TEMP-COAT®

THE POWER TO INSULATE AND PROTECT

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Highlights

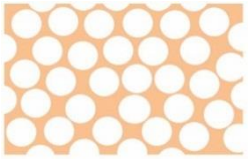
- Application without shut-down or process interruption between +5°C and 180°C
- Quick drying - 1/5 liquid by volume
- Light weight – 0.67kg per liter
- Thermal conductivity coefficient k(eqv)=0,001 W/moC
- Acrylic Latex Binders for long life and UV Resistance
- Stop mold and mildew growth
- High Quality with 10 year manufacturer warranty
- Approved by Multiple Independent Testers
- Extremely stable in hostile conditions between -60°C to +260°C
- Can be toned to different colors
- ROI up to 1 year
- Regularly decreases maintenance costs

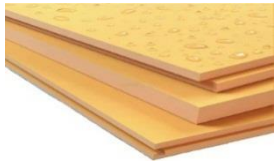
Basic types of isolations

Purpose of all well known insulating materials is to reduce the possibility of hot air convection. There are three types of thermal insulation materials:

- Thermal insulation with open air pores, e.g. mineral wool

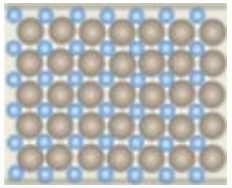
- Thermal insulation with closed air pores, e.g. polystyrene, stiroflex, stirodur ...

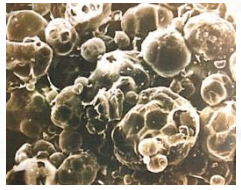




As smaller are air pores in the structure of insulation materials, as lower is heat convection through air pores, that means lower thermal conductivity.

- Ultra-thin insulating coating or liquid ceramic insulation, consists of microspheres of 10-20 microns, filled of charged gas with pressure 0.13 Pa. Thermal conductivity of microspheres is 0.0008 W/m°C.





Thermal conductivity of intire insulation is little higher than microsheres due to acrylic polymer binder : 0.001 W/m°C.

Overview

- A Ceramic Insulation - a thin layer which makes thermal and condensation barrier, used as :
- – Hot and cold temperature control
- – Personnel protection
- – Condensation & corrosion control
- – Acoustics insulation

Thermal Effects:
Value of k (eqv) o.oo1 W / m ° C

Comparative values for known materials:

Material	k (eqv)
Polystyrene	0.03 W / m ° C
Mineral wool	0.04 W / m ° C
Oak	0.21 W / m ° C
Solid brick	0.56 W / m ° C

Product can be used between -60°C and +260 °C

Can be applied to:
– Pipes, process systems, storage tanks, heat exchangers etc.
– Roofs, facades, transporting containers
– HVAC ducts
- Furnaces, boilers, refrigerating plants

Fire Classification (ČSN EN 13501):

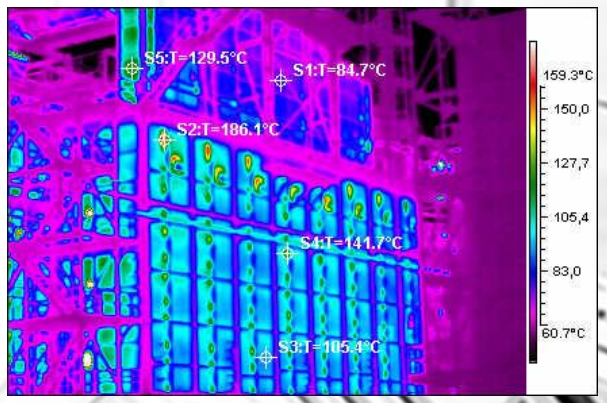
- A2 - on the flame
- S1 - The emission of smoke
- Without grime
- Smoke emitted during combustion is NOT toxic

