

## FlameShield™ Firesleeve: High Temperature, Heat, Flame, Fire & Molten Metal Resistant Protection for Hoses, Cables and Wires 500°F / 260°C Continuous Rating – Higher Temperature for Shorter Periods Industrial Grade & Heavy Duty Grade: *Silicone Rubber Coated Fiberglass Sleeve*



### Protection from:

- Heat
- Flame
- Fire
- Molten Metal Splash
- Welding Splatter & Sparks

**FlameShield™** firesleeve is the recognized standard for heat, flame and fire protection for hoses, tubing, cables and wiring in harsh environments. Ideal for electric cables and gas hoses in welding applications.

Utilized in most industries with hot processes, liquid metal or welding operations to protect assets and prevent failures, prolonging the life of critical hoses, wires and cables, and reduce unexpected shutdowns.

Also protects personnel from hot or cold hoses and pipes.

Firesleeve can be double sleeved or undersleeved with uncoated braided or knitted sleeves for additional thermal protection.

Industrial grade FlameShield™ firesleeve has minimal radial elasticity (approx 5%) while the Heavy Duty grade has approximately 20% of elasticity, allowing it to pass over couplings and connectors.

The Heavy Duty version sleeve is also used to cover water-cooled high current EAF cables and cooling water hoses at metal processing plants due to the excellent molten metal splash and slag protection. Both Industrial and Heavy Duty sleeve are extremely flexible, pliable and conformable. Used for fuel, brake, oil and hydraulic line / hose protection on mobile construction equipment, mining equipment, rail cars, buses and emergency response vehicles.

Also an excellent cold temperature sleeve with flexibility to -76°C. See further material specifications on Page 1-8.

S-FSHD up to 5" / 127mm ID meets standards: UL 1441 VW-1, DIN EN ISO 15540, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

Industrial Grade firesleeve is fabricated from a E-type glass yarn that is **knitted** and the Heavy Duty Grade is fabricated from a dense E-type yarn that is **braided**. Both the knitted and braided firesleeve receive a thick coating of self-extinguishing silicone rubber that withstands liquid metal splash, flame, slag, sparks, and other hazards in the toughest of environments.

Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red in all sizes for both Industrial and Heavy Duty Grades; and Black is available in sizes from -04 through -48 in Heavy Duty Grade. Other colors may be available or can be ordered in lot quantity. Use ABST-LP-1 silicone rubber paint to add color markings. Nominal wall thickness is 0.140" for S-FSHD and 0.160" for S-FS.

## FlameShield™ Firesleeve

500°F / 260°C continuous rating with weld splatter / molten metal splash protection.  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

