Sorting action: quality assurance and risk minimisation for defective deliveries

A sorting action is the targeted manual or mechanical inspection and separation of a delivery into good and defective parts when a quality defect is suspected or confirmed. It is used in series production to keep defective components away from the production process and to maintain the ability to deliver. For buyers and suppliers, it is a central quality management instrument, but also a costly intervention whose cost arrangements and procedures should be regulated contractually.

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Key facts at a glance

01 A sorting action separates an affected delivery 100 per cent into sound and defective parts.

02 It is typically triggered in cases of critical deviations, complaints or unclear material mixes in the warehouse.

03 It is carried out at the supplier, at the customer in the buyer organisation's warehouse, or by specialised third-party service providers.

04 In practice, the costs of sorting are frequently initially borne by the supplier where a defect can be demonstrably attributed to them.

05 Alternatives such as blocking, recall or deviation approval should be weighed up before a sorting action is released.

06 A documented sorting action provides findings for the 8D report, complaint assessment and supplier rating.

Definition: sorting action

A sorting action is a complete inspection (100% inspection) of a quantity of material with the aim of isolating defective units and passing only inspected good parts on to production or the customer. It is

an emergency instrument of incoming goods and process management and differs from sampling inspection through its complete nature.

Distinction from other measures

The sorting action is not identical to a block or a recall: a block holds material back without inspecting it; a recall affects goods already delivered. The sorting action, by contrast, actively filters so that production can continue with verified sound parts.

Triggers for a sorting action

Typical triggers are identified manufacturing deviations, risk of confusion between production stages, material mix-ups in the warehouse or complaints from production. In practice, sorting is also frequently carried out after a change of supplier or a process change at the supplier until process capability has been confirmed again.

Methods and procedure for the sorting action

A sorting action follows a structured procedure: release decision, definition of inspection criteria, execution, documentation and return to the normal process. Without clearly defined inspection criteria and labelling of material statuses, there is a risk of mis-sorting and repeated actions.

Preparation and inspection criteria

First, affected material numbers, batches, suppliers and time periods are narrowed down using the material number system. The inspection criteria (measuring characteristics, good/defective limits, inspection equipment) are defined in writing and released by quality management. Affected goods are blocked physically and in the system so that no defective parts enter the material flow.

Execution and marking

Sorting is carried out manually, visually or by measurement, and increasingly also automatically using vision systems. Good parts are clearly marked (e.g. labels with the action number) and defective parts are documented in separate, labelled containers. Traceability down to batch level is mandatory for subsequent procedures.

Rework, return and cost arrangement

In addition to the pure separation, the action often includes rework or scrapping. Via the returns process, defective parts are returned to the supplier or disposed of on site at the supplier's expense. The cost arrangement (staff deployment, inspection equipment, standstill time) should be agreed in writing in advance, for example within the framework of a quality agreement.

Key KPIs for evaluating sorting actions

Sorting actions generate measurable quality and process indicators that feed into supplier evaluations and internal reports. They make the impact of quality problems economically visible.

Quality-related key figures

Central metrics are the scrap and sorting rate (proportion of defective parts), the distribution of defect types and the number of sorting actions per supplier per year. These values typically feed into the supplier rating and complaint assessment.

Economic key figures

Important are the costs per action (staff hours, inspection costs, logistics, rework) as well as the impact on the backorder rate and delivery readiness. Frequently, the duration of the action and the return to regular incoming inspection are also measured as lead time.

Risks and controls in sorting actions

Sorting actions tie up personnel resources, cause direct costs and carry the risk that defective parts nevertheless enter the process. Clear responsibilities, double checks and systematic pursuit of the root cause are therefore indispensable.

Operational risks

The main hazards are mis-sorting due to fatigue or unclear criteria, mixing of sorted and unsorted material, and production interruptions in the event of shortages of good parts. Without clear marking, there is also a risk that defective parts later re-enter stock as good parts.

Contractual and legal aspects

Who bears the sorting costs follows from the law on defects and the agreed quality agreements; in practice, the supplier bears the costs where the defect is attributable to them. Details such as burden of proof, deadlines and reimbursement procedures should be reviewed legally on a case-by-case basis, for example in connection with a notice of defect.

Supplier development instead of permanent sorting

A repeated sorting action at the same supplier is a warning signal. Instead of permanent sorting, root cause analysis (e.g. via 8D), process improvement at the supplier and consistent measures within the preferred supplier programme or in supplier segmentation should follow. If quality remains inadequate, expediting and a realignment of procurement may become necessary.

Current developments in sorting actions

Digitalisation and automation are changing the way sorting actions are prepared, carried out and documented. At the same time, pressure is increasing to detect quality problems earlier in the process in order to avoid sorting effort.

