



**SOLAR HIGH REFLECTIVE
COATINGS**

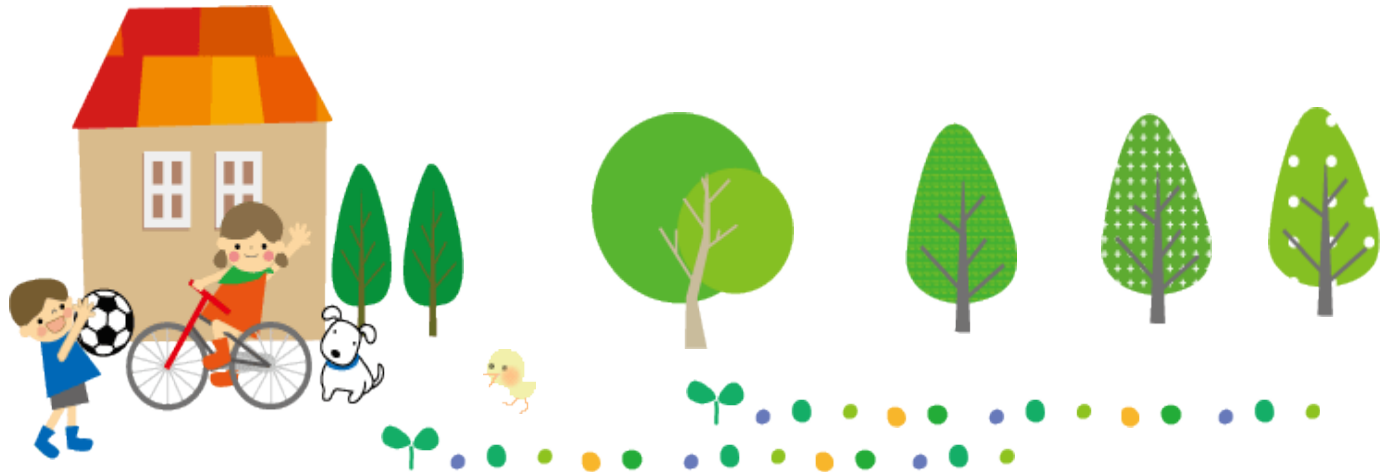
MIRACOOOL®

MIRACOOOL CO., LTD.

30/SEPTEMBER/2010



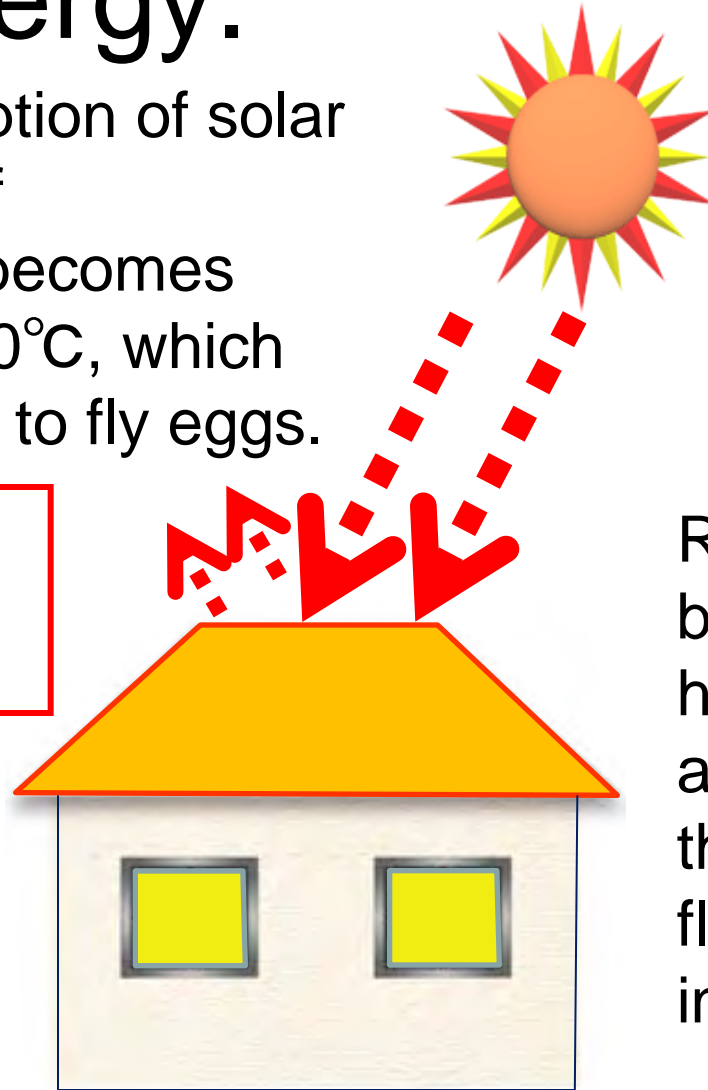
Solar energy gives a lot of benefit to the earth.
However, solar radiation also causes temperature rises inside houses and buildings.



