



SUPPLIER QUALITY MANUAL



Dear Supplier,

Within our corporate strategy, we at BERCO S.p.A. have outlined the future state of our business. Quality is one of the key priorities identified by BERCO S.p.A.: together with reliability and durability, quality is what customers expect from BERCO S.p.A.. These words signify the ability to stand out and be market leaders. We are proud of the name BERCO S.p.A. and we are fully committed to developing products that meet the expectations and expand the position BERCO S.p.A. has won on the market.

As Suppliers of BERCO S.p.A. and members of the BERCO S.p.A. team, you play a crucial role in the implementation and achievement of our corporate goals. We need your commitment and expertise: we cannot hit the targets we have set for ourselves without your total engagement.

We are confident that the identification and implementation of a clear strategy founded on essential principles which our Suppliers too share can result in the enhancement of value regarding product development, total operating costs, flexibility and speed, but more importantly quality.

This Supplier Quality Manual is part of the strategy we are putting in place and a testament to our collaboration-oriented approach. We are convinced that this manual will help clarify which tools and information you need to become familiar with in order to be aligned with the requirements of BERCO S.p.A., the market and the current business procedures.

We are committed to speeding up the pace of quality improvement of both existing and new products. With this respect, we will foster passion for quality and focus our entire organisation on the development of new products, on the improvement of our production process, and on daily management of continuous improvement, which are all key factors with a direct impact on product quality.

We will infuse passion for the “zero defects” principle throughout the entire supply chain and within our supplier base. This is not the regular corporate problem-solving approach: it is a pro-active attitude to quality management that focuses on prevention and continuous improvement, which is deeply rooted in our supplier base. We will convert our attitude towards quality from “as received” in the factory to “as delivered” to the end customer. We will focus on quality as perceived by customers and measured with metrics that confirm an excellent level of product quality and reliability.

We are convinced that this shared vision, our common goals and our collective resources, aligned and ready for action, will be the key to put our partnership in a position to offer our customers what they expect, to create extremely high level products, and to deliver them effectively, which will positively contribute to the building of our future.

This is why your support to our initiatives is always heartedly appreciated.

Massimiliano Alberti

Quality Director

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LIST OF CHANGES	
Rev. N.	Description
00	First issue Cancels and replaces CTFNDQB0011
01	Modified page 26 by inserting important information related to the new management for functional class Paragraphs 7.3.1 and 7.5.1 have been updated, specifying how Berco will handle NC material in case of non-collection by the supplier.

1 PURPOSE OF SUPPLIER QUALITY MANUAL

This Manual will help you get a better understanding of the expectations BERCO S.p.A. has with respect to quality.

This Manual defines both initial and continuous requirements concerning the Supplier's quality processes and performances. It defines the principles governing the relationship between BERCO S.p.A. and its Suppliers with reference to the quality and reliability required from third-party products.

This Manual is intended to offer the Supplier clarifications on what the company expects in terms of tools developed and implemented to manage, plan, monitor and document product and process controls. The Manual also specifies the control procedures BERCO S.p.A. carries out at the time of lot receiving.

This Manual serves as reference for the Supplier to correctly manage the relationship with BERCO S.p.A. and to fulfil performance expectations.

This Supplier Quality Manual provides information on the minimum procedures that all the Suppliers are required to implement successfully.

This Supplier Quality Manual applies to the Suppliers of all the factories of BERCO S.p.A..

The ultimate goal of BERCO S.p.A. is to provide customers with conforming products, to supply such products globally, and to be a competitive supplier on each and every market. This goal can only be achieved with the support and engagement of all our Suppliers. Clear and concise expectations and requirements will make the relationship between the Supplier and the customer more fruitful for all.

2 GENERAL

Although the Suppliers are free to make their own choices and to develop their own industrial process system (production and control), the requirements laid down in this Manual are intended to, unless exceptions are defined in the agreement signed with the Supplier:

- specify the tools and procedures the Supplier is required to adopt for product development, manufacture and control, as referenced in the standards supplementing the technical specifications, in order to receive and maintain the authorisation to supply the production factories of BERCO S.p.A.;
- provide the Suppliers with guidelines to put in place strategies and to use suitable resources to achieve and maintain, at a reasonable level of certainty, product compliance with the technical specifications required by BERCO S.p.A..

