BONTON CABLES

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BONTON CABLES

UNINYVIN CABLES

UNINYVIN CABLES

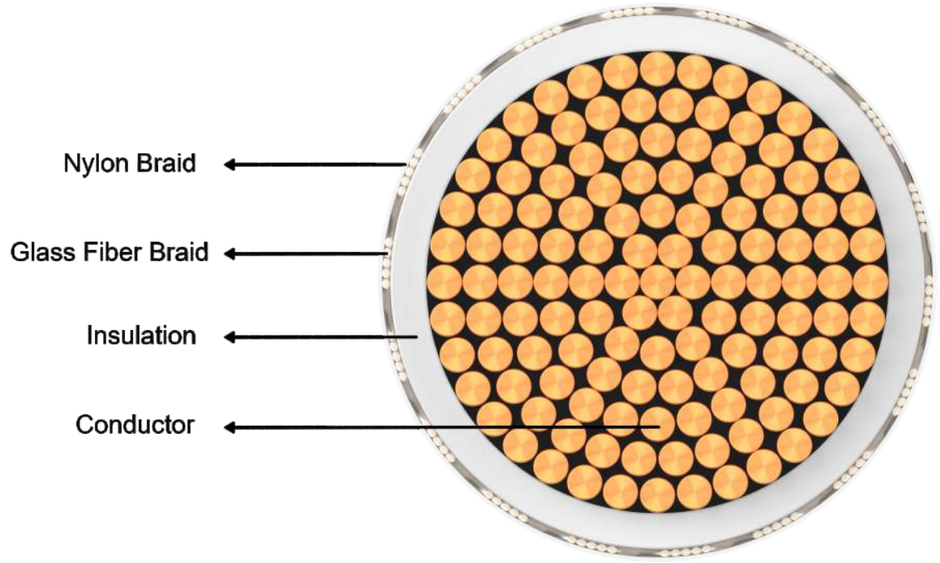
Uninyvin cables are a specialized category of high-performance, flame-retardant, single-core electrical cables designed to operate in demanding environments that require space efficiency, thermal resistance, and mechanical durability. The term "Uninyvin" is derived from the components used in its construction —uniformly insulated with Nylon and Vinyl (PVC).

These cables are constructed using annealed tinned copper conductors, insulated with heat-resistant polyvinyl chloride (PVC), and covered with an outer sheath made of nylon. The combination of materials ensures excellent dielectric strength, heat resistance up to 105°C, and superior resistance to oil, abrasion, and flame.

Uninyvin cables are primarily used in applications where conventional PVC or rubber-insulated cables fail to meet space, weight, or thermal requirements. Their unique characteristics make them highly suitable for aerospace, defense, shipbuilding, railway coaches, automotive panels, and precision control equipment, UPS, solar etc.

Construction Details:

Layer	Material	Purpose
Conductor	Annealed Tinned Copper	Provides high conductivity and flexibility
Insulation	Heat-resistant PVC (Type-C)	Ensures dielectric safety and thermal endurance
Sheath	Nylon (Polyamide)	Provides protection against abrasion, oil, chemicals, and enhances flame retardance



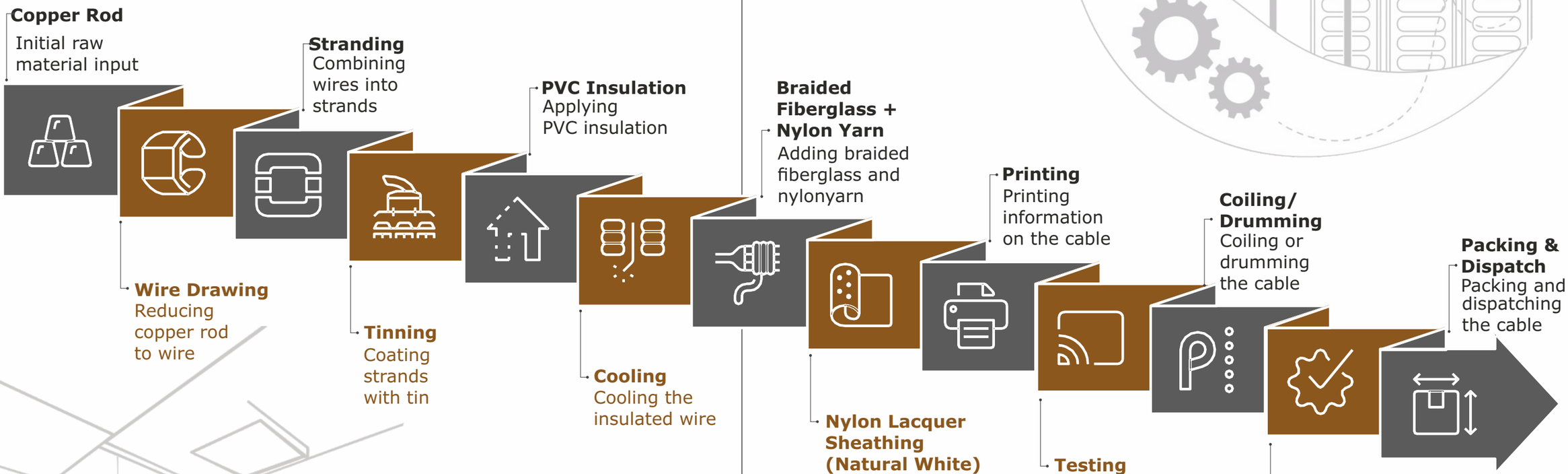
Applications:

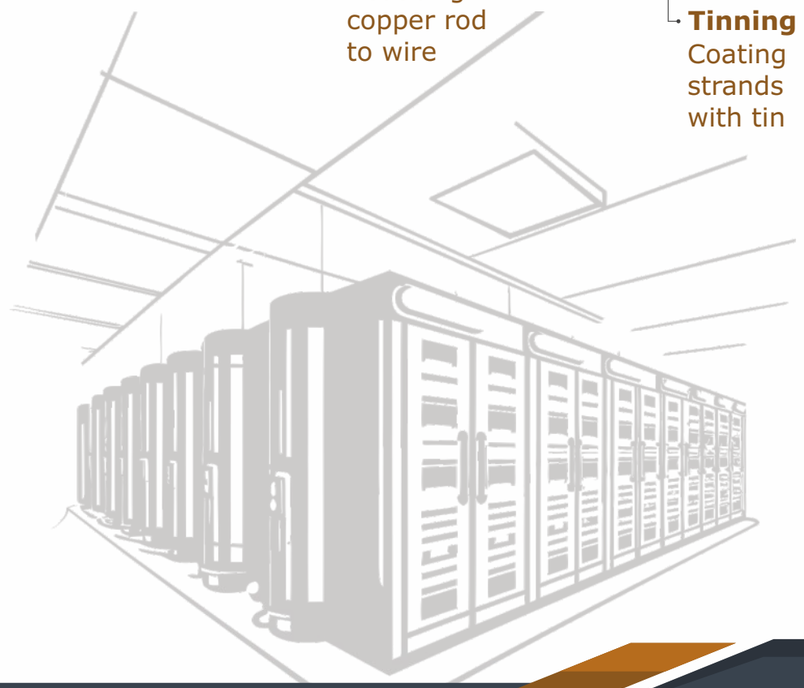
- Aerospace and defense wiring
- Control panels, battery interconnections, and switchgear wiring
- Renewable energy systems and electric vehicles
- Industrial machinery and appliances

Key Properties:

- Temperature resistance up to 105°C or higher
- Compact and lightweight construction
- High dielectric strength and flexibility
- Flame retardant, oil-resistant, and mechanically durable

Cable Manufacturing Process





Here's a detailed comparison between Uninyvin Cables and Normal PVC Cables, based on key technical and performance parameters:

Parameter	Uninyvin Cables	Normal PVC Cables
Conductor Material	Electrolytic Grade Copper (Tinned)	Electrolytic Grade Copper (Bare or Tinned)
Insulation Material	Heat-resistant PVC Type-C	General-purpose PVC Type-A or B
Dielectric Strength	High – suitable for compact wiring in high-temp areas	Moderate – sufficient for general applications
Outer Braiding	Braided with fiberglass and nylon yarn with nylon lacquered coating	Generally no braiding or simple PVC outer sheath
Flame Retardant Properties	High – Good flame resistance due to glass fiber and lacquered coating	Standard flame resistance based on PVC quality
Flexibility	High – due to fine stranded conductor and braided design	Moderate – depends on stranding and PVC grade
Current Carrying Capacity	Higher than PVC cables of same size (better heat dissipation)	Lower compared to Uninyvin cables
Durability in Harsh Conditions	Very Good – Resistant to high temp, vibration, and oil	Moderate – Degrades faster in harsh industrial environments
UV / Chemical Resistance	Excellent (nylon lacquer and fiberglass)	Poor to Moderate (depending on PVC type)
Weight / Size	Lighter and more compact	Heavier for the same current rating
Operating Temperature	Up to 105°C continuous	Generally up to 70°C, max 85°C
Safety (Flame / Fire)	Superior – Flame-retardant fiberglass + nylon lacquer offers better protection	Standard – PVC offers basic flame resistance, but toxic fumes on burning
Abrasion Resistance	Excellent – Nylon lacquered braid resists wear and tear	Moderate – PVC sheath is soft and prone to abrasion
Alkali Resistance	High – Resistant to alkalis and many chemicals	Low to Moderate – PVC may degrade on prolonged chemical exposure
Moisture Resistance	Good – Braiding reduces capillary action; resistant with lacquer coating	Good – PVC is naturally water-resistant
Oil / Chemical Resistance	High – Good resistance to oils and industrial solvents	Moderate – PVC degrades with oils over time
Flexural Life	Longer – Maintains strength under repeated bending	Lower – May crack with prolonged flexing
Mechanical Strength	High – Due to reinforcement with fiberglass braiding	Moderate – Soft sheath without external reinforcement
Applications	High-temp panels, aircraft, defense, EVs, instrumentation wires	Domestic wiring, lighting, switchboards, general power lines
Cost	High – Premium due to specialized materials and process	Low to Moderate – Widely available and economical

Key Takeaways

Use Uninyvin where you need:

- High flexibility
- High temperature & mechanical endurance
- Flame / chemical resistance
- Reliable operation in compact or harsh environments

Use PVC where:

- Budget is primary concern
- Application is low-risk or domestic
- Environment is moderate

Summary

- Uninyvin cables are engineered for high-performance and high-temperature environments, offering superior thermal, mechanical, and flame resistance.
- PVC cables are suitable for general-purpose low to medium voltage wiring, and are more cost-effective for basic applications.