In case roof surface **absorbs** the solar energy.

Due to absorption of solar radiation, roof temperature becomes higher than 60°C , which is hot enough to fly eggs.

Low
Reflection

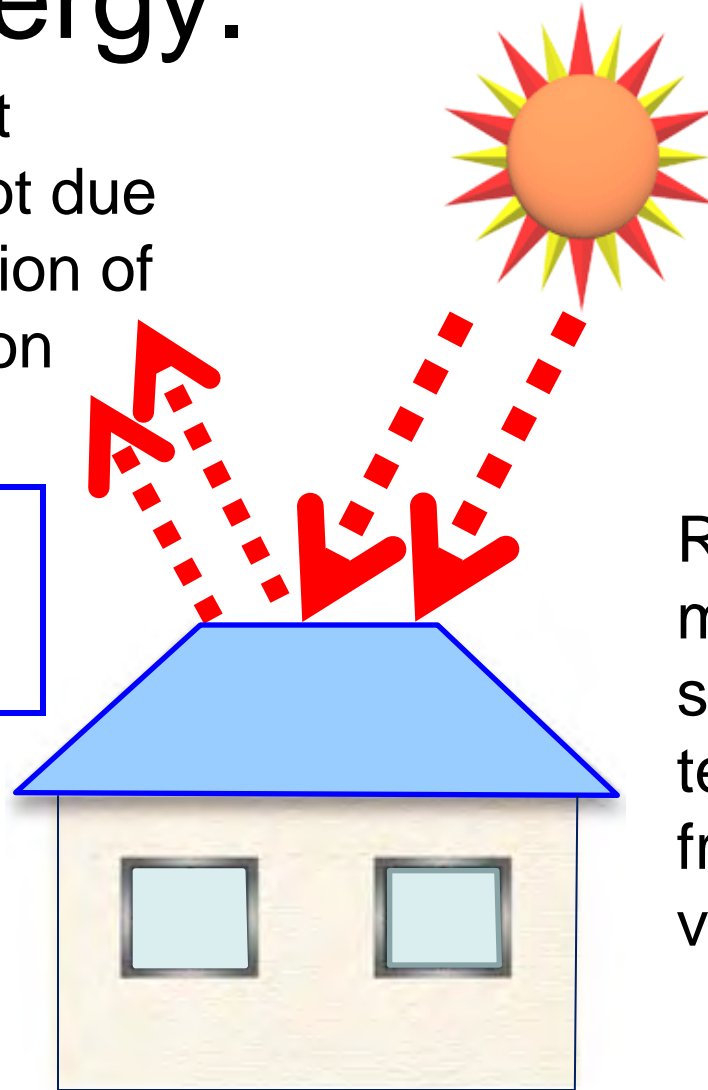


Room temp. becomes much higher than the ambient temp. as the result of heat flow from rooftop into the room.

In case roof surface **reflects** the solar energy.

Roof does not become so hot due to high reflection of solar energy on rooftop.

High
Reflection



Room temp. is more or less the same as outside temp as heat flow from the rooftop is very little.