The supply requirements hereunder contain information owned by BERCO S.p.A. and they are sent to the Supplier on condition that they are not disclosed, reproduced or used for other purposes without the explicit authorisation of BERCO S.p.A. in writing.

3 CODE OF CONDUCT

BERCO S.p.A. carries out its own business taking as reference the provision listed in the corporate Code of Conduct.

The Code of Conduct of BERCO S.p.A. draws inspiration from the principles of compliance with the existing laws, loyalty, fairness and professional discipline with a view to preserving the integrity of the Group equity and to safeguarding its respectability and reputation, founding its relationships with the shareholders and the financial stakeholders on clarity and transparency.

BERCO S.p.A. does not establish any business relationship with persons who do not base their business on the principles underlying the aforementioned Code. All the Suppliers of BERCO S.p.A. are therefore required to accept it explicitly and to agree to behave in compliance with the guidelines thereunder. Acceptance must be confirmed in writing, in the form and manner required by BERCO S.p.A. (refer to P4_Purchasing.OI "CORPORATE MANAGEMENT SYSTEM MANUAL" and the acceptance form "Supplier Declaration - Thyssenkrupp Supplier Code of Conduct"). Failure to accept or breaching of the code shall legitimate BERCO S.p.A. to not establish commercial relationships with a new Supplier or to break those with existing suppliers.

The Code of Conduct of BERCO S.p.A. may be consulted in and downloaded from the relevant online section of our website: <https://www.thyssenkrupp-berco.com/it/company/downloads>.

4 APPLICABILITY

This Manual applies to all the Suppliers who provide raw materials or components, whether they are for direct use in the production cycle or indirect purchases. BERCO S.p.A. is the owner of this document and all interpretations and changes hereof shall require approval by BERCO S.p.A..

The requirements laid down in the Supplier Quality Manual shall apply to the Suppliers of:

- materials for the production cycle (raw materials, moulded parts, semi-finished products, castings, etc.);
- parts for the production cycle or spare parts (components and assemblies);
- mechanical machining, heat treatments, surface treatments, welding, and painting.

The Supplier shall contact their relevant buyer for any matter in connection with procurement and the Supply Chain. For any matter concerning the product quality, the Supplier shall contact the Supplier Quality entity (the internal entity at BERCO S.p.A. designated to manage these aspects). Finally, when it comes to ethical issues, the Suppliers can contact the relevant persons online through the website: <https://thyssenkrupp.com/compliance-wb>.

5 REQUIREMENTS AND SUPPLIER'S RESPONSIBILITY

5.1 Quality Management System and Environmental Management System

Quality Management System – Where expressly required by BERCO S.p.A., the Supplier shall provide for and maintain a Quality Management System, in compliance with the applicable international standards such as:

- UNI EN ISO 9001: Quality Management Systems - Requirements;
- IATF 16949: Automotive quality management systems;
- UNI EN ISO 9100: Quality Management Systems - Requirements for aviation, space and defence organizations;
- UNI EN ISO 3834-2: Quality requirements for fusion welding of metallic materials - Part 2: Comprehensive quality requirements

BERCO S.p.A. has decided to take all the aforementioned standards and their updates as a requirement for the supply network.

The Supplier shall generally provide for and implement a documented Quality Management System covering all the product/process-related steps, including development, manufacture, and delivery. The Suppliers shall agree the quality system assessment and validation procedures based on the existing needs.

Environmental Management System – Compliance with the safety and environmental standards set forth by the legislation in the Supplier's country is an aspect of primary importance for BERCO S.p.A..

The priority is given to Suppliers who have a management system certified by a third-party entity, in accordance with the following international standards:

- ISO 14001 Environmental Management Systems – Requirements and user guide;
- ISO 45001:2018 Occupational health and safety management systems - Requirements and user guide.

The Supplier is in any case required, which may be the subject of assessment during the audit, to operate so as to minimise the environmental impact and to restrict the use of non-renewable resources in favour of clean energy sources.

The implementation of an efficient Environmental Management System and of an Occupational Health and Safety System to ensure compliance with the applicable standards and to promote continuous improvement of the environmental performances is a key element for Supplier's assessment.

All supplies shall adhere to the applicable environmental standards.