FlameShield™ High Temperature Firesleeve: Industrial grade and Heavy Duty grade					
Nominal ID Inches / mm / Dash #			Industrial Grade Knit Part Number	Heavy Duty Grade Braid Part Number	
1/4	6	-04	S-FS-M006-04	S-FSHD-M006-04-X	
5/16	8	-05	S-FS-M008-05	S-FSHD-M008-05-X	
3/8	10	-06	S-FS-M010-06	S-FSHD-M010-06-X	
7/16	11	-07	S-FS-M011-07	S-FSHD-M011-07-X	
1/2	13	-08	S-FS-M013-08	S-FSHD-M013-08-X	
9/16	15	-09	S-FS-M015-09	S-FSHD-M015-09-X	
5/8	16	-10	S-FS-M016-10	S-FSHD-M016-10-X	
11/16	17	-11	S-FS-M017-11	S-FSHD-M017-11-X	
3/4	19	-12	S-FS-M019-12	S-FSHD-M019-12-X	
13/16	20	-13	S-FS-M020-13	S-FSHD-M020-13-X	
7/8	22	-14	S-FS-M022-14	S-FSHD-M022-14-X	
1	25	-16	S-FS-M025-16	S-FSHD-M025-16-X	
1 1/8	29	-18	S-FS-M029-18	S-FSHD-M029-18-X	
1 1/4	32	-20	S-FS-M032-20	S-FSHD-M032-20-X	
1 3/8	35	-22	S-FS-M035-22	S-FSHD-M035-22-X	
1 1/2	38	-24	S-FS-M038-24	S-FSHD-M038-24-X	
1 5/8	41	-26	S-FS-M041-26	S-FSHD-M041-26-X	
1 3/4	44	-28	S-FS-M044-28	S-FSHD-M044-28-X	
1 7/8	48	-30	S-FS-M048-30	S-FSHD-M048-30-X	
2	51	-32	S-FS-M051-32	S-FSHD-M051-32-X	
2 1/4	57	-36	S-FS-M057-36	S-FSHD-M057-36-X	
2 3/8	60	-38	S-FS-M060-38	S-FSHD-M060-38-X	
2 1/2	64	-40	S-FS-M064-40	S-FSHD-M064-40-X	
2 5/8	67	-42	S-FS-M067-42	S-FSHD-M067-42-X	
2 3/4	70	-44	S-FS-M070-44	S-FSHD-M070-44-X	
2 7/8	73	-46	S-FS-M073-46	S-FSHD-M073-46-X	
3	76	-48	S-FS-M076-48	S-FSHD-M076-48-X	
3 1/4	83	-52	S-FS-M083-52	S-FSHD-M083-52-X	
3 1/2	89	-56	S-FS-M089-56	S-FSHD-M089-56-X	
3 3/4	95	-60	S-FS-M095-60	S-FSHD-M095-60-X	
4	102	-64	S-FS-M102-64	S-FSHD-M102-64-X	
4 1/2	114	-72	S-FS-M114-72	S-FSHD-M114-72-X	
5	127	-80	S-FS-M127-80	S-FSHD-M127-80-X	
5 1/2	140	-87	S-FS-M140-87	S-FSHD-M140-87	
6	152	-96	S-FS-M152-96	S-FSHD-M152-96	
8	203	-128	S-FS-M203-128	S-FSHD-M203-128	
10	254	-160	S-FS-M254-160	S-FSHD-M254-160	
12	305	-193	S-FS-M305-193	S-FSHD-M305-193	
14	356	-225	S-FS-M356-225	S-FSHD-M356-225	
16	406	-257	S-FS-M406-257	S-FSHD-M406-257	

- For 6" ID and larger, the size is customizable - the sizes shown above in the table are example sizes and pricing. Sizes up to 120" ID are available - Priced by quotation.
- On-site custom fabrication over non-moveable or non-disconnectable hoses and pipes is available.

Standard color is Oxide-Red for S-FS. Oxide-red and Black is available for S-FSHD.

Other colors such as Silver/Grey, Yellow, Green and Blue are available – minimums may apply..

Add the color code after the part number. For the "-X" value above in the part number use "-OR" for Oxide-Red or "-BK" for Black

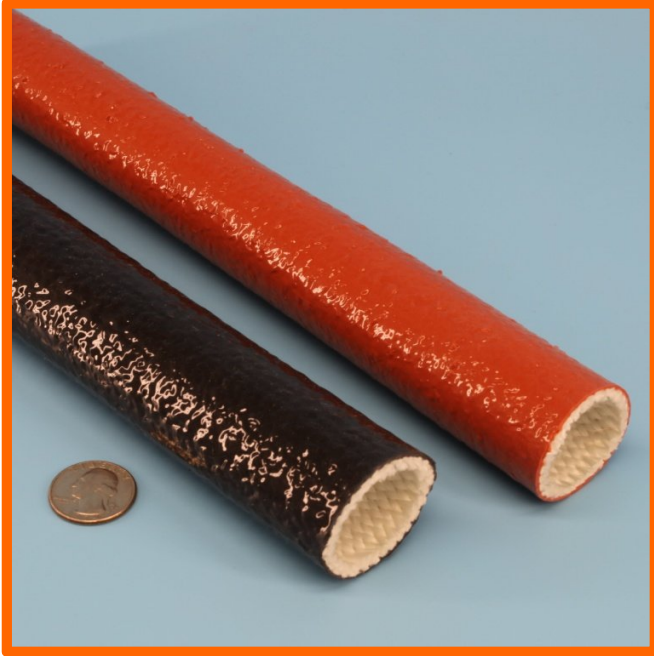
Sizes up to 5" ID are available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths

Larger diameters up to 6" ID may also be available in 50 foot / 15 metre lengths

## SAE AS1072 Aviation / Aerospace Firesleeve: High Temperature, Heat, Flame & Fire Resistant - without markings - Oxide-Red and Black

500°F / 260°C Rating – Higher Temperature for Shorter Periods

Aviation / Aerospace Grade: Meets SAE AS1072 - *Silicone Rubber Coated Fiberglass Sleeve*



FlameShield™ Aviation / Aerospace grade firesleeve is manufactured to the SAE AS1072F specification and allows properly assembled hose assemblies to meet SAE AS1055D testing. We also maintain traceability records for customers buying this product. 500°F / 260°C rating and with a 15 minute FAA "Fireproof" rating when assembled according to SAE AS1055.

