

FUJIKURA EUROPE LIMITED

COMPARISON OF EMISSION AND EMISSIVITY PERFORMANCE OF ALUMINIUM, STEEL, BLACK ANODISED ALUMINIUM AND PREMIUM GRADE FUJIHOKKA AT VARIOUS TEMPERATURES

(PGH/COMP/0101 comp2.doc)

TEST DETAILS

Instruments used: Bruker Equinox 55 Fourier Transform Infra – Red Spectrophotometer (FTIR) modified for far IR emission measurements. The Blackbody reference source was a Land Instruments P550P National Physical Laboratory certified source (99.5% minimum emissivity).

Samples were heated on a Specac water cooled platen, accuracy +/- 1degC.

Measurements were made at 50°, 100° and 200°C. A Blackbody reference scan was made at each temperature followed by each sample.

The FTIR measured the intensity of radiated energy at each temperature in the 1-25 micron region. The emission values are arbitrary values calculated by the FTIR spectrophotometer. The instrument also gives comparative peak emission values for each sample.

Emissivity is calculated by dividing the sample emission by the Blackbody emission at the relevant temperature. Emissivity is expressed as a percentage value. The higher the value the better the material is at radiating far IR electromagnetic waves in the 1-25 micron region.

Emissivity results given are average, minimum and maximum. The maximum value invariably occurs above 10µm and is not so important as the minimum value which occurs below 10µm where most materials absorb electromagnetic (far IR) energy causing heat increase.

CONCLUSIONS

The attached results clearly show the superior emission and emissivity of Premium Grade Fujihokka over aluminium, steel and standard black anodized aluminium. The material is therefore far more effective at absorbing and radiating far infra-red thermal energy than any of these other materials.

This property of PG Fujihokka makes it an ideal material for applications involving heating, cooling or drying.

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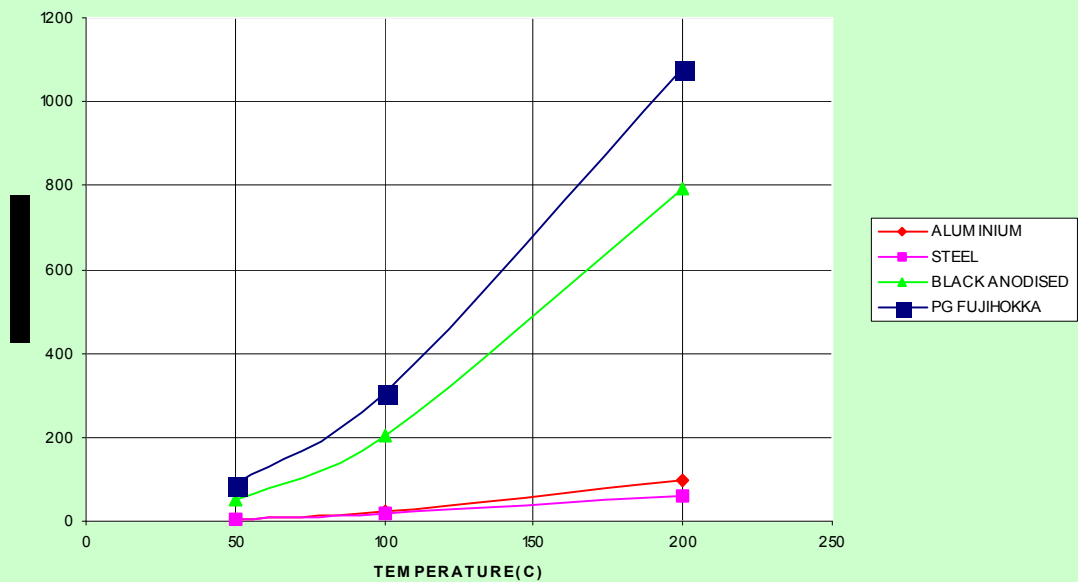
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GRAPH: EMISSIVITY VS TEMPERATURE

