

www.dynoteq.com

INSULATION JACKET

ENERGY SAVING & HEAT-LOSS PREVENTION



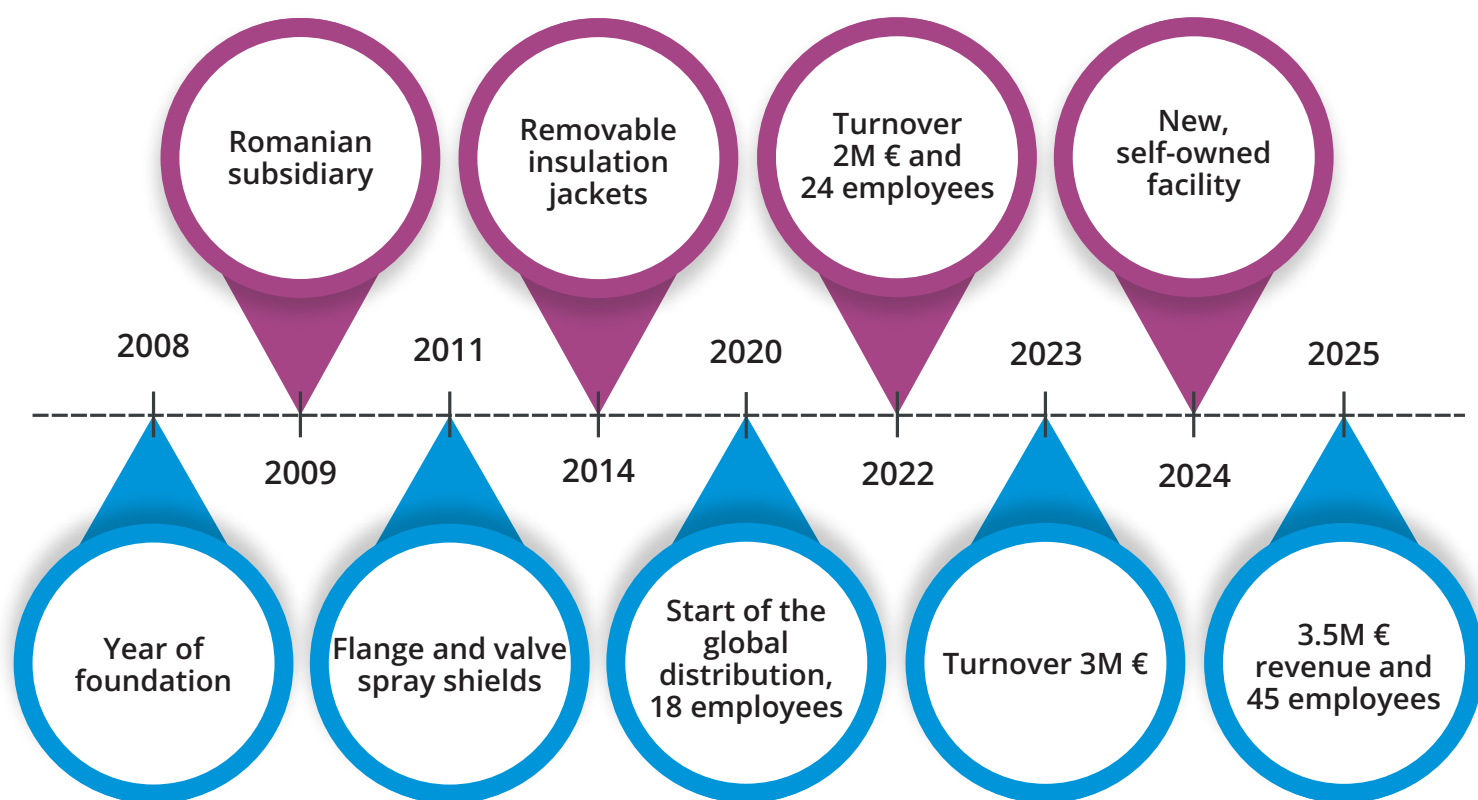
DYNOTEQ
Dynamic Technology

About us

Our mission is to ensure that we provide the right service, solution and product at the right time to minimize our clients' operational costs. We don't want to be the biggest, but we do want to be the best in all we do, offer and supply.