TC101 as compered to classic insulation

	Fiberglass	Cellulose	Foam polyurethane	Temp Coat
Roof Top Insulation	-	-	Requires a top coat there fore expensive.	1 coat
Pests	Warm & fuzzy home.	Warm & fuzzy home.	Warm & fuzzy home.	Resistant
Settling	Can Settle	Will Settle (Up to 50%)	Won't Settle	Won't Settle
Mold	Will Grow	Will Grow	Will Grow	Resistant
Environmental	Potentially Harmful to Installer	Potentially Harmful to Installer	Toxic fumes when burned. Potentially Harmful to Installer	Non Toxic Not Harmful to Installer
Water Proofing	No	No	Yes as system	Yes as system
Life under UV	No	No	No	20 years
R – Value (Per inch)	(If installed perfectly) 3.1	3.0	3.4 – 3.6	Equivalent R19 for 0,4mm.
Sound Deadening	Fair	Fair	Excellent	Excellent

Energetic efficiency

- Energy savings from 3% to 15%
- Improves process of heating and cooling
- Reduces thermal shock from surroundings
- Reduces thermal expansion
- Reduces waste of energy
- Return on investment up to 1 year



Advantages of control and maintenance

- Fast visual area control
- Easy reparation

Personnel protection

- Piping, flanges, valves, vessels, heat exchangers, refrigerators, cooling systems .....

Corrosion protection and insulation of pipelines

- Easy application
- Resistant to water
- Bonds to the surface
- Reduces heat loss

Site: OAO "TGK-11" Omsk

Heat loss coefficient:

Classic insulation - 6.9
TEMP – COAT - 1.0

Advantages in Petroleum and Chemical Industry

- Reduces energy losses during heating and cooling
- Reduces fuel consumption in heaters
- Reflexes more than 85% solar heat - antireflection properties
- Adheres to hot and cold surfaces from -60 o C to 260 o C
- Can be applied to surfaces up to 180 o C without interrupting in process
- It does not require any additional protection (as coating), allows easy control and inspection
- Resistant to wind, hail or snow
- Applies directly to the substrate (eliminates moisture between substrate and insulation and thus corrosion)
- Almost no maintenance, possibility of simple reparation
- Resistant to water, sea water and chemicals
- It reduces or completely stops the expansion or shrinkage caused damage to roofs
- Application in sugar mills in evaporators & sugar driers

Industrial heaters and boiling plants

An example of the effect after the implementation of the project

Furnace surface area	**1210**	m^2
Average annual air temperature	**4,1**	°C

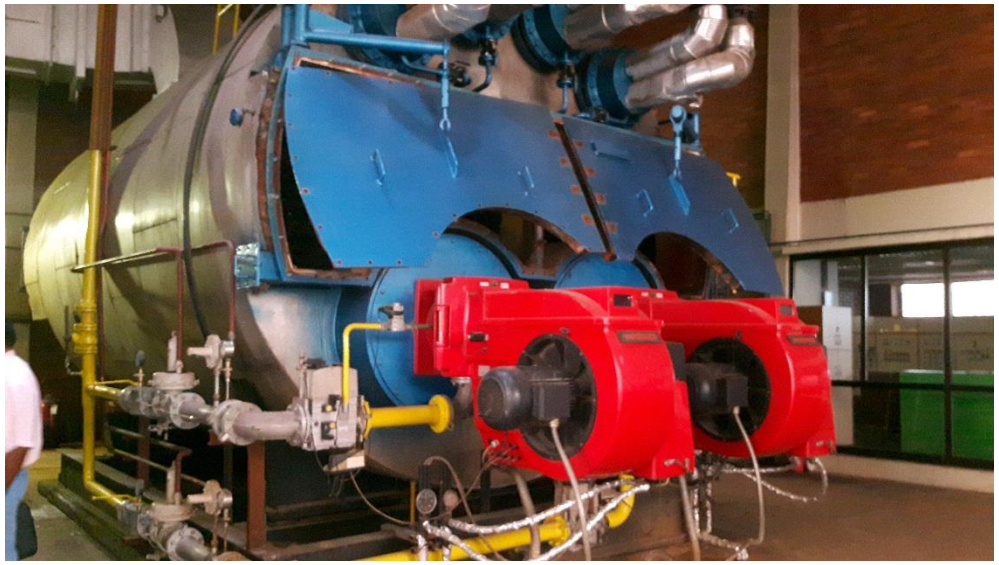
start	1 year	2 years	3 years	4 years
Furnace surface temperature, °C				
60	63	66	69	72
Heat loss from the furnace body, kW				
1390	1480	1570	1630	1720
Additional insulation of furnace body				
Insulation coating surface temperature, °C				
36	37	38	39	41
Heat loss from the furnace body, kW				
46	49	52	54	57
Saving in gas consumption,%				
5,2	**5,4**	**5,6**	**5,8**	**6,0**

