



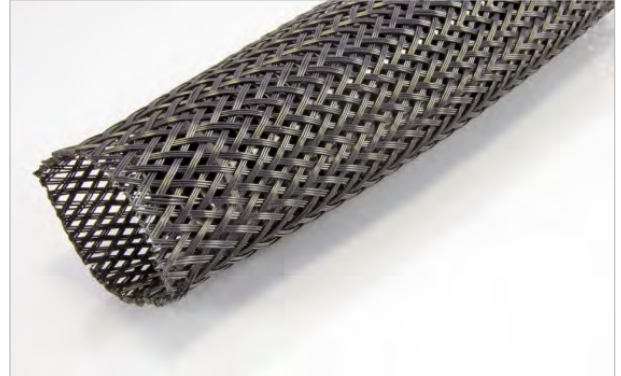
CATALOGUE

2012 VERSION 2.0

Originally braided from 10 mil polyethylene terephthalate (PET) monofilament yarns. The material has a wide operating temperature range and is resistant to chemical degradation, UV radiation, and abrasion. Used in electronic, automotive, marine and industrial wire harnessing applications where cost efficiency and durability are critical. The unique braided construction and wide expandability allows for quick and easy installation over large connectors and long runs.

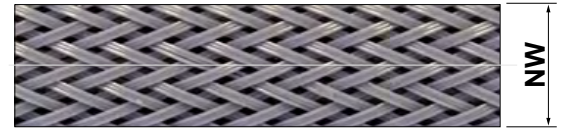


- Economical and easy to install
- Cut and abrasion resistant
- Expands up to 150%
- Halogen free
- Resists gasoline, engine chemicals and cleaning solvents
- FMVSS 302 approved



TYPE	COLOUR
MPT 0.50 BK .30	
NW	PU

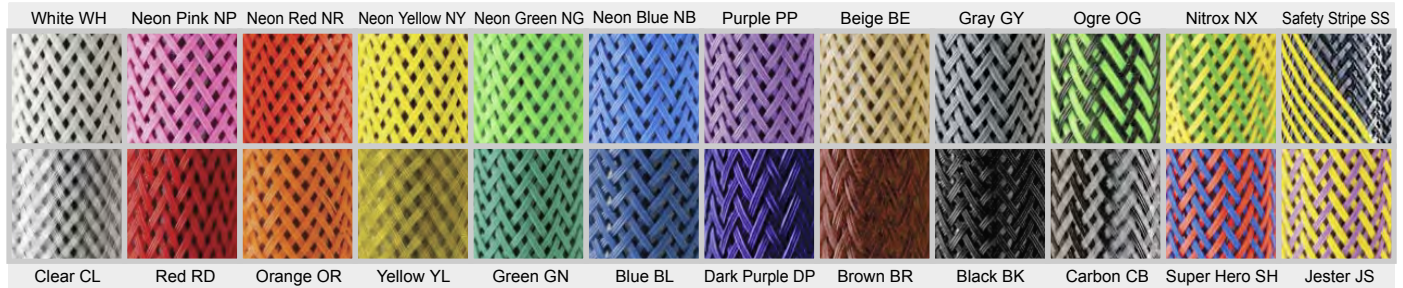
	Melt Point
	ASTM D-2117 482°F (250°C)
	Maximum Continuous
	Mil-I-23053 257°F (125°C)
	Minimum Continuous
	-94°F (-70°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Minimum Diameter		Maximum Diameter		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MPT0.13BK.65	1/8"	2.4	3/32"	6.4	1/4"	0.27	0.18	65	225
MPT0.25BK.60	1/4"	3.2	1/8"	11.1	7/16"	0.39	0.26	60	200
MPT0.38BK.38	3/8"	4.8	3/16"	12.7	1/2"	0.85	0.57	38	125
MPT0.50BK.30	1/2"	6.4	1/4"	19.1	3/4"	1.14	0.77	30	100
MPT0.63BK.30	5/8"	9.5	3/8"	25.4	1"	1.41	0.95	30	100
MPT0.75BK.22	3/4"	12.7	1/2"	31.8	1 1/4"	1.78	1.20	22	75
MPT1.00BK.20	1"	15.9	5/8"	41.3	1 5/8"	1.99	1.34	20	65
MPT1.25BK.15	1 1/4"	19.1	3/4"	44.5	1 3/4"	2.38	1.60	15	50
MPT1.50BK.12	1 1/2"	25.4	1"	54.0	2 1/8"	2.91	1.96	12	40
MPT1.75BK.9	1 3/4"	31.8	1 1/4"	69.9	2 3/4"	3.64	2.45	9	30
MPT2.00BK.15	2"	38.1	1 1/2"	88.9	3 1/2"	4.90	3.30	15	50
MPT2.50BK.15	2 1/2"	44.5	1 3/4"	92.1	3 5/8"	5.65	3.80	15	50
MPT3.00BK.15	3"	63.5	2 1/2"	120.7	4 3/4"	5.94	4.00	15	50

MTG offers MPT in the widest range of standard colours in the industry, including UV reactive and multicolour spirals. Additionally, we can manufacture MPT in custom solid or spiral combinations.



