

1 Experimental Research Agency of Fouling on Heat Rating of the
 2 Tubular Ridge Convector

3 Sukhotski Albert

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6 **Abstract**

7 The experimental research of intensity of a thermal stream and distribution of temperatures
 8 on ribbed pure and low-purity surface of the tubular ridge convector with spiral aluminium
 9 ribs is spent at air free convection. Researches were spent by a method of full thermal model
 10 testing at specially developed experimental stand, and ring uniform pollution ribbed tubes
 11 was created by dense winding between ribs of a linen cord or wrapping of tube by an
 12 aluminium foil. It is revealed that at a free convection in tubes with a close arrangement of ribs
 13 of pollution of intercostal space at the basis ?????????? does not lead to essential decrease in a
 14 heat rating (less than 10

16 **Index terms**— bimetallic ribbed tube, convector, pollution, heat rating at air free convection.

17 **1 Experimental Research Agency of Fouling on Heat Rating of
 18 the Tubular Ridge Convector**

19 ?????????????????? ?????????????? ??????? ?????????? ?????????????? ?? ?????????? ?????????????? ??????????????
 20 ??????????

21 **2 Sukhotski Albert**

22 Abstract-The experimental research of intensity of a thermal stream and distribution of temperatures on ribbed
 23 pure and low-purity surface of the tubular ridge convector with spiral aluminium ribs is spent at air free convection.
 24 Researches were spent by a method of full thermal model testing at specially developed experimental stand, and
 25 ring uniform pollution ribbed tubes was created by dense winding between ribs of a linen cord or wrapping of
 26 tube by an aluminium foil.

27 It is revealed that at a free convection in tubes with a close arrangement of ribs of pollution of intercostal space
 28 at the basis ?????????? does not lead to essential decrease in a heat rating (less than 10 %), and the decline to
 29 give heat properties of a tube occurs only at pollution of cops ribbed (on 20,5 %). The temperature on altitude
 30 of a lateral surface of a rib decreases slightly (less than 2 %), and on a rib cop in relation to the basis -for 6-9 %.
 31 Hence, at maintenance of ridge convectors of systems of heating their frequent and careful clearing of pollution
 32 is not obligatory.

33 Keywords: bimetallic ribbed tube, convector, pollution, heat rating at air free convection. ?????????? ??????????
 34 ????? q, ??/? , ?? 1 ? ??????? ?????? ?????? ?????????? ?????????? ?? ?????? ? ?????? ?????????? ? ??????????
 35 ?????????? ?? ?????? (t ? -t 0)/q,?? 0 ?/?? h,?? W=10,3 ??;

36 **3 ????????????**

37 () i / , q W Q 1 = ? ??? Q ? ?1,0 1,5 2,0 R ? , (? 2? ? 0)/?? q/?t ??? , ??/(?? 0) ?? ??? 4 ??????????????
 38 ?????????? ?????????????? ?????? ?????????? (t ? -t 0) / q ?? ?????? h ??? ?????? (h ?
 39 ??? 4: ?????????? ?????????????? ?????? ?????????? (t ? -t 0) / q ?? ?????? h ??? ?????? (h ?
 40 = 0), ?????????? ?????? ?????? ? ?????? ? ?????????? ?????? ? ?????? ? ?????? ?????????? h ? ?
 41 ?????? ?????? W: ! ? h ? = 0 ??, , ? h ? = 3,3 ??, 7 ? h ? = 6,3 ??, ? ? h ? = 8,7 ??, ? ? h ? = 11,4 ??,
 42 ? ? h ? = 16,1 ??; ! ? W = 10,3 ??, ! ? W = 19,3 ??, ! ? W = 26,0 ??, ? ? W = 51,0 ??, ! ? W =



Figure 1:



Figure 2:

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(?? 20,5%). ?????????????? ?? ?????? ???????? ??????????????
????? ?????????????? ?????????????? (????? 2%), ? ??
????????? ????? ?? ?????????? ? ?????????? -?? 6-9%.
???????????????,

Figure 4: ???????????, ??? ?? ?????????????? ?????????? ? ?????? ? ?????? ??????????????????
????? ??????????? ?????????????? ?????????????? ? ?????????? ?????????? ?? ?????? ?
????????????? ?????????? ?????????? ?????????? (????? 10%), ? ?????????? ?????????????????? ??????????
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????????????? [12?15] ??? ?????????????? ????????

?????, ?????????????????? ??????. ??????, ?????, ??? ?????? ? ?????????????? ?????????????? ?????????? ?????????? ?

II. ??????? ?????

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????????????? ?????? ??10. D?"????? ?????? ?????? ??????

d ? = 25 ??,

?????? ?????? ?????? ?????????????? ?????????????? ?????????? ?????????? ?????????? ??????????

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????????????? ? [16] ?????????????????? ?????? ???

????????????? ??????-????????????? ??????????????. ?

????? ?????????? ?????? ?????? 0,8×0,8×1 ?

????????????? ?????????? ?????????? ??????, ???????

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5 ?????????????? ?????? ?????-
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????????????? ?? ??? 1. ?????? ??????????????????

????????? ??? 1, ?????????? ???, ????????????

$(t ? -t 0)/q, (? 0 ?)/??$
 0,55 $h ? =0 ??; h ? =6,3 ??;$ $h ? =3,3$
 $? ?;$ $h ? =8,7$
 $? ?;$ $h ? =16,1$
 $? ?.$
 0,50 $h ? =11,4 ??;$
 $h ? =?$
 0,45 $h ? =?$
 0,40 0 4 8 12 $h, 0,6$
 $? ?$
 0 4 8 12

(???. 1, ??????? I). ?????????? ?????? ?? ??????
 ??????? ?????? ?????? ?????? ? ??????????????
 ??????? ?????????? ?????? ?????????????? t ? ??????????????
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Figure 7:

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