BERCO S.p.A. also expects the Suppliers fulfil the following criteria:

- monitoring and compliance with the environmental legislation in place in the country in which the products are manufactured and to which they are shipped;
- preferred use of materials and processes that are respectful of the environment and safe for persons;
- elimination and/or reduction of polluting production processes;
- sustainability of the component life cycle, evaluation of utilisation of both resources and raw materials;
- reduced generation of waste, both during in-house processes and packaging (e.g. optimisation of packaging weight and volume);
- use of recycled materials, where feasible, both for in-house processes and for packaging.

5.2 Supplier's technical documentation

The Supplier shall draw up, implement, and keep up to date all the formalised instructions (construction drawings, manufacturing cycles, control plans, the Quality Manual, material specifications, test reports, etc.) as required for the products delivered to BERCO S.p.A. to fulfil the quality and reliability requirements.

Any product purchased and the associated services shall comply with the defined specifications and requirements, including:

- drawings relating to a specific product or service;
- specific statements of work;
- technical specifications and/or reliability requirements applicable to the goods or to a specific part;
- material specifications applicable to the product or service;
- applicable regulatory/industry standards;
- changes or deviations approved by BERCO S.p.A.;
- commercial agreements signed;
- supply orders.

5.2.1 Documentation on the presence of peculiar substances in the materials and/or products supplied to Client

Although the products must be compliant with the Italian and international laws on safety, ecology and the environment, the Supplier shall provide:

- documentation on the chemical composition of the products - at the time of preliminary negotiations or sample submission;
- final information on the elementary composition of materials constituting the products/components - at the time of the supply authorisation process.

These documents shall be made readily available when requested by BERCO S.p.A..

For further details on the specifications BERCO S.p.A. expects, refer to sections 6.7. and 6.8.

5.3 Technical information from Client

Any and all technical information supplied by BERCO S.p.A. is subject to the terms on confidentiality and exclusive property rights laid down in the purchase agreement in force and in the confidentiality agreement.

Consistently with the Supplier's selection and sourcing process, BERCO S.p.A. shall make available technical information that is helpful to the Suppliers, based on the type of agreement signed.

BERCO S.p.A. shall also provide product-specific and general Standards, Statements of work, Tables, etc. on its information system.

Any changes to the documentation above after Sourcing may result in a review of the contractual terms.

The Supplier shall make sure that the above-mentioned technical documentation and the relevant updates are available when and where manufacturing takes place, and that the documentation quality is controlled.

Notwithstanding the provisions laid down in the General Purchase Conditions concerning "Industrial Property", the Supplier shall be entitled to ask BERCO S.p.A. for additional information or for clarifications regarding drawings, standards, statements of work, technologies, equipment, testing and control procedures, etc.

5.4 Feasibility

The Supplier of new products/processes shall beforehand confirm to the Client (BERCO S.p.A.) its capability to manufacture and industrialise the product in compliance with all technical specifications and at the expected volumes, in addition to ensuring that its processes are suitable to manufacture the supplied products.

The Supplier shall demonstrate and maintain compliance with all the documented requirements, including design performance, reliability, process control and capacity.

5.5 Product and process reliability planning

Advanced Product Quality Planning (APQP) is a structured method used to define the necessary operations to ensure a product compliance with the customer's requirements at the stage of development and launching.

Although the Suppliers are free to select and develop their own processes, they have to be able to implement product quality planning, in accordance with the guidelines set forth in the AIAG Manual - *Advanced Product Quality Planning and Control Plan (APQP)*.

Upon receiving of a sampling order, the Supplier shall manage the following steps:

- advanced product quality planning (APQP) as needed;
- whatever is helpful to prove performance of the above-mentioned activities at the time of the product approval process by sending the relevant documentation (e.g. flow chart, FMEA and capacity analyses).

Although the Suppliers are free to select and develop their own system, they shall put in place the procedures and have the tools below to ensure the quality of deliveries.

5.5.1 Production process flow chart

The Supplier shall draft a **flow chart** that illustrates the sequence of all the steps in the process, from material receiving to finished product shipment, including sub-supply processes and control activities, handling and packaging.

Processes or the operations in the flow charts, process FMEA, and the control plans shall be unambiguously connected.

5.5.2 F.M.E.A. (Failure Mode & Effects Analysis)

The Supplier of products they design and/or of critical or complex products shall evaluate the potential causes and effects of defects caused by the product, the design or the process. The Supplier shall examine these potential defects using the **FMEA method** (Failure Mode & Effects Analysis) (DFMEA = Design FMEA and PFMEA = Process FMEA), which is a suitable tool to help remove risk through a systematic analysis of the potential causes of faults, based on their seriousness, likelihood, and possibility of being identified.