Abrasion Test Data

- Abrasion resistance: **Medium**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **77°F**
- Humidity: **72%**
- Two broken filament: **300 test cycles**
- Approximately 6 broken filaments: **500 test cycles**
- Material wear out: **1,150 test cycles**
- Pre-test weight: 4,547.4 mg
- Post-test weight: 4,133.9 mg
- Test end loss of mass point of destruction: 413.5 mg

Physical Properties

- Monofilament diameter *ASTM D-204*: **.010**
- Flammability rating *FMVSS-302 Approved*: **UL94**
- Recommended cutting: **Hot Knife**
- Colours: **25**
- Wall thickness: **.025**
- Tensile strength *ASTM D-2256 Lbs (Yarn)*: **7.5**
- Specific gravity *ASTM D-792*: **1.38**
- Moisture absorption% *ASTM D-570*: **.1-.2**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
 - TML **.19**
 - CVCM **.00**
 - WVR **.16**
- Smoke D-Max *ASTM E-662*: **56**
- Outgassing: **Med**
- Oxygen index *ASTM D-2863*: **21**

MPT - Chemical Resistance Index

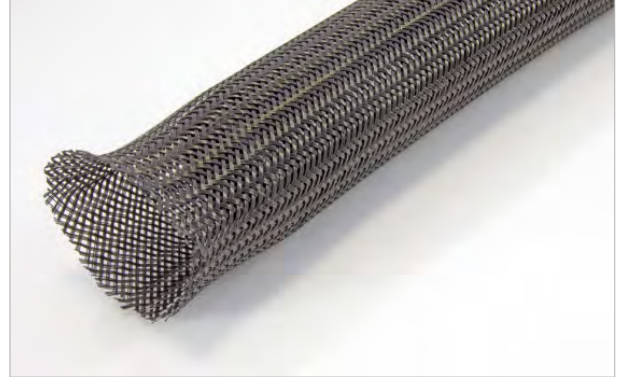
	5	4	3	2	1	No Effect
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

	5	4	3	2	1	No Effect
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

By adjusting the physical characteristics of the polyethylene terephthalate filaments, the engineers have produced a product with the same specifications of our MPT and the unique advantage of being able to cut the material with ordinary scissors and still maintain an extraordinarily fray-resistant end. It is ideal for field installers and other situations where access to a hot knife is impossible. MCC's fray-resistant properties allows frequent expansion at the cut-end without unraveling.

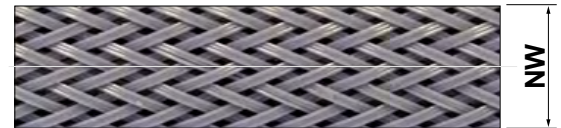


- Resists fraying when cut with scissors
- Increased braid density for fuller coverage
- Cut and abrasion resistant
- Halogen free
- Colours: Black BK / Grey GY



TYPE	COLOUR
MCC0.38BK.30	30
NW	PU

	Melt Point
	ASTM D-2117
	482°F (250°C)
	Maximum Continuous
	Mil-I-23053
	257°F (125°C)
	Minimum Continuous
	-94°F (-70°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Minimum Diameter		Maximum Diameter		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MCC0.13BK.30	1/8"	3.2	1/8"	6.4	1/4"	0.59	0.40	30	100
MCC0.25BK.30	1/4"	4.0	5/32"	11.1	7/16"	0.68	0.46	30	100
MCC0.38BK.30	3/8"	4.8	3/16"	15.9	5/8"	1.10	0.74	30	100
MCC0.50BK.30	1/2"	6.4	1/4"	19.1	3/4"	1.22	0.82	30	100
MCC0.75BK.22	3/4"	15.9	5/8"	25.4	1"	1.65	1.11	22	75
MCC1.00BK.15	1"	19.1	3/4"	30.2	1 3/16"	1.84	1.24	15	50
MCC1.25BK.15	1 1/4"	25.4	1"	38.1	1 1/2"	2.32	1.56	15	50
MCC1.50BK.15	1 1/2"	31.8	1 1/4"	50.8	2"	2.75	1.85	15	50

Abrasion Test Data

- Abrasion resistance: **Medium**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **77°F**
- Humidity: **72%**
- A few strands beginning to pull out of sample: **550 test cycles**
- Small hole in material: **650 test cycles**
- Material wear out: **800 test cycles**
- Pre-test weight: **3,168.1 mg**
- Post-test weight: **2,771.9 mg**
- Test end loss of mass point of destruction: **396.2 mg**

Physical Properties

- Monofilament diameter *ASTM D-204*: **.008**
- Flammability rating: **UL94**
- Recommended cutting: **Scissors / Hot Knife**
- Colours: **2**
- Wall thickness: **.024**
- Tensile strength *ASTM D-2256 Lbs (Yarn)*: **6**
- Specific gravity *ASTM D-792*: **1.38**
- Moisture absorption% *ASTM D-570*: **.1-2**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
 - TML **.19**
 - CVCM **.00**
 - WVR **.16**
- Smoke D-Max *ASTM E-662*: **56**
- Outgassing: **Med**
- Oxygen index *ASTM D-2863*: **21**

MCC - Chemical Resistance Index

	5	4	3	2	1	No Effect
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

MF6 unique split, semi-rigid braided construction makes it the ideal solution for situations where ease of installation is of primary importance. The lateral split allows the tube to open up to accommodate a wide variety of bundling requirements, and the semi-rigid braid configuration simply closes around the entire installation without the need for any additional fasteners (Velcro, tape, etc.). The 10 mil braid is lightweight, quiet and flexible. The 25% edge overlap (at nominal diameter) allows coverage around inline plugs, connectors and splices.

