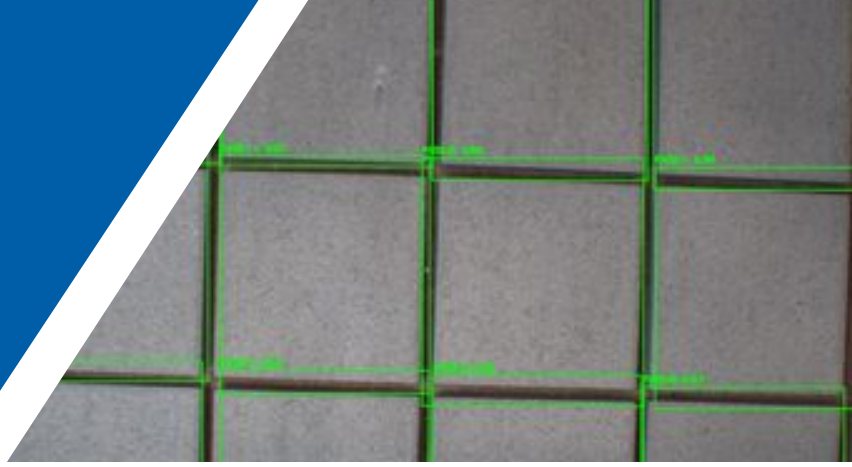
USE CASE

PAVER DEFECT INSPECTION

USING THE ACCELLA QUALITY BOX™



A leading US manufacturer of pavers needed a reliable, fast way to detect common defects such as cracks, foreign objects or broken pieces on pavers on the dryside. The entire board of pavers of varying sizes and configurations needs to be assessed and the results displayed on an operator screen to allow shop floor personnel to quickly replace defective products.

CHALLENGES

- Defects can be hard to spot with traditional solutions due to surface heterogeneity and challenging lighting conditions.
- Defect detection of the entire board needs to be completed in under 3 seconds due to the line speed.
- The solution needs to be seamlessly integrated with legacy ERP, MES and quality systems.

SOLUTION

- The Accella Quality Box™ running on the Accella MFG Bot™ is trained to identified the pavers and then assess the likelihood of a defect and the defect type.
- The results are displayed on a operator screen so operators can quickly identify and replace defective products.

PROCESS

- Annotated images of OK and defective pavers were obtained during production.
- A two-step process is used to identify all pavers on a board and then detect defects and categorize the defect type.
- The information is transmitted to a screen for easy visualization.

OUTCOMES

- Defective pavers can be identified with>98% accuracy regardless of shape, size and color.
- Each board can be analyzed in under 1 second.
- Defect detection accuracy is independent of shift, operator, line or plant and highly consistent

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