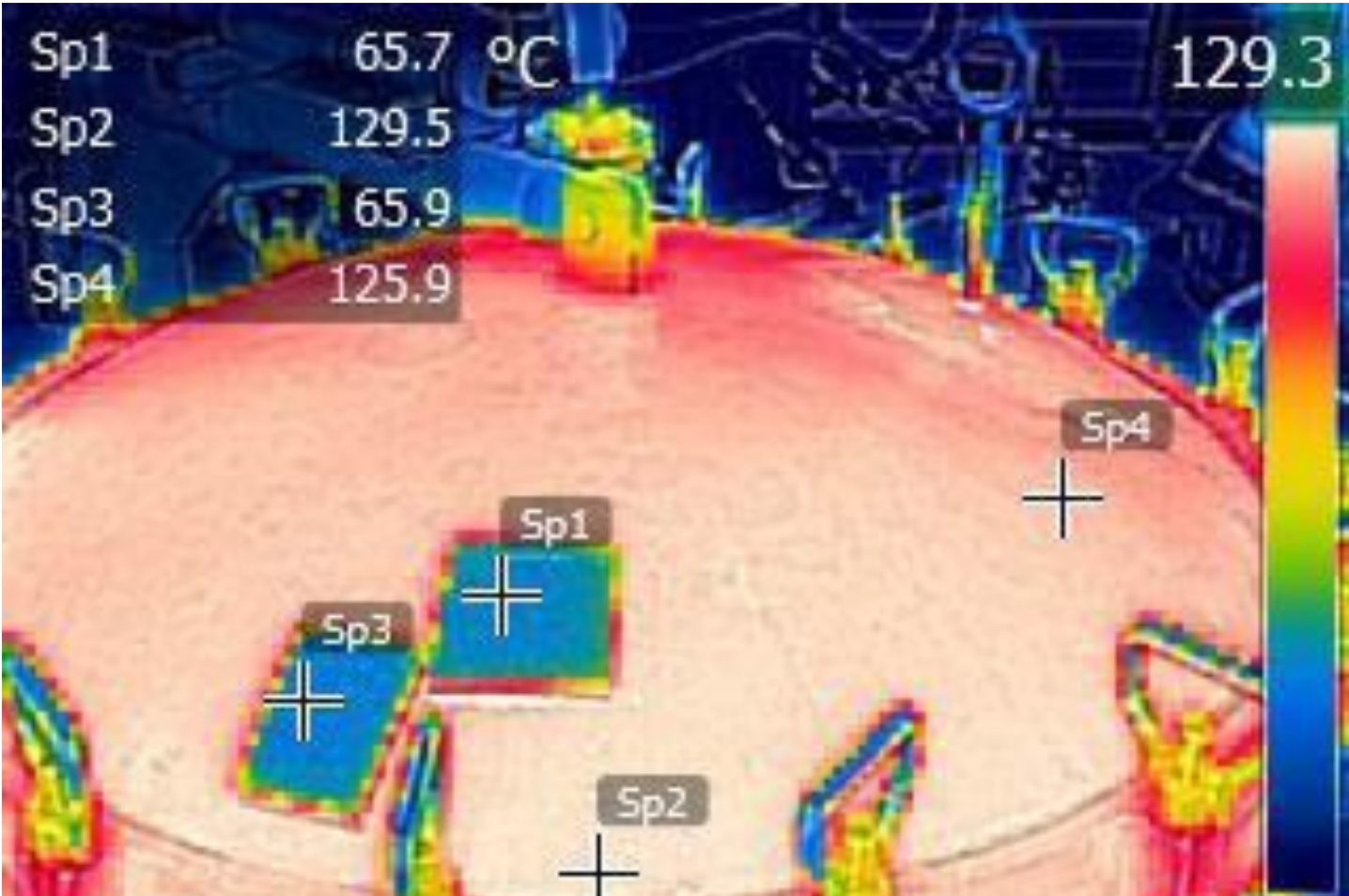


# INSULATION IS MORE THAN SAVING ENERGY

INSULATION IN INDUSTRY

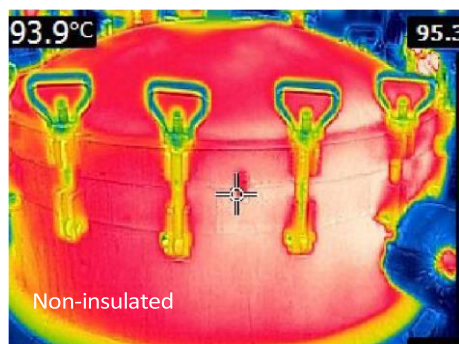
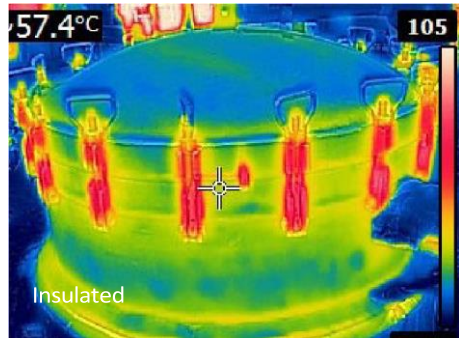