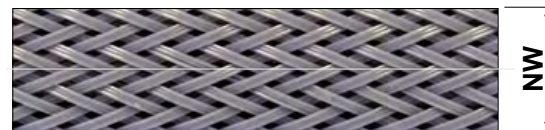


- Easy, cost and labour
- Effective installation
- More flexible than split convoluted or spiral wrap
- 25% edge overlap
- Soft and quiet in high vibration uses
- Cut and abrasion resistant
- Chemically inert
- Halogen free



TYPE	COLOUR
MF6	0.50 BK
22	
NW	PÜ

	Melt Point
	ASTM D-2117 482°F (250°C)
	Maximum Continuous
	Mil-I-23053 257°F (125°C)
	Minimum Continuous
	-94°F (-70°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Wall Thickness		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MF60.13BK.30	1/8"	0.60	0.024"	0.30	0.20	30.0	100
MF60.25BK.30	1/4"	0.64	0.025"	0.89	0.60	30.0	100
MF60.38BK.22	3/8"	0.64	0.025"	1.78	1.20	22.0	75
MF60.50BK.22	1/2"	0.64	0.025"	2.08	1.40	22.0	75
MF60.75BK.15	3/4"	0.64	0.025"	2.38	1.60	15.0	50
MF61.00BK.15	1"	0.97	0.038"	2.97	2.00	15.0	50
MF61.25BK.15	1 1/4"	0.97	0.038"	3.57	2.40	7.5	25
MF61.50BK.7.5	1 1/2"	0.97	0.038"	4.01	2.70	7.5	25
MF62.00BK.7.5	2"	0.97	0.038"	5.35	3.60	7.5	25

Abrasion Test Data

- Abrasion resistance: **Medium**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **80°F**
- Humidity: **74%**
- Some scuffing visible: **550 test cycles**
- Significant wear is visible
several braid filaments broken: **1,200 test cycles**
- Material wear out: **1,950 test cycles**
- Pre-test weight: **5,365.1 mg**
- Post-test weight: **4,850 mg**
- Test end loss of mass
point of destruction: **515.1 mg**

Physical Properties

- Monofilament diameter *ASTM D-204*: **.008-0.15**
- Flammability rating: **UL94**
- Recommended cutting: **Hot Knife**
- Colours: **3**
- Wall thickness: **.024-0.038**
- Tensile strength *ASTM D-2256 Lbs (Yarn)*: **6-10**
- Specific gravity *ASTM D-792*: **1.38**
- Moisture absorption% *ASTM D-570*: **.1-.2**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
TML **.19**
CVCM **.00**
WVR **.16**
- Smoke D-Max *ASTM E-662*: **56**
- Outgassing: **Med**
- Oxygen index *ASTM D-2863*: **21**

MF6 - Chemical Resistance Index

	3	4	More Affected	Affected	2	Little Effect	1	No Effect
Aromatic Solvents								
Aliphatic Solvents								
Chlorinated Solvents								
Weak Bases								
Salts								
Strong Bases								
Salt Water 0-S-1926								
Hydraulic Fluid MIL-H-5606								

	3	4	More Affected	Affected	2	Little Effect	1	No Effect
Lube Oil MIL-L-7808								
De-Icing Fluid MIL-A-8243								
Strong Acids								
Strong Oxidants								
Esters/Ketones								
UV Light								
Petroleum								
Fungus ASTM G-21								

The latest innovation in the braided material design is the concept of using different shaped filaments to create strength, stiffness or a variety of other effects. MNH Sleeve is engineered from flat thick abrasion guard for use on hoses. This type of sleeve has been tested against competitor's abrasion guards that mix materials in an effort to gain slight abrasion advantages. Our Sleeve achieves better results without sacrificing great looks or flexibility. Constant abuse from road hazards, abrasion and vibration make MNH the choice to protect hoses in over-the-road vehicle.

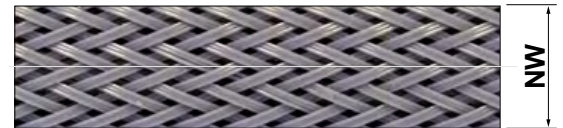


- Innovative braided flat filament technology
- Resists damage from UV, gasoline, engine chemicals & salt water
- Heavy plastic protection
- Smooth inner wall reduces internal abrasion
- Extreme cut and abrasion resistant
- Halogen free
- Colour: black



TYPE	COLOUR
MNH0.75BK.15	BK.15
NW	PŪ

	Melt Point
	ASTM D-2117
	509°F (265°C)
	Maximum Continuous
	Mil-I-23053
	302°F (150°C)
	Minimum Continuous
	-76°F (-60°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Expansion Range Min.		Expansion Range Max.		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MNH0.50BK.30	1/2"	9.5	3/8"	15.9	5/8"	2.08	1.40	30.0	100
MNH0.75BK.15	3/4"	15.9	5/8"	25.4	1"	3.12	2.10	15.0	50
MNH1.00BK.15	1"	22.2	7/8"	31.8	1 1/4"	3.27	2.20	15.0	50
MNH1.25BK.15	1 1/4"	25.4	1"	38.1	1 1/2"	3.72	2.50	15.0	50
MNH1.75BK.7.5	1 3/4"	38.1	1 1/2"	50.8	2"	5.94	4.00	7.5	25
MNH2.00BK.7.5	2"	44.5	1 3/4"	63.5	2 1/2"	6.54	4.40	7.5	25

