

Quantity deviation workflow: handling delivery quantity deviations in procurement

The quantity deviation workflow describes the rules-based process by which companies identify, assess and resolve situations where a delivered or reported quantity deviates from the ordered quantity. It is a central element of operational procurement and goods management, as quantity deviations affect direct payments, inventory values and production processes. A clearly defined workflow prevents deviations from going unnoticed or being accepted ad hoc without verification.

Key facts

- The quantity deviation workflow systematically checks whether delivered quantities match the ordered quantity and routes deviations into defined resolution steps.
- It typically runs at goods receipt, during confirmation checks and invoice verification, and draws on defined tolerance thresholds.
- Tolerance bands are often graduated by material class and supplier category and anchored in procurement approval limits.
- Quantity deviations directly affect KPIs such as schedule adherence and supplier performance evaluation.
- Without a workflow, there is a risk of maverick buying, inventory distortion and disputed invoices with follow-up costs.
- Digital systems and guided buying rules automate resolution steps and document decisions in an auditable manner.

Definition: quantity deviation workflow

The quantity deviation workflow is a defined process that comes into effect when there are deviations between ordered, confirmed, delivered and invoiced quantities. It specifies who examines a deviation, which decision paths and approvals apply, and how the resulting data flows back into purchasing, goods management and invoice verification.

Types of quantity deviations

In practice, four typical forms of deviation occur: under-delivery, over-delivery, partial delivery and quantity deviation on the invoice despite correct delivery. Labelling or packing errors, such as deviating information on the packing list, can also lead to apparent quantity differences that must be clearly distinguished in the workflow.

- Under-delivery: delivered quantity smaller than ordered
- Over-delivery: delivered quantity above tolerance
- Formal deviation: packing slip or delivery note differs from the physical stock

Distinguishing from quality and schedule deviations

Quantity deviations are clearly separated in qualitative terms from process deviations at inspection

characteristics, which are handled in the complaint assessment process. Date deviations are likewise subject to their own workflows and KPIs such as deadline tracking. This clean separation is important because causes, responsibilities and corrective actions differ.

Methods and approach in the quantity deviation workflow

A robust workflow follows a clear sequence: detection, classification, clarification, decision and posting. It is mapped in rules so that processors do not face each individual case ad hoc but can draw on parameters such as tolerance bands and history.

Defining tolerance bands and approvals

At the outset, tolerance thresholds are defined per material class and supplier group, for example ± 2 per cent for standard parts with optimised batch sizes and ± 0 per cent for critical A- or C-parts relevant to lean manufacturing. If a deviation exceeds the tolerance, the system creates a resolution case and routes it, depending on value, to the buyer, goods recipient or approval body. Procurement approval limits determine who may decide on values up to what amount on their own.

Resolution steps and escalation levels

The workflow typically consists of automatic checks at goods receipt, initial clarification by the operational buyer, reconciliation with the supplier and, where necessary, escalation to sourcing or supply chain management. Escalation may also touch on legal aspects, ranging from acceptance with price adjustment through return shipment to invoking guarantee agreements. Every step is documented with justification so that evidence is available for later supplier discussions.

- Automatic checks at confirmation, goods receipt and invoice
- Deviation alert with brief information on order line, tolerance and history
- Supplier query with a deadline for a response
- Decision: acceptance, follow-up delivery, credit note or return

Integration into purchasing and goods management

The workflow must be closely interlinked with the purchase order, goods receipt posting and accounting. Under-deliveries are either kept open as a remaining quantity or closed, while over-deliveries require a deliberate stock decision. For invoice deviations, three-way match rules apply: only when order quantity, delivery quantity and invoice quantity match within tolerance is the invoice released; otherwise a resolution case is opened.

Key KPIs for quantity deviations

Quantity deviations are measurable and can be used as a steering metric for supplier development and process quality. A realistic reference metric is important, for example per cent of purchase order lines rather than deviations per order volume.

Supplier and process KPIs

Key metrics are the deviation rate (share of line items with quantity deviations), average resolution effort per case and the proportion of unsettled legacy cases. Supplementary KPIs such as schedule adherence and carrier performance show whether delays or transport losses are the cause. Short-term shortages affect the production plan via production control and rough cut capacity planning (RCCP) and should therefore not be viewed in isolation.

Economic perspective

In addition to quantity, time and quality aspects, the financial impact should also be captured: follow-up costs from production stoppage risks, excess stock, handling costs for returns and the loss of discounts or tiered prices. Payment options from dynamic discounting or early payment discounts can be lost on disputed invoices, so resolution cases should also be assessed from a cost of capital perspective.

Impact on supplier performance evaluation

Delivery quantity reliability is a core criterion in many supplier evaluations alongside quality (e.g. first pass yield (FPY)) and on-time delivery. The evaluation of quantity deviation workflow data provides objective, documented facts for development or alignment discussions and reduces debate to a sound data basis.

Risks and controls in the quantity deviation workflow

Without a clean workflow, inventory distortion, disputed invoices and ultimately production risks arise. Controls must therefore, on the one hand, make deviations visible early and, on the other, prevent apparent corrections from silently altering stock and payment data.

Typical sources of error

Common problems include silent acceptance of over-deliveries, permanently open remaining quantities that are never closed, and manual postings without verification. Communication between goods receipt, procurement and accounting is also a recurring weak point: information does not flow optimally or is processed without an understanding of quantity logic.