"The reward for job well-done is the opportunity to do more... is what drives us." Karoly Feher, CEO.

Our Milestones



Dynoteq Ltd. has been operating since the year 2008 as a 100% Hungarian-owned family business. We deal with the distribution and manufacturing of special sealing products as well as thermal insulation materials. We have been dealing with sealing technology since 2004, so we have some 18 years of experience in this field.

We consciously built and build our company around industrial activities. Our goal is to serve the ever-increasing and changing needs effectively. We carefully examine all problem areas or applications to provide our customers with the most suitable product, thus providing the best solution.

Our range of products and service is built by our customers' diverse needs. We advise and consult our customers in any aspect to cover the demands of the end-user in any industry. We are application driven and can with our flexible approach meet almost any material requests.

Why thermal insulation jackets?

Insulation basics

European Industrial Insulation Foundation (Eiif) study showed that about 10% of the surfaces to be insulated in Europe have poor quality and decades old insulation dating back to the era of the region's industrial boom.

Properly insulating these surfaces, nearly 9.5 million GJ energy could be saved in Hungary alone. This is a significant amount, even when only examining the cases that are profitable from a purely economic point of view – which amount can be accounted for in the EKR.

DYNOTEQ'S thermal insulation sleeves & jackets are:

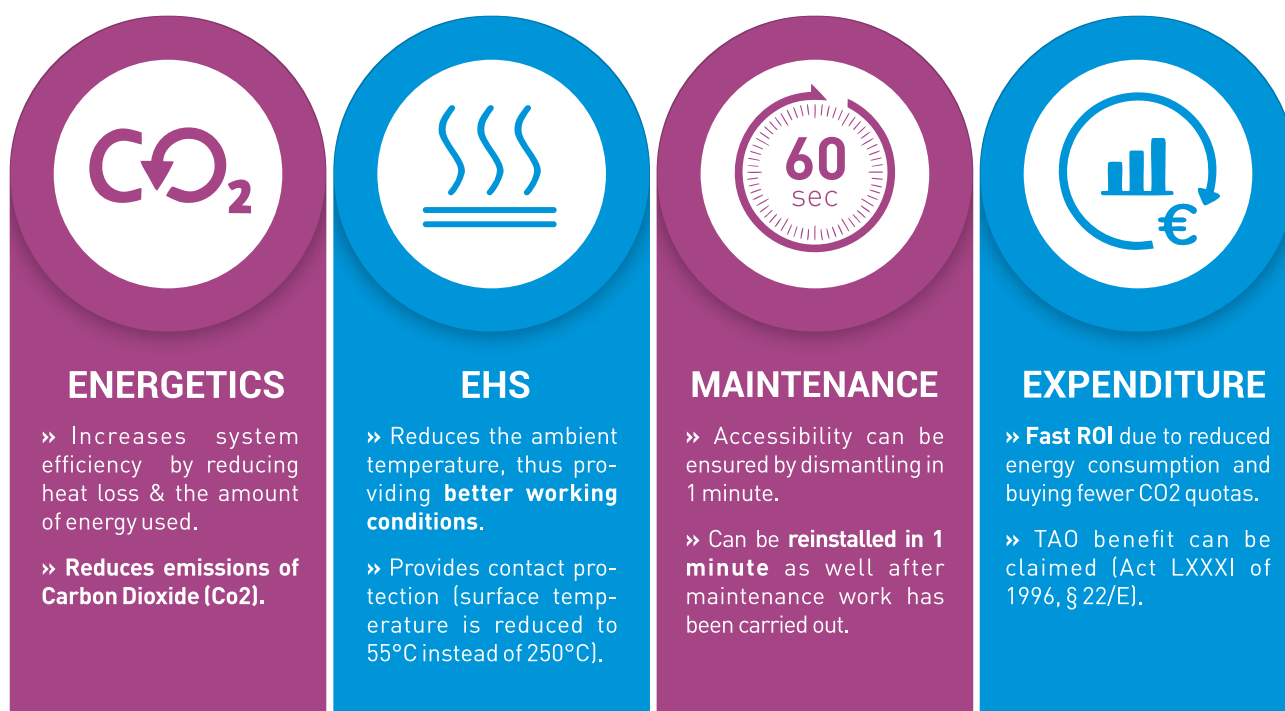
- » a solution to a problem that industry experience has shown to affect a significant proportion of companies
- » fabricated to effectively insulate the most complex, often disrupted surfaces
- » designed to withstand extreme environmental factors and stresses