MECHANISM OF HEAT SHIELD FUNCTION

- ROOM TEMPERATURE IS EFFECTED BY SURFACE TEMPERATURE
- MIRACOOOL REDUCES SURFACE TEMPERATURE

HIGH

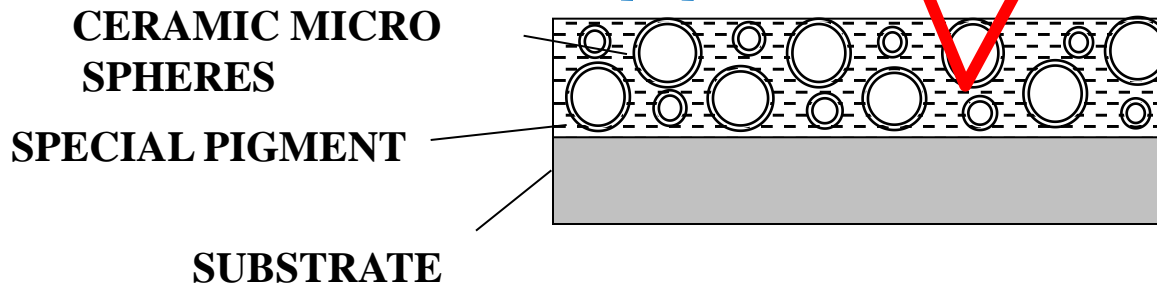
EMISSION

REFLECTANCE

HIGH

