

# Inspection of Concrete Structure

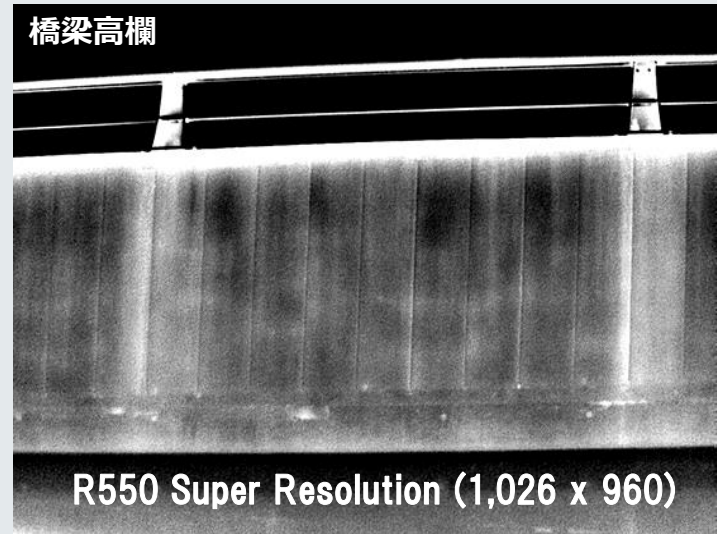
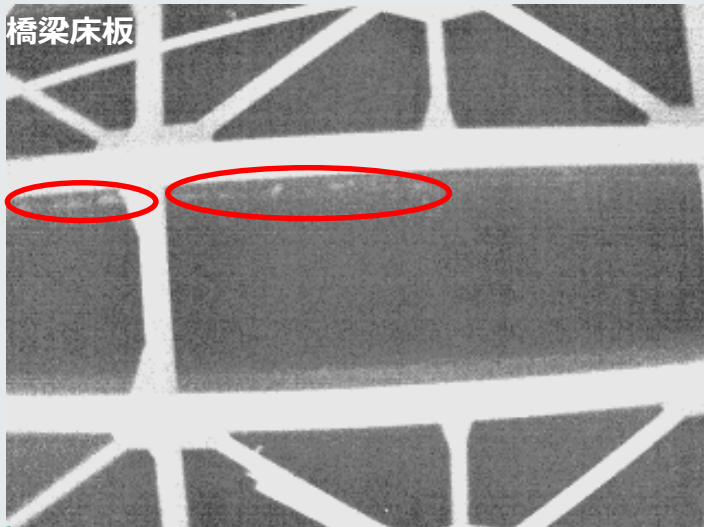
## Issue

Delamination of concrete structure needs to be found without use of work platform or scaffold.

## Avio Solution

Avio IR Thermography allows you to diagnosis delamination of concrete structure from distance, without work platform or scaffold, which contribute to improve work efficiency.

- ★With super resolution, max. 1280×960 pixel image is acquired.
- Wide field of view is available by wide angle lens (max. 93°).



R550 Series



R450 Series

# Avio IR thermography

## For efficient diagnosis of concrete structure

### ■ Suitable model for diagnosis of concrete structure

Model	R550S	R450S
		
Detector	2-dimensional uncooled microbolometer	
Display Pixels (Super Resolution)	307,200 pixels : 640×480 (1.2M Pixels : 1,280×960)	172,800 pixels : 480×360 (0.7M Pixels : 960×720)
FOV	32°(H)×24°(V)	24°(H)×18°(V)
Sensitivity	0.025°C (S/N improvement)	0.025°C (S/N improvement)
Measurement Range	-40~650°C	-40~120°C
Frame Time	30Hz	40Hz
Spatial Resolution (Super Resolution)	0.87mrad (0.58mrad equiv.)	0.87mrad (0.58mrad equiv.)
Option Lens	X2 Tele, X2 Wide, X3 Wide	X2 Tele, X2 Wide

#### Theory of concrete structure delamination detection

- ① During day time, when external thermal stress is applied to concrete structure, delaminated area are heated faster than normal area, because of smaller thermal capacity.  
Example of thermal stress: Sun light, temperature gap between day time and night time.
- ② When external thermal stress is gone, heat accumulated inside of the concrete, will be radiated. Therefore, delaminated area with smaller thermal capacity becomes colder than normal area with larger thermal capacity.(Reversed phenomenon)

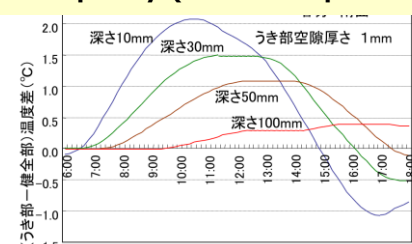
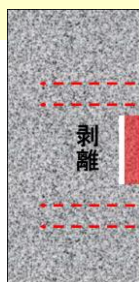
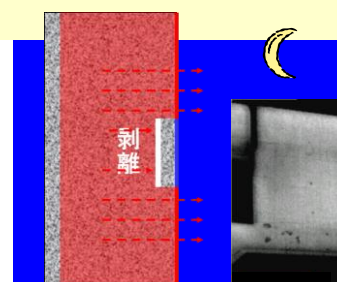
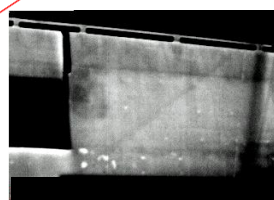


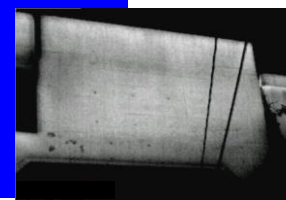
図. 浮き部深さと温度差の現れ方の例  
東京: 春分: 南面 浮き部の空隙厚さ1mmの場合



① Under thermal stress



② No thermal stress



Avio offers most suitable model for all of your measurement needs.

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#### WARNINGS & CAUTIONS

- Before using this product, please carefully read the provided Operation Manual "WARNINGS" & "CAUTIONS" section to ensure proper operation.
- Please do not place the product in high temperature, high humidity or high inert gas environments.

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