NYSHA®
MOBILITY TECH

HIGH TEMPERATURE CABLES

UL REGISTERED FIRM 50257886 ISO 9001:2015 DQS

www.nyshamobilitytech.com

IATF 16949

SILICON CABLES

NYSHA SUPERFLEX Silicon cables are high temperature cables insulated with extruded silicon rubber.

Technical Parameters:

- Operating Temp: -40°C to 180°C
- Conductor Material: ATC
- Voltage Rating: 600V / 1000V
- Extruded Cable

Properties:

- Halogen Free
- High Chemical Resistance
- Highly Flexible
- Flame Retardant & Low Smoke
- Light in weight

Applications:

- Motors & Generators
- Steel Plants
- Automotive Applications
- Military Applications
- Aerospace Industry
- Medical Applications
- Space Applications

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FEP CABLES

FEP or Fluorinated Ethylene Propylene is an extruded fluoropolymer used for high temperature applications.

Technical Parameters:

- Operating Temp: -50°C to 200°C
- Conductor Material: ATC / ASPC / NPC
- Voltage Rating: 250V / 600V / 1000V
- Extruded Cable

Properties:

- High Chemical Resistance
- High Dielectric Strength
- High Abrasion & Corrosion Resistance
- Excellent High Frequency Electrical Properties
- Low Friction
- Highly Flexible

Applications:

- Wire Harness Assembly
- Motors & Transformer Lead Wires
- Battery, UPS, Inverter
- Automotive & EV Applications
- Defence Applications
- Aerospace Industry
- Medical & Scientific Instruments
- Military & Naval Applications
- High Temp Industrial Equipment
- Chemical Industry Applications
- Oil & Gas Industry

Comparison in FEP & PVC Cables

SL No.	Property	FEP Cable	PVC Cable
1	High Voltage Application (at lower wall thickness)	Superior	Inferior
2	Chemical Resistance	Superior	Inferior
3	Temperature Range	Superior	Inferior
4	Temperature Cycles	Superior	Inferior
5	Overall Cable Diameter	Superior	Inferior
6	Flexibility	Superior	Inferior
7	Price Advantage	Inferior	Superior

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FEP CABLES

Technical Data Sheet (According to JSS 51034)

Nominal Cross Section Area	Conductor Construction				Nominal Outer Diameter		
	No. of Strands	Dia of Strands	Bunched Dia	Max Conductor Resistance at 20°C	ET - 250V AC	E - 6000V AC	ET - 1000V AC
sqmm		mm	mm	ohms/km	mm	mm	mm
0.0340	7	0.08	0.24	570.9	0.56	0.76	1.00
0.0507	1	0.25	0.25	356.4	0.56	0.76	1.00
0.0568	7	0.10	0.30	332.3	0.61	0.81	1.07
0.0806	1	0.32	0.32	224.4	0.63	0.84	1.09
0.0887	7	0.13	0.38	210.5	0.69	0.89	1.14
0.1282	1	0.40	0.40	140.9	0.71	0.91	1.18
0.1409	7	0.16	0.48	133.7	0.79	0.99	1.24
0.1540	19	0.10	0.50	126.7	0.79	0.99	1.24
0.2047	1	0.50	0.50	88.4	0.81	1.00	1.27
0.2270	7	0.20	0.60	83.2	0.91	1.12	1.37
0.2407	19	0.13	0.63	80.2	0.91	1.12	1.37
0.3243	1	0.65	0.65	56.1	0.95	1.15	1.41
0.3547	7	0.25	0.75	52.5	1.07	1.27	1.52
0.3820	19	0.16	0.80	49.8	1.07	1.27	1.52
0.5168	1	0.80	0.80	34.7	1.12	1.30	1.57
0.5630	7	0.32	0.97	33.0	1.27	1.47	1.73
0.6162	19	0.20	1.00	30.3	1.27	1.47	1.73
0.8969	7	0.40	1.20	20.7		1.75	2.00
0.9627	19	0.25	1.25	19.1		1.75	2.00
1.2293	19	0.29	1.45	14.9		2.03	2.25
1.2000	37	0.20	1.40	15.0		2.00	2.20
1.5272	19	0.32	1.60	12.5		2.15	2.40
1.9412	19	0.36	1.83	9.5		2.42	2.69
1.8886	37	0.25	1.75	10.0		2.35	2.60
2.3864	19	0.40	2.00	7.8		2.60	2.85
3.0848	19	0.45	2.25	6.0			3.17
2.9742	37	0.32	2.24	6.5			3.12
4.7397	37	0.40	2.82	3.9			3.68
8.6054	133	0.29	4.29	2.2			5.31
13.5889	133	0.36	5.41	1.4			7.45

PTFE CABLES

Polytetrafluoroethylene or PTFE is a particularly versatile white & opaque plastic fluoropolymer that is typically a tape sintered material.