Automated inspection and data tracking

Vision systems and automated measuring practices reduce manual effort and improve the repeatability of inspection. Digitally documented actions with seamless batch traceability increase supply chain visibility and speed up coordination with the supplier.

Early detection instead of reaction

The trend is towards preventive quality assurance: improved incoming inspection, FMEA, process audits at the supplier and a structured supplier capacity alignment help to prevent the triggers for sorting actions from arising in the first place. This fits into comprehensive product lifecycle management that secures quality as early as start of production (SOP).

Cost allocation and recharge of the sorting action

The question of who bears the costs of a sorting action is in practice a frequent point of dispute between procurement and supplier. As a general rule: if the defect is attributable to the supplier, they typically bear the costs; this should be safeguarded contractually and via quality agreements.

Overview of cost types

Account should be taken of staff costs for sorting, use of inspection equipment, logistics (transport, interim storage), rework or scrapping, as well as any costs for special deliveries and production downtime. These items are generally asserted as value adjustment or credit note against the supplier.

Recharge in procurement

Recharge frequently takes place via separate debit note procedures, credit notes or price adjustments in ongoing orders. Clean documentation via the material number system and complaint assessment is important so that costs can be assigned to the correct transaction and supplier.

Typical metrics

Metric	Typical value
Sorting rate (defect share)	in practice frequently < 1 % for capable processes *Proportion of parts sorted out during the sorting action as a share of the total quantity*

Duration of the sorting action	typically 1–5 working days *From release until return to the normal process*
Cost per sorting action	highly case-dependent, frequently a four-figure EUR amount *Staff, inspection equipment, logistics and rework*
Sorting actions per supplier per year	target value: 0 *Feeds into the supplier rating; repeat occurrences are critical*
Mis-sorting rate	target: < 0.1 % *Measure of the effectiveness of the inspection criteria and inspector qualification*

Practical example

A medium-sized mechanical engineering company repeatedly identifies fitting deviations when installing gearbox shafts on production line 2. The quality department blocks all affected shafts in the warehouse, and procurement triggers a sorting action carried out by an external service provider in the engineering company's warehouse.

- Narrowing down the affected batches via the material number system and written definition of the inspection criteria
- Full sorting of around 12,000 parts within two working days with label marking of good parts
- Notice of defect to the supplier with a declaration to bear the costs of sorting, logistics and rework
- 8D report and adjustment of the supplier rating; reduced weighting for follow-up orders until process release

Conclusion

The sorting action is a proven instrument for controlling quality deviations at short notice and safeguarding production. However, it is always symptom management: the real lever lies in eliminating the root cause at the supplier and in systematic follow-up through complaint assessment and supplier rating. Buyers should structure triggers, procedures and cost arrangements contractually in advance so that they can act quickly in the event of a disruption. Those who consistently document and evaluate sorting actions gain valuable insights for supplier development and procurement strategy.

Frequently asked questions

? What is a sorting action?

A sorting action is the complete inspection of a delivery or stock to isolate defective parts and ensure that only inspected good parts are used further. It is deployed in cases of critical deviations, complaints or unclear material mixes. The aim is to maintain production without any quality risk.

? Who bears the costs of a sorting action?

Where the defect is attributable to the supplier, in practice the supplier frequently bears the costs of sorting, logistics and rework. The exact arrangement follows from the law of sale and any quality agreements. The details should be reviewed on a case-by-case basis from a contractual and legal perspective.

? When is a sorting action triggered?

Typical triggers are identified manufacturing deviations, material mix-ups, elevated complaint rates or transitions between production stages at the supplier. Sorting is also carried out after process changes or for new parts until process capability has been confirmed. The decision is usually taken by quality management together with procurement.

? What is the difference between a sorting action and a recall?

In a sorting action, material that is still within the company's own sphere of influence – in the warehouse or in production – is inspected. A recall, by contrast, affects goods already delivered to customers and is considerably more serious in both legal and reputational terms. The sorting action is therefore the earlier and usually less costly intervention instrument.

? How long does a typical sorting action take?

The duration depends on the quantity, the scope of inspection and staff availability; in practice, the range extends from a few hours to several working days. For large quantities or complex measurements, service providers or automated inspection systems are used. A fixed timeframe should be agreed with the supplier.

? How can sorting actions be avoided?

Preventive quality assurance is key: clear drawing and inspection requirements, process audits at the supplier, first article inspection before start of production (SOP) and an effective supplier rating. A structured complaint process and consistent root cause analysis prevent repeat occurrences. Digitally recorded quality data also increases transparency along the supply chain.

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