Advantages in power and boiling plants

- Energy saving (fuel) 5-10%
- Mechanical stability, guarantee period 10 years
- Small surface volume of insulation, up to 2mm
- Application without sandblasting - simple reparations
- Replaces classic thermal and hydro insulation (higher efficiency)
- Insulation application without interruption of technological process
- ROI up to 1 year

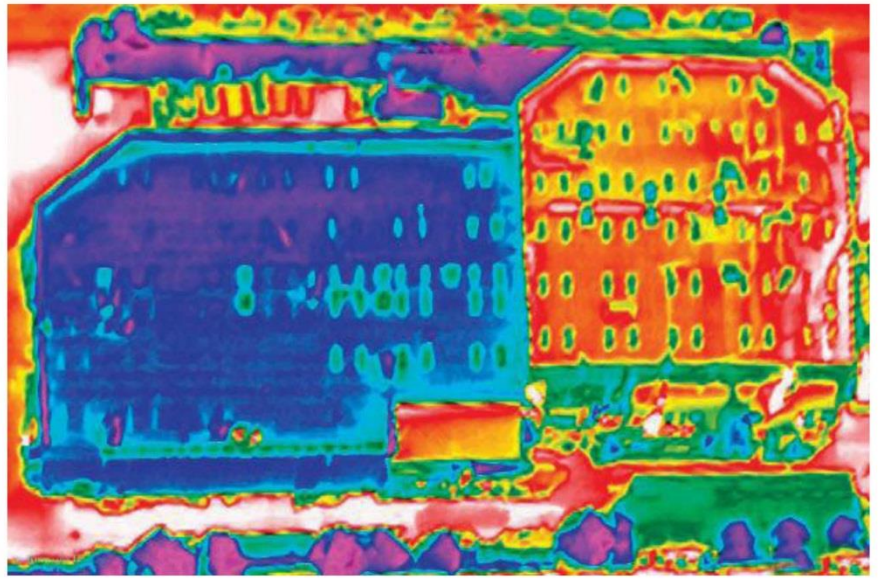
Problems and solutions in boiling plants

- *High level of heat loss on boilers and chimneys up to economizers - TEMPCOAT reduces heat loss – i.e. fuel savings of up to 10%*
- *High level of corrosion in underground pits (frequent leakages and replacement of heating pipes) - TEMPCOAT stops corrosion, guarantee 10 years, reduces maintenance costs, represents unique technical solution for this problem*
- *Reduces annual insulation costs of underground heating pipes, plus saving of thermal energy*
- *Easy insulation application on inaccessible parts of the pipelines*



