

lifeline

Cables

**New
RHW**
see inside



The ***Latest Innovation*** in **Fire Rated Cables**



Lifeline® is Draka Cableteq USA's Latest Innovation in Fire Protection Cable Systems

Introduced by Draka Cableteq USA, it is designed to provide a cost-effective means for two-hour protection against fire and water. Lifeline® safeguards critical fire alarm systems and emergency circuits. Unlike other protective cable, Lifeline® is a flexible, non-armored cable that allows fire controls and alarm circuits to continue to function in extreme environments.



**For more information call
your Lifeline friend at
1-800-444-2696
www.datatechtx.com**

MARKETS:

- Fire Protection
- Emergency Power
- Homeland Security
- Communications
- Building Technologies

APPLICATIONS:

- Single conductor conduit cable for use with the fire pumps and emergency circuits
- Multi-conductor conduit cable for use with fire alarm systems
- Multi-conductor stand alone cable for fire alarm, communications and security systems





A Family of Two Hour **Fire Rated Cables**

Lifeline® Cables are designed for use in critical circuits that necessitate the cable's 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. To improve first responder effectiveness, Lifeline cable use would provide for active surveillance and data retrieval, firefighter communications and firefighter elevators.

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.

To insure the total quality and reliability of Lifeline Cables most critical component, all silicone rubber is compounded in-house at Draka Cableteq USA utilizing proprietary formulations. All Lifeline cables utilize ceramified silicone technology to achieve their fire rating. Use of silicone ensures that each Lifeline cable is flexible and has equivalent or improved electrical performance over its non-fire rated counterpart. All Lifeline cables are two hour fire rated per UL 2196 – "Standard for Tests of Fire Resistive Cables" and are UL listed for the appropriate service.

Lifeline® RHW

- 600 volt power cable for use in feeder or branch circuits.
- Classified two hour fire rating in conduit (EMT).

Lifeline® CIC

- Type FPL & NPLF cable for use in Fire Alarm Systems.
- Classified two hour fire rating in conduit (EMT).

Lifeline® CI

- Type FPLR-CI cable for use without conduit in Fire Alarm Systems.
- Installation per National Electrical Code articles 760, 300-11, 300-15.



CERAMIFIED SILICONE TECHNOLOGY is the hardening of a standard 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.

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Qualifications

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

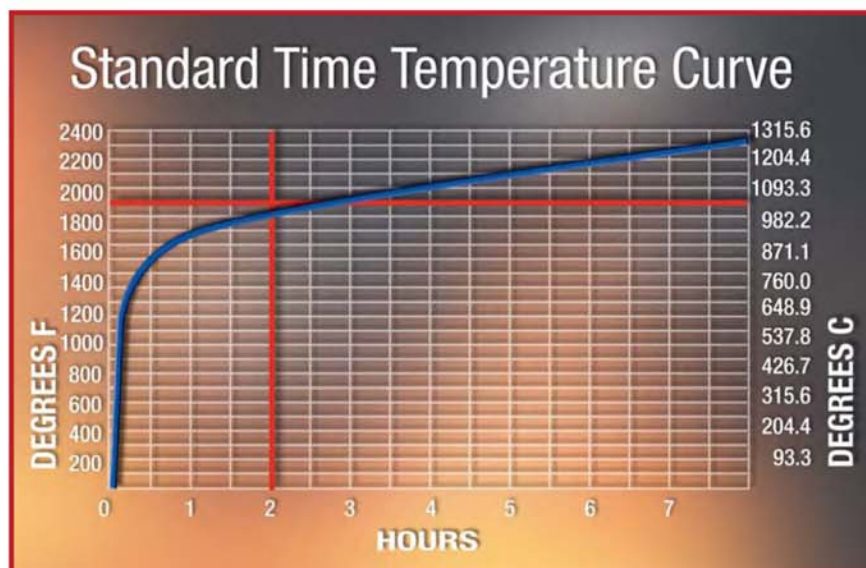
The best way to separate cables that maintain circuit integrity from cables that do not is qualification to UL 2196. This standard fire rates cables in accordance with their ability to operate for given periods of time (one-hour fire rated, two-hour fire rated, etc.) under fire conditions. The four distinctive 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



3. Water application following 2 hour fire

- 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



Lifeline in the Codes



NFPA 70 – National Electrical Code

ARTICLE 695 Fire Pumps

- “Be a listed electrical circuit protective system with a minimum 1-hour fire rating.”

ARTICLE 700 Emergency Systems

- “Be a listed electrical circuit protective system with a minimum 1-hour fire rating.”
- “Be a cable listed to maintain circuit integrity for not less than 1 hour when installed in accordance with the listing requirements.”