This sleeve is extremely flexible, pliable, and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering so it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be. Firesleeve that is short will pull back from the fitting when the hose is bent, and if this occurs the hose assembly won't meet the TSO. Appropriate clamps must be used over the firesleeve at the fitting for aviation and Marine applications. (See our clamps and tools)

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings, and splices.

See further specifications on Page 1-9.

FlameShield™ S-AS1072 firesleeve also meets the following standards: UL 1441 VW-1, DIN EN ISO 15540, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

FlameShield™ AS1072 Aviation / Aerospace Grade Firesleeve									
Nominal ID Inches / mm / Dash #			Part Number		Nominal ID Inches / mm / Dash #			Part Number	
1/4	6	-04	S-AS1072-M006-04-X		1 3/4	44	-28	S-AS1072-M044-28-X	
5/16	8	-05	S-AS1072-M008-05-X		1 7/8	48	-30	S-AS1072-M048-30-X	
3/8	10	-06	S-AS1072-M010-06-X		2	51	-32	S-AS1072-M051-32-X	
7/16	11	-07	S-AS1072-M011-07-X		2 1/4	57	-36	S-AS1072-M057-36-X	
1/2	13	-08	S-AS1072-M013-08-X		2 3/8	60	-38	S-AS1072-M060-38-X	
9/16	15	-09	S-AS1072-M015-09-X		2 1/2	64	-40	S-AS1072-M064-40-X	
5/8	16	-10	S-AS1072-M016-10-X		2 5/8	67	-42	S-AS1072-M067-42-X	
11/16	17	-11	S-AS1072-M017-11-X		2 3/4	70	-44	S-AS1072-M070-44-X	
3/4	19	-12	S-AS1072-M019-12-X		2 7/8	73	-46	S-AS1072-M073-46-X	
13/16	20	-13	S-AS1072-M020-13-X		3	76	-48	S-AS1072-M076-48-X	
7/8	22	-14	S-AS1072-M022-14-X		3 1/4	83	-52	S-AS1072-M083-52-X	
1	25	-16	S-AS1072-M025-16-X		3 1/2	89	-56	S-AS1072-M089-56-X	
1 1/8	29	-18	S-AS1072-M029-18-X		3 3/4	95	-60	S-AS1072-M095-60-X	
1 1/4	32	-20	S-AS1072-M032-20-X		4	102	-64	S-AS1072-M102-64-X	
1 3/8	35	-22	S-AS1072-M035-22-X		4 1/2	114	-72	S-AS1072-M114-72-X	
1 1/2	38	-24	S-AS1072-M038-24-X		5	127	-80	S-AS1072-M127-80-X	
1 5/8	41	-26	S-AS1072-M041-26-X		6	162	-96	S-AS1072-M162-96-X	

For the "-X" value above in the part number, use "-OR" for Oxide-Red or "-BK" for Black

AS1072 Aerospace grade firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands flame exposure, allowing qualified hose assemblies to meet FAA TSO-C42 (Propeller feathering hose assemblies), TSO-C53a (Fuel and Oil system hose assemblies) and TSO-C75 (Hydraulic hose assemblies). Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red in all sizes and Black is available in sizes -04 through -32. Nominal wall thickness is 0.16".

**This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths**  
**Larger sizes available in 50 foot / 15 metre lengths**



## SAE AS1072 Aviation / Aerospace Firesleeve: High Temperature, Heat, Flame & Fire Resistant Type 2 with SAE Marking Silicone Rubber Composite 500°F / 260°C Rating – Higher Temperature for Shorter Periods



FlameShield™ Aviation / Aerospace grade firesleeve is manufactured to the SAE AS1072F specification. CofC and Test Report available with orders. Our company QMS has been reviewed and accepted by major aerospace OEMs. Allows properly assembled hose assemblies to meet SAE AS1055D testing. We also maintain traceability records for customers buying this product. 500°F / 260°C rating and with a 15 minute FAA "Fireproof" rating when assembled according to SAE AS1055.

