We keep an eye on your quality

Block Brick Inspection System BBIS

ibea®
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The Block Brick Inspection System is used to check all technically relevant sides of clay blocks. These are all pages except for the support side of the conveor belt. The grinding station is extremely important in the production of clay blocks, as this is where the width dimension is set.

When grinding, however, there can be undesirable side effects, e.g. the sides cannot be ground at right angles or at the wrong distance to each other, depending on the setting in the grinding chamber.

Since there is corresponding wear during grinding, this incorrect setting can also occur during production.
This is usually checked manually, but this only takes place at corresponding cyclical intervals i.e. there may be faulty products that are then difficult to filter out of the good production afterwards.

Permanent monitoring is therefore an advantage. This would also make it possible to automatically readjust the grinding dimension, which would increase the precision enormously.

side mounted 3D camera

side mounted 3D camera

The system works with 3 high.resolution color matrix cameras and 2 correspondingly resolving 3D cameras from the side (grinding side).
The matrix recodring of the 3 color cameras is carried out at the same time after the two side-mounted 3D cameras have recorded their image.

The lightning for this is located in a light tunnel that is equipped with white LEDs. The lightning is flashed. Due to the dome shape, all areas are illuminated homogeneously so that no important adjustment measures have to be taken here. Only the brightness has to be set once.

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The 3 matrix images (color) can then be evaluated simultaneously using a program. For this purpose, corresponding areas are set in the 3 recorded aread (areas = ROI), which are automatically checked with various algorithms.

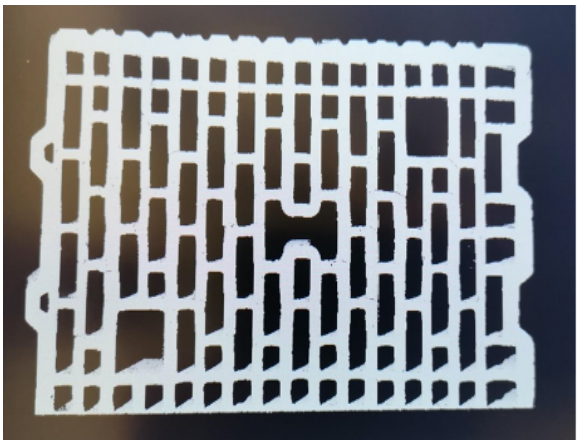
Depending on the setting, this also serves to identify the type of error (so-called classifiert), i.e. to determine wether this is a hole, crack, break, etc. error. Homogeneous surfaces, on the other hand, are rated as free of defects.

The usual groove profile can be hidden for structured surfaces. This is done automatically.

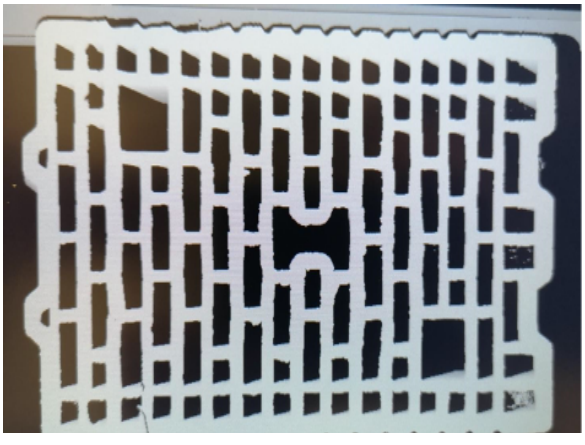
FEATURES

The brick is checked for:

- Grinding dimension betwenn both grinding sides
- Angularity, Transparency
- Continous surface cracks
- Bridge cracks that have a corresponding size
- Deformations of any kind + length/ width/length at +/- 0,1mm accuracy
- Sealed or poorly formed grids
- Missing grids
- Inclusions or chips, broken corners, etc.
- color deviations/anomalies