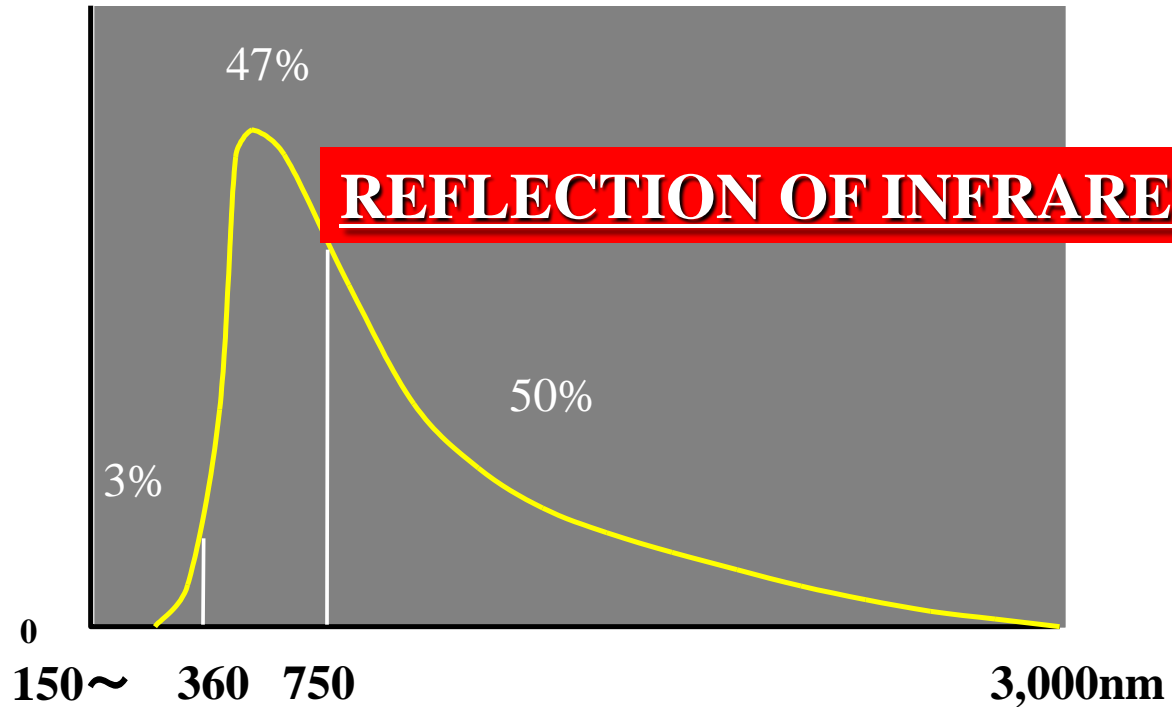
CONDUCTIVITY

LOW



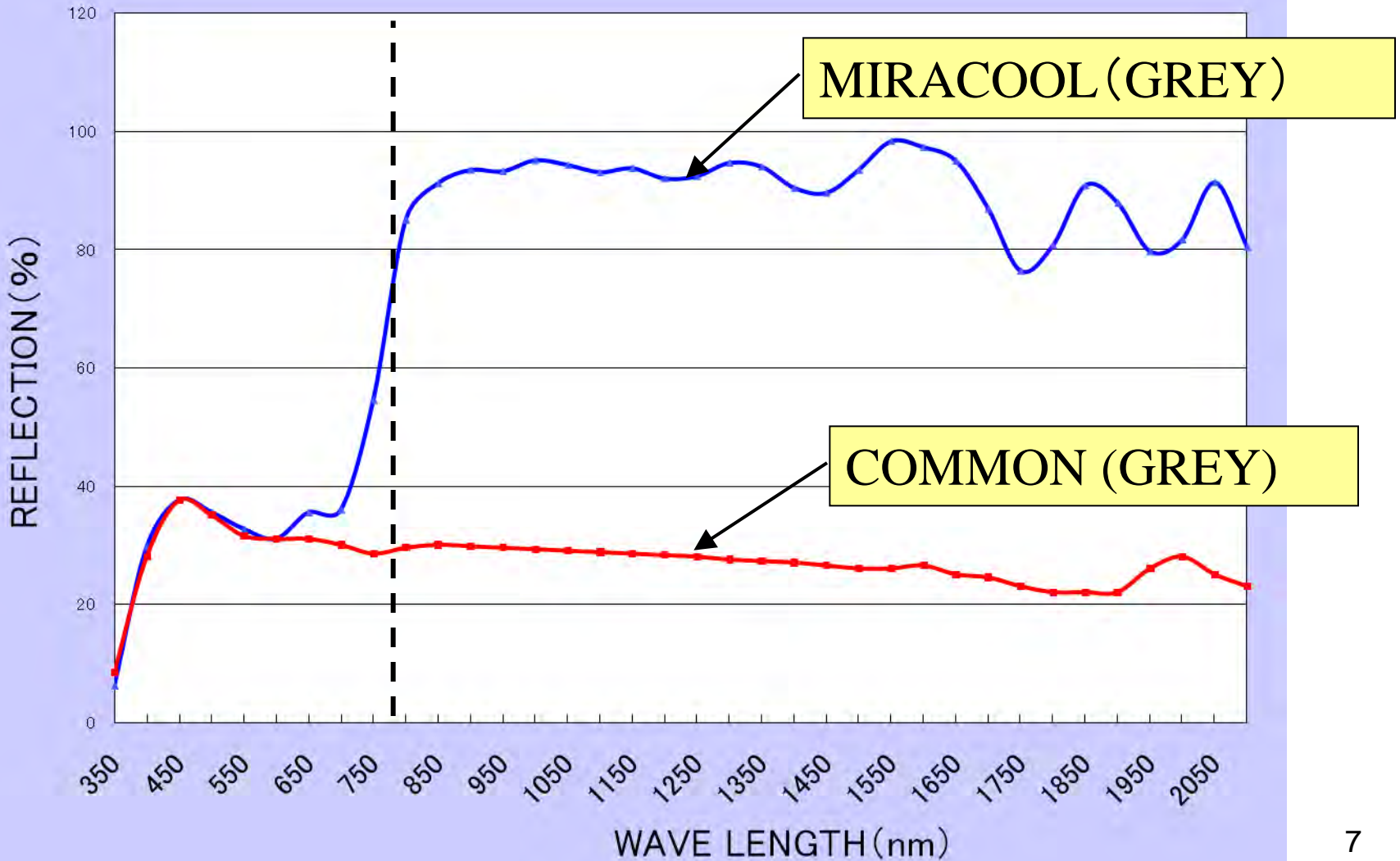
SOLAR SPECTRUM

SOLAR ENERGY



UV VISIBLE NEAR INFRARED

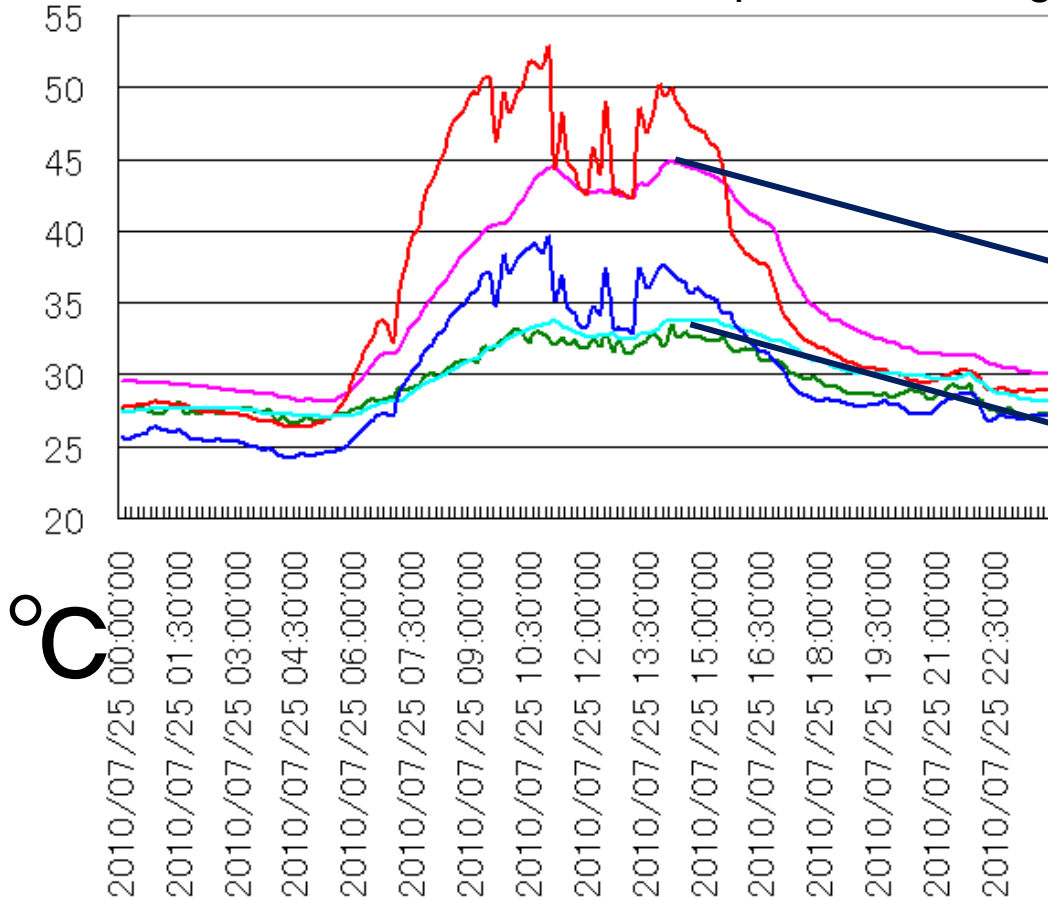
REFLECTION OF INFRARED