ARTICLE 517 Health Care Facilities

- “The wiring of the emergency system of a hospital shall be mechanically protected by installation in non flexible metal raceways.”
- “The emergency system shall be limited to circuits essential to life safety and critical patient care. These are designated the life safety branch and the critical branch.”

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 Code

- Survivability, as applicable
- “Circuits shall be protected from the point at which they exit the control unit until the point that they enter the notification zone that they serve using one or more of the following methods: A 2-hour rated cable or cable system.”

NFPA 101 - Life Safety Code

- “Life Safety Branch. A subsystem of the emergency system consisting of feeders and branch circuits, meeting the requirements of Article 700 and intended to provide adequate power needs to ensure safety to patients and personnel, and which are automatically connected to alternate power sources during interruption of the normal power source.”

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.”

Installed Reliability

The Lifeline® family of fire rated cables are easy to install and do not require any special tools or techniques and do not have any length restrictions.

- ✓ ***Unquestioned Fire Rating***
- ✓ ***Ease of Installation***
- ✓ ***Lower Installed Cost***
- ✓ ***Standard Code Installation Procedures***
- ✓ ***No Special Tools, Connectors or Procedures***
- ✓ ***Long Length Availability***
- ✓ ***Code Compliant***

Lifeline® RHW – 600 Volt Power • 150°C Overload Capability • Workable Flexibility

Lifeline® CI – Fire Alarm



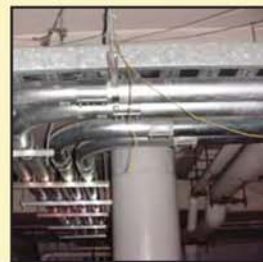
Matched Lengths



Standard Installation



Conduit Pull Box



Long Conduit Runs



- Robust Cable Construction
- Low Capacitance Design

1-800-444-2696

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RHW-2 2-Hour Fire Rated

A Low Cost, High Reliability Qualified Fire Rated Cable System.

Lifeline® RHW is a composite insulation system that achieves the smallest diameter and highest temperature rating of any ceramified silicone fire rated cable. Without the need for additional fire barrier tapes, Lifeline RHW is UL Listed as type RHH/RHW-2 for 90°C and UL classified with a 2-hour fire rating per UL 2196 - “Standard for Tests for Fire Resistive Cables”. Lifeline RHW replaces Mineral Insulated (MI) cable, concrete encasement or construction of unnecessary fire barriers as the optimum way to protect critical circuits against attack by fire and water.

LIFELINE® RHW

UL LISTED TYPE
RHH /RHW-2

UL CLASSIFIED
TWO-HOUR
FIRE RATED CABLE

LOW SMOKE &
HALOGEN FREE

Features & Benefits

- Recognized two hour fire rating
- UL Listed type RHH/RHW-2, 600 Volt
- Rated 90°C Dry or Wet
- Smallest size, Smaller conduit
- No special tools, connectors or procedures
- Low Smoke & Halogen Free (LSHF)
- Installed Reliability
- No cable length restrictions

Performance

- Classified two hour fire rating per UL 2196 - “Standard for Tests for Fire Resistive Cables”.
- Electrical Circuit Protective System (FHIT) #25 of the UL Fire Resistance Directory.
- UL Subject #44 for Rubber-Insulated Wires and Cables.
- Exceeds fire rating requirements of National Electrical Code Articles 695 & 700.