The Supplier shall carry out FMEA as specified in the AIAG Manual - *Potential Failure Mode & Effects Analysis* (FMEA).

Given that the FMEA tool can be applied to both design and the manufacturing process, the Supplier is required to submit the Process (Design) FMEA for all the supplied products to BERCO S.p.A. for approval.

The Supplier shall consider mitigation actions for all causes of fault with RPN>150 when the Seriousness level \leq 8 and for all causes of fault with RPN>80 when the Seriousness is \geq 9.

Where applicable, the Supplier can run the FMEA by families of products.

The Process FMEA shall examine the potential causes of fault that may occur throughout all the steps in the process described in the flow chart (keeping the same numbers) and shall pay special attention to the critical and safety features specified in the technical documentation provided by BERCO S.p.A..

The FMEA shall be updated:

- when products or processes are changed;
- when production is moved to a different line or to a different factory;
- when new causes of fault are identified or notified by BERCO S.p.A. through nonconformity reports;
- in the event of serious nonconformities, as a result of which BERCO S.p.A. has formally requested the opening of a 8D Report.

When required, the Supplier shall attend to the drafting of the product or process FMEA documents pertaining to the supplied product at BERCO S.p.A..

5.5.3 Scheduling of production process and product controls

The Supplier shall provide for optimal management of manufacturing and assembly processes through the monitoring of the production process parameters and the product features, as laid down in a formalised **Control Plan**. This plan shall be developed for the prototyping, pre-production, and production stages.

BERCO S.p.A. requires all the Suppliers to develop control plans in accordance with the guidelines given in the AIAG Manual - *Advanced Product Quality Planning and Control Plan (APQP)*.

Without prejudice to the Supplier having primary responsibility for the implementation of the Control Plan, the plan shall be made available to BERCO S.p.A. at any time, and the latter reserves the right to check it, to approve its contents, and to ask for changes to be made.

In drafting the control plans, the Supplier shall take into account the flow chart, the outcomes of the process FMEA, and the expertise on similar products. Procedures for continuous improvement of processes shall be implemented.

The control plans shall be developed for all production steps and shall include control of all the safety and key features (critical and main) of both the product and the process, as specified in the drawings and in the technical specifications referenced therein or as resulting from the FMEA.

The control plans and the steps in the FMEA flow chart shall be unambiguously connected.

The control plans shall be developed, where applicable, for the production of prototypes and lots in series.

The control plans shall be reviewed and updated, where necessary, when a change is made that affects the product, the production process, measurements, logistics, procurement sources or the FMEA.

The Supplier shall keep its production process under control, including all sub-processes, by way of monitoring all the specifications set forth in the technical documentation, and agrees to avoid changes to the Control Plan without prior notification to BERCO S.p.A. / the Supplier Quality entity. Please note that the contents of the Control Plan have to be shared with and approved by BERCO S.p.A. / the Supplier Quality entity and/or the end CUSTOMER through audits.

The Supplier shall provide for the support required to conduct the audit.

5.5.4 Production system planning: process capacity analysis

Without prejudice to the Supplier's freedom to select and develop its own industrial system, the Supplier shall have suitable equipment to fulfil the product requirements in terms of quality and reliability and to preventively check its suitability and consistency over time by measuring the process capacity to the specifications given in the technical documentation.

The parameters that help assess whether a piece of equipment included in a production process is suitable to manufacture a component with the necessary repeatability and reproducibility are identified in the process capacity measurement (Cm, Cmk, Pp, Ppk, Cp, and Cpk) (statistical process control – refer to the AIAG Manual **Statistical Process Control - SPC**).

The Supplier shall schedule capacity tests of its own process (measurement of Cm, Cmk, Pp, Ppk, Cp, and Cpk), which shall be carried out in accordance with the guidelines given in the AIAG Manual - *Statistical Process Control (SPC)*, in order to monitor and check the production process and make sure it works to its maximum potential for the production of compliant products with the requirements.

