PRIORITY WIRE & CABLE, INC.

PRYSMIAN
Prysmian Group
Draka

Lifeline Fire Protection Cable Solutions

A Critical Difference in Protecting Critical Circuits

U.S. Toll Free: 1-800-945-5542 Canada Toll Free: 1-877-611-5122
Visit our web site at: www.prioritywire.com to sign up and check inventory.

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Fire Protection Cable Systems

Leadership in two-hour cables

Introduced by Draka Engineered Specialties, Lifeline two hour fire rated cables are designed for use in critical circuits that necessitate electrical operation in conditions of direct exposure to fire and water. Under these conditions, Lifeline cables will provide the absolute cable operation required for emergency power to fire pumps and power panels for lighting and other powered functions that may support safe and rapid building egress. Lifeline cables are also designed for critical circuit applications in fire alarm systems including detection, notification, signaling line circuits and communications. Lifeline cable use improves first responder effectiveness by allowing for active surveillance and data retrieval, firefighter communications and firefighter elevators.

A critical difference in protecting critical circuits

Lifeline products utilize a unique Ceramified Silicone technology to safeguard fire alarm systems and emergency circuits. Unlike other protective cable systems, Lifeline is a flexible, non-armored cable that installs like standard cables.

Ceramified Silicone Technology

Most of the electrical systems that we use in our daily lives are powered by standard electrical cables. Even the systems that we depend upon in the times of danger and emergency are powered by standard power, interconnect or control cables.

Unfortunately, these cables do not have a tolerance for high temperature or fire, both of which may occur during emergency conditions. In such conditions, thermoplastic cables melt and thermoset cables form a conductive ash causing both types to quickly short electrically.

The Lifeline family of cables are produced with electrical grade ceramified silicone rubber which is proven to protect the critical circuits for your emergency systems against attack by fire and water.

Ceramified Silicone Technology is the hardening of a standard silicone rubber insulating material into an insulating glass-like structure which protects the conductors against attack by fire and the water which may be present during fire fighting efforts.

Performance with cost-effectiveness

Lifeline cables are designed to provide a cost-effective means for achieving two-hour fire protection. Product is available from stock in long lengths or can be supplied as customer required lengths. Easy to install, there are no special tools, connectors or techniques required. The result is unquestioned fire rating with lower installed costs as compared to alternative methods.

Markets

- Building - High-rise, educational & healthcare facilities
- Industrial - Manufacturing, mining, pulp & paper
- Transit - Tunnels, railways, airports
- Defense - Government, security, military

Applications

Emergency power & fire alarm systems including:

- Fire pumps
- Exhaust & pressurization fans
- Lighting & signage
- Emergency generators
- Communications
- Sound & security
- Control panels

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Qualifications

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UL 2196 - "Standard for Tests for Fire Resistive Cables"

The best way to separate cables that maintain circuit integrity from cables that do not is qualification to UL 2196. This standard fire rates cables in accordance with their ability to operate for given periods of time (one-hour fire rated, two-hour fire rated, etc.) under fire conditions. The four distinctive reasons this standard exceeds other all qualification methods and is the standard of choice for the USA are as follows:

1. **Large Scale Test (10 ft. x 10 ft. test wall)**
   This furnace test was developed for the fire rating of doors, windows, walls, etc.
2. **Standard Time Temperature Curve**
   Accepted as representing an intense, fully developed fire within a building - see graph below
3. **Water Application Following Two-hour Fire Exposure**
   2 1/2" hose stream test for feeder or branch circuit cables normally installed in conduit or metal sheaths

   Fog nozzle test (75 gal/min) for Lifeline® CI cables installed per NEC Article 760
4. **Electrically Energized and Monitored**
   Insulation resistance measurements before and after test