| LIFELINE® Part Number | Copper Size AWG/MCM | Number of Strands | Insulation Thickness in. (mm) | Overall Diameter in. (mm) | Approximate Weight lbs/Mft (kg/km) | Ampacity* 90° C Amps | EMT Size*** for 3 conductors | EMTSize*** for 4 conductors |
|-----------------------|---------------------|-------------------|-------------------------------|---------------------------|------------------------------------|----------------------|------------------------------|-----------------------------|
| RHW-14 | 14 | 7 | 0.045 (1.1) | 0.165 (4.1) | 25 (37) | 15** | 1/2" | 1/2" |
| RHW-12 | 12 | 7 | 0.045 (1.1) | 0.180 (4.6) | 35 (51) | 20** | 1/2" | 1/2" |
| RHW-10 | 10 | 7 | 0.045 (1.1) | 0.205 (5.2) | 50 (74) | 30** | 1/2" | 3/4" |
| RHW-8 | 8 | 7 | 0.060 (1.5) | 0.265 (6.7) | 75 (112) | 55 | 3/4" | 1" |
| RHW-6 | 6 | 7 | 0.075 (1.9) | 0.330 (8.3) | 120 (179) | 75 | 1" | 1" |
| RHW-4 | 4 | 7 | 0.075 (1.9) | 0.375 (9.5) | 175 (260) | 95 | 1" | 1-1/4" |
| RHW-3 | 3 | 7 | 0.075 (1.9) | 0.405 (10.2) | 210 (313) | 110 | 1-1/4" | 1-1/4" |
| RHW-2 | 2 | 7 | 0.075 (1.9) | 0.435 (11.0) | 260 (387) | 130 | 1-1/4" | 1-1/4" |
| RHW-1 | 1 | 19 | 0.100 (2.5) | 0.525 (13.2) | 345 (513) | 150 | 1-1/2" | 2" |
| RHW-1/0 | 1/0 | 19 | 0.100 (2.5) | 0.565 (14.2) | 420 (625) | 170 | 1-1/2" | 2" |
| RHW-2/0 | 2/0 | 19 | 0.100 (2.5) | 0.605 (15.3) | 515 (766) | 195 | 2" | 2" |
| RHW-3/0 | 3/0 | 19 | 0.100 (2.5) | 0.660 (16.6) | 635 (945) | 225 | 2" | 2-1/2" |
| RHW-4/0 | 4/0 | 19 | 0.100 (2.5) | 0.715 (18.0) | 780 (1161) | 260 | 2" | 2-1/2" |
| RHW-250 | 250 | 37 | 0.130 (3.3) | 0.820 (20.7) | 960 (1426) | 290 | 2-1/2" | 2-1/2" |
| RHW-350 | 350 | 37 | 0.130 (3.3) | 0.925 (23.3) | 1295 (1927) | 350 | 2-1/2" | 3" |
| RHW-500 | 500 | 37 | 0.130 (3.3) | 1.050 (26.5) | 1790 (2664) | 430 | 3" | 3" |
| RHW-600 | 600 | 37 | 0.145 (3.7) | 1.160 (29.2) | 2240 (3334) | 475 | 3" | 3-1/2" |
| RHW-750 | 750 | 37 | 0.145 (3.7) | 1.260 (31.8) | 2645 (3936) | 535 | 3-1/2" | 4" |

Note: Two Hour Rating when installed per UL Electrical Circuit Protective System FHIT.25, Draka Manufacturers Instructions (TIS # 301C) and the National Electrical Code (NFPA 70). Table does not take voltage drop into consideration.

*90°C ampacity based on three current carrying conductors in a conduit and a 30°C (88°F) ambient temperature.

See NEC Table 310.16 for 75°C and 60°C ampacities.

**See National Electrical Code (NFPA 70) section 240-3.

***Electrical Metallic Tubing (EMT) per NFPA 70. For rigid metal conduit see NFPA 70, Chapter 9.

1-800-444-2696

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CIC 2-Hour Fire Rated

Maintain Circuit Integrity and Physical Protection With a Simple, In-Conduit Solution.

Lifeline® CIC is a cost effective means of providing “survivability” as required by the National Fire Alarm Code (NFPA 72). Additionally, it can dramatically increase the reliability of any fire alarm system when it needs it the most (i.e. when the system is under attack by fire and water). Lifeline CIC is flexible and easy to install without the need for any special tools, hardware or instructions. Another benefit of the fire rated construction is extremely low capacitance improving system performance and eliminating the need for special mid-cap cables.

LIFELINE® CIC
 UL LISTED TYPE FPL
 - POWER LIMITED
 FIRE ALARM CABLE
 UL LISTED TYPE
 NPLF - NON-POWER
 LIMITED FIRE
 ALARM CABLE
 UL CLASSIFIED
 TWO-HOUR FIRE
 RATED CABLE
 WHEN USED IN
 CONDUIT

Features & Benefits

- Recognized two hour fire rating when installed in common 1/2" (or larger) EMT conduit.
- Maximum physical protection is provided by conduit installation.
- Considerable economic savings over other recognized fire rating methods.
- Lowest available capacitance rating of any standard fire alarm cable (see data table below).
- Tough flexible construction provides ease of installation.

Performance

- Meets National Fire Alarm Code (NFPA 72) requirements for survivability.
- Classified two hour fire rating per UL Standard for Tests for Fire Resistive Cables, UL 2196, with exposure up to 1850°F, immediate application of water and maintenance of full utilization voltage and electrical load throughout the test.
- UL Listed as NEC Type FPL Fire Alarm Cable per UL Standard #1424 and UL Listed as NEC Type NPLF per UL Standard #1425.
- Electrical Circuit Protective System (FHIT) #24 of the UL Fire Resistance Directory.