BERCO S.p.A. specifically requires its suppliers to monitor special features through SPC studies (Statistical Process Control) starting from the very beginning of the production process until a process capacity is achieved that helps mitigate all nonconformity risks. This guideline applies to all the components submitted to BERCO S.p.A. for quality approval throughout the product life cycle. All the features, specifications or other needs specified by the customer shall be compliant with the requirements. BERCO S.p.A. prefers that Suppliers manage special features through statistical control, although performance tests, functional tests and other procedures are acceptable, as defined in the control plan.

The Supplier shall perform capacity testing on safety features - product or production process characteristics that may affect the end user's safety and/or compliance with type-approval and legal requirements - and on key features - product or production process characteristics that may affect the product functionality or

performances, or the next steps in the production process, without however jeopardising the product safety or conformity with type-approval and legal requirements -, as specified in the drawings and in the technical specifications therein, or as resulting from the FMEA.

Without prejudice to guidelines of a more restrictive type than the drawing or the technical specifications, the Supplier shall comply with the requirements listed in the table below.

TYPE OF FEATURE	CAPACITY FOR SERIAL PRODUCTION
Safety feature	$C_p - C_{pK} > 1.67$
Key feature	$C_p - C_{pK} > 1.33$

Where the required values fail to be achieved, the Supplier shall implement a poka-yoke control system or shall subject the products to a 100% check (preferably using Go/No-Go systems).

5.5.5 Sub-supplies

Without prejudice to the general purchase conditions laid down in the purchase agreement, having preliminarily checked the sub-Supplier's suitability, the Supplier shall provide for the sub-supplier to plan its own Quality Management System equivalently to the system planned by the Supplier, i.e. according to the aforementioned conditions. Should the quality management system of the sub-Supplier show deficiencies, the Supplier shall put in place stronger control actions to guarantee the product conformity.

BERCO S.p.A. may, at any time, perform audits directly at the sub-Suppliers' premises sending its auditors on site, prior agreement with the Supplier and the sub-Supplier. The Supplier shall take all efforts required to engage its sub-Suppliers and shall be responsible for checking implementation of any corrective actions, of which it shall give evidence to BERCO S.p.A..

Irrespective of the system put in place, the implementation of timely corrective actions shall always and in any case be guaranteed whenever nonconforming products are identified. Changes of sub-Suppliers in the course of the supply shall be considered as changes to the process and, as such, they will need preliminary authorisation by BERCO S.p.A..

5.6 Monitoring and measuring equipment

The Supplier shall have suitable monitoring and measuring equipment, in such numbers and of such quality as required to perform all necessary checks and tests to ensure that the product specifications and the process requirements referenced in the Control Plan are met. The measuring and test equipment shall be assessed in compliance with the MSA tool criteria. The equipment shall be kept under control through conformity testing. If the Supplier does not have suitable equipment to perform some of the checks and tests specified in the technical documentation of BERCO S.p.A. directly and autonomously, the Supplier shall:

a) report to BERCO S.p.A. / the Supplier Quality entity about all features it cannot test and shall also notify BERCO S.p.A. / the Supplier Quality entity about the service Entity/the qualified and accredited Laboratory it has selected to carry out such tests. BERCO S.p.A. has the right to reject the Laboratory specified by the Supplier;

b) forward a copy of the test reports to the contact person(s) at BERCO S.p.A. / the Supplier Quality entity, the people involved in the verification of samples or production lots, and attach such reports, where provided, to the PPAP documentation or, if provided/required, to the Quality and Conformity Certificate;

c) store the original test documentation for the intended time.

Where required, the Supplier shall give evidence to the auditors of BERCO S.p.A. / the Supplier Quality entity that, before shipping the lots included in the supply, it has used the information resulting from the systems and the control and test equipment, and it has taken timely and efficient actions.

5.7 Data analysis

The Supplier shall regularly use the information generated by monitoring and measuring equipment to put in place the preventive and/or corrective actions required to ensure the product conformity.

Where requested by BERCO S.p.A., the Supplier shall demonstrate that it has followed the instructions above.

5.8 Product handling / picking / packaging / transport system

The procedures for product handling, picking, packaging and transport have a significant impact on the product quality and the users' safety.

The Supplier shall make sure that the product is free of chips or machining residues, burs and, generally, any type of dirt before it is packaged.

The material shall be supplied in packaging that is suitable to preserve the material quality, to make loading and unloading operations safe, and to warehouse the material safely.

The packaging terms and type have to be agreed with the Purchasing Dept. of BERCO S.p.A. at all times.

