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JOINT STOCK COMPANY
OF POWER AND ELECTRIFICATION "MOSENERGO"
(OAO "Mosenergo")
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_____ № _____
to № _____ from _____

To manufacturer representative
of the liquid heat insulation
Korund
(OOO "Kampus")
A.A. Kulagin

CONCLUSION
On test results of liquid ceramic heat insulation "Korund" applying on the Tets-20 OAO "Mosenergo" objects

To assess the effectiveness of liquid ceramic heat insulation (LCHI) "Korund" applying, produced by OOO "NPO FULLEREN" (c. Volgograd), were conducted test trials on the Tets-20 OAO "Mosenergo" heat objects:

1. Pipeline gate valve № 512 boiler № 5
2. Rear wall of boiler plating № 5
3. Pump recirculation pipeline PEN-3 of boiler-turbine plant
4. Fuel oil tank wall № 3 (0,5 sq.m.)

For the tests it was used LCHI "Korund Classic" modification, presented by OOO "Kampus" - regional representative of manufacturer. Application of the material produced by paint brush with a soft natural bristle, fiberwise (by 0,5mm), with drying each layer (24 hour), on a hot surface, without turning off the heat objects.
Temperature measurements at the test heat objects surface produced by contact pyrometer TESTO 925 fact. № 33739463/707.
LCHI "Korund" coating thickness measurements produced by trammel SHTS-1-1-150-0,1
Objects heat insulation works produced:
- from 24.08 to 25.08.2011 in open countryside (object specified p.4);
- from 15.06 to 20.06.2012 indoors (objects specified pp.1,2);
- from 12.10 to 13.10.2011 indoors (objects specified p.3).

Supposed technical task - checking declared physic-mechanical properties of LCHI "Korund", reduction of heat loss, lowering the surface temperature of the test objects and energy saving.

By the LCHI "Korund" applying results was compiled a table of temperature changes on the heat objects surface, depending on the thickness of liquid heat insulation:

Table №1

Test object LCHI "Korund"	*Initial surface temperature, C*	*Indicators of temperature on the object surface, depending on the thickness of the coating/number of layers*					
		1 layer (0,5mm)	*2 layers (1,0mm)*	*3 layers (1,5mm)*	*4 layers (2,0mm)*	*5 layers (2,5mm)*	*6 layers (3,0mm)*
Pipeline gate valve №512	+210	+152,0	+121,4	+99,5	+72,3	+66,0	+44,5
Feed pump recirculation pipeline №3	+118	+84,2	+61,3	+48,6	+35,1		
Wall of boiler plating (rear)	+93	+68,3	+56,0				
Fuel oil tank wall №3	+57	+42,5	+34,7				

On the conducted tests results, the following conclusions:

1. The material is convenient and easy to apply, with the possibility of its application on the surfaces of complex geometric shape (hatches, flanges, gate valves etc.).
2. Heat insulated surfaces have an aesthetic appearance, heat insulation coating can be used as a finishing.
3. The material does not create additional loads on objects.
4. Korund is resistant to atmospheric precipitation, wind loads, ultraviolet, thermal shocks, has anti-corrosion properties.
5. During testing on objects TETS-20 (11 months), specified at pp. 3, 4, delaminations, cracking, color changes did not happen.
6. Coating effectively protects service personnel from burns, significantly reduces the surface temperature of objects and indoors.
7. Test results allow to conclude on the effectiveness of this material as heat insulation.

Application: 1. Photos insulated objects before and after applying LCHI "Korund", 2 sheets.

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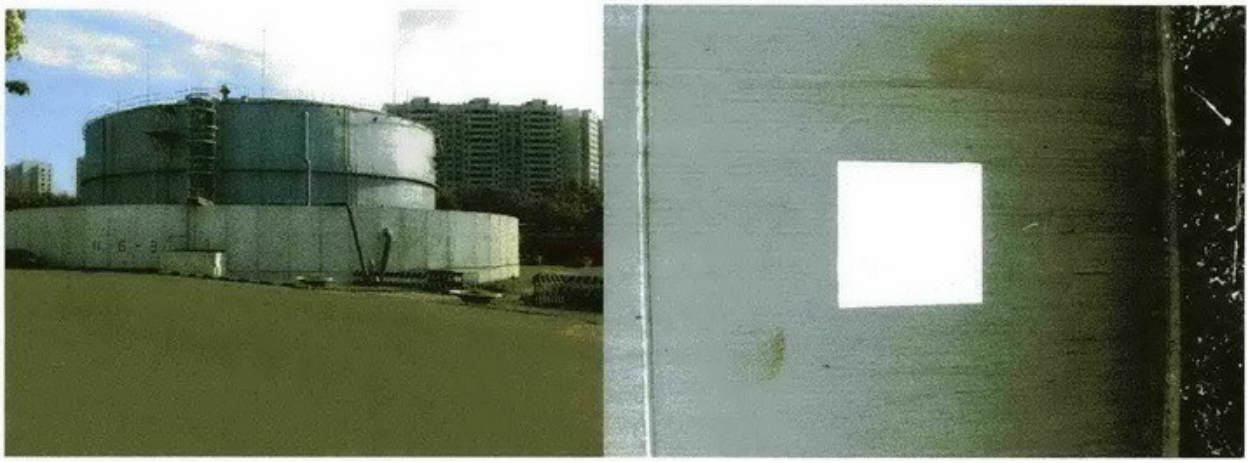
Application to the Conclusion TETS-20
on the LCHI Korund test results

Fuel oil tank wall № 3

Experimental plot of tank wall heat insulation 0,5 m2 with the thickness of the liquid heat insulation coating Korund =1mm. The temperature on the tank wall surface before coating = +57C, after coating = +34,7C. After 11 months of use on the tank LCHI Korund retained its properties, not delaminated, not cracked, not changed color.



Wall of boiler plating №5 (rear)

Surface temperature was +93C, after applying 1 mm LCHI Korund the surface temperature dropped to +56C.

Pipeline gate valve № 512 boiler № 5

The gate valve surface temperature was +210C. applying LCHI Korund with 3mm thickness reduced the temperature up to +44,5C.

Feed pump recirculation pipeline №3

The surface temperature of the pump, gate valve and pipe was +118C. After applying liquid heat insulation Korund with 2mm thickness the temperature dropped to +35,1C. Appearance of the coating in the photo after 9 months of exploitation in a temperature range from +118C to +143C shows a lack of delaminations, cracking and changes the color of the material.

Regional representative of the manufacturer
liquid heat insulation Korund in Moscow and
Moscow region OOO “Kampus”

Kulagin A.A.