This sleeve is extremely flexible, pliable and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering so it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be. Firesleeve that is short will pull back from the fitting when the hose is bent, and if this occurs the hose assembly won't meet the TSO. Appropriate clamps must be used over the firesleeve at the fitting for aviation and Marine applications. (See our clamps and tools)

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings, and splices.

For further specifications see Technical Data page 1-9. This sleeve is marked per the AS1072 specification. Other markings such as tradenames or part numbers may be added.

FlameShield™ S-AS1072 firesleeve is also compliant to the following standards: UL 1441 VW-1, DIN EN ISO 15540, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

### FlameShield™ SAE AS1072 Aviation / Aerospace Grade Firesleeve with Marking

Nominal ID Inches / mm / Dash #			Part Number	Nominal ID Inches / mm / Dash #			Part Number
1/4	6	-04	AS1072-04 SIL-FG	1 3/4	44	-28	AS1072-28 SIL-FG
5/16	8	-05	AS1072-05 SIL-FG	1 7/8	48	-30	AS1072-30 SIL-FG
3/8	10	-06	AS1072-06 SIL-FG	2	51	-32	AS1072-32 SIL-FG
7/16	11	-07	AS1072-07 SIL-FG	2 1/4	57	-36	AS1072-36 SIL-FG
1/2	13	-08	AS1072-08 SIL-FG	2 3/8	60	-38	AS1072-38 SIL-FG
9/16	15	-09	AS1072-09 SIL-FG	2 1/2	64	-40	AS1072-40 SIL-FG
5/8	16	-10	AS1072-10 SIL-FG	2 5/8	67	-42	AS1072-42 SIL-FG
11/16	17	-11	AS1072-11 SIL-FG	2 3/4	70	-44	AS1072-44 SIL-FG
3/4	19	-12	AS1072-12 SIL-FG	2 7/8	73	-46	AS1072-46 SIL-FG
13/16	20	-13	AS1072-13 SIL-FG	3	76	-48	AS1072-48 SIL-FG
7/8	22	-14	AS1072-14 SIL-FG	3 1/4	83	-52	AS1072-52 SIL-FG
1	25	-16	AS1072-16 SIL-FG	3 1/2	89	-56	AS1072-56 SIL-FG
1 1/8	29	-18	AS1072-18 SIL-FG	3 3/4	95	-60	AS1072-60 SIL-FG
1 1/4	32	-20	AS1072-20 SIL-FG	4	102	-64	AS1072-64 SIL-FG
1 3/8	35	-22	AS1072-22 SIL-FG	4 1/2	114	-72	AS1072-72 SIL-FG
1 1/2	38	-24	AS1072-24 SIL-FG	5	127	-80	AS1072-80 SIL-FG
1 5/8	41	-26	AS1072-26 SIL-FG	6	162	-96	AS1072-96 SIL-FG

SAE AS1072 Aerospace grade firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands flame exposure, allowing qualified hose assemblies to meet FAA TSO-C42 (Propeller feathering hose assemblies), TSO-C53a (Fuel and Oil system hose assemblies) and TSO-C75 (Hydraulic hose assemblies). Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red with black printing. Black sleeve with white printing is available. Other colors available.

**This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths  
Larger sizes available in 50 foot / 15 metre lengths**

# NSN / NATO Aerospace Sleeve meeting SAE AS1072 Flame & Fire Resistant Type 2 with SAE Marking Silicone Rubber Composite for "Sleeve, hose assembly, fire protection" 500°F / 260°C Continuous Rating – Higher Temperature for Shorter Periods



FlameShield™ NSN / NATO firesleeve is manufactured to SAE AS1072 Aerospace specification. CofC and Test Report available with orders. Our company QMS has been reviewed and accepted by major aerospace OEMs. Allows properly assembled hose assemblies to meet SAE AS1055D testing. We also maintain traceability records for customers buying this product. 500°F / 260°C continuous rating and with a 15 minute FAA "Fireproof" rating when assembled according to SAE AS1055.