resulting 3D picture



3D picture with crack

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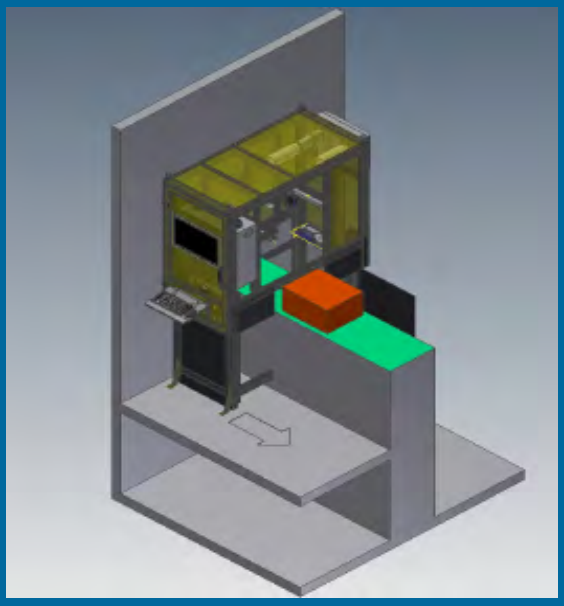
Since the local placement is not always exactly the same when the image is taken, the inspection areas are centered or tracked over the image. This is done automatically for all picture sets.



The subsequent 3D recordings recorded during the feed movement are recorded late, but the evaluation is output together with the results of the 2D recording. The setting of the 3D test areas is the same as for the 2D test areas. However, a test for the unifomity of the grid structure without interruptions is considered as the algorithm and further tests measure the distances between for example 4 corner points

For this purpose, the two 3D sensors are calibrated in such a way that the result would be „0“ without the brick. During the evaluation the trapezoidal shape, ovality or squareness are calculated and compared with the corresponding presets.

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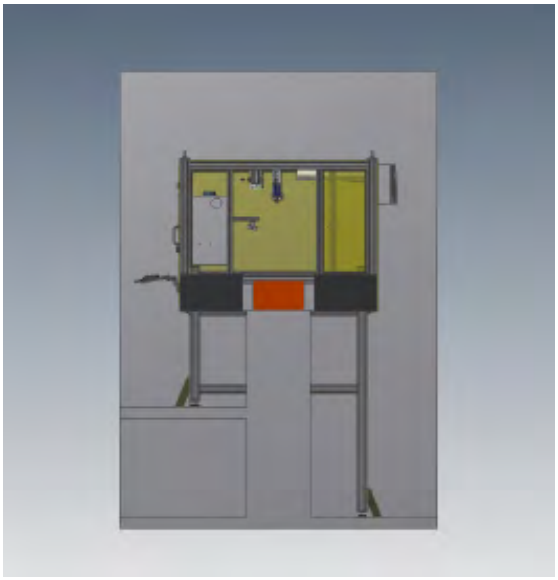
The collected data is recorded in order to derive a trend and also to generate statistics that can then be analyzed over shifts, days, months, etc. The system can be combined with a weighing belt to determine the desity of the brick. This is also done automatically.

NIO bricks can be removed from the production line using a pneumatically operated ejector.

BBIS is therefore ideally suited for checking the brick quality, especially the grinding dimension. The intuitive operation of the teach-in makes it very easy to set up. The system is therefore suitable for a permanent 100% inspection of all products and is very flexible when it comes to product changes. The evaluation is fully automatic and offers full statistics with a detailed error statement (classifier). In connection with our Checkweigt you can monitor the volume and thus the density of your products.



Test procedure for ibea-systems

- Standard image processing applications:
  Camera inspection of surface, texture, wrinkles, geometry, shape and dimensional accuracy, color, 2D- and 3D-measurements, hologram recording, roughness, position and rotation measurements, tightness

- Image processing special applications:
  Heat flow thermography through direct heat supply or ultrasonic excitation for structual testing, crack tests or for anomaly control; UV-light for fluxing agents or coating control - crack inspection, X-ray

- Acoustic inspection: excitation via clapper systems

- Eddy current measurement: cast parts

This is checked by ibea:

- ceramic tubes,
  ceramic insulators
- NoX-isolators
- sprinkler glasses, sprinkler body
- glass ampoules, plastic ampoules
- syringes, syringe parts
- catheter
- arterial tubes
- blister control or sealing
- silicone seals
  and plastic seals
- metal packaging
- plastic packaging
- coarse and fine ceramics

Test our know-how

Send us samples of your defective products that should be tested, with a brief description of the problem. Briefly describe your existing conveyor system, perhaps with a few pictures. Please also indicate the belt speed and the clock rate. We will make you a comprehensive offer including the necessary accessories - at an attrative price!

About Ibea

Ibea develops and implements inspection systems for perfect quality inspection - modular, future-proof and flexible. Our goal is to ensure smooth production for you around the clock. We therefor pay particular attention to the stability and freedom from maintenance of our systems. As a system integrator, we offer a complete service, from consulting to implementation of the inspection systems, with which we accompany you professionally.

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