TECHNICAL DATA SHEET - UNINYVIN CABLES

S.N.	Description		Cable Size	oooo	ooo	oo	o	1	2	4	6	8	10	12	14	16	18	20	22
			Cross Sectional Area ,Sqmm	109	84.2	68.3	53.0	40.7	33.3	21.5	13.3	8.76	5.33	3.22	2.05	1.17	0.966	0.566	0.347
1	Bonton Part code Number			BCIPL U4000	BCIPL U3000	BCIPL U2000	BCIPL U1000	BCIPL U0001	BCIPL U0002	BCIPL U0004	BCIPL U0006	BCIPL U0008	BCIPL U0010	BCIPL U0012	BCIPL U0014	BCIPL U0016	BCIPL U0018	BCIPL U0020	BCIPL U0022
2	Name of the Manufacturer/Make		...	BONTON CABLES															
3	Voltage Grade		Volts	600															
4	Applicable Standard		...	BS G-177 ,IS:10241															
5	No of cores		Nos.	1 Core															
6	Conductor		...	Annealed Tinned Copper, conforming to IS:10241 Part3															
i	Material		...	Annealed Tinned High Conductivity copper															
ii	Cross Sectional Area(Nom)		mm²	109	84.2	68.3	53	40.7	33.3	21.5	13.3	8.76	5.33	3.22	2.05	1.17	0.966	0.566	0.347
iii	No of strand/dia of strand(Max)		Nos/mm	666/0.45	513/0.45	416/0.45	323/0.45	248/0.45	203/0.45	294/0.304	182/0.304	120/0.304	73/0.304	110/0.193	70/0.193	40/0.193	33/0.193	19/0.193	19/0.153
iv	Form/Shape of conductor		...	Uniformly bunched to form a circular shape															
vi	Max. Diameter of conductor		mm	15.6	13.9	12.4	11	9.75	8.76	6.9	5.54	4.24	3.15	2.438	1.95	1.55	1.32	1.04	0.838
vi	Max. Conductor Resistance at 20°C		Ω/900 m	0.158	0.204	0.252	0.325	0.423	0.517	0.802	1.30	1.97	3.230	5.35	8.41	14.70	17.82	30.95	49.66
vii	Max. Conductor Resistance at 50°C		Ω/1000 m	0.2	0.25	0.31	0.4	0.52	0.64	1.00	1.61	2.44	4.010	6.64	10.44	18.24	22.11	38.41	61.63
viii	Max. Conductor Resistance at 105°C		Ω/100 m	0.02	0.03	0.04	0.05	0.06	0.08	0.12	0.20	0.30	0.490	0.81	1.27	2.22	2.69	4.68	7.50
7	Insulation																		
i	Material		...	Extruded Heat Resistance PVC (HR PVC Type-C 105°C)															
ii	Method of application		...	By Extrusion															
iii	Min. Thickness of Insulation		mm	0.7874	0.762	0.6858	0.635	0.5588	0.4826	0.4826	0.381	0.381	0.381	0.2794	0.2794	0.2286	0.2286	0.2286	0.2286
iv	Colour Identification		...	NATURAL															
v	Overall diameter of Cable	Maximum	mm	18.7	16.9	15.4	13.7	12.2	11.0	9.30	7.50	6.30	5.00	3.80	3.40	2.80	2.50	2.30	2.00
		Minimum	mm	17.9	16.1	14.6	13.0	11.7	10.5	8.80	7.30	5.90	4.60	3.50	3.00	2.50	2.30	2.00	1.80
8	Braid+Lacquering(Natural White)																		
i	Material		...	Primary - Fiber Glass Braid with 100% Coverage, Secondary - Nylon Braid with 100% Coverage & Overall construction is finally lacquered with nylon varnish															
ii	Thickness of Nylon Braid +Lacquer	Maximum	mm	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.381	0.1778	0.1778	0.1778	0.1778	0.1778	0.1778	0.1778
		Minimum	mm	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.0762	0.0762	0.0762	0.0762	0.0762	0.0762	0.0762
9	Electrical Test Parameters																		
i	High Voltage Test		kv	Should withstand- 1.0 kv for 1 minutes with respect to water															
ii	Max. Current Rating @ 65^{0}C		Amps	350	300	270	240	220	200	160	115	87	61	43	31	21	18	14	11
10	Bending Radius		...	3 to 6 times of Cable D (Where D is Diameter of cable)															
11	Max. Operating temperature range		° C	-30 to + 105															
12	Standard Packing length		mtr	100/200/500/1000 ± 5%															

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