This sleeve is extremely flexible, pliable and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering so it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be. Firesleeve that is short will pull back from the fitting when the hose is bent, and if this occurs the hose assembly won't meet the TSO. Appropriate clamps must be used over the firesleeve at the fitting for aviation and Marine applications. (See our clamps and tools)

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings and splices.

For further specifications see Technical Data Page. This sleeve is marked per the AS1072 specification. Other markings such as tradenames, symbols, etc. may be added. Cage L8347.

FlameShield™ S-AS1072 firesleeve is also compliant to the following standards: UL 1441 VW-1, DIN EN ISO 15540, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

FlameShield™ NSN / NATO SAE AS1072 Aerospace Grade Sleeve with Marking											
Nominal ID Inches / mm / Dash #			Part Number (Yellow highlights NSN/NATO Spec)			Nominal ID Inches / mm / Dash #			Part Number (Yellow highlights NSN/NATO Spec)		
1/4	6	-04	AS1072-04 SIL-FG			1 3/4	44	-28	5970-14-413-6220		
5/16	8	-05	5970-14-455-2318			1 7/8	48	-30	AS1072-30 SIL-FG		
3/8	10	-06	5970-14-455-2322			2	51	-32	5970-14-413-6221		
7/16	11	-07	AS1072-07 SIL-FG			2 1/4	57	-36	5970-14-413-6222		
1/2	13	-08	5970-14-455-2324			2 3/8	60	-38	AS1072-38 SIL-FG		
9/16	15	-09	AS1072-09 SIL-FG			2 1/2	64	-40	5970-14-455-2328		
5/8	16	-10	5970-14-413-6212			2 5/8	67	-42	AS1072-42 SIL-FG		
11/16	17	-11	AS1072-11 SIL-FG			2 3/4	70	-44	AS1072-44 SIL-FG		
3/4	19	-12	5970-14-413-6213			2 7/8	73	-46	AS1072-46 SIL-FG		
13/16	20	-13	AS1072-13 SIL-FG			3	76	-48	5970-14-455-2331		
7/8	22	-14	5970-14-413-6214			3 1/4	83	-52	AS1072-52 SIL-FG		
1	25	-16	5970-14-413-6215			3 1/2	89	-56	5970-14-455-2332		
1 1/8	29	-18	AS1072-18 SIL-FG			3 3/4	95	-60	AS1072-60 SIL-FG		
1 1/4	32	-20	5970-14-413-6216			4	102	-64	5970-14-455-2334		
1 3/8	35	-22	AS1072-22 SIL-FG			4 1/2	114	-72	AS1072-72 SIL-FG		
1 1/2	38	-24	5970-14-413-6217			5	127	-80	AS1072-80 SIL-FG		
1 5/8	41	-26	AS1072-26 SIL-FG			6	162	-96	AS1072-96 SIL-FG		

SAE AS1072 Aerospace grade firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands flame exposure, allowing qualified hose assemblies to meet FAA TSO-C42 (Propeller feathering hose assemblies), TSO-C53a (Fuel and Oil system hose assemblies) and TSO-C75 (Hydraulic hose assemblies). Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red with black printing. Black sleeve with white printing is available. Other colors available.

This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths  
Larger sizes available in 50 foot / 15 metre lengths

## DIN EN ISO15540 Marine Grade Firesleeve: High Temperature, Heat, Flame & Fire Resistant

500°F / 260°C Continuous Rating - 800°F / 426°C For Up To 30 Minutes

Marine Grade - Meets DIN EN ISO 15540 / USCG / SOLAS

**Silicone Rubber Coated Fiberglass Sleeve**



FlameShield™ Marine grade firesleeve allows properly assembled hose assemblies to meet ISO 15540 testing. We also maintain traceability records for customers buying this product. 500°F / 260°C continuous rating and with a 30 minute "Fireproof" 800°F / 426°C rating.

This sleeve is extremely flexible, pliable and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering so it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be. Firesleeve that is short will pull back from the fitting when the hose is bent, and if this occurs the hose assembly won't meet the ISO standard. Appropriate clamps must be used over the firesleeve at the fitting for aviation and Marine applications. (See our clamps and tools)

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings and splices.

