

Degree of standardisation: how much standardisation does technical procurement need?

The degree of standardisation describes how strongly products, processes, interfaces or supplier relationships are standardised within a company. For technical procurement, it is a key control variable, because it determines how much effort, detailing or special engineering a procurement item contains. A high degree of standardisation typically reduces complexity, process costs and error rates, while a low degree of standardisation means more individuality but also more effort in quality assurance and supplier management.

Key facts

- The degree of standardisation measures the proportion of standardised, reusable or catalogue-based solutions within total output.
- In practice, it is often expressed as the ratio of standard parts or standard processes to the total number of items.
- A higher degree of standardisation typically reduces material, inspection and process costs noticeably.
- Discounts achieved through standardisation are often in the range of roughly 5 to 30 per cent of the affected procurement costs.
- The degree of standardisation is an umbrella spanning strategy, engineering, procurement and quality management.
- A value stream analysis helps systematically uncover non-standardised process stages.

Definition: degree of standardisation

The degree of standardisation denotes the extent to which parts, materials, processes, documents or contract structures rely on unified norms and repeatability. Depending on context, it is measured at product, process or organisational level. For buyers it answers the question of how much procurement volume can be handled through defined standards and how much must be negotiated or specified individually.

Distinguishing it from technical standardisation and unification

Standardisation (Normung) refers to formal technical standards, such as DIN or ISO standards. The degree of standardisation is defined more broadly: it also covers internal part families, reference configurations, framework agreements and standardised procedures such as a uniform ordering process. Unification, in turn, describes the measure, while the degree of standardisation quantifies the state achieved. Only measurement turns a declaration of intent into a controllable metric.

- Standardisation (Normung): external, formal standards (DIN, ISO, EN)

- Standardisation: internal unification of parts and processes
- Degree of standardisation: measurable state, usually expressed as a ratio

Levels of standardisation

On the product level, what matters is the share of the bill of materials consisting of standard or catalogue parts. On the process level, what counts is how many procurement, inspection and logistics steps run through defined standards. On the contract level, the degree is reflected in uniform framework conditions, such as standardised Incoterms CFR or other delivery clauses as well as model contracts for works of this nature. The higher the level, the greater the leverage – but also the stronger the conflict of interest with engineering departments that strive for individuality.

Methods and approach for increasing the degree of standardisation

A higher degree of standardisation does not come about by decree, but through systematic analysis and alignment between engineering, procurement and production. A step-by-step approach from part consolidation through process standardisation to supplier integration has proven effective.

Part consolidation and material master clean-up

The starting point is almost always the material master. Similar screws, seals, cables or sheet thicknesses are merged, duplicate parts are removed and preferred bought-in parts are defined. A value stream analysis additionally shows which material and information flows run in an improvised rather than standardised manner. In practice, part variety often falls by double-digit percentages through consistent clean-up alone – with a direct impact on procurement and inventory costs.

Establishing standardised procurement processes

Processes can be standardised through uniform enquiry and award logics. A structured competitive tendering process with fixed requirement catalogues, defined negotiation rounds and documented negotiation techniques is what makes comparisons between suppliers possible in the first place. Negotiation minutes and award documentation ensure traceability, while a supplier day communicates the standards uniformly. For recurring services, framework agreements and clearly agreed Service Level Agreement (SLA) arrangements provide predictability.

Harmonising interfaces and documentation

Standardisation does not end at the factory gate. Uniform drawing templates, defined data formats and consistent classification – for example via HS classification in the customs field – significantly reduce coordination effort. Administration can also be standardised: routine VAT ID checks for new suppliers, a fixed three-way match rate target in invoice verification and clearly defined payment terms rather than case-by-case arrangements from advance payment to payment on account.

Key KPIs for measuring the degree of standardisation

Without robust metrics, standardisation remains an intention. The relevant KPIs measure both the degree itself and its impact on cost, quality and speed. They are suitable for regular target-actual comparisons of price at part and process level.

Degree-related metrics

The core metric is the proportion of standard parts as a share of the total number of parts or of

procurement spend. Additional metrics include the number of active material numbers per commodity group, the number of qualified suppliers per category and the share of standardised ordering processes within total volume. An increase in these ratios shows whether consolidation is taking effect or whether new one-off parts and exceptions are emerging.

Impact-related metrics

The impact shows in cost, quality and lead time: falling prices for comparable items, shorter time-to-market, fewer complaints and improving supplier performance in the supplier scorecard. Process quality can also be measured, for example via the three-way match rate or the error rate in invoice verification with regard to commercial accuracy. Those who combine these metrics recognise early whether standardisation is genuinely creating value or merely symmetry on paper.