Abrasion Test Data

- Abrasion resistance: **Extremely high**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **80°F**
- Humidity: **72%**
- Minor scuffing: **100 test cycles**
- One broken strand: **900 test cycles**
- Second Broken Strand: **1,200 test cycles**
- One strand pulled out of material: **3,500 test cycles**
- Material wear out: **4,400 test cycles**
- Pre-test weight: **7,191.6 mg**
- Post-test weight: **6,761.4 mg**
- Test end loss of mass point of destruction: **430.20mg**

Physical Properties

- Flat filament: **.020**
- Flammability rating: **N/A**
- Recommended cutting: **Hot Knife**
- Colours: **1**
- Wall thickness: **.05**
- Tensile strength(Yam): **.05**
- Specific gravity *ASTM D-792*: **1.12**
- Moisture absorption% *ASTM D-570*: **2.5**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
TML **1.10**
CVCM **.01**
WVR **.69**
- Smoke D-Max *ASTM E-662*: **56**
- Outgassing: **High**
- Oxygen index *ASTM D-2863*: **22**

MNH - Chemical Resistance Index

	5	4	3	2	1	
	Severely Affected	More Affected	Affected	Little Effect	No Effect	
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

	5	4	3	2	1	
	Severely Affected	More Affected	Affected	Little Effect	No Effect	
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

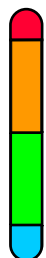
MDW is the answer to organizing and controlling wires, cables and hoses that are subject to constant and extreme use. The flexible sleeve is made from tightly woven ballistic nylon with an aggressive industrial strength hook and loop closure. MDW is used to keep wires together, prevent abrasion damage on hoses & cables and to prevent chains from damaging expensive finished surfaces. MDW provides greater abrasion resistance and water repellency compared to other nylon sleeves. It is extremely flexible and easy to install over single or multiple hoses. In the event of a hose rupture, the high strength sleeving helps prevent high pressure fluid from becoming a danger to equipment operators and other personnel.



- Tightly woven ballistic nylon construction
- Heavy duty, oversize hook and loop closure
- Repels liquids
- Resists and prevents damage from UV, abrasion, gasoline, engine chemicals and salt water
- Deflects high pressure hose ruptures
- Colour: Black



TYPE	COLOUR
MDW 1.50 BK	7.5
NW	PÙ

	Melt Point
	ASTM D-2117 410°F (374°C)
	Maximum Continuous
	Mil-I-23053 200°F (93.3°C)
	Minimum Continuous
	-60°F (-51.1°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Wall Thickness		Hook & Loop Width		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MDW1.00BK.7.5	1"	6.6	0.26"	25.4	1"	1.22	0.82	7.5	25
MDW1.50BK.7.5	1 1/2"	6.6	0.26"	25.4	1"	1.63	1.10	7.5	25
MDW2.00BK.7.5	2"	6.6	0.26"	25.4	1"	2.38	1.60	7.5	25
MDW2.50BK.7.5	2 1/2"	6.6	0.26"	25.4	1"	3.72	2.50	7.5	25
MDW3.00BK.7.5	3"	6.6	0.26"	25.4	1"	5.05	3.40	7.5	25
MDW3.50BK.7.5	3 1/2"	6.6	0.26"	25.4	1"	6.24	4.20	7.5	25
MDW4.00BK.7.5	4"	6.6	0.26"	25.4	1"	9.66	6.50	7.5	25
MDW4.50BK.7.5	4 1/2"	6.6	0.26"	25.4	1"	12.34	8.30	7.5	25
MDW6.00BK.7.5	6"	6.6	0.26"	25.4	1"	31.21	21.0	7.5	25

Abrasion Test Data

- Abrasion resistance: **Extremely high**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **84°F**
- Humidity: **74%**
- First signs of slight fraying: **5,000 test cycles**
- Visible small hole in material: **7,500 test cycles**
- Material wear out: **8,500 test cycles**
- Pre-test weight: **6,903.10 mg**
- Post-test weight: **5,911.80 mg**
- Test end loss of mass point of destruction: **991.30mg**

Physical Properties

- Monofilament diameter: **N/A**
- Flammability rating: **N/A**
- Recommended cutting: **Scissors**
- Colours: **1**
- Wall thickness: **.026**
- Tensile strength: **N/A**
- Specific gravity *ASTM D-792*: **1.13**
- Moisture absorption% *ASTM D-570*: **2.7**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
TML **1.10**
CVCM **.01**
WVR **.69**
- Smoke D-Max *ASTM E-662*: **56**
- Outgassing: **High**
- Oxygen index *ASTM D-2863*: **22**

MDW - Chemical Resistance Index

Severely Affected	More Affected	Affected	2	Little Effect	1	No Effect
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

Severely Affected	More Affected	Affected	2	Little Effect	1	No Effect
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

MDP provides tough hose protection in two ways. First, the ISO 6945 spec, MDP's unique .08" thick tubular weave design will withstand greater than 200,000 abrasion cycles without wearing through the fabric. Additionally, the exceptionally smooth inner wall provides easy installation and minimizes any internal abrasion problems. The tightly woven nylon construction is extremely flexible and resists chemical and ultraviolet degradation. MDP is perfect for industrial and construction applications where ISO certified hose protection is called for.