S-ISO15540 also meets the following standards: UL 1441 VW-1, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

**500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.**

FlameShield™ DIN EN ISO15540 Marine Grade Firesleeve										
Nominal ID Inches / mm / Dash #			Part Number		Nominal ID Inches / mm / Dash #			Part Number		
1/4	6	-04	S-ISO15540-M006-04-X		1 7/8	48	-30	S-ISO15540-M048-30-X		
3/8	10	-06	S-ISO15540-M010-06-X		2	51	-32	S-ISO15540-M051-32-X		
7/16	11	-07	S-ISO15540-M011-07-X		2 1/4	57	-36	S-ISO15540-M057-36-X		
1/2	13	-08	S-ISO15540-M013-08-X		2 1/2	64	-40	S-ISO15540-M064-40-X		
9/16	15	-09	S-ISO15540-M015-09-X		2 5/8	67	-42	S-ISO15540-M067-42-X		
5/8	16	-10	S-ISO15540-M016-10-X		2 3/4	70	-44	S-ISO15540-M070-44-X		
3/4	19	-12	S-ISO15540-M019-12-X		2 7/8	73	-46	S-ISO15540-M073-46-X		
7/8	22	-14	S-ISO15540-M022-14-X		3	76	-48	S-ISO15540-M076-48-X		
1	25	-16	S-ISO15540-M025-16-X		3 1/4	83	-52	S-ISO15540-M083-52-X		
1 1/8	29	-18	S-ISO15540-M029-18-X		3 1/2	89	-56	S-ISO15540-M089-56-X		
1 1/4	32	-20	S-ISO15540-M032-20-X		3 3/4	95	-60	S-ISO15540-M095-60-X		
1 3/8	35	-22	S-ISO15540-M035-22-X		4	102	-64	S-ISO15540-M102-64-X		
1 1/2	38	-24	S-ISO15540-M038-24-X		4 1/2	114	-72	S-ISO15540-M114-72-X		
1 5/8	41	-26	S-ISO15540-M041-26-X		5	127	-80	S-ISO15540-M127-80-X		
1 3/4	44	-28	S-ISO15540-M044-28-X							

For the "-X" value above in the part number, use "-OR" for Oxide-Red or "-BK" for Black

ISO15540 Marine grade firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands flame exposure, allowing qualified hose assemblies to meet DIN EN ISO 15560 for fuel and lubricating oil marine systems.

Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red in all sizes and Black is available in sizes -04 through -32. Nominal wall thickness is 0.16".

**This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths  
Larger sizes available in 50 foot / 15 metre lengths**



## MSHA Approved Firesleeve for Mining Applications

### High Temperature, Heat, Flame & Fire Resistant

### 500°F / 260°C Continuous Rating - 800°F / 426°C For Up To 30 Minutes

### Silicone Rubber Coated Fiberglass Sleeve



**MSHA IC-366/01**

FlameShield™ MSHA Mining approved firesleeve protects hoses and lines on mobile and fixed mining equipment. 500°F / 260°C continuous rating and with a 30 minute 800°F / 426°C rating.

This sleeve is extremely flexible, pliable and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering in such a manner that it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be.

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings and splices.

500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

FlameShield™ MSHA Mining Approved Firesleeve							
Nominal ID Inches / mm / Dash #			Part Number		Nominal ID Inches / mm / Dash #		
1/4	6	-04	S-FSHD-MSHA-M006-04		1 7/8	48	-30
3/8	10	-06	S-FSHD-MSHA-M010-06		2	51	-32
7/16	11	-07	S-FSHD-MSHA-M011-07		2 1/4	57	-36
1/2	13	-08	S-FSHD-MSHA-M013-08		2 1/2	64	-40
9/16	15	-09	S-FSHD-MSHA-M015-09		2 5/8	67	-42
5/8	16	-10	S-FSHD-MSHA-M016-10		2 3/4	70	-44
3/4	19	-12	S-FSHD-MSHA-M019-12		2 7/8	73	-46
7/8	22	-14	S-FSHD-MSHA-M022-14		3	76	-48
1	25	-16	S-FSHD-MSHA-M025-16		3 1/4	83	-52
1 1/8	29	-18	S-FSHD-MSHA-M029-18		3 1/2	89	-56
1 1/4	32	-20	S-FSHD-MSHA-M032-20		3 3/4	95	-60
1 3/8	35	-22	S-FSHD-MSHA-M035-22		4	102	-64
1 1/2	38	-24	S-FSHD-MSHA-M038-24		4 1/2	114	-72
1 5/8	41	-26	S-FSHD-MSHA-M041-26		5	127	-80
1 3/4	44	-28	S-FSHD-MSHA-M044-28				

MSHA approved firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands flame exposure.