Custom-made for specific applications our products:

- » can be reused after up to 1000 disassemblies and reassemblies
- » effortlessly resist extreme weather conditions
- » are water, oil, acid and alkalic resistant
- » are available in over 40 different constructions
- » with unique upgrades allow for installation with either an electronically controlled heating element or a leak detector.

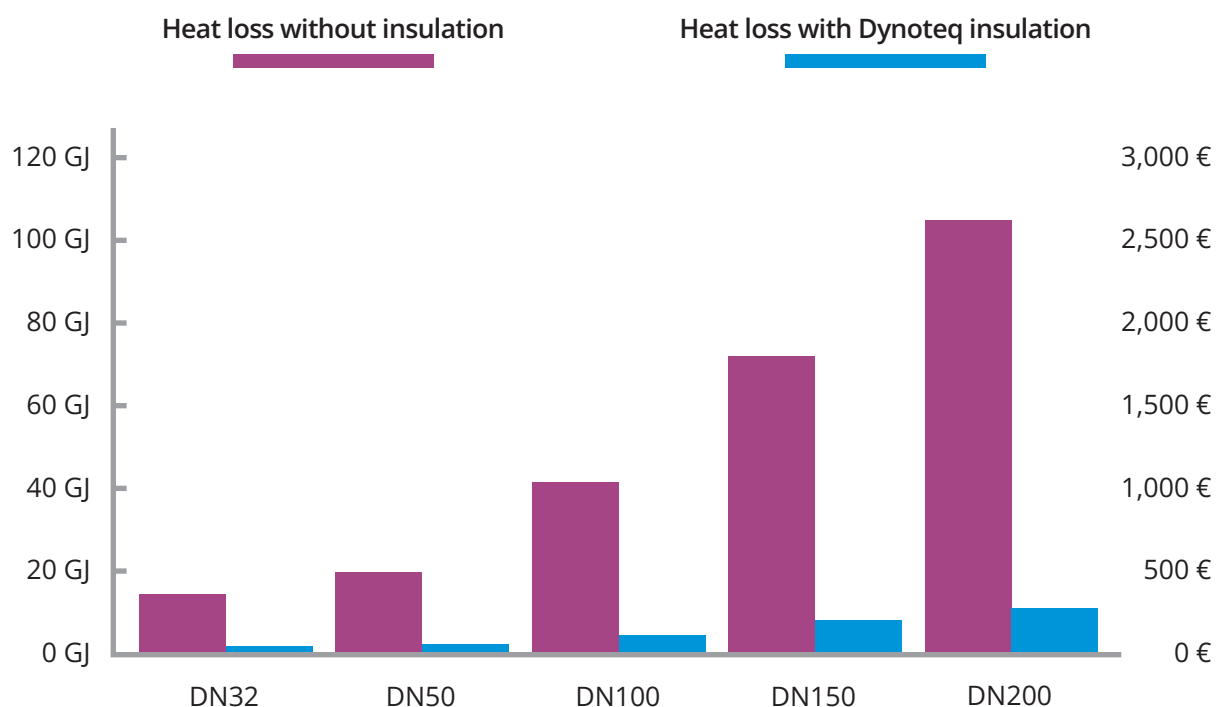
The payback period for heating installations without other subsidies is 1-2 years, and for steam systems within 1 year! Projects can raise additional funds by using EED in your country. You can also apply for ESCO financing if required.

Improving affected areas with insulation jackets



Real-time savings through heat-loss prevention

An average size DN100 valve has a surface area of 0,38m². The bigger is the difference between the operating and ambient temperature (LH) the bigger is the heat loss on the valve surface. The following graphs show the heat loss if different size globe valves.