Unshielded — Dual UL Listing: NEC Type FPL and NEC Type NPLF

| LIFELINE® Part Number | Copper AWG Size STRAND | No. of Conductors | Overall Diameter in. (mm) | Weight lbs/Mft (kg/km) | Nominal Capacitance pf/ft (pf/m) | DC Resistance ohms/Mft |
|-----------------------|------------------------|-------------------|---------------------------|------------------------|----------------------------------|------------------------|
| CICFPL-2C/18NS | 18 - solid | 2 | 0.33 (8.4) | 53 (79) | 15 (48) | 6.5 |
| CICFPL-4C/18NS | 18 - solid | 4 | 0.37 (9.4) | 76 (113) | 15 (48) | 6.5 |
| CICFPL-6C/18NS | 18 - solid | 6 | 0.43 (10.9) | 104 (155) | 15 (48) | 6.5 |
| CICFPL-8C/18NS | 18 - solid | 8 | 0.51 (13.0) | 136 (202) | 15 (48) | 6.5 |
| CICFPL-2C/16NS | 16 - solid | 2 | 0.33 (8.4) | 62 (92) | 17 (56) | 4.1 |
| CICFPL-4C/16NS | 16 - solid | 4 | 0.40 (10.2) | 94 (140) | 17 (56) | 4.1 |
| CICFPL-2C/14NS | 14 - 7 str | 2 | 0.39 (9.9) | 80 (119) | 19 (62) | 2.6 |
| CICFPL-4C/14NS | 14 - 7 str | 4 | 0.44 (11.2) | 125 (186) | 19 (62) | 2.6 |
| CICFPL-2C/12NS | 12 - 7 str | 2 | 0.42 (10.7) | 101 (150) | 21 (69) | 1.8 |
| CICFPL-4C/12NS | 12 - 7 str | 4 | 0.49 (12.4) | 168 (250) | 21 (69) | 1.8 |

Shielded Overall — Dual UL Listing: NEC Type FPL and NEC Type NPLF

| LIFELINE® Part Number | Copper AWG Size STRAND | No. of Conductors | Overall Diameter in. (mm) | Weight lbs/Mft (kg/km) | Nominal Capacitance pf/ft (pf/m) | DC Resistance ohms/Mft |
|-----------------------|------------------------|-------------------|---------------------------|------------------------|----------------------------------|------------------------|
| CICFPL-2C/180S | 18 - solid | 2 | 0.33 (8.4) | 57 (85) | 26 (85) | 6.5 |
| CICFPL-4C/180S | 18 - solid | 4 | 0.38 (9.7) | 81 (121) | 26 (85) | 6.5 |
| CICFPL-6C/180S | 18 - solid | 6 | 0.44 (11.2) | 110 (164) | 26 (85) | 6.5 |
| CICFPL-8C/180S | 18 - solid | 8 | 0.51 (13.0) | 142 (211) | 26 (85) | 6.5 |
| CICFPL-2C/160S | 16 - solid | 2 | 0.35 (8.9) | 66 (98) | 30 (98) | 4.1 |
| CICFPL-4C/160S | 16 - solid | 4 | 0.40 (10.2) | 99 (147) | 30 (98) | 4.1 |
| CICFPL-2C/140S | 14 - 7 str | 2 | 0.40 (10.2) | 85 (126) | 36 (118) | 2.6 |
| CICFPL-4C/140S | 14 - 7 str | 4 | 0.45 (11.4) | 130 (193) | 36 (118) | 2.6 |
| CICFPL-2C/120S | 12 - 7 str | 2 | 0.43 (10.9) | 106 (158) | 42 (138) | 1.8 |
| CICFPL-4C/120S | 12 - 7 str | 4 | 0.50 (12.7) | 173 (257) | 42 (138) | 1.8 |



1-800-444-2696

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CI 2-Hour Fire Rated

LIFELINE® CI
UL LISTED
2 HOUR FIRE RATED
FIRE ALARM CABLE
TYPE FPLR-CI

Survivability Achieved With Code Recognized Cable and Installation Practices.

All Lifeline® CI cables are qualified to UL 2196 - “Standard for Tests for Fire Resistive Cables” which includes a two hour fire exposure (accepted as representing an intense, fully developed fire within a building), water exposure and several electrical tests and monitoring to assure its circuit integrity performance. All of this in a robust non armored fire alarm cable that is flexible, easy to install and requires no special procedures to meet code requirements.