Standard lengths are 100 feet; specific cut lengths are available. Standard color is Oxide-Red.

**This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths**  
**Larger sizes available in 50 foot / 15 metre lengths**

## DualShield™ Dual Layer Firesleeve: High Temperature, Heat, Flame & Fire Resistant - without markings - Oxide-Red and Black

500°F / 260°C Continuous Rating – Higher Temperature for Shorter Periods  
Aviation / Aerospace Grade: - Silicone Rubber Coated Fiberglass Sleeve



DualShield™ firesleeve is built from two layers of aviation grade sleeve, providing superior protection to hoses, wiring, cables and tubing from heat, flame, molten splatter, sparks and other environmental factors. The first completed sleeve is oversleeved with another layer of fiberglass braid, and that braid is also coated with the same thick coating of self-extinguishing silicone rubber.

This sleeve is highly flexible, pliable and conformable. Typically used to protect fuel, oil, hydraulic lines and hoses, as well as critical wiring and cables. Remains flexible to -76°C (-104.8°F).

Firesleeve must be cut slightly longer than the hose or cable it is covering so it covers part of the fitting or connector. The longer the hose or cable, and if tight fitting, or if in use the hose/cable will be curved, then the longer the firesleeve needs to be. Firesleeve that is short will pull back from the fitting when the hose is bent. Appropriate clamps and end seal dip or liquid can be used to finish the sleeve ends. (See our clamps and tools)

This sleeve has a radial elasticity of approximately 15% allowing it to slide over connectors, fittings and splices.

See further specifications on Page 1-8.

DualShield™ firesleeve also meets the following standards: UL 1441 VW-1, DIN EN ISO 15540, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

500°F / 260°C continuous rating, 800°F / 426°C for periods up to 30 minutes  
2200°F / 1205°C for periods up to 15 minutes and short excursions to 3000°F / 1650°C.

DualShield™ Dual Layer Firesleeve											
Nominal ID Inches / mm / Dash #			Part Number			Nominal ID Inches / mm / Dash #			Part Number		
1/4	6	-04	S-DualFSDH-M006-04-X-Y			1 3/4	44	-28	S-DualFSDH-M044-28-X-Y		
5/16	8	-05	S-DualFSDH-M008-05-X-Y			1 7/8	48	-30	S-DualFSDH-M048-30-X-Y		
3/8	10	-06	S-DualFSDH-M010-06-X-Y			2	51	-32	S-DualFSDH-M051-32-X-Y		
7/16	11	-07	S-DualFSDH-M011-07-X-Y			2 1/4	57	-36	S-DualFSDH-M057-36-X-Y		
1/2	13	-08	S-DualFSDH-M013-08-X-Y			2 3/8	60	-38	S-DualFSDH-M060-38-X-Y		
9/16	15	-09	S-DualFSDH-M015-09-X-Y			2 1/2	64	-40	S-DualFSDH-M064-40-X-Y		
5/8	16	-10	S-DualFSDH-M016-10-X-Y			2 5/8	67	-42	S-DualFSDH-M067-42-X-Y		
11/16	17	-11	S-DualFSDH-M017-11-X-Y			2 3/4	70	-44	S-DualFSDH-M070-44-X-Y		
3/4	19	-12	S-DualFSDH-M019-12-X-Y			2 7/8	73	-46	S-DualFSDH-M073-46-X-Y		
13/16	20	-13	S-DualFSDH-M020-13-X-Y			3	76	-48	S-DualFSDH-M076-48-X-Y		
7/8	22	-14	S-DualFSDH-M022-14-X-Y			3 1/4	83	-52	S-DualFSDH-M083-52-X-Y		
1	25	-16	S-DualFSDH-M025-16-X-Y			3 1/2	89	-56	S-DualFSDH-M089-56-X-Y		
1 1/8	29	-18	S-DualFSDH-M029-18-X-Y			3 3/4	95	-60	S-DualFSDH-M095-60-X-Y		
1 1/4	32	-20	S-DualFSDH-M032-20-X-Y			4	102	-64	S-DualFSDH-M102-64-X-Y		
1 3/8	35	-22	S-DualFSDH-M035-22-X-Y			4 1/2	114	-72	S-DualFSDH-M114-72-X-Y		
1 1/2	38	-24	S-DualFSDH-M038-24-X-Y			5	127	-80	S-DualFSDH-M127-80-X-Y		
1 5/8	41	-26	S-DualFSDH-M041-26-X-Y			6	162	-96	S-DualFSDH-M162-96-X-Y		

