

# ÖLFLEX® FOR INDUSTRY

## LAPP FOR LIFE

ÖLFLEX® 190/190 CY  
ÖLFLEX® FD 890/FD 890 CY



# GERMAN PRECISION ENGINEERING PROUDLY PRODUCED IN THE USA.



The Lapp Group North American headquarters located in Florham Park, NJ houses Lapp USA, Lapp Cable Works and our latest expansion, Lapp Group's Center for Competence and Innovation. This Center is assessed by UL as a Client Test Data Program (CTDP) laboratory for Product Testing, R&D, Quality Validation and New Product Innovation. Lapp Cable Works is our state of the art cable manufacturing plant for ÖLFLEX® brand quality products and custom designed cables. In addition, this facility houses Lapp Systems, which provides complex harnesses, integrated solutions and custom cable assemblies.



## 2600 PEOPLE, 21 LANGUAGES 1 WORLDWIDE FAMILY

In the late 1950's, Oskar Lapp turned his visionary dream into reality with the invention of the first industrially manufactured control cable, ÖLFLEX®. This was the beginning of his family run and oriented company. Lapp Group produces innovative cables, connectors, accessories, and engineered solutions as a worldwide market leader. Oskar Lapp's vision continues today through his wife, Ursula Ida, and his sons, Andreas and Siegbert Lapp.

Within 50 years, the Lapp Group has grown to 2,600 employees operating around the globe developing, manufacturing and selling more than 40,000 products. With 17 manufacturing sites, 39 company-owned sales operations, more than 100 foreign representations and worldwide headquarters in Stuttgart, Germany, the Lapp Group people are everywhere you need us to be.





## **ÖLFLEX® 190 ÖLFLEX® 190 CY**

**RELIABILITY IS  
OUR LEGACY**

20+ years as the industry's  
leading control cable

Fully tested for oil resistance  
and crush & impact standards

Durable, extremely flexible  
industrial design

## **ÖLFLEX® FD 890 ÖLFLEX® FD 890 CY**

**MOTION AT ITS  
ULTIMATE LIMIT**

Setting the performance  
standard for over 20 years

Field performance for over  
30,000,000 flexing cycles

Tested for 10,000,000  
flex cycles

**ALWAYS  
CHALLENGED  
NEVER BEATEN**



# ÖLFLEX® 190 ÖLFLEX® 190 CY

INDUSTRIAL CONTROL CABLES FOR RELIABILITY

## UNSURPASSED OIL PERFORMANCE

### UL OIL RES I/CSA C22.2 No. 230

In oil for 4 days at 100°C

50% Unaged Tensile Strength

50% Unaged Elongation

### UL OIL RES II

In oil for 60 days at 75°C

65% Unaged Tensile Strength

65% Unaged Elongation

### UL AWM 21098/CSA C22.2 No. 30

In oil for 60 days at 80°C

65% Unaged Tensile Strength

65% Unaged Elongation

## DESIGNED FOR EXCELLENT FLEXIBILITY EXCEEDING INDUSTRY STANDARDS

- Extra fine copper stranding
- Pressure extruded industrial grade jacket
- Removal of back-twist in our state-of-the-art production facilities
- Copper stranding meets AWG & European mm<sup>2</sup> standards
- Meets NFPA 79 2007

## BUILT TO WITHSTAND MECHANICAL ABUSE

### LAPP STANDARD MP-02\*

**DESCRIPTION** Independent lab tested for crush & impact

**IMPACT** 10/50 lbs

**CRUSH** 1000/2000 lbf

**TENSILE** 1700 psi

**ELONGATION** 175%

**STANDARD** UL 1277 ASTM D-412

\*Industrial standards set by Lapp Group. For more details see our cable attribute charts at [www.lappusa.com](http://www.lappusa.com) or in Lapp's full line catalog.

## AVAILABLE SIZES

AWG / mm <sup>2</sup>	CONDUCTOR COUNT
20 AWG / 0.5 mm <sup>2</sup>	2   3   4   5   7   9   12   18   25
18 AWG / 1.0 mm <sup>2</sup>	2   3   4   5   7   9   12   18   25   34   41   50
16 AWG / 1.5 mm <sup>2</sup>	2   3   4   5   7   9   12   18   25   34   41   50   61
14 AWG / 2.5 mm <sup>2</sup>	2   3   4   5   7   9   12   18   25
12 AWG / 4.0 mm <sup>2</sup>	3   4   5   7   11
10 AWG / 6.0 mm <sup>2</sup>	3   4   5
8 AWG / 10.0 mm <sup>2</sup>	4   5
6 AWG / 16.0 mm <sup>2</sup>	4   5
4 AWG / 25.0 mm <sup>2</sup>	4   5
2 AWG / 35.0 mm <sup>2</sup>	4   5

Part Number creation: 60XXYY; XX=AWG size, YY=conductor count.  
Add CY at the end for shielded version.