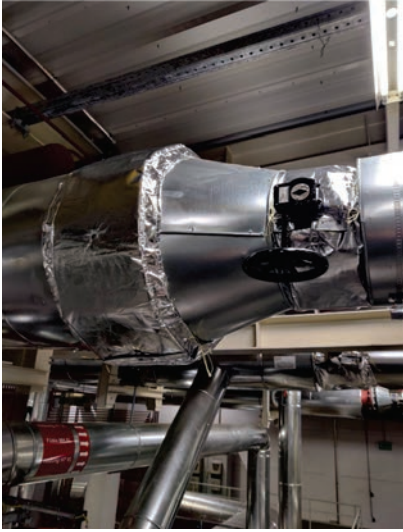


Parameters:

Surface temperature: **160 °C**
 Ambient temperature: **25 °C**
 Air speed: **0,5 m/s**
 Energy cost: **25 €/GJ**
 Hours of operation: **8760 h/year**

Layers	Base materials	Max. temperature	Material properties
Cover materials	E-fibreglass fabric coated with aluminium coated polyester film	150°C	470 g/m ²
	E-fibreglass fabric coated with silicone	250°C	510 g/m ²
	E-fibreglass fabric coated with electrically conductive, antistatic PTFE Teflon® (ATEX certified)	300°C	560 g/m ²
	E-glass fibre reinforced PTFE Teflon® laminate	300°C	230 g/m ²
	PTFE Teflon® multilayer crossfilm laminate	300°C	460 g/m ²
	E-fibreglass fabric coated with silica	700°C	640 g/m ²
	E-fibreglass fabric coated with silica (with stainless steel filaments)	700°C	700 g/m ²
	E-fibreglass fabric coated with silica (with stainless steel filaments), inner side reinforced with stainless steel wire mesh	700°C	1200 g/m ²
	96% pure silica cloth	1000°C	1150 g/m ²
Insulating materials	„E“-Fiberglass needled mat	550°C	130 kg/m ³
	stonewool	650°C	100 kg/m ³
	bio-soluble ceramic fibre blanket	1000°C	128 kg/m ³
	Pyrogel XTE	650°C	180 kg/m ³

Insulation jackets portfolio



DLT150-AL-EG25

Ideal for valves, flanges, pumps, heat exchangers and other parts of heating systems with complex geometry. **The aluminum coating makes it aesthetic;** it is a popular insulation type in the car industry.

Max. Temperature: 150°C

Insulation structure: Inner and outer fabric: nonstick aluminised polyester film laminated E-glass cloth

Insulation: needled E-glass fibre mat



DMT300-H-EG25

Ideal for medium to high temperature applications. Valves, flanges, pumps, heat exchangers and any complex geometry surface. **It is very suitable for thermal oil systems.**

Max. Temperature: 300°C

Insulation structure: Inner and outer fabric: E-glass reinforced PTFE cloth

Insulation: needled E-glass fibre mat



DLT250-S-EG25

For medium temperature applications. Ideal for valves, flanges, pumps, heat exchangers and every equipment with complex geometry. **The most commonly used DynoFlex insulation blanket.**

Max. Temperature: 250°C

Insulation structure: Inner and outer fabric: nonstick silicone impregnated E-glass cloth

Insulation: needled E-glass fibre mat



DHT550-SWS-RW50

Ideal for high temperature (>300 °C) for valves, pipes, flanges and very complex geometry surface. **It is very suitable for gas engines and turbines.**

Max. Temperature: 550°C

Insulation structure: Inner and outer fabric: the silicone impregnated E-glass cloth

Insulation: rockwool mat



DLT300-EX-EG25

ATEX zone 2 valves, flanges, pumps, heat exchangers and every equipment with complex geometry. With PTFE coating, it is **resistant to splashing chemicals, acids and alkalis.**

Max. Temperature: 300°C

Insulation structure: Inner and outer fabric: electrically conductive, anti static PTFE impregnated E-glass cloth

Insulation: needled E-glass fibre mat



DHT650-MSWR-SW50

It can be used as an insulation for high temperature (>300°C) **valves pipes, flanges and other complex geometry surfaces** like gas engines and turbines.