Technical Parameters:

- Operating Temp: -65°C to 260°C
- Conductor Material: ASPC / NPC
- Voltage Rating: 250V / 600V / 1000V
- Typically Tape Sintered Cable

Properties:

- High Electrical Resistance & Dielectric Strength
- Highly Chemically Inert
- Resistance to Water (due to Fluorine's high Electronegativity)
- Low Coefficient of Friction
- High Density & Non-sticky material
- Don't propagate flame or fire
- Resistant to solder iron damage

Applications:

- Automotive Applications
- Motors & Batteries
- Defence Applications
- Aerospace Industry
- Boilers & Gas Turbines in power plants, steel mills etc.
- Medical Industry
- Oil & Gas Industry

Comparison in FEP & PTFE Cables

SL No.	Property	FEP	PTFE
1	Flexibility	Superior	Inferior
2	Cost	Superior	Inferior
3	Overall Cable Diameter	Superior	Inferior
4	Behaviour under vibration in automotive vehicles	Superior	PTFE has a tendency to open up under the high vibration in automotive vehicles
5	Corrosion Resistance	Similar	Similar
6	Temperature Range	Inferior	Superior

ETFE CABLE

Ethylene Tetrafluoroethylene Copolymer or ETFE is modified fluoropolymer used as insulation for high temperature applications. Its moderate level of stiffness and high resistance to chemicals make it ideal for applications such as chemical tank linings where the ETFE material bend to curved surfaces and still provide good strength to the cable.

Technical Parameters:

- Operating Temp: -40°C to 150°C
- Conductor Material: ATC / ASPC / NPC
- Voltage Rating: 250V / 600V / 1000V
- Extruded Cable

Properties:

- High Electrical Resistance & Dielectric Strength
- Highly Chemically Inert
- Abrasion, Impact & Corrosion Resistant
- Highly Resistant to Radiation Energy
- Fire & Flame Retardant Properties
- Light in Weight
- Moderate Stiffness

Applications:

- Fluid handling & Chemical Processing Equipment
- Medical applications like Oxygen Respirator
- Nuclear Power applications
- Automotive applications
- Defence Industry
- Aerospace Industry

PVDF CABLES

Polyvinylidene Difluoride or PVDF is a non-reactive Thermoplastic Fluoropolymer.

Technical Parameters:

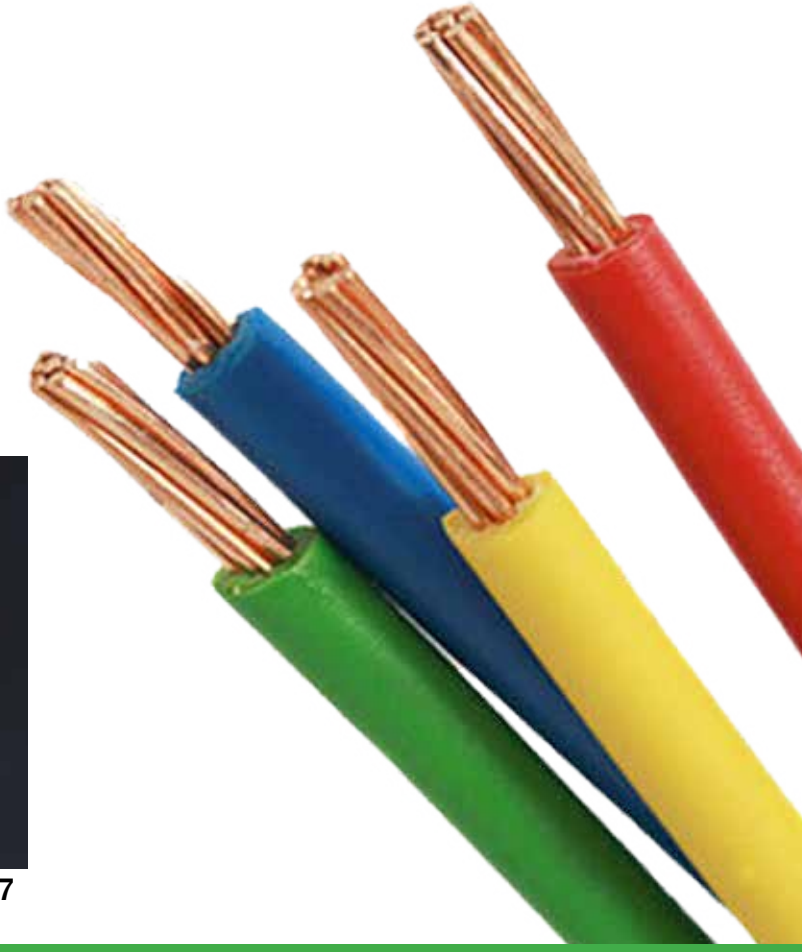
- Operating Temp: -130°C to 150°C
- Conductor Material: ATC / ASPC / NPC
- Voltage Rating: 250V / 600V / 1000V
- Extruded Cable

