



# LAPP GROUP

## Cable Solutions for the Food & Beverage Industry

Hygiene is an absolute priority in the food industry. The tough hygiene requirements also apply to electrical components. They must be resistant to a very wide range of chemical, thermal and physical stresses so that they can be used in refrigerated areas and moist environments. It is particularly important for components to be resistant to aggressive acidic and alkaline industrial cleaning agents. These difficult conditions mean that it is not always easy to find the correct product. Lapp has a comprehensive range of standard and specialized products which meets the requirements of the food and packaging industries. Our proven and tested range of products contain a solution for all applications.



### ÖLFLEX® ROBUST

The ÖLFLEX® ROBUST range is a generation of flexible control and connection cable.

Manufactured with Lapp TPE outer sheath compound P4/11, highly resistant to vegetable-based oils, these cables are flexible, UV resistant, tough and manufactured with RoHS compliant materials. They are robust where exposed to fresh, processed and sewage water, beverages such as fruit juices, wine, beer, lemonades, if cold, warm or for a short time also hot, and several chemicals. They are ideal for applications where they are in contact with vegetable and animal fats and oils, i.e. dairy products such as milk, butter, cheese or fish and meat processing. Furthermore, ÖLFLEX® ROBUST cables bear up the cleaning processes in the food industry. There is often high pressure cleaning applied, of which the water or steam jet is the main reason for cable degradation.

ÖLFLEX® ROBUST cables show repeated longer service life, exposed to heated steam more than ten times compared to a standard rubber outer sheath. Moreover, for hygiene and cleaning efficiency reasons, detergents and/or disinfectants are added to the water, which accelerates the destruction.

ÖLFLEX® ROBUST cables are harmless when exposed to various foodstuffs. They are without evaporating substances such as softening agents. Furthermore, they do not contain heavy metals or other substances which are part of the European RoHS directive black list.

The ÖLFLEX® ROBUST family consists of colour coded connection cables and number coded control cables with or without a copper braided screen. A high flexible version is also available for constantly moving applications, e.g. in drag chains.

LAPP KABEL STUÏGART ÖLFLEX ROBUST 200 CE



LAPP KABEL STUÏGART ÖLFLEX ROBUST 215 C CE



Lapp Group manufacture a full range of products suitable to combat the common causes of cable failure in the Food and Beverage Industry, for example –

### **Infestation with microbes**

The degradation of organic substances is caused by microbes and bacteria. Despite sufficient cleanliness, this natural process can not be completely avoided. This typically occurs in agriculture, slaughterhouses, waste disposals etc. Provided that sufficient temperature and humidity are available, cable sheaths can also become a nutrient medium for microbes and bacteria. The decomposition of the insulation material will be the consequence.

### **Hydrolysis**

In the food industries steam jet cleaners are used for cleaning to meet the hygienic requirements. If, however, cables come into contact with steam or hot water, the hydrolysis phenomenon will appear. This means that substances are flushed out of the sheaths, initiating degradation reactions. The insulating material will become brittle, the speed at which this process progresses depends on the temperature prevailing in the cable.



Photo courtesy of Baker Perkins Ltd

## **ÖLFLEX® POLYURETHANE Cables**

Lapp offers an extensive range of Polyurethane sheathed cables suitable for a wide range of applications where flexible cable with very high resistance to both mechanical and chemical damage is required. Polyurethane sheathing offers a tear resistant material with high tensile strength combined with a high resistance to tangling and knotting. All Lapp Polyurethane cables are microbe and Hydrolysis resistant.

### **ÖLFLEX® CLASSIC 400P**

Ölflex 400P features fine wire stranded copper conductors and a PVC core insulation with a grey Polyurethane outer sheath. Ölflex 400P offers a high resistance to chemicals, oils, greases and other aggressive substances found in industrial environments. Also available is Ölflex 400 CP which contains a tinned copper wire braid for EMC regulations. Temperature range of -5°C to +70°C.