FIELD DATA (1)



Steel Roof + PEF4mm + No Suspended Ceiling

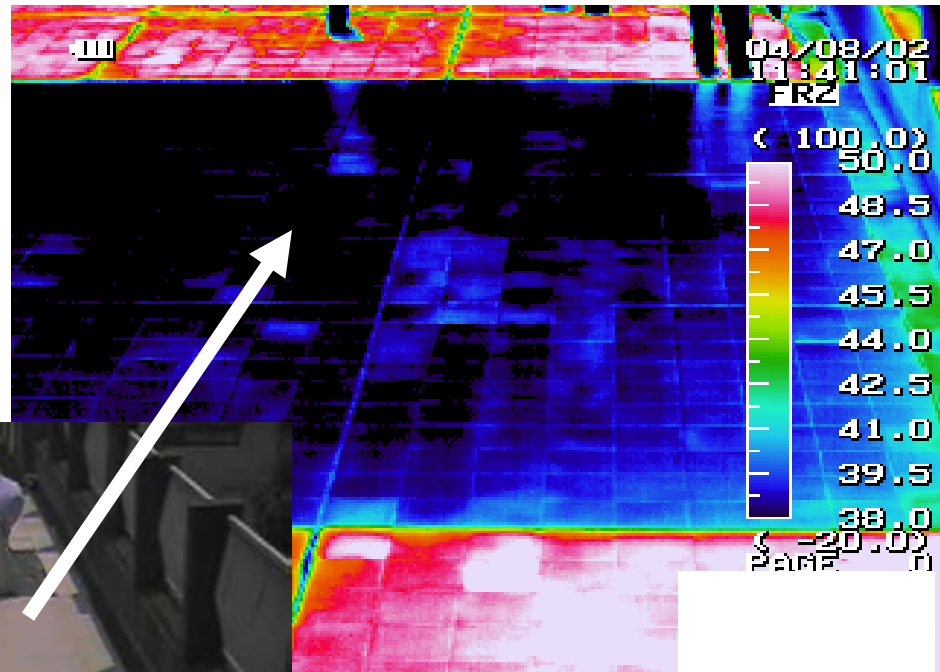


Max. of Temp. Diff. is 11°C

- AMBIENT TEMP.
- ROOM TEMP (UNCOATED)
- ROOF BOTTOM (UNCOATED)
- ROOM TEMP (MIRACOOOL)