When hearing the word “insulating” most people’s first thought is energy-saving. Energy-saving is important and it helps to realise climate objectives. Yet, in the industry, also other factors play a role. At Bunge Loders Croklaan, who produce vegetable oil and fats for the food industry, different filters and lids were insulated, not so much to save energy, but for the personal safety of employees and contractors, who perform work activities in the vicinity of hot process installations.

Dirk Mulder is an employee of Bunge Loders Croklaan, at the Maasvlakte and explained that the first reason for insulation derived from a proposal to improve the working conditions. The proposal was to improve the ventilation of the space by allowing more outdoor air to enter, via additional vent openings. This did not address the

cause, which was the heat of the filters. The cause of the high temperatures in the room, with so-called “vertical leaf filters” (VLF), was the heat coming from those filters. At the top, the filters were not insulated for about 1 m, heating the surface until about 100°C. Instead of applying more ventilation it was decided to insulate the filters.

As the work involves vegetable oils and because the filters consist of multiple components, that require an array of manual actions, insulation by use of the common systems and materials was not obvious. Still, a material could be found that was suitable and could be applied to the filters. This concerns an insulation material made of



Rubber, that is resistant to the components in the oil and is suitable for surfaces that are difficult to insulate. Chabel supplies and assembles this insulation material and is involved with the application thereof.

Bunge Loders Croklaan autonomously sorted out how and where the material was to be applied and, based on various tests, a certain material compound was selected, in consultation with Chabel. Meanwhile, at the Maasvlakte, different filters (a total of some 44 filters), piping and high pressure steam boiler lids have been provided with insulation, in such a way that the surface reaches a temperature below 60°C.

Within the CINI standard (Commission for Insulation for Dutch Industry) for insulation, mainly the aspect of “personal protection” was looked at, while on the basis thereof spots with a temperature exceeding 60°C, were insulated. This resulted in a safer work environment and a better climate to work in.

Cleaning the insulation can easily be done by use of warm water, if no high pressure washer are used to spray the material. In addition, regarding the operational installations bearing this insulation, there is no need for maintenance by the supplier. Any damages can easily be restored by smearing the damage using a fresh component.

Additional advantage is of course the energy-savings, consisting of about 3kW continuously per VLF-filter, whereas with the energy prices of late 2020, the return time is about 2.5 years.

Company Chabel, who applied the insulation material at Bunge Loders Croklaan, makes it clear that the insulation was applied in consultation with the client. Insulating VLF-filters in the space, has significantly improved the work climate, making expansion of ventilation openings redundant.

During the preparation, design and application of the insulation, Bunge Loders

Croklaan has consistently assisted and collaborated with Chabel.

It is by no means a fact that all companies are so closely involved in the insulation of installations as Bunge Loders Croklaan. Many companies leave the insulation, selected on the basis of price, to an insulation company. By also paying attention to things other than pricing, when requesting and assessing quotations, as a client, the performance of the insulation can be further improved.

The savings with respect to insulation of filters are explained below, by means of a general example.

Chabel calculated the costs of insulation for a 1,500 mm diameter filter:

The costs for the applied insulation were about € 2,400, including assembly. The return time, in case of a surface temperature of 100°C at the surface of the filter (without insulation), and a gas price of € 0.25 / Nm3, is approximately 1.5 years.

The costs of the natural gas do not include a calculation for CO2. Including this would reduce the return time.

In 2014, Epro Consult organised a workshop, by order of the chain organisation MVO and was supported by the Government Agency for Enterprising Holland, that Chabel has elucidated with regard to the application options for the insulation applied by them. Companies in the margarine-, fats- and oil industry (MVO) were given the opportunity to get acquainted with the insulation material. This material, by Chabel, is particularly suitable for surfaces that are difficult to insulate, such as filters, and the advantage is that no deterioration takes place due to the oils used, while also no oil is being taken up by the material.

Since 2014, this insulation has been applied at various companies in the edible oil sector and meanwhile also in the petrochemistry. The new generation of the material was further developed and is also incombustible.