- Heavy duty, .08" wall thickness
- ISO 6945 certified
- Professional grade construction
- Smooth inner wall prevents internal abrasion damage
- Braided nylon resists UV, salt, chemicals, vermin & rot
- Halogen free
- Colour: black



TYPE	COLOUR
MDP0.75BK.15	BK.15
NW	PŪ

	Melt Point
	ASTM D-2117 410°F (210°C)
	Maximum Continuous
	Mil-I-23053 248°F (120°C)
	Minimum Continuous
	-49°F (-45°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Wall Thickness		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MDP0.75BK.15	0.75"	2.0	0.08"	6.58	4.43	15	50
MDP0.93BK.15	0.93"	2.0	0.08"	8.19	5.51	15	50
MDP1.13BK.15	1.13"	2.0	0.08"	10.63	7.15	15	50
MDP1.25BK.15	1.25"	2.0	0.08"	11.06	7.44	15	50
MDP1.35BK.15	1.35"	2.0	0.08"	11.92	8.02	15	50
MDP1.43BK.15	1.43"	2.0	0.08"	12.37	8.32	15	50
MDP1.63BK.15	1.63"	2.0	0.08"	14.06	9.53	15	50
MDP1.81BK.15	1.81"	2.0	0.08"	15.92	10.71	15	50
MDP2.19BK.15	2.19"	2.0	0.08"	18.30	12.31	15	50
MDP2.63BK.15	2.63"	2.0	0.08"	22.04	14.83	15	50
MDP2.88BK.15	2.88"	2.0	0.08"	25.71	17.30	15	50
MDP3.13BK.7.5	3.13"	2.0	0.08"	26.81	18.04	7.5	25
MDP3.38BK.7.5	3.38"	2.0	0.08"	29.89	20.11	7.5	25
MDP3.63BK.7.5	3.63"	2.0	0.08"	32.10	21.60	7.5	25
MDP4.00BK.7.5	4.00"	2.0	0.08"	34.96	23.52	7.5	25

Abrasion Test Data

- Abrasion resistance: **Extremely high**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **85°F**
- Humidity: **74%**
- Minimal visible wearing into material: **400 test cycles**
- Visible wearing into material: **3,000 test cycles**
- Heavy wear but not yet through the material: **11,000 test cycles**
- Material wear out: **13,000 test cycles**
- Pre-test weight: **14,096 mg**
- Post-test weight: **11,705 mg**
- Test end loss of mass point of destruction: **2,391 mg**

Physical Properties

- Monofilament diameter: **N/A**
- Flammability rating: **N/A**
- Recommended cutting: **Scissors**
- Colours: **1**
- Wall thickness: **.080**
- Tensile strength: **N/A**
- Specific gravity *ASTM D-792*: **1.14**
- Moisture absorption% *ASTM D-570*: **2.7**
- Hard vacuum data *ASTM E-595 at 10-5 torr*: **TML 1.10**
CVCM .01
WVR .69
- Smoke D-Max *ASTM E-662*: **N/A**
- Outgassing: **High**
- Oxygen index *ASTM D-2863*: **22**

MDP - Chemical Resistance Index

	3	4	5	2	1	No Effect
	Severely Affected	More Affected	Affected	Little Effect	1	No Effect
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

	3	4	5	2	1	No Effect
	Severely Affected	More Affected	Affected	Little Effect	1	No Effect
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

Flame spread is a vital safety consideration in applications as diverse as home built aircraft wiring for safely managing sound & lighting cables at clubs, concerts and theaters. To accommodate these issues and to provide unequaled flexibility and access, we have developed this unique sleeving product. MFR self-extinguishing fully complies with UL standard VW-1. The addition of an organic flame inhibitor to our triaxially braided split sleeving provides the perfect solution to a wide range of cable management needs. Easy slip over installation, complete access along the entire run, economy, durability and UL certified flame retardant make MFR ideal when the goal is to manage wires and cables safely and effectively.

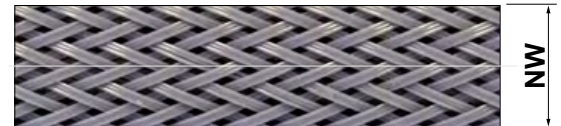


- VW-1, FAR 25
- Easy, cost and labour effective wraparound installation
- More flexible than spiral wrap of split convoluted tubing
- 25% edge overlap
- Resists chemicals & solvents
- Cut and abrasion resistant
- Colour: Black w/ White tracer (TB)



TYPE	COLOUR
MFR0.38TB.30	PÙ
NW	PÙ

	Melt Point
	ASTM D-2117 446°F (230°C)
	Maximum Continuous
	Mil-I-23053 257°F (125°C)
	Minimum Continuous
	-94°F (-70°C)



Specifications are subject to change without notice

Order Number	Nominal Width		Wall Thickness		Weight		Standard Spool Put-Ups [Box B]	
	(NW)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)	
MFR0.13TB.30	1/8"	0.61	0.024"	0.30	0.20	30	100	
MFR0.25TB.30	1/4"	0.64	0.025"	0.89	0.60	30	100	
MFR0.38TB.22	3/8"	0.64	0.025"	1.78	1.20	22	75	
MFR0.50TB.22	1/2"	0.64	0.025"	2.08	1.40	22	75	
MFR0.75TB.15	3/4"	0.64	0.025"	2.38	1.60	15	50	
MFR1.00TB.15	1"	0.97	0.038"	2.97	2.00	15	50	
MFR1.25TB.7.5	1 1/4"	0.97	0.038"	3.57	2.40	7.5	25	
MFR1.50TB.7.5	1 1/2"	0.97	0.038"	4.01	2.70	7.5	25	
MFR2.00TB.7.5	2"	0.97	0.038"	5.35	3.60	7.5	25	

