

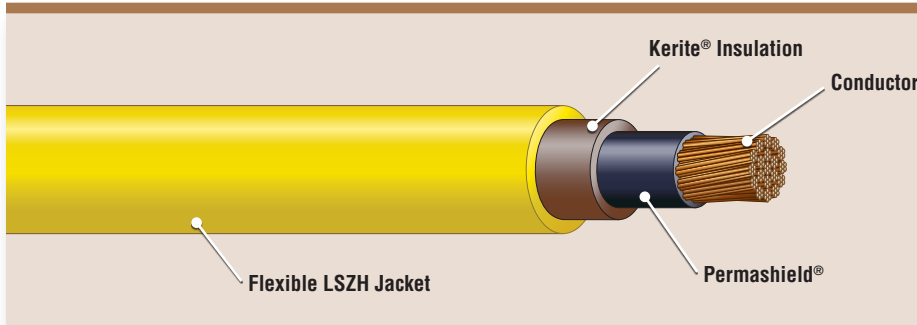
PermaLife LSZH Medium Voltage Motor Lead Wire

Power Cable 7kV

Discharge Resistant Kerite® Insulation System



RSCC Nuclear Cable
www.rsccnuclearcable.com



40 Year Qualified Life at 90°C
for Class 1E Nuclear Plant Use

LOCA Qualified
Spec. RSS-7-030

Scope

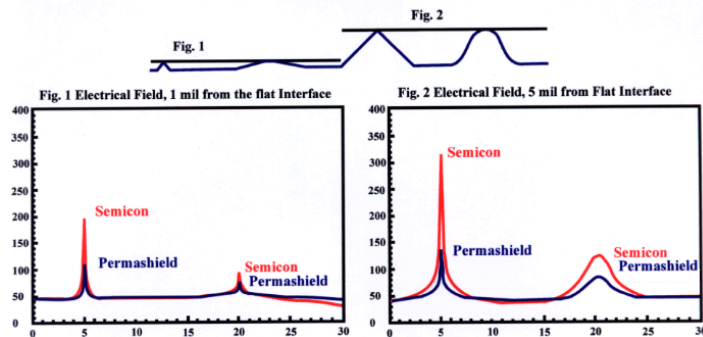
PermaLife motor lead wire is a jacketed single conductor power cable designed for motor lead wire end use applications in Nuclear Power Generating Plants. It is intended for use in harsh and demanding environments and qualified for Class 1E applications (LOCA Qualified).

Rated 90°C for normal operation in wet and dry locations, 130°C for emergency overload conditions, and 250°C for short circuit conditions.

Features

Permashield® non-conducting stress control layer:

- 100% production tested in accordance with ICEA S-96-659-2014.
- Greater than 2X reduction in electrical stress magnification caused by surface irregularities compared to semicon conductor shields.



- 66% improvement in average AC breakdown strength over semicon (Ref. A.D. Little, Inc., *The Physics of Permashield®*, August 1983)

Kerite® discharge resistant EPR insulation:

- Discharge resistant insulation system formulated to prevent the degradation that occurs as a result of partial discharge per ASTM D2275.

Point Probe Test for Discharge Resistance			
Discharge Resistant EPR	Discharge Free EPR	TR-XLPE	XLPE
TIME TO INCEPTION OF EROSION (HOURS)			
>250	48	Immediate	Immediate
TIME TO DIELECTRIC FAILURE (HOURS)			
>250	120	80	45

Performance History

- Only medium voltage cable with zero reported failures of the insulation system. (Ref. NEI 06-05, *Medium Voltage Underground Cable White Paper and EPRI Plant Engineering: Aging Management Program for Medium Voltage Cable systems for Nuclear Power Plants*)

Construction

Conductor: Tinned copper, class “H” concentric strand

Conductor Shield: Permashield® conductor shield (non-conducting stress control layer)