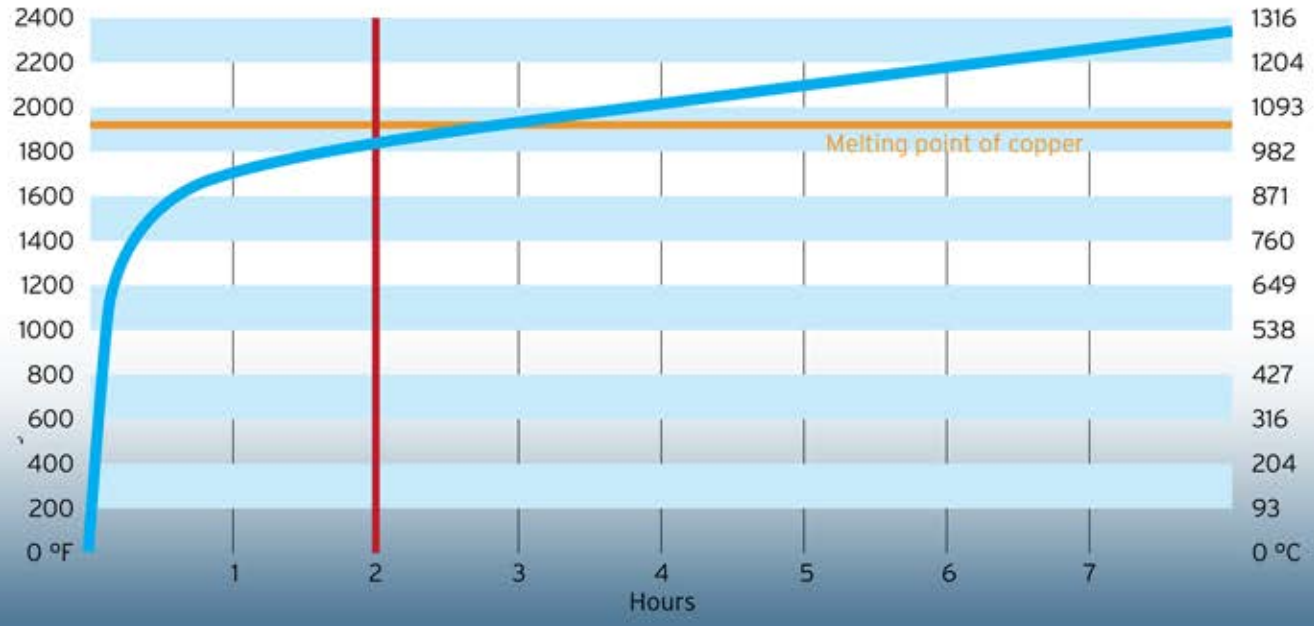
   Utilization voltage applied during test and after water

   Current leakage measured during test and after voltage

   Low amperage fuse for failure measurement

   Dual light bulbs for monitoring and load

Standard Time / Temperature Curve



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RHW-2 Two Hour Fire Resistive Cables

Applications

Lifeline® fire resistive cables were designed to meet and have successfully passed the two hour fire rating certification test per UL 2196, *Standard for Tests for Fire Resistive Cables.*

Lifeline® Cables are preferred over Mineral Insulated (MI) cables, concrete encasement or the construction of fire rated assemblies based on the facts that Lifeline® Cables are less costly, easier to install, and readily available.

Fire resistive cables are required per NFPA 70, Articles 517, 695, 700, 708 and 760 as well as NFPA 72, NFPA 101, NFPA 130 and NFPA 502

Specifications and Ratings

- Listed to UL 44, *Thermoset Insulated Wires and Cables*, as the following type:
  - RHW-2, 600 Volt, Rated 90°C Dry/90°C Wet
- Classified to UL 2196, Standard for Tests for Fire Resistive Cables, for two-hours
- Electrical Circuit Protective System (FHIT) No. 25A of the UL Fire Resistance Directory
- Sunlight Resistant
- FT4 Rated
- IEEE 1202

Design Parameters

CONDUCTORS: Bare stranded copper, 8 AWG through 750kcmil

INSULATION: Ceramifiable silicone, Low Smoke Zero Halogen (LSZH)

JACKET: Cross-linked polyolefin (XLPO), Low Smoke Zero Halogen

IDENTIFICATION:
Lifeline® Power Cables are marked as follows:

DRAKA MA [X] [Y] LIFELINE (UL) RHW-2 600V FT4 ST1 FIRE-RESISTIVE CABLE FOR USE IN ELECTRIC CIRCUIT INTEGRITY SYSTEM #25A SEE UL FIRE RESISTANCE DIRECTORY R19359 (MONTH/YEAR) (SEQUENTIAL FOOTAGE)

Notes: [X] is the size of the cable in AWG or kcmil
[Y] is the size of the cable in mm^2