Risks and controls in managing the degree of standardisation

Too much standardisation can be as harmful as too little. Rigid norms block innovation, force costly adaptations and increase dependence on individual components or suppliers. The trade-off between unification and flexibility requires active management and clear control mechanisms.

Typical risks

Common pitfalls are outdated standards that no longer reflect market developments, and implicit monopolies when a standard part is manufactured by only a single supplier. Friction also arises culturally: engineering teams perceive standardisation as an intrusion into their design freedom. A lack of supply chain visibility exacerbates the problem, because dependencies only become visible when it is too late.

Controls and early warning systems

Countermeasures include early warning indicators for supply risks, regular reviews of the part master and defined exception processes for genuinely individual requirements. A Business Continuity Plan (BCP) for critical standard parts prevents the failure of an apparently unspectacular standard part from halting production. For negotiations with suppliers, a right to audit remains sensible in order to actually verify agreed standards. New solution ideas can be assessed in a structured way through idea evaluation before they alter the standard.

Regulation, sustainability and resilience

Sustainability and supply chain documentation require standardised formats of evidence across multiple tiers of the supply chain. Standardisation helps twice over here: it reduces data collection effort and makes deviations visible. At the same time, awareness is growing that overly tight standards can cost resilience. Many companies therefore strike a balance between standard parts for volume and qualified alternatives for critical positions – supported by continuous supply risk monitoring.

Data standardisation and the platform economy

Unified item master data, standardised enquiry formats and machine-readable drawings enable award-ready comparisons across platforms and marketplaces. Those who maintain standardised data can launch competitive tenders faster and benchmark prices more objectively. The degree of data standardisation thus becomes a competitive question in itself – it determines whether a company can participate fully in digital procurement networks.

Typical metrics

Proportion of standard parts in the bill of materials: often 50–80 %

strongly industry-dependent; series production higher than special-purpose machinery manufacturing

Reduction in active material numbers: typically 10–30 %

a typical result of material master clean-up

Cost effect of standardisation: often 5–30 %

relative to the affected procurement costs, not to total volume

Three-way match rate: > 95 %

indicator of standardised procurement and invoice processes

Practical example

A medium-sized machinery manufacturer with around 40,000 active material numbers discovered during an analysis that over 300 similar screw variants were in use in the fasteners commodity group alone. The consequences: fragmented procurement volumes, difficult price comparisons and frequent stockouts. The company launched a standardisation programme led by procurement, together with engineering and production.

- Clean-up of the material master to around 80 preferred parts per commodity group within one year
- Introduction of a standardised competitive tendering process with defined negotiation rounds for all C parts
- Framework agreements with clearly assigned Incoterms CFR and uniform Service Level Agreement (SLA) requirements
- Regular target-actual comparison of price per part class to monitor the effectiveness of standardisation

Conclusion

Frequently asked questions

What is the degree of standardisation?

The degree of standardisation describes how strongly parts, processes or contract structures are standardised within a company. It is often expressed as the proportion of standardised or reusable solutions within total output. In procurement, it governs how much volume is handled through defined standards rather than case-by-case sourcing.

How do you calculate the degree of standardisation?

Most commonly, the proportion of standard parts is calculated as a share of the total number of material numbers or of procurement spend, typically expressed as a percentage. Alternatively, process or contract shares can be measured. A clear definition per level is essential, otherwise figures are not comparable across departments.

What are the benefits of a high degree of standardisation in procurement?

A high degree of standardisation pools volumes, simplifies price comparisons and reduces inspection,

inventory and process costs. Error rates typically fall as well, because recurring parts and procedures create routine. In addition, negotiating power increases, since standardised requirements are comparable across suppliers.

What are the risks of excessive standardisation?

Excessive standardisation can stifle innovation and make adaptation to customer-specific requirements more expensive. If a standard part is available from only one supplier, an implicit monopoly arises with supply failure risk. For this reason, critical standard parts should be included in a Business Continuity Plan (BCP) and monitored via early warning indicators.

How do you increase the degree of standardisation in procurement?

A step-by-step approach has proven effective: clean up the material master, consolidate similar parts, introduce standardised enquiry and award processes, and involve suppliers. A value stream analysis reveals non-standardised process stages. In parallel, negotiation minutes and award documentation ensure the traceability of the new standards.

What is a good degree of standardisation?

There is no universally valid target value, as it depends heavily on the industry and type of production. In series production, shares of over 70 per cent standard parts in the bill of materials are not uncommon in practice, while special-purpose machinery manufacturing records significantly lower values. Rather than an absolute figure, the trend over time compared with competitors is more meaningful.