Max. Temperature: 650°C

Insulation structure: Inner and outer fabric: silica impregnated thermo E-glass cloth with the stainless-steel filaments and reinforced with two layers of steel wire mesh.

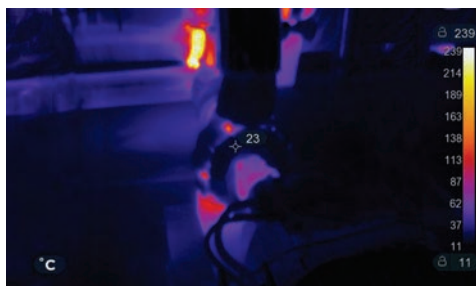
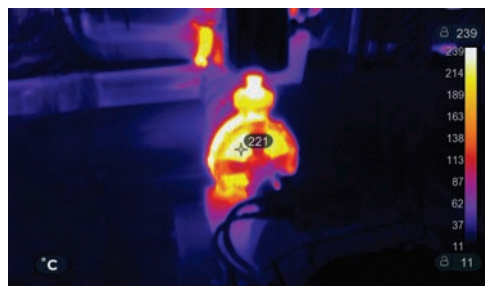
Insulation: bio-soluble ceramic fibre blanket

Insulation blankets applications

What should be insulated with our products?

All hot (50-1000°C) surfaces found in industry can be insulated with DynoFlex insulation blankets designed for the conditions. It is best to start an insulation project on surfaces that could not be insulated with other competing solutions.

Centrifugal pump insulation case



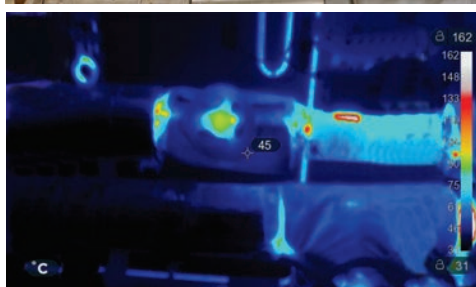
 Cost of insulation
139 EUR

 Savings per year
1873 EUR

 ROI
<1 month

	Heat loss (W)	Yearly heat loss (MWh)	Yearly heat loss (GJ)	Cost of heat loss (EUR)
Uninsulated	1700	14.89	53.6	2144
Insulated	215	1.88	6.77	271