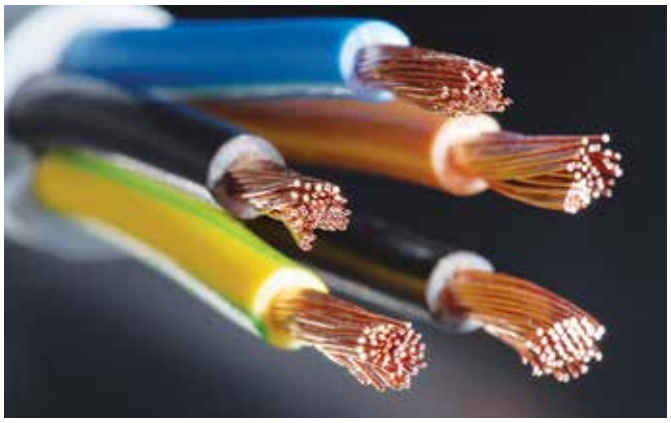
Properties:

- Exhibits Piezoelectric & Pyroelectric properties
- High Electrical Resistance
- Abrasion & Impact Resistant with Good Mechanical Strength
- Chemical Resistance to oil, water, and most industrial solvents
- Resistant to UV Light Energy
- Heat Resistant Properties
- Light in weight

Applications:

- Automotive Industry
- Military applications
- Aerospace Industry
- Chemical Processing Equipment
- Biomedical Research
- Oil & Gas Industry





PFA CABLES

Perfluoroalkoxy or PFA is an extruded high temperature insulation material typically used when high continuous current carrying capacity and high flexibility are required to be maintained in high temperature environments.

Technical Parameters:

- Operating Temp: -65°C to 260°C
- Conductor Material: ATC / ASPC / NPC
- Voltage Rating: 250V / 600V / 1000V
- Extruded Cable

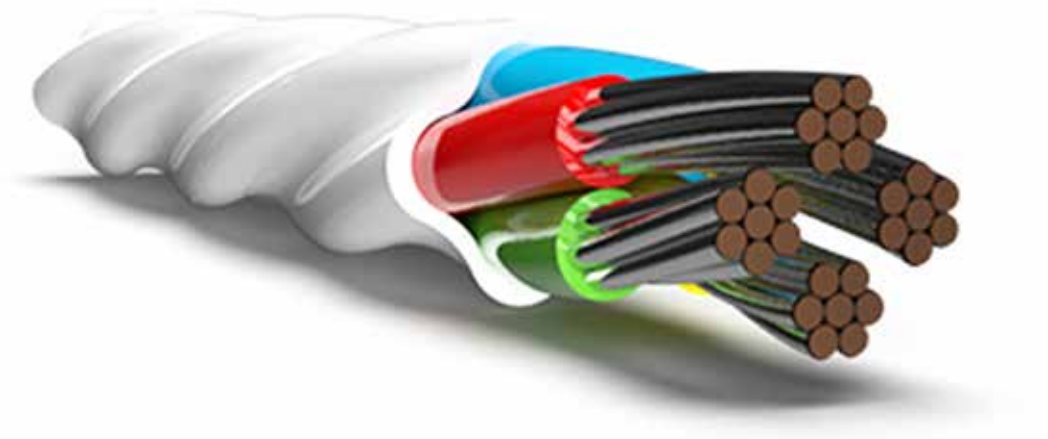
Properties:

- Thin wall thickness
- Excellent Strength & Toughness at low temperatures
- Superior Mechanical Strength at High Temp when compared to FEP
- High Crack & Stress Resistance
- Great Electrical Insulation Properties & Dielectric Strength
- Low Coefficient of Friction & Non-sticky
- Chemical Resistance to oil, water, and most industrial solvents
- Highly Flexible, even at low temperatures
- Flame Resistant Properties
- Light in weight

Applications:

- Automotive Applications, particularly in Oxygen and NOx Sensors & Gas Igniters
- Military Applications
- Aerospace Industry
- Oil & Gas Industry
- Appliance Wiring

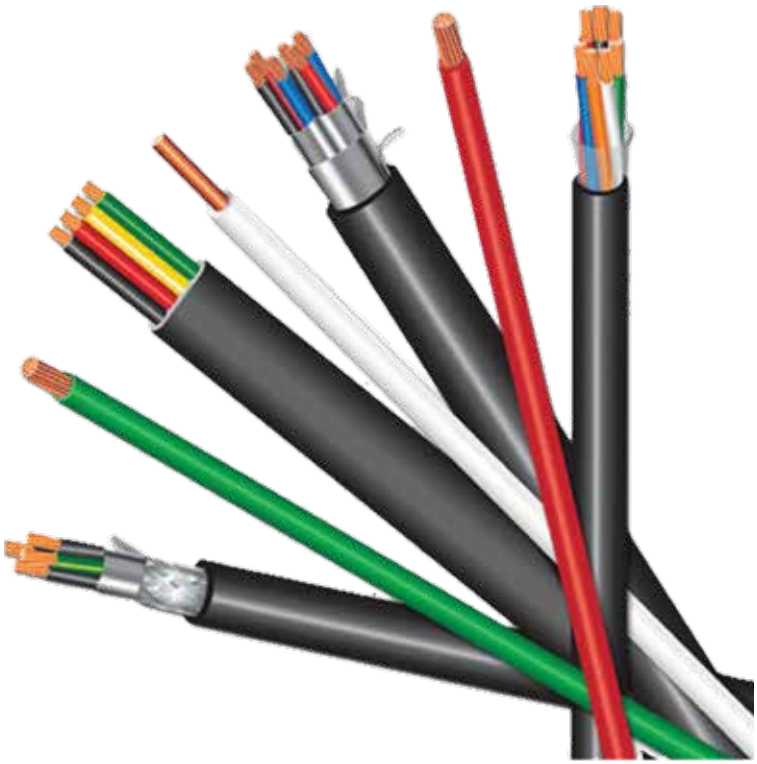
HIGH TEMP MULTICORE & COMPOSITE CABLES



We design and manufacture a wide variety of high temperature multicore and composite cables using a variety of polymers.

These can be of various types such as:

- Multicore cables with High Temp Insulation & High Temp or PVC/TPE/TPU Sheath
- Multicore cables with High Temp Insulation, High Temp or PVC/TPE/TPU Sheath as well as Braid and/or Foil Shielding
- Composite cables with multiple Conductor Sizes, High Temp Insulation & High Temp or PVC/TPE/TPU Sheathing
- Composite cables with multiple Conductor Sizes, High Temp Insulation, Braid and/or Foil Shielding & High Temp or PVC/TPE/TPU Sheathing
- Composite cables with a combination of High Temp Insulation Polymers & High Temp or PVC/TPE/TPU Sheath



General Construction

- **Conductor:** ATC / ASPC / ANPC depending on insulation material
- **Insulation:** FEP, PTFE, ETFE, PVDF, PFA, Silicon
- **Shielding if required:** Aluminium Mylar Tape, ATC Braid, ASPC Braid, ANPC Braid
- **Sheathing:** FEP, PTFE, ETFE, PVDF, PFA, Silicon, PVC, TPE, TPU or as per requirement
- **Voltage Rating:** 250V / 600V / 1000V
- **Operating Temperature:** upto 260°C depending on insulation & sheathing material

Derating Factor for PTFE Multicore Cables	
No. of Cores	**Derating Factor (x Amps)**
2 to 5	0.8
8 to 15	0.7
16 to 30	0.5