All wooden packaging material must be treated and marked in compliance with the requirements laid down in standard

- IPPC/FAO ISPM 15.

Failing specific instructions, the Supplier shall design packaging in such way as to ensure that the product features stay unaltered during warehousing, transport, and unpacking, and the products arrive at the site where they will be used without posing hazards to the users and free of dented, oxidised and/or scratched parts, or any other defect likely to jeopardise compliance with the requirements.

Possible changes to the packaging instructions drafted by the Suppliers shall be agreed with the Purchasing Dept. of BERCO S.p.A. and shall be authorised in writing by BERCO S.p.A..

If the products are carried by sea, the Supplier shall provide for appropriate protection throughout the voyage.

If the application of protective oil is required or needed, the Supplier shall specify the name of the product used and shall attach the product and safety data sheets to the PPAP, and it shall make sure that the product is compliant with all the applicable environmental and safety regulations.

5.9 Product identification

The Supplier shall have a system in place that helps:

- identify raw materials and semi-finished products stocked in its warehouses;
- identify the product manufacture progress with respect to the monitoring and measuring requirements;
- separate “conforming” products from “nonconforming” products throughout the production cycle;
- identify finished and released products.

If the product is also manufactured for other customers, the Supplier shall mark the containers with the “emergency stock” for BERCO S.p.A..

The Supplier shall identify each container of products to be shipped to BERCO S.p.A. with a label/tag placed on the outside wall and visible, which shall at least bear the following information: Supplier’s business name, product code, transport document number, amount of products in the container, total weight of the container, container tare, references to the purchase order issued by BERCO S.p.A..

The tag must be made of non perishable material and wording must be written with indelible ink for outdoor storage.

The Supplier shall have a system in place to identify and go back to, unmistakably for each production lot, the manufacturing date, the outcomes of testing and controls to which the products were subjected, and any corrective action implemented. This requirement also applies to products and machining processes performed by sub-Suppliers.

When required in the drawings or technical specifications, the Supplier shall mark the products and shall monitor and record their unambiguous identification.

5.10 Product and process changes

5.10.1 Product changes

The Supplier shall have a system in place to monitor changes which is designed to timely and precisely respond to such changes. Any change likely to have an impact on shape, suitability, function, interchangeability or reliability shall in any case be implemented following approval in writing by BERCO S.p.A.. This includes production processes, quality standards for product acceptance, and test requirements.

Any Supplier willing to put forward changes to the product - whether designed by the Supplier or by BERCO S.p.A. - to meet its own production requirements shall submit a specific request to BERCO S.p.A..

The change shall be made exclusively after BERCO S.p.A. has notified its authorisation, which shall include the amendment of the technical documentation, and following the performance of tests on the product for its re-validation, as was the case before the change.

The authorisation shall not represent a value judgement on the technical/technological choices which fall under the Supplier’s responsibility.

This also applies to process changes having an impact on the product features that are not specified in the technical documentation.

With respect to changes required by BERCO S.p.A. or changes put forward by the Supplier and authorised by BERCO S.p.A., the Supplier shall have an identification system to track the date on which such product changes were introduced.

Finally, the Supplier is responsible for notifying each factory of BERCO S.p.A. involved in the supply about the first shipments of modified products, and a note shall be written on the shipping documents that travel with the lot.

5.10.2 Process changes

The Supplier shall not be entitled to make changes to the process without prior formal authorisation in writing by BERCO S.p.A..

This excludes changes intended to improve process safety, which the Supplier is authorised to implement before receiving BERCO's authorisation.

The Supplier shall have an identification system to track the date on which changes were introduced in the production cycle (materials, machining, treatments, etc.).

The aforementioned provisions also apply to sub-Suppliers' process changes.

Note: process changes shall also mean transfers to a new production site and/or selection of a new sub-Supplier.

5.11 Extraordinary authorisation of nonconforming deliveries (derogation or concession)

5.11.1 Products Subject to Legislative and Safety Constraints

Under no circumstances shall these products be delivered if they are not compliant with the technical specifications.

5.11.2 Products other than specified in 5.11.1

With regard to this type of products, where the Supplier identifies nonconformities with the technical specifications which cannot be remedied in due time as required by BERCO S.p.A., the Supplier shall not deliver such products without priorly and formally requesting the authorisation in writing of the Supplier Quality entity of BERCO S.p.A. using the derogation/concession request form (ref. MOD_001_QAM).