PWC Part Number	Conductor Size AWG/MCM	Number of Strands	Insulation Thickness (in.)	Overall Diameter (in.)	Approximate Weight lbs./Mft	Ampacity 90°C	EMT Size for 3 Conductors	EMT Size for 4 Conductors
8-01LIFELINE	8	7	0.060	0.29	81	55	1"	1"
6-01LIFELINE	6	7	0.075	0.36	127	75	1-1/4"	1-1/4"
4-01LIFELINE	4	7	0.075	0.41	183	95	1-1/4"	1-1/2"
3-01LIFELINE	3	7	0.075	0.43	222	110	1-1/4"	1-1/2"
2-01LIFELINE	2	7	0.075	0.46	263	130	1-1/2"	1-1/2"
1-01LIFELINE	1	19	0.100	0.55	355	150	2"	2"
1/0-01LIFELINE	1/0	19	0.100	0.59	431	170	2"	2"
2/0-01LIFELINE	2/0	19	0.100	0.63	526	195	2"	2-1/2"
3/0-01LIFELINE	3/0	19	0.100	0.69	645	225	2-1/2"	2-1/2"
4/0-01LIFELINE	4/0	19	0.100	0.74	791	260	2-1/2"	2-1/2"
250-01LIFELINE	250	37	0.130	0.85	977	290	2-1/2"	3"
350-01LIFELINE	350	37	0.130	0.96	1295	350	3"	3-1/2"
500-01LIFELINE	500	37	0.130	1.09	1807	430	3"	3-1/2"
600-01LIFELINE	600	61	0.145	1.20	2187	475	3-1/2"	4"
750-01LIFELINE	750	61	0.145	1.30	2687	535	4"	

[1] Ampacities are based on Table 310.15(B)(16) (formerly table 310.16) of the National Electrical Code (NFPA 70) for 3 current carrying conductors at 30°C ambient.

[2] Electrical Metallic Tubing (EMT) size is calculated without an equipment grounding conductor (EGC).
A larger size EMT may be required if an EGC is used. For additional conductors and other types of conduit, consult the NEC.

UL RoHS COMPLIANT

The above dimensions are approximate and subject to normal manufacturing tolerances. Information subject to change without notice.

**Also available in 10,12 & 14 AWG constructions upon request

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Code Compliance

NFPA 70 / National Electric Code

Article 695 Fire Pumps

"Be a listed electrical circuit protective system with a minimum two-hour fire rating."

Article 700 Emergency Systems

"Be a listed electrical circuit protective system with a minimum two-hour fire rating."

"Be a cable listed to maintain circuit integrity for not less than two hours when installed in accordance with the listing requirements."

Article 708 Critical Operations Power Systems (COPS)

"Feeders shall meet one of the following conditions: (1) Be a listed electrical circuit protective system with a minimum two-hour fire rating."

"Riser communication cables shall be two-hour fire resistive cable or a classified two-hour electrical circuit protective system."

"Control, monitoring and power wiring to HVAC systems shall be two-hour fire resistive cable or a classified 2-hour electrical circuit protective system."

Article 760 Fire Alarm Systems

"Fire Alarm Circuit Integrity (CI) Cable. Cable used in fire alarm systems to ensure continued operation of critical circuits during a specified time under fire conditions."

NFPA 72 / National Fire Alarm and Signaling Code

Chapter 12.4 Pathway Survivability

Chapter 12.4.3 Pathway Survivability Level 2, two-hour fire rated cable, cable system, enclosure or protected area.

Chapter 12.4.4 - Pathway Survivability Level 3, Fully sprinklered building plus two hour fire rated cable, cable system, enclosure or protected area.

Chapter 24 - Emergency Communication systems

Chapter 24.3.5 - Pathway Survivability

Chapter 24.3.5.4.1 - Systems requiring relocation or partial evacuation, Level 2 or Level 3.

Chapter 24.3.5.7 - Two-way in-building wired emergency communications systems, Level 2 or Level 3.

Chapter 24.3.5.9.1 - Area of refuge emergency communication, Level 2 or Level 3.

NFPA 130 / Standard for Fixed Guideway Transit and Passenger Rail Systems

Chapter 5 Stations:
Emergency Lighting and Communications

Chapter 7 Emergency Ventilation System:
Ventilating System Wiring

Chapter 8 Vehicles: Communications & Fire Alarm Cables

NFPA 502 / Standard for Road Tunnels, Bridges, and Other Limited Access Highways

Chapter 12: Electrical Systems
12.1.2 Emergency circuits:

(1) A fire-resistive cable listed for 2 hours in accordance with ANSI/UL 2196 . . .

(2) Circuits embedded in concrete or protected by a 2-hour fire barrier system in accordance with UL 1724.

NFPA 101 / Life Safety Code

"Elevator equipment, elevator communications, two-way communication systems shall be located and properly protected to ensure a minimum one-hour of operation in the event of a fire."

"Annex B: Elevators for Occupant-Controlled Evacuation prior to phase 1 emergency recall operations."

International Building Code

"Mechanical smoke exhaust - Wiring for operation and control of smoke exhaust fans shall be connected ahead of the main disconnect and protect against exposure to temperatures in excess of 1000° F (538°C) for a period of not less than 15 minutes."

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Priority Wire & Cable Distribution Centers

Exclusively Supporting Distributors For Over 20 Years

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