Control and approval mechanisms

Effective measures include a strict separation of posting and approval, mandatory fields for justifications and regular reviews of open cases by age and value. Procurement approval limits and documentation requirements create binding obligations. Schedule tracking also supports planning, since foreseeable under-deliveries with long lead times allow early alternative responses such as direct award or alternative sources of supply.

Legal and contractual safeguards

Contracts should stipulate which quantity and partial delivery tolerances apply, when follow-up deliveries fall due and what rights exist in the event of persistent deviations. Depending on the constellation, checks up to and including the right of termination for cause may be relevant. As the assessment depends heavily on the individual case, legally binding steps should be reviewed by legal counsel before implementation; tenders too, for example along the lines of a tender questionnaire, should include requirements for delivery quantity reliability and reporting processes.

Current developments and digitalisation

The quantity deviation workflow is increasingly migrating into digital systems: instead of manual notifications by email, procurement platforms and ERP systems handle detection, case tracking and supplier communication.

Automated resolution cases and guided buying

Modern systems automatically check confirmations, delivery notes and invoices against each other and

generate resolution cases with prepared decision options. Guided buying rules steer users down defined paths and reduce manual degrees of freedom, which also indirectly curbs maverick buying. Cases can be tracked as tickets, making volumes and cycle times measurable.

Data exchange with suppliers

Electronic delivery note and shipping data, complemented by consistent packing list information, significantly reduce formal deviations. In multi-tier supply chains, advanced reporting and digital logistics processes help make bottlenecks visible earlier. The quality of the exchange depends heavily on shared definitions, for example on how partial and remaining quantities are reported.

Regulatory accompanying factors

Current European regulations such as the PPWR (Packaging and Packaging Waste Regulation) increase requirements regarding packaging material quantities and packaging information, which can indirectly affect quantity reconciliations and packaging declarations. Data quality is also becoming more important, as quantity reconciliations increasingly serve as a critical basis for evidence and reporting obligations along the supply chain.

Typical metrics

Deviation rate: typically under 2–5% of line items

Proportion of purchase order lines with quantity deviations outside tolerance

Average resolution time: often 3–10 working days

from case creation to decision, depending on coordination effort

Supplier quantity reliability: typically > 98%

delivered quantity within tolerance band, relative to ordered quantity

Share of open legacy cases: under 5%

cases older than a defined deadline, usually 20 working days

Practical example

A mid-sized mechanical engineering company with around 12,000 purchase order lines per year experienced recurring under-deliveries for standard bought-in parts in practice; invoices were nevertheless paid in full, stock did not match system quantities and stocktaking differences accumulated. The company introduced a digital quantity deviation workflow that automatically creates resolution cases whenever defined tolerances are exceeded.

- Tolerance bands defined by material class and supplier category in a kick-off workshop
- Automatic case creation for confirmation, goods receipt and invoice deviations, with four-eyes approval above defined values
- Supplier discussions based on a documented deviation history, including objective evaluation in the supplier scorecard
- Monthly reporting on open cases by age and value, with escalation after 20 working days

Conclusion

The quantity deviation workflow may appear technical, but in effect it is a highly economic tool of operational procurement. It links purchasing, goods receipt and invoice verification into an auditable

resolution process and provides reliable data for supplier evaluation and planning. Prerequisites are clearly defined tolerances, established approvals and consistent documentation. Companies that address quantity deviations systematically reduce inventory and payment risks and gain negotiating leverage with suppliers. Mapping the workflow digitally also cuts processing effort and creates transparency in a process that otherwise easily generates unnoticed costs.

Frequently asked questions

What is a quantity deviation workflow?

A quantity deviation workflow is a defined process that systematically detects, classifies and resolves deviations between ordered, confirmed, delivered and invoiced quantities. It sets tolerance thresholds, responsibilities, approval levels and documentation requirements. The aim is to handle quantity deviations promptly in an economically and legally sound manner.

How do you set tolerance thresholds for quantity deviations?

Tolerance thresholds are typically defined by material class, supplier category and value class, for example stricter for A-parts and production line parts than for C-parts. Common rules of thumb in practice allow a few per cent, but close to zero for critical production parts. It is important that thresholds are documented, implemented in systems and reviewed regularly.

Which KPIs belong to the quantity deviation workflow?

Core KPIs are the deviation rate as a percentage of line items, average resolution time, the share of open legacy cases and delivery quantity reliability per supplier. Supplementary KPIs such as schedule adherence and carrier performance provide clues about root causes. The data is often fed into supplier performance evaluations.

What happens in the case of over-delivery or under-delivery?

In the case of under-deliveries, depending on the agreement, a follow-up delivery is requested, the purchase order line is kept open, or the case is settled with a price adjustment or credit note. For over-deliveries, operational practice determines whether to accept against a price adjustment or to return the goods. In both cases the process should be documented, also for the purposes of supplier performance evaluation.

How does a quantity deviation differ from a complaint?

A quantity deviation concerns the number of units delivered, whereas a complaint deals with a deviation in the quality of the goods. Both run in separate processes: quantity deviations in the deviation workflow, quality deviations typically in complaint management. In practice both can occur at the same time and should then be assessed together.

What role does the quantity deviation workflow play in supplier performance evaluation?

The results of the workflow provide objective data on delivery quantity reliability and problem density per supplier. These can be combined with quality, on-time delivery and responsiveness in scorecards. This makes supplier discussions fact-based and allows development measures to be tracked in measurable terms.