Abrasion Test Data

- Abrasion resistance: **High**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **70°F**
- Humidity: **63%**
- Slight scuffing visible: **500 test cycles**
- Visible wear & five broken filaments: **1,200 test cycles**
- Material wear out: **1,600 test cycles**
- Pre-test weight: **3,469.8 mg**
- Post-test weight: **3,114.0 mg**
- Test end loss of mass point of destruction: **355.8 mg**

Physical Properties

- Monofilament diameter *ASTM D-204*: **.008-.015**
- Flammability rating *FMVSS-302 Approved*: **VW-1**
- Recommended cutting: **Scissors / HK**
- Colours: **1**
- Wall thickness: **.024-.038**
- Tensile strength *ASTM D-2256 Lbs (Yarn)*: **4-6.5**
- Specific gravity *ASTM D-792*: **1.38**
- Moisture absorption% *ASTM D-570*: **.1-.2**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
TML **.19**
CVCN **.04**
WVR **.06**
- Smoke D-Max *ASTM E-662*: **275**
- Outgassing: **Med**
- Oxygen index *ASTM D-2863*: **31**

MFR - Chemical Resistance Index

	5 Severely Affected	4 More Affected	3 Affected	2 Little Effect	1 No Effect
Aromatic Solvents					
Aliphatic Solvents					
Chlorinated Solvents					
Weak Bases					
Salts					
Strong Bases					
Salt Water 0-S-1926					
Hydraulic Fluid MIL-H-5606					

	5 Severely Affected	4 More Affected	3 Affected	2 Little Effect	1 No Effect
Lube Oil MIL-L-7808					
De-Icing Fluid MIL-A-8243					
Strong Acids					
Strong Oxidants					
Esters/Ketones					
UV Light					
Petroleum					
Fungus ASTM G-21					

MFG is an extremely high temperature resistant sleeve commonly used as thermal protection for wires, cables and hoses that are subjected to continuous and extreme high temperature environments, such as engine manifolds and exhaust systems. It is braided from fiberglass yarns and coated with high temperature resins. MFG is tough and durable, maintaining its tight structure under extreme vibration, abrasion, mechanical stress and temperature variations. MFG installs easily over a variety of applications to either deflect or retain heat in environments up to 1,200° F.



- UL recognized
- Resin coated, heavy weight fiberglass won't burn, melt or become brittle
- Easy to install-cuts with scissors
- Resists gasoline and engine chemicals
- Cut and abrasion resistant
- Colour: Black (BK) & Silver (SV)



TYPE	COLOUR
MFG0.75BK.15	BK.15
NW	PU

	Melt Point
	ASTM D-2117
	2,048°F (1,120°C)
	Maximum Continuous
	Mil-I-23053
	1,202°F (650°C)
	Minimum Continuous
	-94°F (-70°C)



Specifications are subject to change without notice

Order Number	Nominal Width	Maximum Diameter		Wall Thickness		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MFG0.25BK.15	1/4"	9.5	3/8"	0.79	0.031"	2.97	2.00	15	50
MFG0.38BK.15	3/8"	15.9	5/8"	1.09	0.043"	4.90	3.30	15	50
MFG0.50BK.15	1/2"	19.1	3/4"	1.17	0.046"	7.13	4.80	15	50
MFG0.63BK.15	5/8"	22.2	7/8"	1.17	0.046"	7.88	5.30	15	50
MFG0.75BK.15	3/4"	28.6	1 1/8"	1.17	0.046"	9.51	6.40	15	50
MFG0.88BK.15	7/8"	31.8	1 1/4"	1.17	0.046"	12.93	8.70	15	50
MFG1.00BK.7.5	1"	41.3	1 5/8"	1.45	0.057"	15.61	10.50	7.5	25
MFG1.50BK.7.5	1 1/2"	66.7	2 5/8"	1.55	0.061"	23.78	16.00	7.5	25

Abrasion Test Data

- Abrasion resistance: **High**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **73°F**
- Humidity: **55%**
- Visible minor scuffing: **200 test cycles**
- Scuffing and wear continues: **500 test cycles**
- Several Broken Strands: **1,300 test cycles**
- Material wear out: **1,650 test cycles**
- Pre-test weight: **19,411.6 mg**
- Post-test weight: **17,154.5 mg**
- Test end loss of mass point of destruction: **2,257.1 mg**

Physical Properties

- Monofilament diameter: **N/A**
- Flammability rating: **VW-1**
- Recommended cutting: **Scissors**
- Colours: **2**
- Wall thickness: **.031-.061**
- Tensile strength *ASTM D-2256 Lbs (Yarn)*: **N/A**
- Specific gravity *ASTM D-792*: **1.0-1.8**
- Moisture absorption% *ASTM D-570*: **.01**
- Hard vacuum data *ASTM E-595 at 10-5 torr*:
TML **.02**
CVCM **.01**
WVR **.00**
- Smoke D-Max *ASTM E-662*: **N/A**
- Outgassing: **Low**
- Oxygen index *ASTM D-2863*: **N/A**

MFG - Chemical Resistance Index

	5	4	3	2	1	No Effect
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

	5	4	3	2	1	No Effect
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

MVW is made from continuous filament basalt fiber and is engineered for protection from temperatures of up to 1,500°F. When wrapped around exhaust pipes, the unique construction creates an attractive and durable finished product. It is 25% stronger and provides a 300°F increase in temperature protection over fiberglass wrap. The product is very rugged, and will not exhibit any vibration damage over long periods of use. This fiber wrap is easy to install and will provide a long service life of protection.

