impulse cycles tested up to 1,000,000 cycles

// Cover on Request

 E93-20 1 1/4 DN 32	ISO 18752	 210 BAR (3000 PSI)	 -40°C to +120°C -40°F to +250°F	 4S
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Bar	psi	Bar	psi	mm	kg/m	
E93-20-32	1 1/4	31.5	44	210	3000	840	12000	195	2.1	4S
E93-24-38	1 1/2	38	51.5	210	3000	840	12000	250	2.84	4S
E93-32-51	2	51	65.1	210	3000	840	12000	350	3.73	4S

*Dimensions shown may be changed without prior notice

FLEXINA 4000 (E74)

ISO 18752 Grade C+



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

One / two braids of high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to 120°C), (Max +125°C intermittent)

// Fittings:

GM Series

// Impulse cycles tested up to 600,000 cycles

// Cover on Request

 ZMTE ®	E74-04	1/4 DN 06	ISO 18752	 280 BAR (4000 PSI)	 -40°C to +120°C -40°F to +250°F	 1R
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Bar	psi	Bar	psi	mm	kg/m	
E74-04-06	1/4	6.6	12	280	4000	1120	16000	45	0.21	1R
E74-05-08	5/16	8.2	15.1	280	4000	1120	16000	55	0.33	2R
E74-06-10	3/8	9.9	17	280	4000	1120	16000	65	0.42	2R
E74-08-13	1/2	13.2	20.5	280	4000	1120	16000	80	0.55	2R
E74-10-16	5/8	16.3	24.2	280	4000	1120	16000	90	0.71	2R
E74-12-19	3/4	19.5	28.2	280	4000	1120	16000	120	0.91	2R

* Dimensions shown may be changed without prior notice

FLEXINA 4000 (E94)

ISO 18752 Grade D



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

Four / six alternating layers of spiral high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to 120°C), (Max +125°C intermittent)

// Fittings:

GM Series / GMS Series

// Impulse cycles tested up to 1,000,000 cycles

// Cover on Request

 ZMTE ®	E94-06	3/8 DN 10	ISO 18752	 280 BAR (4000 PSI)	 -40°C to +120°C -40°F to +250°F	 2R
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Bar	psi	Bar	psi	mm	kg/m	
E94-06-10	3/8	9.9	18.6	280	4000	1120	16000	65	0.46	4S
E94-08-13	1/2	13.2	21.8	280	4000	1120	16000	80	0.61	4S
E94-10-16	5/8	16.3	25.7	280	4000	1120	16000	90	0.86	4S
E94-12-19	3/4	19.5	29	280	4000	1120	16000	120	1.09	4S
E94-16-25	1	25.8	35.7	280	4000	1120	16000	150	1.67	4S
E94-20-32	1 1/4	31.5	44.6	280	4000	1120	16000	210	2.4	4S
E94-24-38	1 1/2	38	51.5	280	4000	1120	16000	250	2.84	4S
E94-32-51	2	51	68.4	280	4000	1120	16000	350	6.94	6S

* Dimensions shown may be changed without prior notice

FLEXINA 5000

ISO 18752 Grade D



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

Four / six alternating layers of spiral high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to +120°C), (Max +125°C intermittent)

// Fittings:

GM Series / GMS Series

// Impulse cycles tested up to 1,000,000 cycles

// Cover on Request

 ZMTE®	E95-06	3/8 DN 10	ISO 18752	 350 BAR (5000 PSI)	 -40°C to +120°C -40°F to +250°F	 4S
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Bar	psi	Bar	psi	mm	kg/m	
E95-06-10	3/8	9.9	19.2	350	5000	1400	20000	65	0.57	4S
E95-08-13	1/2	13.2	22.3	350	5000	1400	20000	80	0.71	4S
E95-10-16	5/8	16.3	26.4	350	5000	1400	20000	100	0.95	4S
E95-12-19	3/4	19.5	29	350	5000	1400	20000	120	1.09	4S
E95-16-25	1	25.8	36.5	350	5000	1400	20000	150	1.81	4S
E95-20-32	1 1/4	31.5	45	350	5000	1400	20000	210	2.55	4S
E95-24-38	1 1/2	38	52.4	350	5000	1400	20000	250	3.11	4S
E95-32-51	2	51	70.8	350	5000	1400	20000	395	6.31	6S

*Dimensions shown may be changed without prior notice

FLEXINA 6000

ISO 18752 Grade D



// Inner Tube:

Oil resistant synthetic rubber

// Reinforcement:

Four / six alternating layers of spiral high-tensile steel wire

// Cover:

Environment and abrasion resistant synthetic rubber

// Temperature Range:

-40°F to +250°F (-40°C to 120°C), (Max +125°C intermittent)

// Fittings:

GM Series / GMS Series

// Impulse cycles tested up to 1,000,000 cycles

// Cover on Request

 ZMTE®	E96-06	3/8 DN 10	ISO 18752	 420 BAR (6000 PSI)	 -40°C to +120°C -40°F to +250°F	 4S
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Product Number										Reinf. Layers
	Inch	I.D.	O.D.	Bar	psi	Bar	psi	mm	kg/m	
E96-06-10	3/8	9.9	19.9	420	6000	1680	24000	65	0.63	4S
E96-08-13	1/2	13.2	22.3	420	6000	1680	24000	90	0.77	4S
E96-10-16	5/8	16.3	26.4	420	6000	1680	24000	100	0.95	4S
E96-12-19	3/4	19.5	30.1	420	6000	1680	24000	140	1.34	4S
E96-16-25	1	25.8	36.7	420	6000	1680	24000	150	1.92	4S
E96-20-32	1 1/4	31.5	47.4	420	6000	1680	24000	210	3.37	6S
E96-24-38	1 1/2	38	55.6	420	6000	1680	24000	250	4.56	6S
E96-32-51	2	51	71.4	420	6000	1680	24000	395	6.31	6S

*Dimensions shown may be changed without prior notice

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