A derogation/concession is an authorisation granted to the Supplier concerning a deviation which is temporary and limited to a defined number of items.

The request must not be submitted if the Supplier is not sure that the component can keep its operating features unaltered for as long as required by BERCO S.p.A..

The request shall specify the following:

- the factory of BERCO S.p.A. that will use the component;
- the part number and the part name;
- the type of deviation and its characteristics;
- the number of parts involved in the deviation (or the deviation duration).

These data, together with other strictly necessary information, are clearly specified in form MOD_001_QAM.

If the product is simultaneously intended for two or more than two BERCO S.p.A. factories, the quantities for each individual factory shall be specified.

After checking the equivalence of the product, the designated entity of BERCO S.p.A. (Engineering Dept.) may authorise the delivery, specifying potential constraints for the Supplier and potential greater expenses charged to the Supplier (induced costs that the Supplier Quality entity of BERCO S.p.A. will notify to the Supplier).

As explained above, the Supplier shall send the derogation/concession request by email to the following address: deroghe_concessioni.berco@tyssenkrupp.com.

5.12 Recording and storage of control and test results

The Supplier shall maintain a suitable system to record the results of specific controls performed on its production and shall store these records for at least 10 years.

Unless otherwise specified, the Supplier shall store all documents pertaining to deliveries to BERCO S.p.A. for a minimum of 10 years.

The Supplier shall actively provide for its sub-Suppliers to behave similarly with reference to the products they are required to manufacture.

The entire documentation, including the sub-Suppliers' documentation, shall be made available to BERCO S.p.A. upon request. Where BERCO S.p.A. asks for documents to be shared, they shall be emailed to the following address: certificati.berco@thyssenkrupp.com.

5.13 Recording and storage of control and test results

The Supplier shall implement suitable traceability processes to prevent possible product recall campaigns. The Supplier shall have a system in place to identify and go back to, unmistakably for each production lot, the manufacturing date, the outcomes of controls/testing to which the product was subjected, and any corrective action implemented. This commitment also applies to the products manufactured by the sub-Suppliers and to their features.

Products under development shall be identified by samples and by lots, before they are qualified, using signs that clearly specify their features.

5.14 Product marking

The Supplier shall adhere to the product marking requirements specified in the technical documentation provided by BERCO S.p.A..

6 SUPPLY PROCEDURES AND REQUIREMENTS

6.1 Prototypes used to verify project suitability

BERCO S.p.A. considers as **prototypes** any product that can be manufactured following different processes from serial production, although they still have to comply with the specified requirements.

Prototypes shall be set up and made available for all such products that require a preliminary definition and testing at the time of design/approval, as required by BERCO S.p.A. (technical approval).

Where it is deemed necessary, BERCO S.p.A. shall ask for the submission of a specific X-PAP for prototypes (ref. PS_002_T&I at the following link <https://www.thyssenkrupp-berco.com/it/company/downloads>).

As explained above, prototypes may be manufactured using systems and equipment other than those required for serial production.

When requested by BERCO S.p.A., the Supplier shall carry out experimental testing on the prototypes and the result of these tests shall contribute to the technical approval of the product.

6.2 Sampling to check product/process conformity

Samples shall be checked exclusively when the products have passed the technical approval stage.

The approval process for serial production (PPAP) begins with the taking of a product sample from a significant lot (min. 300 pieces, if not otherwise agreed) that the Supplier has manufactured with the systems and equipment it will eventually use for serial production.

The Supplier shall be responsible for performing controls and tests in order to verify full compliance of the serial prototype with the technical specifications before it is delivered to BERCO S.p.A..

To finalise the procedures required to authorise use of the material in the production cycle, BERCO S.p.A. may request that its delegated persons attend to the above-mentioned controls and tests at the Supplier's factory.

The PPAP samples shall be submitted to the designated entity of BERCO S.p.A. / to the Supplier Quality entity for controls and testing, as required to obtain the authorisation to supply the products, and the samples shall be complete with the measurements of the production process capacity (or any other assessment made with a methodology approved by BERCO S.p.A.) - the above process capacity is taken as a feature contemplated in the control plan.

The qualification of parts ensures that they meet the technical/performance requirements. The qualification of the process ensures that the specific production processes implemented help manufacture parts of constant and acceptable quality.

