

## Dekoron Wire and Cable Capabilities Overview

### Research, Product Development and Application Engineering

Research, product development and application engineering are fundamental to the Dekoron tradition of servicing our customers with reliable, innovative products and technical support. Product and reliability engineering are an inherent part of our product development process. Our research and product development staff is complemented by our modern and diversified research facilities. Polymer engineering and chemistry allow us to provide the ultimate in value engineered polymers for a wide variety of industrial and commercial product applications.

**Custom compounding capabilities allow us to develop and manufacture products for the specific applications in markets such as:**

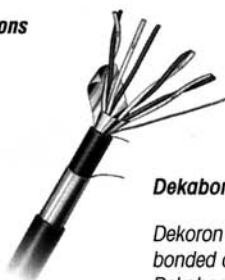
- Chemical processing
- Oil exploration and production
- Refining and petrochemical
- Food processing
- Power generation
- Waste water treatment
- Offshore
- Pulp and paper
- Light Rail

Innovations include cables capable of providing extended operation while exposed to fire and cables exhibiting low smoke and zero halogen characteristics.

### Cable Components

Cables with up to 100 conductors or conductor groups and continuous lengths of 10,000 feet (3,000 meters) are possible. All conductor groups can be shielded against electromagnetic interference by the use of proper shields and drains. Dekoron is capable of applying electromagnetic interference shields of aluminum-polyester (Mylar®) tape or copper-polyester (Mylar) tape.

### Armor Options



**Dekabon Armor Cable**

Dekoron also has the capability to apply bonded aluminum sheathing, Dekabon. Dekabon is hermetically sealed aluminum tape, bonded to a jacket that is capable of protecting the cable from moisture and chemicals. Paired with a drain wire, Dekabon acts as an electrostatic shield providing excellent lightning protection.



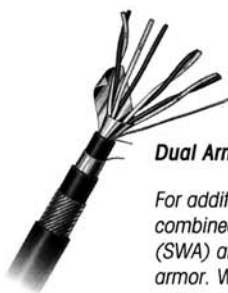
**Interlock Armor**

Dekoron can provide mechanical strength and protection with several armor types available. For good cut-through and crush resistance Dekoron can offer galvanized steel and aluminum interlocked armor. Interlock armor cable is ideal for open tray installations.



**Served Wire Armor**

Where good cut-through resistance is necessary but vertical drop installation is required, Dekoron can offer galvanized steel served wire armor. It has excellent longitudinal strength – ideal for long pulls.



**Dual Armor**

For additional protection, all cables can be combined with galvanized steel wire armor (SWA) and galvanized or aluminum interlocked armor. When combined with armor, Dekabon offers superior cable protection.

### Cable Insulation Materials

Dekoron thermoplastic insulations include polyvinyl chloride (PVC). PVC with nylon, high density polyethylene (HDPE), thermoplastic elastomer (TPE). Dekoron thermoset insulations include crosslinked polyethylene (XLPE) and a crosslinked silicone alloy for circuit integrity applications.

### Cable Jacket Options

Jacket options include polyvinyl chloride (PVC), high density polyethylene (HDPE), low density polyethylene (LDPE), chlorinated polyethylene (CPE), thermoplastic elastomer (TPE), flame retardant zero halogen elastomer (TPN), chlorosulfonated polyethylene (Hypalon®).

### Cable Jacket Marking

Dekoron provides jacket marking designating Dekoron part number and cable type, voltage rating, conductor size and grouping, insulation and jacketing materials, location and year manufactured, lot number (for traceability), and sequential quantity in feet as the standard marking text. Dekoron can also provide customer specified jacket marking, including sequential metric marking.

**Conductor sizes, insulations, jackets and armors can be mixed and matched to custom design a cable for specific properties and needs. Cables with two different armor layers are routinely made to obtain the optimum moisture, chemical and physical damage resistance.**

## Conductor Data

Solid Copper Conductors						20°C Direct Current Resistance			
AWG / Size	CMA	Nominal Diameter		Approximate Weight		Bare		Tinned	
		mils	mm	lb/Mft	kg/km	ohms/Mft	ohms/km	ohms/Mft	ohms/km
20 / 0.52 mm <sup>2</sup>	1,020	32.0	0.81	3.10	4.61	10.10	33.20	10.50	34.60
18 / 0.82 mm <sup>2</sup>	1,620	40.3	1.02	4.92	7.32	6.39	21.00	6.64	21.80
16 / 1.31 mm <sup>2</sup>	2,580	50.8	1.29	7.81	11.60	4.02	13.20	4.18	13.70
14 / 2.08 mm <sup>2</sup>	4,110	64.1	1.63	12.40	18.50	2.52	8.28	2.63	8.61
12 / 3.31 mm <sup>2</sup>	6,530	80.8	2.05	19.80	29.40	1.59	5.21	1.65	5.42
10 / 5.26 mm <sup>2</sup>	10,380	101.9	2.59	31.43	46.77	0.99	3.28	1.04	3.41

