False reject reduction checklist

Metal detectors | Checkweighers | X-ray inspection

Improve inspection accuracy, reduce unnecessary waste, and maintain compliance with this practical checklist for minimizing false rejects.

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Metal detectors

Setup & sensitivity

- [ ] Sensitivity set based on actual risk (not maximum possible)
- [ ] Product effect properly compensated (high moisture/salt)
- [ ] Multi-frequency or product-specific settings optimized

Product handling

- [ ] Product consistently centered through the aperture
- [ ] Uniform product orientation and spacing maintained
- [ ] Appropriate spacing between products on conveyor

Environment & operation

- [ ] No nearby vibration affecting the detector
- [ ] Electrical interference minimized (motors, radios, VFDs)
- [ ] Routine performance testing with certified test pieces
- [ ] Calibration schedule defined and followed
- [ ] Reject system verified for proper timing and function

X-ray inspection

System setup

- [ ] Detection sensitivity aligned with product risk and density
- [ ] Correct product profile/program selected
- [ ] Image processing parameters optimized (contrast, masking, filters)

Product characteristics

- [ ] Product density and composition consistent
- [ ] Avoid changing running speed from learned recipe
- [ ] Product positioned consistently within inspection area

Environment & operation

- [ ] Minimal vibration affecting image clarity
- [ ] No external factors causing product movement
- [ ] Regular performance validation with test samples
- [ ] Reject confirmation system functioning correctly
- [ ] Image review and audit trail enabled for monitoring of reject statistics

Checkweighers

Setup & calibration

- [ ] System calibrated with accurate, traceable weights
- [ ] Appropriate tolerance limits set (not overly tight)
- [ ] Dynamic calibration verified at actual line speeds

Product flow

- [ ] Consistent product spacing (no touching or overlap)
- [ ] Stable product transfer onto weigh belt
- [ ] No product bouncing, sliding, or tilting

Environment & operation

- [ ] Equipment isolated from vibration
- [ ] Air currents minimized (fans, HVAC)
- [ ] Maintain a clean conveyor belt
- [ ] Conveyor belts aligned and properly tensioned
- [ ] Routine weight checks performed and logged
- [ ] Trend data monitored for drift or variability

Continuous improvement (all systems)

- [ ] False reject rates tracked over time
- [ ] Root cause analysis performed on recurring issues
- [ ] Standard procedures documented and followed
- [ ] Operators trained and regularly retrained
- [ ] Discuss preventive service plans offered by your product inspection partner

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