# ÖLFLEX® FD 890

# ÖLFLEX® FD 890 CY

CONTINUOUS FLEX CABLES FOR AUTOMATION

## HIGHLY RESISTANT TO OILS AND COOLANTS

### UL OIL RES I/CSA C22.2 No. 230

In oil for 4 days at 100°C

50% Unaged Tensile Strength

50% Unaged Elongation

### UL OIL RES II

In oil for 60 days at 75°C

65% Unaged Tensile Strength

65% Unaged Elongation

### UL AWM 21098/CSA C22.2 No. 30

In oil for 60 days at 80°C

65% Unaged Tensile Strength

65% Unaged Elongation

## PROVEN DESIGN FOR UNSURPASSED CONTINUOUS FLEXING

- Designed for cable track length up to 30 feet
- Tested for 10 million continuous flexing cycles
- Field performance for over 30,000,000 flexing cycles

Note: For UL type MTW approval, See ÖLFLEX® CHAIN 879/ 879 CY

## TESTED TO SEVERE PARAMETERS

LAPP STANDARD CF-02\*

TRAVEL DISTANCE 20 feet

ACCELERATION SPEED 3.2-16.4 ft/s<sup>2</sup>

TRAVEL SPEED 2.7-16.4 ft/s<sup>2</sup>

BEND RADIUS 75% of bend radius

TEMPERATURE 10°C to 22°C

\*Industrial standards set by Lapp Group. For more details see our cable attribute charts at [www.lappusa.com](http://www.lappusa.com) or in Lapp's full line catalog.

## AVAILABLE SIZES

AWG / mm <sup>2</sup>	CONDUCTOR COUNT
20 AWG / 0.5 mm <sup>2</sup>	3   4   5   7   12   18   25   34
18 AWG / 1.0 mm <sup>2</sup>	3   4   5   7   12   18   25   34
16 AWG / 1.5 mm <sup>2</sup>	3   4   5   7   9   12   18   25   34   41   50
14 AWG / 2.5 mm <sup>2</sup>	4   7
12 AWG / 4.0 mm <sup>2</sup>	4   7
10 AWG / 6.0 mm <sup>2</sup>	4
8 AWG / 10.0 mm <sup>2</sup>	4
6 AWG / 16.0 mm <sup>2</sup>	4
4 AWG / 25.0 mm <sup>2</sup>	4
2 AWG / 35.0 mm <sup>2</sup>	4

Part Number creation: 89XXYY; XX=AWG size, YY=conductor count.  
Add CY at the end for shielded version.



# PERFORMANCE ADVANTAGE

IN THE HARSHTEST ENVIRONMENTS

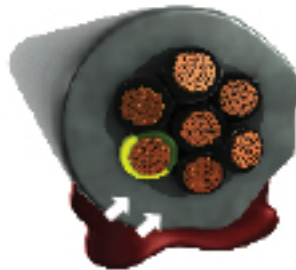
## COMPETITORS

**OILS IN CONTACT WITH CABLE**



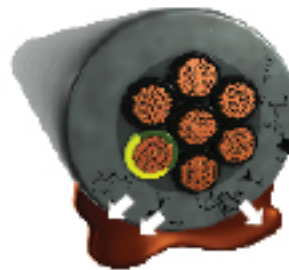
**STEP 1:** When process oils come in contact with PVC & Polyolefin compounds, the process oils are attracted to the plasticizers in the cable.

**ABSORPTION & SWELLING**



**STEP 2:** The oils can be absorbed by a Polyolefin material resulting in swelling and weakening of the cable jacket.

**CRACKING CAUSED BY REMOVAL OF PLASTICIZERS**



**STEP 3:** The oils can extract the plasticizers from PVC materials making the cable jacket hard and lead to failures.

## ÖLFLEX® BY LAPP

**SEE THE DIFFERENCE OF THE ÖLFLEX® ENGINEERED AND SPECIALLY FORMULATED JACKET COMPOUND**



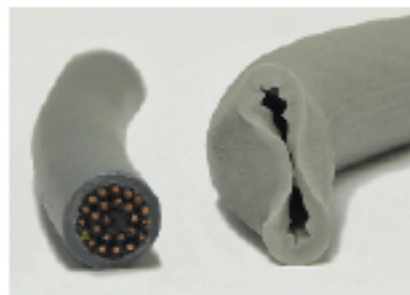
**ÖLFLEX® 190 and ÖLFLEX® FD 890** jacket compounds are made with a special oil in the plasticizer that is not common in the industrial market. Process oils will not absorb into the jacket & insulation or extract plasticizers out of the compound causing failures.

**ÖLFLEX® 190 AND ÖLFLEX® FD 890 ARE TESTED TO AND PASS UL OIL RES I/II AND AWM 21098 AS WELL AS VDE 0472 SECT 803A AND 803B**

**SAMPLES OF COMPETITOR CABLES EXPOSED TO OILS AND COOLANTS**



**CRACKING**



**MELTING OR SOFTENING**



**SWELLING**

# APPLICATION ADVANTAGE

RELIABILITY PROVEN BY OVER 100,000,000 APPLICATIONS WORLDWIDE

## WASHDOWNS, OIL SPRAY, CHEMICALS & SOLVENTS

Whether it is washdowns or severe cutting oils, coolants or chemicals, ÖLFLEX® 190 and ÖLFLEX® FD 890 will perform longer than all others.



## RUGGED DESIGN FOR HIGH IMPACT

ÖLFLEX® 190 and ÖLFLEX® FD 890 pass the UL 1277 Crush and Impact test and are built to withstand the harshest environments.



## X-Y FLEXING MOTION

All flexing cables, including ÖLFLEX® FD 890, are validated in our test facility to our stringent Lapp standards for reliability against cable failure.



## FLEXIBILITY FOR EASY INSTALLATION

Route and bend ÖLFLEX® 190 and ÖLFLEX® FD 890 to conform to your machine without damage.



# ÖLFLEX®

Power And Control Cables

# SKINTOP®

Cable Glands

# SILVYN®

Conduit

# ETHERLINE®

Industrial Ethernet

# EPIC®

Connectors

# UNITRONIC®

Data Cables

# FLEXIMARK®

Marking Systems

# HITRONIC®

Fiber Optic Cables



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