

Surface Anomaly Inspection System

SAI-1

The Surface Anomaly Inspection system SAI-1 by ibea is designed for quality control of large area surfaces. This newly developed SAI-1 works ideally with objects that measure 2x1 m, and with up to 10 cm difference in height. The exceptional know-how and long-standing experience of our engineers and technicians in object illumination and recording are the main reason for this breakthrough new inspection system.

SAI-1's range of application, and hence, resulting standards are as follows:

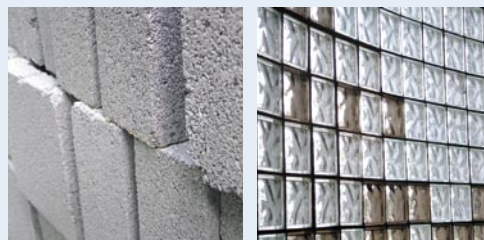
- Inspection of tiles
- Inspection of roofing tiles
- Inspection of lime malm brick
- Inspection of building boards/gypsum plasterboard
- Inspection of concrete slabs
- Inspection of glass bricks
- Inspection of areas made out of glass/ plastics, Wood-Plastic-Composites (WPC)

The following quality characteristics can be inspected, amongst other things:

- Surface anomalies (cracks, fractures, blow holes, bubbles etc.)
- Contamination, color variation
- Accuracy to size
- Texture, grain size

ibea uses solely high-quality cameras, lenses, as well as illumination equipment which is crucial for good optical inspection systems. The lighting system elements are aligned with the specific characteristics of large area objects, and utilize special, long-lasting light emitting diodes (LEDs).

Our components comply with the highest industry standards, and therefore are able to secure system stability in harsh production environments, as in 24-hour operation facilities and - most notably - are maintenance-free. With the help of our internal testing systems and remote diagnostics abilities it is possible to check settings and functions quickly and worldwide.



SAI-1



SAI-1, executed as roofing tile inspection

The Future in Quality Control

The user software can handle several "jobs" all at once and is therefore capable of depicting and adapting to new production environments quickly. Modification of a "job" can be implemented at any time – even while inspection is ongoing. During inspection the operator has on display: error statistics, course of inspection including errors, Pareto analysis, system status and the last images containing errors plus respective error entries.

Up to 3 ejector signals are controlled with the Real Time System (RTS), which guarantees monitored ejections even at different conveyor speeds.

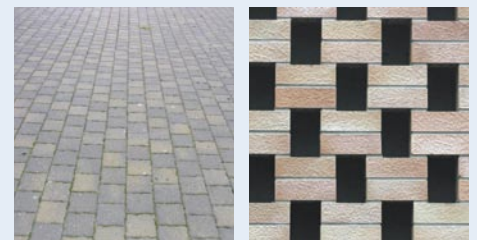
The Surface Anomaly Inspection system SAI-1 consists of two assembly groups: the Imager and the Electronic Rack. The Imager here means a construction combination of illumination(s), camera(s), and lens. Ibea's concept is a modular one, i.e. apart from existing standards it is possible to build variants for other applications. Another distinctive feature of the SAI-1-Imager is the constructive preparation for up to 4 cameras – a prerequisite for the perfect inspection of large objects.

The patented Color Flash Light (CFL) illumination technology offers – amongst durability, and with constant intensity – the possibility of distinctively depicting various production errors due to its very bright flashing LEDs.

The Electronic Rack houses computer and PLC. All units up to IP 65 (V2A) can be stored in the solid Standard-Rack. Custom-made products can be stored equally well at any time. The racks can be equipped with a tube as well as TFT monitor. Accessible from the rear of the rack is the power distribution including the switch relays for mass production errors and system operation status.

The Ibea expert team is able to develop system software and perfectly integrate it within a short amount of time – and for all kinds of use.

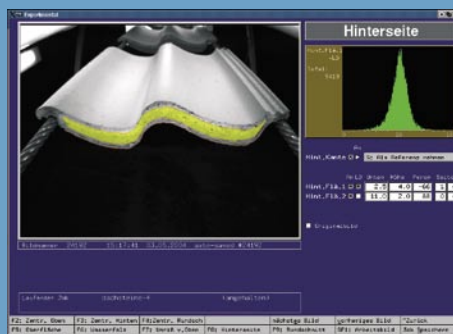
SAI-1, executed as roofing tile inspection



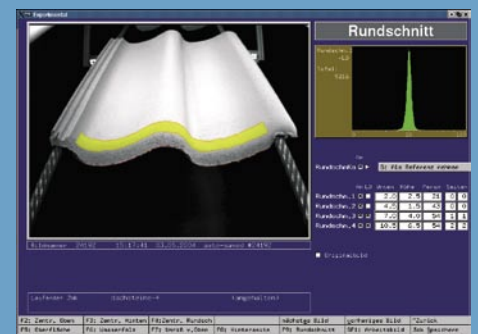
Example of roofing tile inspection. Altogether 30 different areas of the tile are inspected.



Surface inspection



Inspection of ridge side



Inspection of drip side



Motorized Zoom lens
for the automated
selection of various
diameters (0-200 mm).



High-resolution camera
for inspection of large
objects.



Climate control unit
for Electronic Racks
and/or cameras.



**PLC Power Down
Kombi Box**
Power Down Automatic
for PC

Test our know-how and send us your specifications!

Feel free to send us samples of your faulty products that need inspection. Please give us a short description of your conveying system, possibly including photographs. Please also include conveyor speed and clock speed.

We will prepare a comprehensive offer specified to your needs, including needed accessories – all for an attractive price!

Technical specifications for SAI-1 and accessories:

Input:

- 240 VAC 50-70 Hz (16 A) input voltage
- 24 VDC input for conveyor speed gauge (included)
- 24 VDC input for trigger light barrier (included)

Output:

- 3x 24 VDC (1 A) output per line for ejector valve (included 1x)
- 2 alert outputs 24 VDC (100 mA)
- Serial interface RS 232
- Ethernet interface
- 2 more freely programmable system outputs 24 VDC (relays included)
- USB-Port

ibea[®]
we keep an eye on your quality

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