Insulation: Proprietary Kerite® discharge resistant insulation

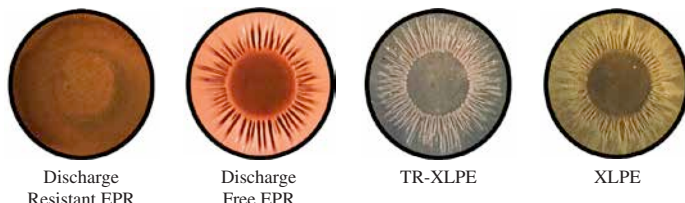
Braid: Woven glass braid

Jacket: Flexible, thermoset low smoke zero halogen (LSZH)

Note: Special designs are available on request

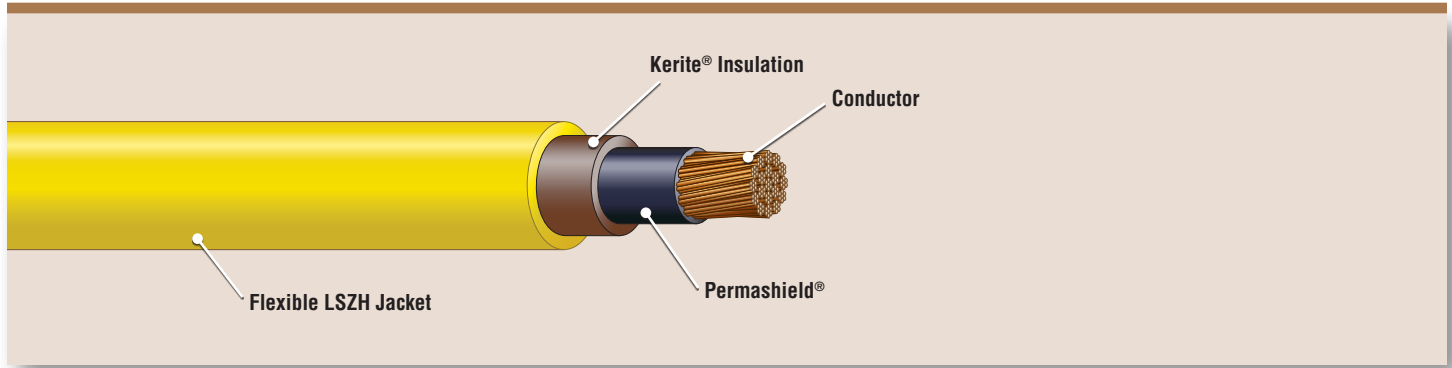
Performance Standards

- Designed and tested in accordance with ICEA standard S-96-659
- Class 1E qualified in accordance with IEEE 383 and IEEE 323
 - Nuclear qualified with a minimum 40 year thermal life expectancy at 90°C
 - Radiation resistant (up to 220 megarads)
- Meets low smoke generation requirements and halogen free requirements of ICEA standard S-96-659
- Motor lead wire passes UL VW-1 vertical flame test
- Quality Assurance program in accordance with 10 CFR Appendix B
- Full traceability



PermaLife LSZH Medium Voltage Motor Lead Wire Power Cable 7kV

Discharge Resistant
Kerite® Insulation System



7kV Single Conductor (100%) Insulation Level

Catalog No. Prefix	Size (AWG/kcmil)	Number of Strands	O.D. Over Insulation (Inch)	Jacket Thickness (Mils)	Jacket O.D. (Inches)	Cable Weight (Lbs/M')
P50-0060	6	19x7	0.51	70	0.68	295
P50-0040	4	19x7	0.56	70	0.73	365
P50-0020	2	37x7	0.63	70	0.80	470
P50-0010	1	37x7	0.67	70	0.84	535
P50-0100	1/0	37x7	0.71	70	0.88	556
P50-0200	2/0	37x7	0.76	70	0.93	735
P50-0300	3/0	37x7	0.82	70	0.99	900
P50-0400	4/0	37x7	0.93	85	1.07	1,075
P50-0250	250	61x7	0.99	100	1.21	1,290
P50-0350	350	61x7	1.08	100	1.30	1,675
P50-0500	500	61x7	1.25	100	1.47	2,225

Note: All gauge sizes and triplex constructions are available.



Marmon Engineered Wire & Cable LLC
A Berkshire Hathaway Company