Features & Benefits

- Recognized two hour fire rating
- UL Listed as Type FPLR-CI
- Considerable economic savings over other recognized fire rating methods
- No special procedures to meet code requirements
- Robust flexible construction provides ease of installation
- Lowest available capacitance rating of any standard fire alarm cable

Performance

- Meets National Fire Alarm Code (NFPA 72) requirements for survivability
- UL Standard 1424 - “Cables for power-limited Fire Alarm Circuits”
- UL Standard 2196 - “Standard for Tests for Fire Resistive Cables”
- UL Standard 1666 - “Test for flame propagation height of electrical ... cables installed vertically in shafts”



Unshielded — UL Listing: NEC Type FPLR (UL File #208490)

| LIFELINE® Part Number | Copper AWG Size STRAND | No. Of Conductors | Overall Diameter | | Weight | | Nominal Capacitance | | DC Resistance ohms/Mft |
|-----------------------|------------------------|-------------------|------------------|--------|---------|---------|---------------------|--------|------------------------|
| | | | in. | (mm) | lbs/Mft | (kg/km) | pf/ft | (pf/m) | |
| * C1FPLR-2C/18NS | 18 - solid | 2 | 0.330 | (8.4) | 54 | (80) | 15 | (48) | 6.7 |
| * C1FPLR-4C/18NS | 18 - solid | 4 | 0.375 | (9.5) | 78 | (116) | 15 | (48) | 6.7 |
| * C1FPLR-6C/18NS | 18 - solid | 6 | 0.435 | (11.0) | 107 | (159) | 15 | (48) | 6.7 |
| * C1FPLR-8C/18NS | 18 - solid | 8 | 0.510 | (13.0) | 140 | (208) | 15 | (48) | 6.7 |
| C1FPLR-2C/16NS | 16 - solid | 2 | 0.350 | (8.9) | 64 | (95) | 17 | (56) | 4.2 |
| C1FPLR-4C/16NS | 16 - solid | 4 | 0.400 | (10.2) | 96 | (143) | 17 | (56) | 4.2 |
| C1FPLR-2C/14NS | 14 - 7 str | 2 | 0.390 | (9.9) | 82 | (122) | 19 | (62) | 2.6 |
| C1FPLR-4C/14NS | 14 - 7 str | 4 | 0.445 | (11.3) | 127 | (189) | 19 | (62) | 2.6 |
| C1FPLR-2C/12NS | 12 - 7 str | 2 | 0.425 | (10.8) | 104 | (155) | 21 | (69) | 1.7 |
| C1FPLR-4C/12NS | 12 - 7 str | 4 | 0.490 | (12.4) | 170 | (253) | 21 | (69) | 1.7 |

Shielded Overall — UL Listing: NEC Type FPLR (UL File #208490)

| LIFELINE® Part Number | Copper AWG Size STRAND | No. Of Conductors | Overall Diameter | | Weight | | Nominal Capacitance | | DC Resistance ohms/Mft |
|-----------------------|------------------------|-------------------|------------------|--------|---------|---------|---------------------|--------|------------------------|
| | | | in. | (mm) | lbs/Mft | (kg/km) | pf/ft | (pf/m) | |
| * C1FPLR-2C/180S | 18 - solid | 2 | 0.310 | (7.9) | 54 | (80) | 26 | (85) | 6.7 |
| * C1FPLR-4C/180S | 18 - solid | 4 | 0.355 | (9.0) | 77 | (115) | 26 | (85) | 6.7 |
| * C1FPLR-6C/180S | 18 - solid | 6 | 0.415 | (10.5) | 106 | (158) | 26 | (85) | 6.7 |
| * C1FPLR-8C/180S | 18 - solid | 8 | 0.490 | (12.4) | 139 | (207) | 26 | (85) | 6.7 |
| C1FPLR-2C/160S | 16 - solid | 2 | 0.330 | (8.4) | 63 | (94) | 30 | (98) | 4.2 |
| C1FPLR-4C/160S | 16 - solid | 4 | 0.375 | (9.5) | 96 | (143) | 30 | (98) | 4.2 |
| C1FPLR-2C/140S | 14 - 7 str | 2 | 0.370 | (9.4) | 81 | (121) | 36 | (118) | 2.6 |
| C1FPLR-4C/140S | 14 - 7 str | 4 | 0.425 | (10.8) | 126 | (188) | 36 | (118) | 2.6 |
| C1FPLR-2C/120S | 12 - 7 str | 2 | 0.405 | (10.3) | 103 | (153) | 42 | (138) | 1.7 |
| C1FPLR-4C/120S | 12 - 7 str | 4 | 0.470 | (11.9) | 168 | (250) | 42 | (138) | 1.7 |

* Call for Availability

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Draka

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