

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 mm² 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 or in Lapp's full line catalog.

AVAILABLE SIZES

AWG / mm ²	CONDUCTOR COUNT
20 AWG / 0.5 mm ²	2 3 4 5 7 9 12 18 25
18 AWG / 1.0 mm ²	2 3 4 5 7 9 12 18 25 34 41 50
16 AWG / 1.5 mm ²	2 3 4 5 7 9 12 18 25 34 41 50 61
14 AWG / 2.5 mm ²	2 3 4 5 7 9 12 18 25
12 AWG / 4.0 mm ²	3 4 5 7 11
10 AWG / 6.0 mm ²	3 4 5
8 AWG / 10.0 mm ²	4 5
6 AWG / 16.0 mm ²	4 5
4 AWG / 25.0 mm ²	4 5
2 AWG / 35.0 mm ²	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/s²

TRAVEL SPEED 2.7-16.4 ft/s²

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 or in Lapp's full line catalog.

AVAILABLE SIZES

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

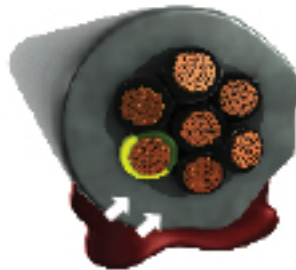
COMPETITORS

OILS IN CONTACT WITH CABLE



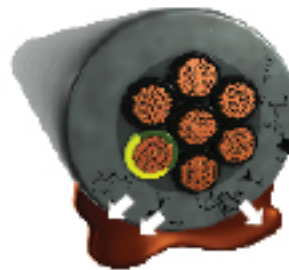
STEP 1: When process oils come in contact with PVC & Polyolefin compounds, the process oils are attracted to the plasticizers in the cable.

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



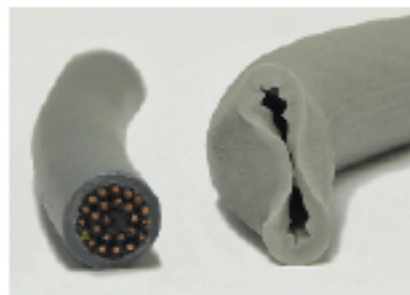
ÖLFLEX® 190 and ÖLFLEX® FD 890 jacket compounds are made with a special oil in the plasticizer that is not common in the industrial market. Process oils will not absorb into the jacket & insulation or extract plasticizers out of the compound causing failures.

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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