For the "-X" value above in the part number, use "-OR" for Oxide-Red or "-BK" for Black for the outer layer color.

For the "-Y" value above in the part number, use "-OR" for Oxide-Red or "-BK" for Black for the inner layer color.

Other color combinations are available

DualShield™ firesleeve is fabricated from a dense E-type braided sleeve and then receives a thick coating of self-extinguishing silicone rubber that withstands fire, flame, molten metal and sparks exposure. Standard lengths are 100 feet; specific cut lengths are available.

**This product is available By-The-Foot / Metre or in standard 100 foot / 30 metre lengths**  
**Larger sizes available in 50 foot / 15 metre lengths**



## FlameShield™ Firesleeve Technical Data

For Part Numbers S-FS / S-FSHD / S-FSHD-MSHA / S-AS1072 / S-ISO15540 / NSN-NATO

### Base Fiberglass Substrate – All Versions

Fiber Type:	E Glass
Specific Gravity:	2.54-2.69
Breaking Tenacity:	1.71 gf/TEX. Std. 1.71 gf/TEX Wet
Tensile Strength:	450,000-500,000 psi.
Breaking Elongation:	4.81% Std. 4.81% Wet
Elastic Recovery:	100%
Average Stiffness:	2824.3 cn/TEX

Effect of Heat: Will not burn; Retains 75% tensile at 343°C; Softens at 732-877°C; Melts at 1121-1182°C.

Effect of Acids and Alkalis; Resistance to acids is fair. Good resistance to most alkalis.

Effect of Bleaches and Solvents: Unaffected.

### Silicone Rubber Coating – All Versions

Durometer, Shore A:	Initial; 35	Aged 240 hours @ 200°C; 45
Tensile Strength (psi):	Initial; 875	Aged 240 hours @ 200°C; 800
Elongation %:	Initial; 500	Aged 240 hours @ 200°C; 200
Flammability, UL94; V-1		
Dielectric Strength (volts/mil); 485		

### Elasticity

S-FSHD: Linear elasticity of approximately 2% and a radial elasticity of approximately 15%.

S-FS: Linear elasticity of approximately 2% and a radial elasticity of approximately 2%.

### S-FSHD / S-AS1072 / S-ISO15540 sleeve meeting SAE AS1072 & DIN EN ISO15540 Specifications; Additional Data

#### Coating Thickness

AS1072 Specification: Minimum: .03" (0.8mm)

#### Fluid Resistance

Phosphate Ester hydraulic fluids	MIL-H-5606 hydraulic fluid
MIL-T-5624 Jet Fuel	MIL-L-6082 lubricating oil
MIL-L-7808 lubricating oil	MIL-L-23699 lubricating oil
MIL-H-83282 hydraulic fluid	

UL 1441 VW-1, EN 45545, NF F 16-101, BS 6853, NF X 10-702, NF X 70 100 & NF X 70 200, BS EN ISO 11925, BS EN ISO 4589-2, BS EN 60695-2-11, ASTM D 2863 OI, DD CEN/TS 45545-2, ASTM G85 Type 2.

### Printed/Marked Sleeve Options

FlameShield™ SAE AS1072 firesleeve is available unmarked but package labelled with the SAE nomenclature, or with SAE standard marking. Sleeve can also be printed/marked with other identification, part numbers, instructions, warnings, etc. Non standard SAE marking cost of an etched print wheel is \$275.00. A setup charge of \$75.00 per print run applies. Please enquire for cost of print run.