MVW reduces under-hood temperatures up to 70%, increases horsepower and fuel efficiency. The fiber works by holding heat within the header, which creates a better exhaust flow. This allows easy removal of spent gasses and creates more airflow to the engine.

- High temperature resistance
- Easy to Install
- Resists gasoline & engine chemicals
- Great appearance
- Colour: Basalt (BA)



TYPE	COLOUR
MVW 2.00 BA.15	
NW	PÙ



Melt Point
ASTM D-2117
2,400°F (1,316°C)
Maximum Continuous
Mil-I-23053
1,200°F (649°C)

Specifications are subject to change without notice

Order Number	Width	Wall Thickness		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MVW1.00BA.15	1"	1.6	1/16"	2.53	1.70	15	50
MVW2.00BA.15	2"	1.6	1/16"	4.76	3.20	15	50

Abrasion Test Data

- Abrasion resistance: **N/A**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**

Physical Properties

- Monofilament diameter: **N/A**
- Flammability rating: **Non Flammable**
- Recommended cutting: **Scissors**
- Colours: 1
- Wall thickness: **.06**

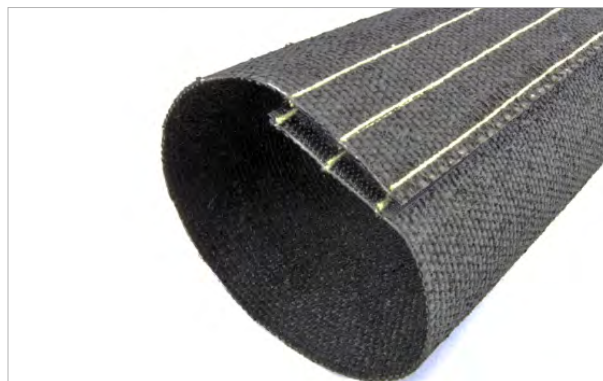
MVW - Chemical Resistance Index

	3	4	3	2	1	1
	Severely Affected	More Affected	Affected	Little Effect	No Effect	
Aromatic Solvents						
Aliphatic Solvents						
Chlorinated Solvents						
Weak Bases						
Salts						
Strong Bases						
Salt Water 0-S-1926						
Hydraulic Fluid MIL-H-5606						

	3	4	3	2	1	1
	Severely Affected	More Affected	Affected	Little Effect	No Effect	
Lube Oil MIL-L-7808						
De-Icing Fluid MIL-A-8243						
Strong Acids						
Strong Oxidants						
Esters/Ketones						
UV Light						
Petroleum						
Fungus ASTM G-21						

MWW is braided from fiberglass yarns with high temperature coating and hook and loop closure. It is commonly used for protecting welding hoses from molten splatter and abrasion from moving and dragging. This product will withstand continuous exposure to temperatures of 400°F, and intermittent exposure to temperatures of up to 1000°F. The heavy duty hook and loop closure ensures a tight seal and allows MWW to be installed easily over existing assemblies. MWW also provides a high level of abrasion and penetration protection to increase the useful life of any hoses exposed to rough or abrasive surfaces.

- Easy to install, cuts with scissors
- Resists damage from UV, gasoline & engine chemicals
- Weld splatter, hot slag, & welding spark protection
- Stays flexible in low temps
- Colour: Black (BK)



TYPE	COLOUR
MWW1.00BK.15	15
NW	PÙ



Intermittent Exposure
1,000°F (538°C)
Maximum Continuous
Mil-I-23053
400°F (204.4°C)



Specifications are subject to change without notice

Order Number	Nominal width		Velcro Width		Wall Thickness		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)	
MWW1.00BK.15	1"	21.3	0.84"	1.0	0.04"	12.48	8.40	15	50	
MWW1.50BK.15	1 1/2"	21.3	0.84"	1.0	0.04"	16.35	11.00	15	50	
MWW2.00BK.15	2"	39.4	1.55"	1.0	0.04"	20.51	13.80	15	50	
MWW2.38BK.15	2 3/8"	39.4	1.55"	1.0	0.04"	22.00	14.80	15	50	
MWW2.75BK.15	2 3/4"	39.4	1.55"	1.0	0.04"	24.37	16.40	15	50	
MWW3.00BK.15	3"	39.4	1.55"	1.0	0.04"	27.35	18.40	15	50	
MWW3.25BK.15	3 1/4"	39.4	1.55"	1.0	0.04"	28.54	19.20	15	50	
MWW3.50BK.15	3 1/2"	39.4	1.55"	1.0	0.04"	30.32	20.40	15	50	
MWW4.00BK.15	4"	39.4	1.55"	1.0	0.04"	32.25	21.70	15	50	

Abrasion Test Data

- Abrasion resistance: **High**
- Abrasion test machine: **Taber 5150**
- Abrasion test wheel: **Calibrase H-18**
- Abrasion test load: **500g**
- Room temperature: **77°F**
- Humidity: **70%**
- Material wear out: **1,060 test cycles**
- Pre-test weight: **7,857.4 mg**
- Post-test weight: **6,602.2 mg**
- Test end loss of mass point of destruction: **1,255.2 mg**