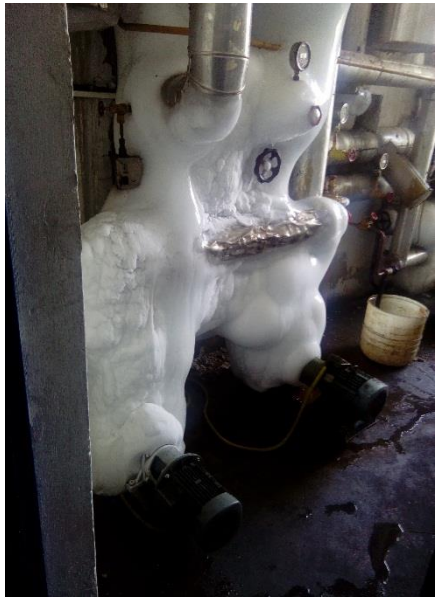
Application in civil construction

- Thin layer of insulation 1mm replaces about 7cm of classical thermal insulation, does not increase total load on structure
- Reduces consumption of energy for heating and cooling about 10% -30%
- Easy application in facades, roofs, concrete beams
- Warranty period 10 years
- Doubly reduces the roof's surface temperature as comparison to white paint
- Good adhesion and elasticity properties of the material
- Prevents appearing of condensate and mildew on wall surfaces



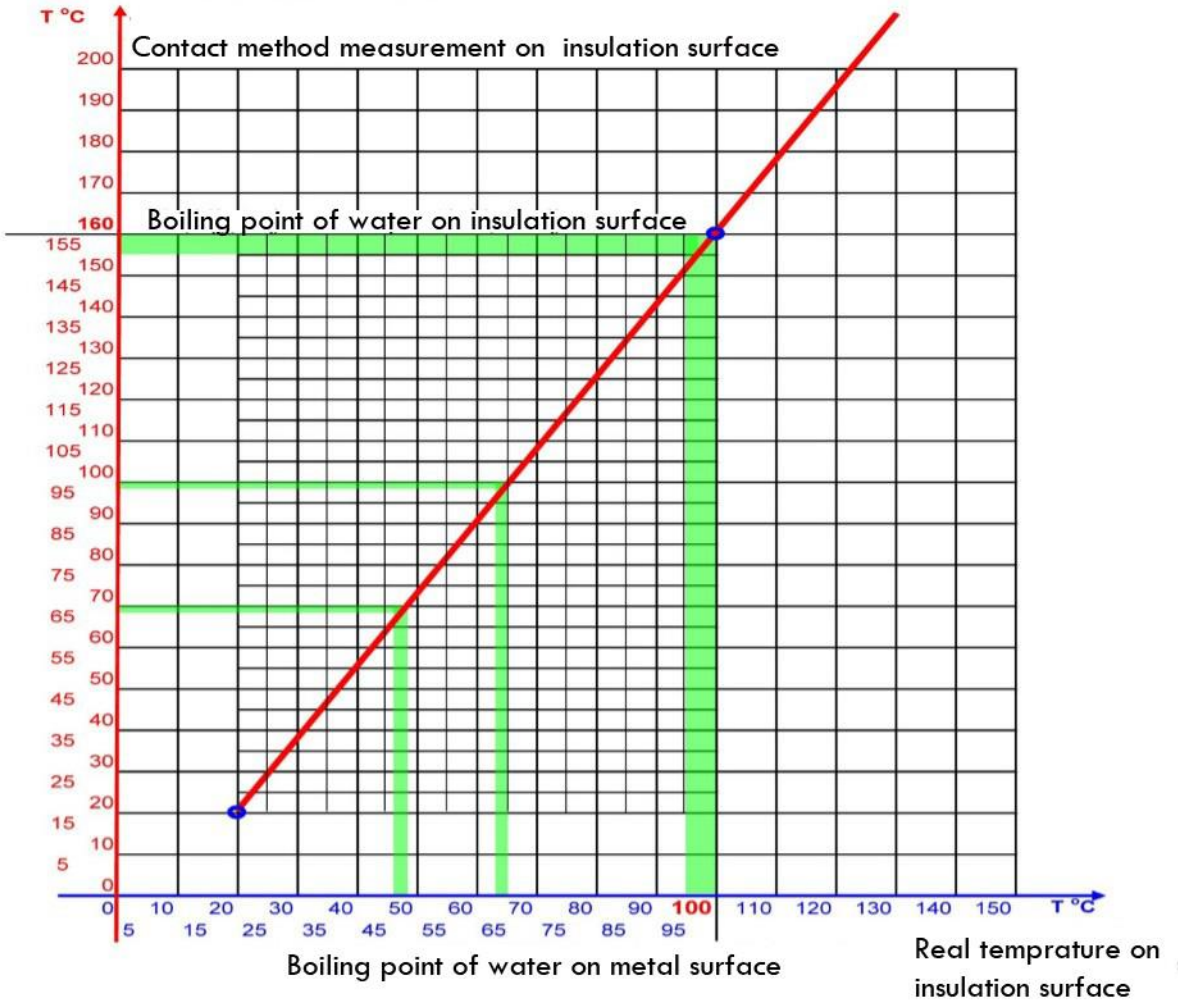
Application of refrigerated and Breweries