FIELD DATA (2-1)

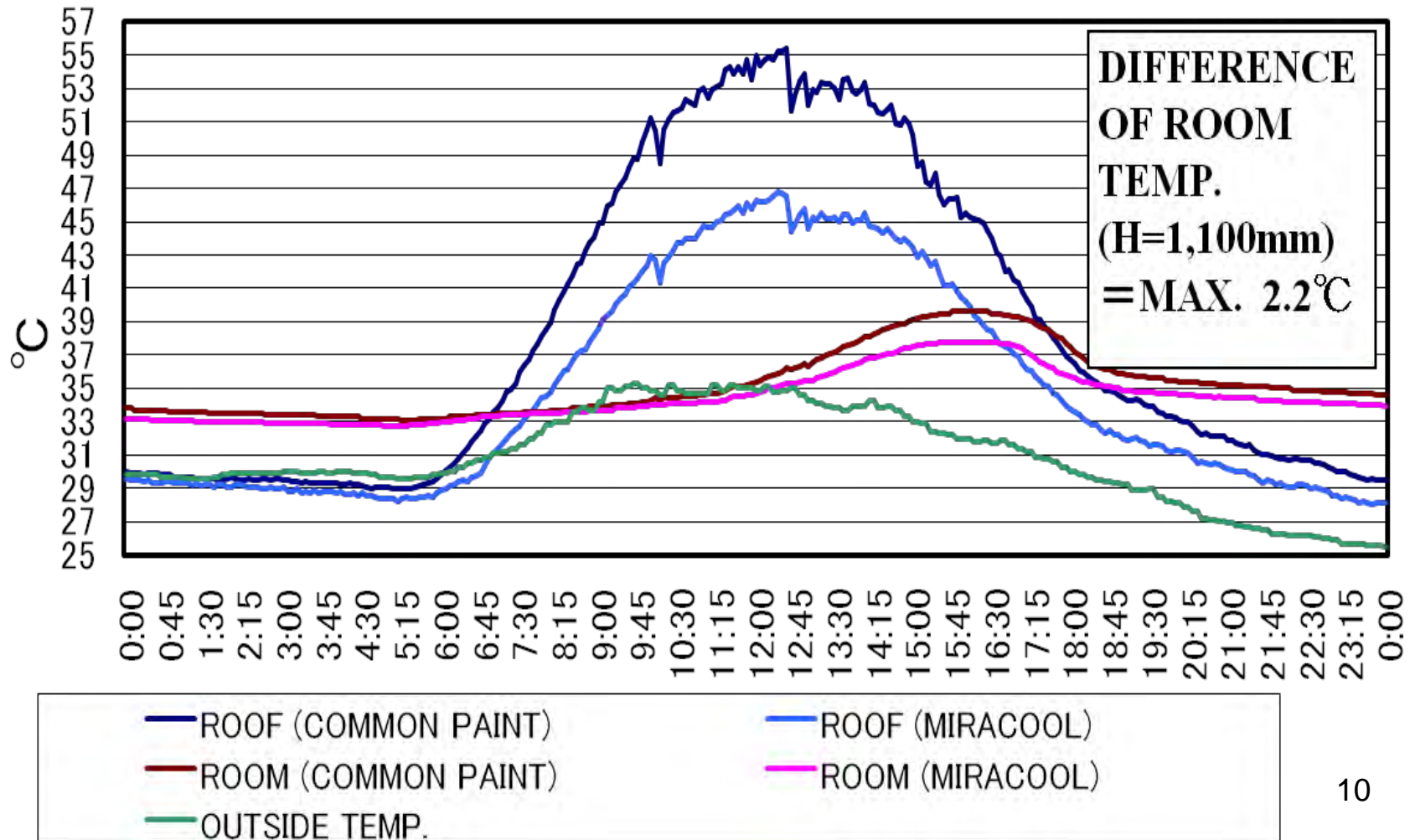
(CONCRETE ROOF OF A
PRIMARY SCHOOL IN
TOKYO
METROPOLITAN)



