New findings on

FIRE HOT

The men behind the window can't believe their eyes. They didn't expect what they see here: the fire blanket that their colleague has just thrown over the burning deep fat fryer is catching fire.

The men behind the glass are fire safety experts. From a safe distance and separated from the test bench, they are observing a series of extinguishing tests on deep fat fryers and deep fryers in the fire testing facility of the Aventis company in the Höchst Industrial Park. The tests are part of a BGN project to investigate the fire hazards of deep fat fryers and determine preventive measures for firefighting.

Today, commercially available fire blankets in accordance with DIN 14155 and DIN EN 1869 are to be tested for their suitability for extinguishing grease fires. A deep fat fryer is filled with grease and set on fire by overheating. It is then covered successively with fire blankets made of wool, cotton, glass, Nomex and Kevlar fabric. The result is the same every time: the fire blanket is not designed for the high heat potential generated by grease and oil fires. It burns through.

Fire blankets: Not suitable for grease fires

There were also new findings regarding fire extinguishers

NOT DESIGNED FOR GREASE FIRES

Dr Klaus Scheuermann, Deputy Head of the Technical Supervisory Service at the BGN and current Chairman of the Fire Protection Working Group, summarises: "None of the fire blankets tested achieved the desired extinguishing effect

We must revise our recommendations for firefighting at deep-frying facilities. Fire blankets are not suitable for this purpose."

In addition to fire blankets, fire extinguishers with various extinguishing agents were also tested. Gerhard Sprenger from the Technical Supervisory Service explains: "We have also gained new insights into fire extinguishers. Not every previously recommended

Extinguishing agents are suitable for fighting grease fires. We will only be able to make our recommendations at a later date, once the results have been fully evaluated. Nevertheless, wherever a deep fat fryer is in use, a fire extinguisher or extinguishing device suitable for fighting grease fires must be kept on hand. Sprenger advises businesses to contact the manufacturers of the extinguishing equipment directly if necessary. They should obtain written confirmation from them that the fire extinguisher is suitable for fighting grease fires.

SUFFICIENT DISTANCE

Another series of tests clearly demonstrated what water can do when it comes into contact with boiling fat. It causes an explosive deflagration, during which hot fat is ejected from the deep fryer

The test was intended to provide information on the safety distances that should be maintained in the kitchen between deep fryers and water baths (bain-maries). A sufficient distance is necessary to prevent water from accidentally splashing when filling the bain-marie or removing the food basins.

into the deep fryer. The fire safety experts present consider a distance of 90 cm between the deep fryer and the bain-marie to be sufficient. If this distance cannot be maintained for space reasons

, a splash guard at least 35 cm high must be installed between the deep fryer and the bain-marie. A vertically mounted metal sheet, for example, is suitable as a splash guard.

Water is poured into the burning deep fryer using a long pipe. 2cl of water creates a fireball with 1700 times its volume, i.e. 34 litres

THERE IS FUEL

To prevent grease fires in your deep fryer, check whether there are any fire hazards on the appliance itself or when working with it. These include, for example:

■ **Heavily discoloured fat** in the deep fryer basin and "sludge" that has settled at the bottom of the basin and on the heating coils. Contaminated fat has a lower ignition temperature than fresh fat. It can ignite even at temperatures within the thermostat's control range.

■ **Insufficient grease in the basin** The grease or oil must completely cover the heating coils c o m p l e t ely. Otherwise, the fat m a y ignite on the hot, exposed surface of the heating coil.

■ **Adding solid fat** In this case, the heating coil in the deep fryer heats up to the maximum temperature without the temperature controller noticing. The temperature controller sensor must be surrounded by liquid fat. For this reason, only liquid fat should be used in the deep fryer.

Fat blocks are pre-melted in a pot. Here too, the fat must not become too hot, otherwise it may ignite spontaneously.

■ **No temperature limiter on the deep fryer** The temperature limiter automatically switches off the appliance at 230 °C. This prevents the fat from overheating and igniting. Temperature limiters are mandatory for commercial deep fryers. Old models without temperature limiters must be retrofitted or taken out of service.