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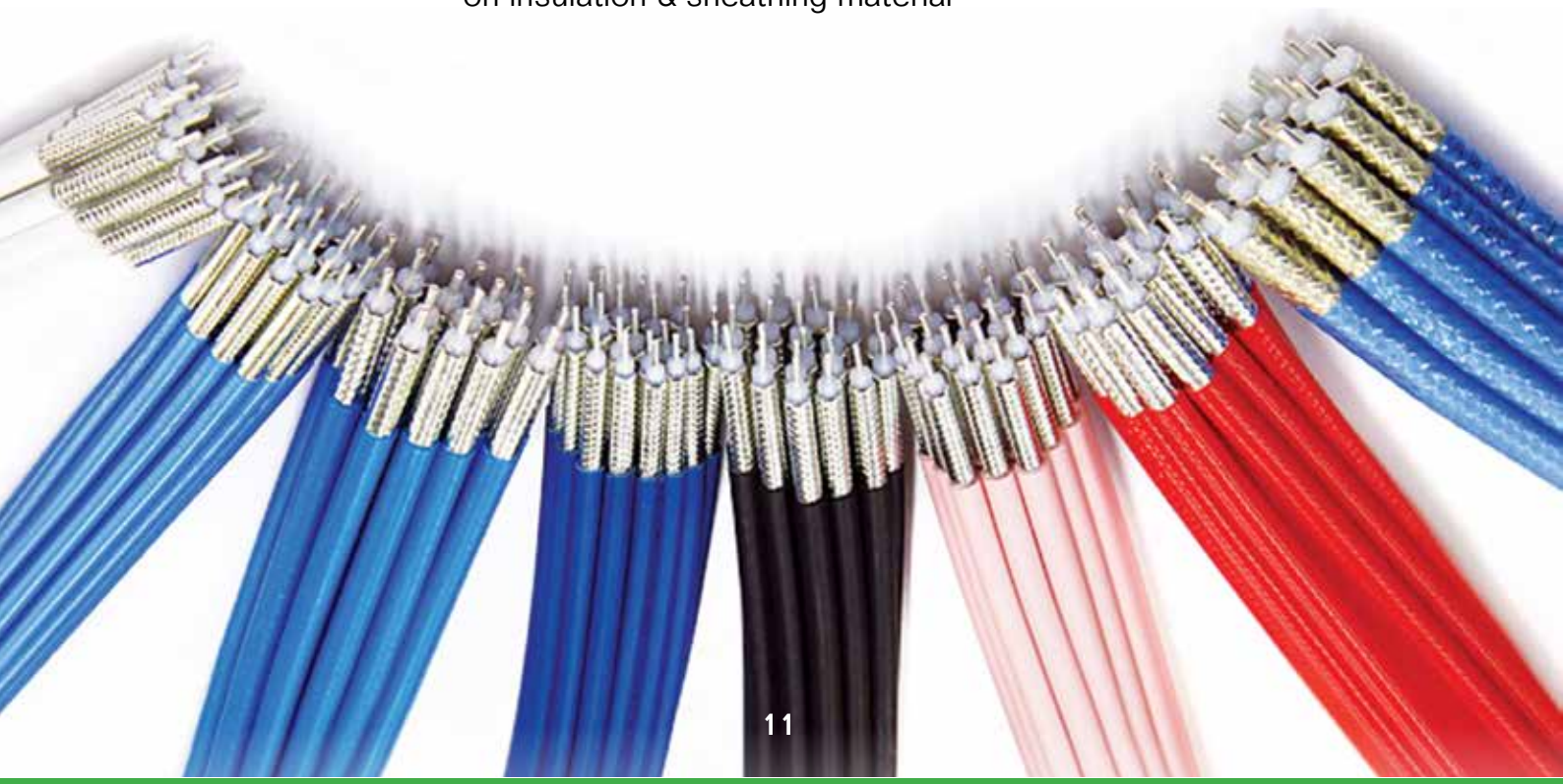
HIGH TEMPERATURE COAXIAL CABLES

High Temperature fluoropolymers have excellent electrical properties making them highly suitable for Coaxial Cables. FEP & PTFE Coaxial cables give a stable and reliable performance over a long period with a low level of losses. PTFE Coaxial Cable is non-reactive & has a low Dielectric Constant even at high frequencies.

General Construction:

- **Conductor:** ATC / ASPC / NPC depending on insulation material
- **Insulation:** FEP / PTFE
- **Shielding:** ATC / ASPC / NPC
- **Sheathing:** FEP / PTFE / PVC or as required
- **Voltage Rating:** 250V / 600V / 1000V
- **Operating Temperature:** upto 260°C depending on insulation & sheathing material



Nysha Mobility Tech Pvt Ltd.

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NMT/HIGH TEMPERATURE CABLES/R0/2024

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