Physical Properties

- Monofilament diameter: **N/A**
- Flammability rating *FMVSS-302 Approved* : **VW-1**
- Recommended cutting: **Scissor/Shears**
- Colours: **1**
- Wall thickness: **.04**

MWW - Chemical Resistance Index

	Severely Affected	More Affected	Affected	Little Effect	No Effect
Aromatic Solvents					
Aliphatic Solvents					
Chlorinated Solvents					
Weak Bases					
Salts					
Strong Bases					
Salt Water 0-S-1926					
Hydraulic Fluid MIL-H-5606					

	Severely Affected	More Affected	Affected	Little Effect	No Effect
Lube Oil MIL-L-7808					
De-Icing Fluid MIL-A-8243					
Strong Acids					
Strong Oxidants					
Esters/Ketones					
UV Light					
Petroleum					
Fungus ASTM G-21					

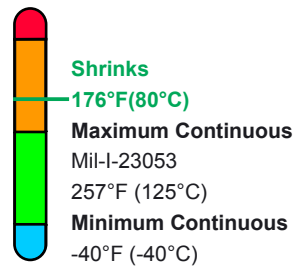
A unique mixture of Polyolefin and Polyester yarns, is the ideal way to form the only shrinkable fabric of its kind. The woven construction makes this product extremely flexible and resistant to trapping water, heat and humidity. Provides outstanding abrasion, chafing and cutting protection, even at high temperatures.

Heatshrink fabric tubing is designed primarily to provide mechanical abrasion protection for components such as rubber hoses, plastic pipes, and harness wiring bundles. Also suitable for other applications, such as noise and rattle suppression.

- Shrink Temperature 176°F (80°C)
- Highly Flexible
- Halogen Free
- Excellent Chemical Resistance
- Superior Abrasion Resistance
- Over A Wide Temperature Range
- Cuts Easily With Scissors



TYPE	COLOUR
MH2 0.48 BK	NW



Specifications are subject to change without notice

Order Number	Nominal Width	Minimum Diameter		Maximum Diameter		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)
MH20.48BK	1/2"	12.0	0.47	6.0	0.24	1.49	1.00	7.5	25
MH20.79BK	3/4"	20.0	0.79	10.0	0.39	2.23	1.50	7.5	25
MH21.18BK	1-3/16"	30.0	1.18	15.0	0.59	2.97	2.00	7.5	25
MH21.58BK	1-1/2"	40.0	1.57	20.0	0.79	3.72	2.50	7.5	25

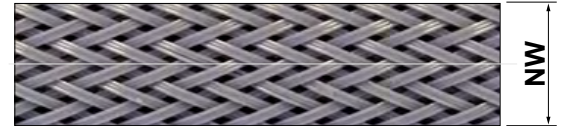
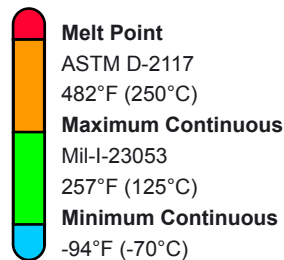
MRF sleeving is the perfect choice for electronic and high tech applications where flame retardance and durability are primary concerns. Ease of installation makes it an efficient choice for long runs of wire or cable. The addition of an organic combustion inhibitor to our standard polyethylene terephthalate gives the sleeve an Underwriters Lab and CSA flame resistance rating of VW-1.



- VW-1 Approved
- Mil-202, FAR 25, FMVSS 302
- Economical and easy to install
- Cut and abrasion resistant
- Expands up to 150%
- Halogen free
- Resists gasoline and engine chemicals
- Available colours: Black with White Tracer (TB)
White with Black Tracer (TW)
Gray with White Tracer (GW)
Spyder (SP) - Custom Color



TYPE	COLOUR
MRF 2.00 TB .15	NW PU



Specifications are subject to change without notice

Order Number	Nominal Width		Minimum Diameter		Maximum Diameter		Weight		Standard Spool Put-Ups	
	(NW)	(mm)	(in)	(mm)	(in)	Kg/100m	Lbs/100'	(M)	(F)	
MRF0.13TB.65	1/8	2.4	3/32	6.4	1/4	0.24	0.16	65	225	
MRF0.25TB.60	1/4	3.2	1/8	11.1	7/16	0.36	0.24	60	200	
MRF0.38TB.38	3/8	4.8	3/16	12.7	1/2	0.85	0.57	38	125	
MRF0.50TB.30	1/2	6.4	1/4	19.1	3/4	1.07	0.72	30	100	
MRF0.75TB.22	3/4	12.7	1/2	31.8	1 1/4	1.29	0.87	22	75	
MRF1.00TB.20	1	15.9	5/8	41.3	1 5/8	1.99	1.34	20	65	
MRF1.25TB.15	1 1/4	19.1	3/4	44.5	1 3/4	2.38	1.60	15	50	
MRF1.50TB.12	1 1/2	25.4	1	54.0	2 1/8	2.91	1.96	12	40	
MRF1.75TB.9	1 3/4	31.8	1 1/4	69.9	2 3/4	4.01	2.70	9	30	
MRF2.00TB.15	2	38.1	1 1/2	88.9	3 1/2	4.90	3.30	15	50	
MRF2.50TB.15	2 1/2	44.5	1 3/4	92.1	3 5/8	5.65	3.80	15	50	
MRF3.00TB.15	3	63.5	2 1/2	120.7	4 3/4	5.94	4.00	15	50	