- Thin layer of insulation around 1mm replaces the classic 10 cm of thermal insulation in cold storage, storage volume remains the same.
- For transport refrigerators does not increase the total weight
- Reduces energy consumption of cooling by 10% -30%
- Prevents condensation on pipelines and containers, thereby preventing corrosion and energy loss
- Good adhesive properties and elasticity of the material
- Significantly reduces the cooling energy cost of spaces for maturation and storage of beer
- The warranty period of 10 years without additional maintenance costs



Measuring of real surface temperature

Real temperature on the surface of insulation with pyrometer should determined according to the following table.



Project implementation strategy

- Material presentation
- Investor's request, project task
- Questionnaire filling by investors
- Technical and commercial proposal
- Contracting and implementation
- Work completing
- Test run and effect conformation

- During project implementation, energy saving guarantee issues by producer on precise running parameters of plant.

Reference –list of TC101

In Russia	In Europe
Thermal insulation of furnaces at Omsk Refinery, Moscow Refinery, Syzran Refinery, Novokujbyshevsk Refinery,	Insulation of tanks for the storage of fuel oil at OMV, Romania , Insulation of tanks at Paper enterprise in Kwidzin, Poland, Insulation of turbine at Skoda-Power,CZ
Insulation of tanks for the storage of fuel oil at Antipinsk Refinery,	Insulation of industrial ventilators at Unipetrol Refinery, Czec Republic,
Isolation of lager department at brewery in Volzhsky,	Insulation of technological facilities at Pirelli company, Germany,
Fasade thermal insulation of 14-storey resedental buildings in Sergiev Posad	Insulation of tanks for the storage of bio diesel at AMD Mainz, Germany
And other	Gymnasium roof insulation in Partizansk, Sk

Certificate

TEMP-COAT®

Liquid Ceramic Insulation Coating

"Engineering Tomorrow's Environment"

Certificate of Achievement

Awarded to:

SRMA GROUP d.o.o.

To whom it may concern:

Certificate of Achievement

Company Temp-Coat Brand Products Ltd certifies, that Mr. Vojislav Petrovic, dipl.ing.arh., Mr.Ranko Nesevic, and Nenad Nesevic (the company SRMA GROUP d.o.o. from Zemun, Serbia) have passed training in the training center of Teplozastita - the representative of Temp-Coat company in Russia. Company SRMA GROUP d.o.o. and employed are certified to distribute TC101 thermal insulation coating and can provide all necessary work with the product.

TEMP-COAT BRAND PRODUCTS, LLC LIMITED LIABILITY SEAL 2001 LOUISIANA COMPANY

12 April, 2016
Date

TEMP-COAT Brand Products, LLC

Certificate of Achievement

ООО «Теплозащита»

Сертификат

Настоящий сертификат удостоверяет, что

специалист S.R.M.A. doo, Zemun, Srbija
Ненад Несевич (Nenad Nesević)

выполнил программу обучения по курсу «Теоретические и практические основы технологии нанесения сверхтонких теплоизоляционных покрытий серии Temp Coat®»

Начальник инженерно-методического центра
ООО «Теплозащита» О. В. Александрин

25 марта 2016 г.

Россия
г. Волжский

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View video on: https://www.youtube.com/watch?v=b8mpR5H1nRw&feature=youtu.be
https://www.youtube.com/watch?v=Vu5VNCVEBZg&feature=youtu.be

SRMA GROUP

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