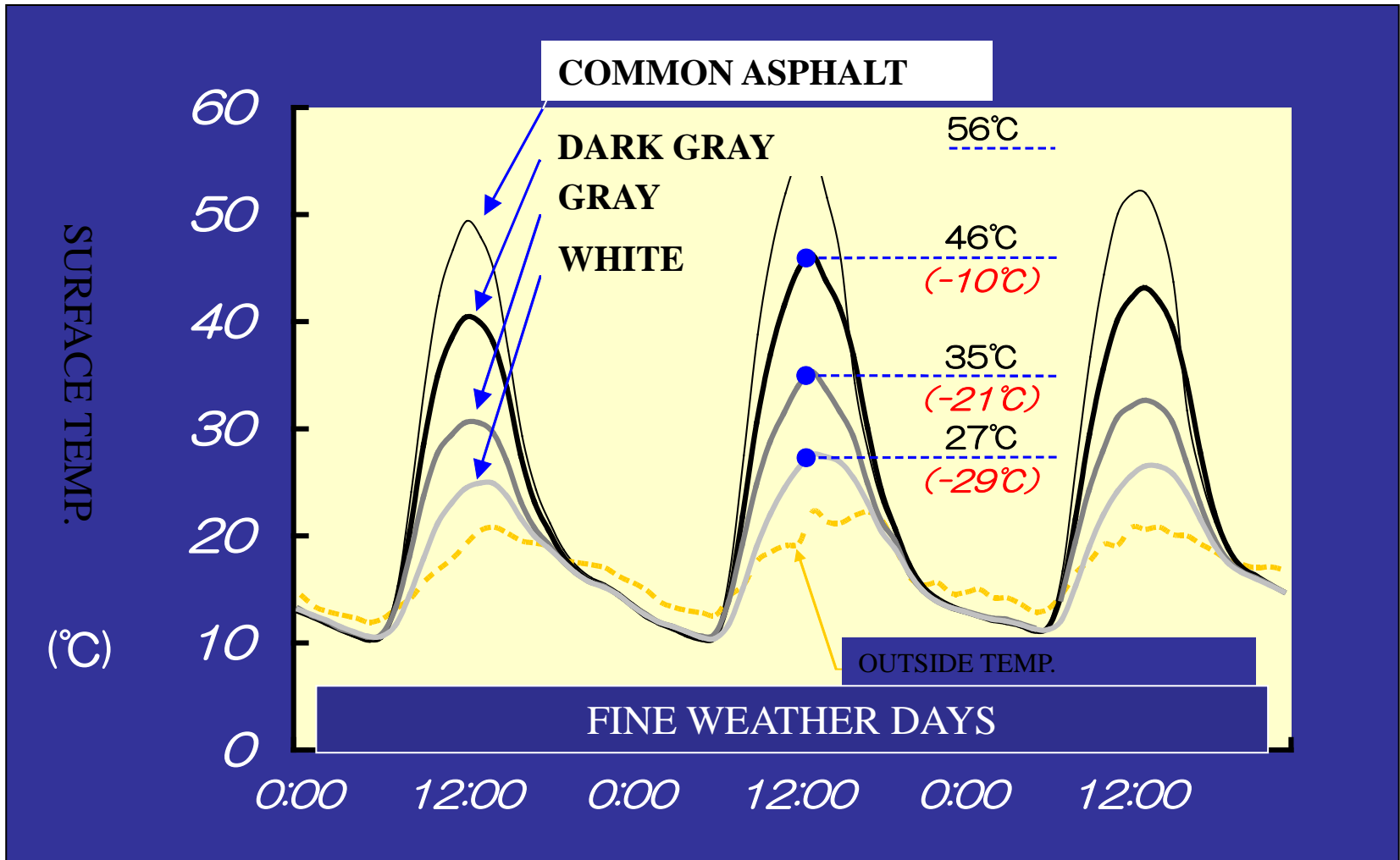
THERMOGRAPHY

FIELD DATA (2-2)

Concrete tile + Waterproofing + Reinforced Concrete + Suspended ceiling



FIELD DATA (PAVEMENT)



WINNER OF GRAA OF INTERNATIONAL ROAD FEDERATION



The International Road Federation's Global Road Achievement Awards (GRAA) program is a competition to honor and recognize road-industry projects that demonstrate excellence and innovation in road development worldwide.

BUILDINGS



FACILITIES



PAVEMENTS



ATHLETIC FILEDS