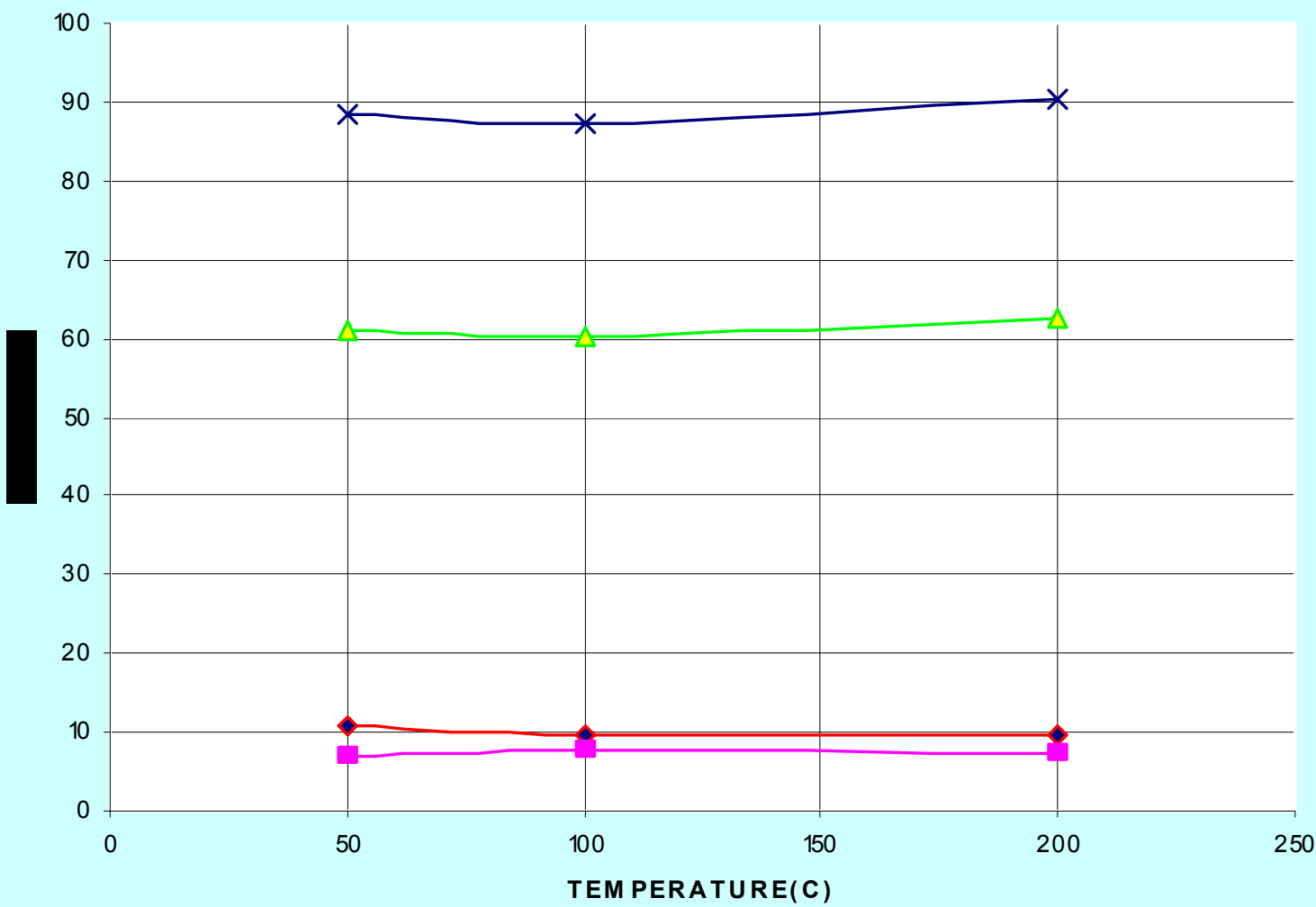
EMISSION VS TEMPERATURE



PEAK EMISSION

TEMPERATURE(°C)	ALUMINIUM	STEEL	BLACK ANODISED	PG FUJIHOKKA
50	6	3	51	88
100	24	17	204	307
200	96	60	790	1080

EMISSIONITY VS TEMPERATURE



AVERAGE EMISSIONITY				
TEMPERATURE(°C)	ALUMINIUM	STEEL	BLACK ANODISED	PG FUJIHOKKA
50	10,7	7,1	61,1	88,4
100	9,5	7,6	60,3	87,4
200	9,5	7,4	62,6	90,5

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