DN100 globe valve insulation case



 Cost of insulation
83 EUR

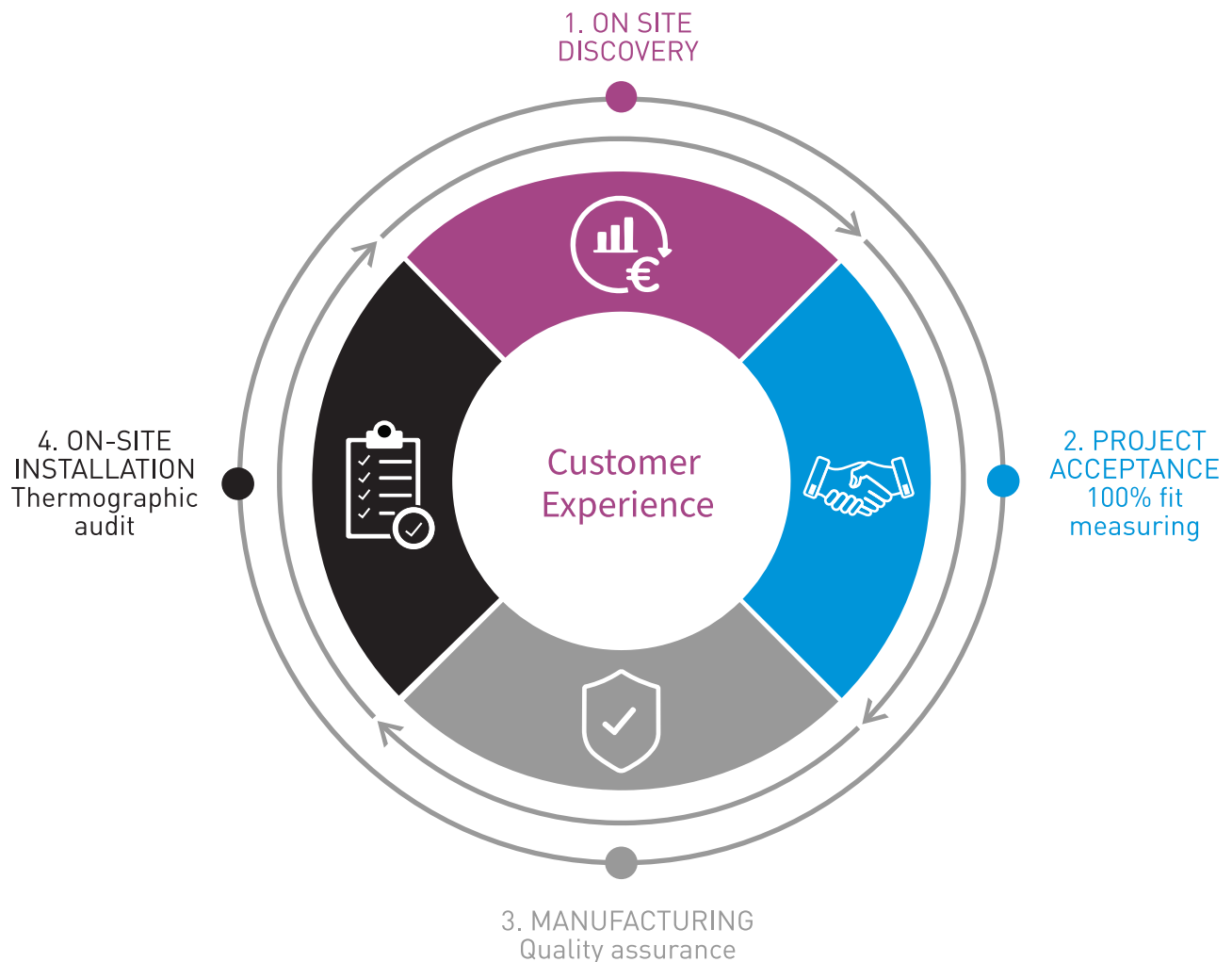
 Savings per year
1015 EUR

 ROI
<1 month

	Heat loss (W)	Yearly heat loss (MWh)	Yearly heat loss (GJ)	Cost of heat loss (EUR)
Uninsulated	900	7.88	28.37	1135
Insulated	59	0.83	2.99	120

*Calculations made with 8760 working hours/year, 40 EUR/GJ energy cost

Insulation project stages explained



1. ON SITE DISCOVERY

Using special measuring equipment and advanced thermographic cameras we list all uninsulated valves and surfaces. Following on-site discovery **we calculate ROI** based on ASTM C 1129-12 and C680 standards, define heat savings in both nature and company resources and present our offer.

2. 100% FIT MEASURING

After **project acceptance** we conduct a second site visit - thorough measuring for 100% fit. Dimensions, shapes and all details are carefully documented. Based on that the most suitable Dynoteq products are selected, designs customised and insulation jackets are scheduled into production.

3. QUALITY ASSURANCE

Following 100% fit measuring process the inner, the outer covers and the insulation is carefully cut and sewn together. We ensure the **quality of our products** by exposing stitches and material to severe mechanical testing before final product confirmation.

4. THERMOGRAPHIC AUDIT

We deliver, execute and install all custom made insulations with 18 months 'Exact Fit' warranty. Installation process is always followed by **thermographic audit** for documenting all cold side (touching) temperatures and ROI double checking.

We provide 18 months and „exact fit" 'warranty!'

Disclaimer:

All testings are done by external institutes and re-confirmed by end-users. The competitive product is one of the leading producers. All information is based on years of experience in production and operation of sealing elements. However, in view of the wide variety of possible installation and operating conditions one cannot draw final conclusions in all application cases regarding the behaviour in gasket joint. The data may not, therefore, be used to support any warranty claims. This edition cancels all previous issues. Subject to change without notice.



Dynoteq Ltd.

Hathaza str. 14
2225 Ullo
Hungary

Office: +36 29 998 610
Fax: +36 29 998 786
Email: info@dynoteq.com
VAT ID: HU14288306