Metric									
0.50 mm <sup>2</sup>	987	31.4	0.79	2.98	4.43	10.50	34.50	10.90	35.80
0.75 mm <sup>2</sup>	1,480	38.5	0.98	4.49	6.68	7.00	23.00	7.28	23.90
1.00 mm <sup>2</sup>	1,974	44.4	1.13	5.97	8.88	5.26	17.30	5.47	17.90
1.50 mm <sup>2</sup>	2,960	54.4	1.38	8.96	13.33	3.50	11.50	3.64	11.90
2.50 mm <sup>2</sup>	4,934	70.2	1.78	14.92	22.20	2.10	6.89	2.19	7.19
4.00 mm <sup>2</sup>	7,894	88.8	2.25	23.87	35.52	1.32	4.33	1.37	4.49

Concentric 7-Strand Class B Copper Conductors								20°C Direct Current Resistance			
AWG / Size	CMA	Nominal Strand O.D.		Approximate O.D.		Approximate Weight		Bare		Tinned	
		mils	mm	in	mm	lb/Mft	kg/km	ohms/Mft	ohms/km	ohms/Mft	ohms/km
20 / 0.52 mm <sup>2</sup>	1,020	12.1	0.31	0.036	0.91	3.15	4.71	10.30	33.90	10.70	36.00
18 / 0.82 mm <sup>2</sup>	1,620	15.2	0.39	0.046	1.17	5.01	7.46	6.54	21.40	6.92	22.70
16 / 1.31 mm <sup>2</sup>	2,580	19.2	0.49	0.058	1.47	7.97	11.86	4.10	13.40	4.35	14.30
14 / 2.08 mm <sup>2</sup>	4,110	24.2	0.62	0.073	1.85	12.68	18.88	2.58	8.45	2.68	8.78
12 / 3.31 mm <sup>2</sup>	6,530	30.5	0.78	0.092	2.34	20.16	30.00	1.63	5.32	1.69	5.53
10 / 5.26 mm <sup>2</sup>	10,380	38.5	0.98	0.116	2.95	32.06	47.71	1.02	3.34	1.06	3.48

Metric											
0.50 mm <sup>2</sup>	987	11.9	0.30	0.036	0.91	3.06	4.55	10.70	35.10	11.30	37.10
0.75 mm <sup>2</sup>	1,480	14.5	0.37	0.044	1.12	4.54	6.76	7.19	23.60	7.63	25.00
1.00 mm <sup>2</sup>	1,974	16.8	0.43	0.050	1.27	6.10	9.08	5.35	17.60	5.69	18.70
1.50 mm <sup>2</sup>	2,960	20.6	0.52	0.062	1.57	9.17	13.64	3.56	11.70	3.70	12.10
2.50 mm <sup>2</sup>	4,934	26.5	0.67	0.080	2.03	15.18	22.59	2.15	7.05	2.24	7.35
4.00 mm <sup>2</sup>	7,894	33.6	0.85	0.101	2.57	24.40	36.31	1.34	4.40	1.39	4.56

Solid Thermocouple Extension Wire					
AWG / Size	CMA	Nominal Diameter		Approximate Weight	
		mils	mm	lb/Mft	kg/km
20 / 0.52 mm <sup>2</sup>	1,020	32.0	0.81	3.10	4.61
18 / 0.82 mm <sup>2</sup>	1,620	40.3	1.02	4.92	7.32
16 / 1.31 mm <sup>2</sup>	2,580	50.8	1.29	7.81	11.60

Thermocouple Extension/ Compensating Wire Types				
ANSI Type	Alloy Identification		Temperature Range °C	Limits of Error
	Positive Wire	Negative Wire		
EX	Chromel	Constantan®	0 to +200	+/- 1.7°C
JX	Iron	Constantan	0 to +200	+/- 2.2°C
KX	Chromel	Alumel®	0 to +200	+/- 2.2°C
SX	Copper	Copper-Alloy II	0 to +200	+/- 5.0°C
TX	Copper	Constantan	-60 to +100	+/- 1.0°C