### **ÖLFLEX® CLASSIC 450P**

Ölflex 450P features the addition of a special red PVC inner sheath to increase durability, ensuring that the cable provides an optimum service life. The flame retardant yellow Polyurethane outer sheath is also resistant to chemical agents, diluted acids and aqueous alkaline solutions.



### **ÖLFLEX® CLASSIC 440P**

This is a similar cable make up to 400P but with TPE core insulation allowing for a wider temperature range of -40°C to +90°C. It offers the same mechanical and chemical resistance as 400P and also available with a tinned copper wire braid for EMC regulations.



## SKINTOP® Cable Glands

The world renowned cable gland is now approved to IP69K in accordance to DIN 40 050. The IP69K rating enables the use of SKINTOP® even under the harshest cleaning procedures with high pressure cleaners and hot water. The glands are exposed to 80°C water vapour and 100 bars pressure from various directions at a close distance.

The SKINTOP® ST-M range of glands are manufactured from Glass Reinforced Nylon, and available in 3 colours - Silver Grey, Light Grey and Black. They are available in a range of thread sizes from 12mm to 63mm and can accommodate cable with outer diameters from 1mm to 45mm.



The SKINTOP® MS-M range of glands are a Nickel Plated Brass for use in areas where there is a high mechanical demand and a need for chemical resistance. They are available in a range of thread sizes from 12mm to 75mm and can accommodate cable with outer diameters from 1mm to 68mm.



## Robotics Cable

The Ölflex® FD range of cables offer one of the most flexible cable ranges available. They are specially designed for high technology applications, notably in areas where automation is at an advanced level and where the stresses placed on conventional cables can cause fatigue.

Where automatic handling equipment and robotics are in constant use the extra flexible qualities of the range will withstand more rigorous and heavy duty operations. At each stage of the cable construction attention has been paid to the areas where stress could have a detrimental effect. The make-up includes very fine wire conductor stranding with a high rate of twist on the strands and also in the twist of the conductors forming the core bundle. The increased rate of twisting reduces stress on the conductors at the point of bending. Other features of the range include extra chalk, textile separator tapes, and a specially formulated Polyurethane sheath for hydrolysis and microbe resistance.

### ÖLFLEX®-FD® CLASSIC 810 P

Polyurethane sheathed for harsh areas



### ÖLFLEX®-FD® CLASSIC 810 CP

copper braid screen and Polyurethane sheath



### ÖLFLEX®-FD® 855 P

very small bend radii for restricted areas and Polyurethane sheath



### ÖLFLEX®-FD® 855 CP

very small bend radii for restricted areas, copper braid screen and Polyurethane sheath



## Silvyn® Conduits

### SILVYN® FD-PU

SILVYN® FD-PU is a coiled corrugated plastic conduit, inside helix of plastic-sheathing spring steel wire and a fixed PUR jacket. For highly flexible and liquid proof installations to be protected against oil, grease and benzene at high temperatures.

Resistant against: oil  
petrol  
grease  
widely resistant to solvents acids  
microbe resistant  
weather-proof  
saltwater-proof

Temperature range: from - 40° to + 80°C



### SILVYN® SSUE

Halogen free stainless steel, grade 316 helically wound flexible conduit for applications in the range of measurement, instrumentation and safety section within the food and beverage industry.

Material: stainless steel 316  
Characteristics: high mechanical strength  
highly flexible  
high tensile strength 170kg for 20mm size  
high compression strength 400kg / 100mm for 20mm size  
corrosion resistant  
inherently low fire hazard

Temperature range: -100°C up to +400°C



### FLEXIMARK®

The stainless steel kit is an industrial system for marking cables, components, pipes and devices in demanding and aggressive environments. This system contains stainless steel character holders, character strips and cable ties, everything produced in stainless steel S15502 (AISI-316). All characters are embossed and convex making them easy to read even when painted. We can also supply all the accessories separately to refill your kit.

Character size – 6mm(w) x 9.5mm(h)



For further information on the complete Lapp range of products, please contact us at one of the following:

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