

# Stop cancer at the door!

International studies have shown that firefighters have a significantly higher risk of developing cancer in comparison to the average wider population. Because of insufficient proof of the interrelationship between cancer and the different cases of fire, in many countries this is still not recognized as being an occupational illness. Especially here, in the case of fire, various structures of cancer-causing substances are released which can lead to illness when coming into contact with people and equipment.

**I**n firefighting operations firefighters protect their respiratory tracts and skin from burns with the aid of respirators and protective clothing. However, it has been proved that substances can penetrate the body by means other than via the respiratory tract. As a result of the enormous heat, the skin is up to 400% more receptive and pathogens can penetrate the body through open pores.

## Extended protection through personal protective equipment

In order to prevent the aforementioned problem, the LHD Group Deutschland GmbH worked through its LION brand for protective equipment on different clothing solutions which are planned to increase safety in action. Thus, for example, by means of additional closure solutions on turnout jackets and pants, contamination of the skin is prevented. Here, through the

use of multi-layered wicking barriers and lining laminates at potentially dangerous points in the clothing, penetration of flue gas under the clothing is prevented. In cooperation with LION Group Inc. and the North Carolina State University an initial prototype for the permeability of critical substances in differing positions and movements was tested with the Fluorescent Aerosol Screening Test (FAST) at the RTI International in June 2016. With the aid of a spray of fluorescent particles, it was possible under black light to determine those points at which the particles touched the skin of the test person. LHD Group Deutschland GmbH and LION Group Inc. developed an initial innovation for turnout jackets and trousers which have been presented worldwide. This development has already been patented. The examination of the black-light images in FAST showed no



### ▼ New clothing solution with multi layered wicking barrier.



### ▼ Flash hood with barrier system.



permeation of substances to the skin in the case of the patented closures.

In addition, new flash hoods with barrier system protect the transition area between the jacket collar and the helmet-mask combination and prevent the dangerous substances coming into contact with the skin.

The problem of the occurrence of cancer among firefighters also continues to be at the back of our minds in the production of LION protective clothing and has already been incorporated in a number of product developments.

## Playing with fire

People who put on protective clothing are prepared to fight danger. However, people who take their contaminated clothing



walls. Timely decontamination following operations can prevent cancer-causing substances from spreading in the fire stations or at home and thus endangering others.

The spread of contamination often goes unnoticed. Apart from the fact, that care must be taken to ensure that following action the contaminated clothing comes into as little contact with the skin as possible, attention must be paid to regular and correct washing procedures. Household washing machines are unsuitable for cleaning multi-layered protective clothing. Correct washing and impregnation procedures are decisive in achieving complete decontamination and

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staff with sufficient technical knowledge. LION TotalCare® service provides fire services with the possibility of placing this responsibility in the hands of certified specialists. We have been providing this service through 10 TotalCare® centers worldwide since as far back as 1989. This service not only ensures that cancer-causing substances on the clothing are destroyed but also that the equipment and operational readiness of the fire services are guaranteed. Thus, for example, an emergency pool is set up to provide the action force with sufficient reserve clothing where necessary.

"We became aware of the problem a number of years ago and it became clear

here." States Daniel von Chamier, COO of the LHD Group Deutschland GmbH. "It is important that you are able to replace contaminated clothing with clean clothing, so that the fire services are continually sufficiently equipped." An example of a good functioning LION TotalCare® Center can be found, for example, in Hong Kong or in Dietzenbach, Germany. The extensions of the contracts with the local fire services there is evidence that the service supports them in their protection of the people in their region.

In the development of a further TotalCare® Center particular attention is paid to the thorough separation of contaminated and clean clothing in order to afford cancer-causing substances no chance of spreading from the very beginning.

### Not in our house

"We can all make sure that the potential danger of cancer among firefighters can be minimized. This begins with the production of proper protective clothing, via the conduct of the individual firefighter during and after action through\*to the correct handling of contaminated clothing by the fire services themselves and naturally also by trained specialists. If all of these people stick to the correct behavioral pattern, we can take a mutual step in the direction of a healthier life." states Sarah Doigi, Manager PR and Marketing. With the current campaign "Not in our house", the LHD Group Deutschland GmbH together with the LION Group Inc. is drawing attention worldwide to the invisible dangers involved in firefighting actions and through tips on correct conduct and with the first clothing solutions is minimizing the risk of cancer occurring.



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