The PPAP samples are subjected to prior submission of all PPAP documents required by BERCO S.p.A., as clarified in Procedure PS_001_QAM on the approval of production components (link <https://www.thyssenkrupp-berco.com/it/company/downloads>).

The Supplier shall certify the product conformity to the technical specifications (e.g. drawings, statements of work, etc.) both at the time of supply commencement and at a later stage when parts are possibly re-sampled for new qualifications (e.g. changes).

6.3 Authorisation to supply new product: PPAP

In accordance with the provisions laid down in Procedure PS_001_QAM (link <https://www.thyssenkrupp-berco.com/it/company/downloads>) on the approval of production components (Procedure concerning PPAP), the supply of

- a newly designed product;
- a first supply product;
- a product to correct a nonconformity on a previously delivered sampling lot;
- and/or modified products;

shall always be preceded by the submission of the PPAP documentation, as required by BERCO S.p.A.. The authorisation to supply the products shall be granted based on: the controls performed on the sampled components, the conformity of the PPAP documentation, the tests required from the Supplier and their outcomes, and any additional testing that BERCO S.p.A. may deem necessary on the samples.

The purpose of the Production Part Approval Process (PPAP) is to determine whether all the customer's requirements specified in the drawings and in the technical specifications have been properly understood by the Supplier and whether the process has the potential required to manufacture products that constantly comply with the requirements for serial production and the cycle times defined at the quotation stage.

As explained above, before the sample lot is submitted, BERCO needs to receive the necessary documentation based on the PPAP level, as illustrated in the chart given in Procedure PS_001_QAM (link <https://www.thyssenkrupp-berco.com/it/company/downloads>); the delivery of the sampled parts shall only be authorised after documentation approval.

The PPAP level is agreed when the supply is defined. Where no specific agreement is in place, the level of standard submission for all product types is **level 2**.

Unless otherwise specified, the Supplier shall submit the required sample parts after taking them from a lot manufactured using the tools, equipment, measuring instruments, materials and production process intended for serial production.

The entire PPAP-related documentation shall be emailed to the following address: ppap.berco@thyssenkrupp.com.

Before shipping the PPAP samples, the Supplier shall be responsible for conducting appropriate controls and tests to check that all the product specifications are compliant with the intended product requirements.

The Supplier shall send the required documentation before shipping the PPAP samples or, where agreed with the Supplier Quality entity of the receiving BERCO S.p.A. factory, together with them at the latest.

The PPAP samples shall be duly identified with a sign showing the Supplier's name, the customer's drawing number, the drawing revision number, and the reference to the purchase order.

Each part within the PPAP samples shall be identified individually and traceability of their measurements and tests, as specified in the PPAP documentation, shall be guaranteed.

The product approval and the authorisation to supply it shall be issued by the Supplier Quality entity of the receiving BERCO S.p.A. factory, provided that the submitted documentation is compliant and based on the results of controls and tests. The above approval is the necessary prerequisite for the Supplier to be authorised to deliver serial supplies.

Should nonconformities be identified, the Supplier Quality entity of the receiving BERCO S.p.A. factory shall not grant approval for serial supplies. The Purchasing Dept. of BERCO S.p.A. shall issue a new order for PPAP sampling. The product approval process shall be repeated at the time of the next supply. In presence of unapproved PPAPs, BERCO S.p.A. reserves the opportunity to charge the Supplier a lump sum of 250 € to pay for the controls performed on the new samples.

Unless otherwise expressly specified in the Part Submission Warrant (PSW), PPAP approval is in force until the part or the process is reviewed or until such approval is withdrawn by BERCO S.p.A.. Moreover, where one of the following conditions arise, the Supplier shall inform BERCO S.p.A. before the first production is shipped:

- correction of a discrepancy found on a part already shipped;
- modification(s) to a product following a technical change in the documentation, in the specifications or in the design material, based on an approved product change authorisation;
- use of an optional process or material that had been used in a previously approved part;
- product manufactured using equipment (excluding consumable equipment), moulds, dies, models that are either new or modified, including replacement or additional equipment;
- production following replenishment or restructuring of existing equipment or systems;
- production following a change of any type whatsoever to the production process or procedure;
- products manufactured after transfer of equipment and systems to a new factory or to a different factory;
- change in the origin of sub-supplied parts, materials or services;
- new product release after the equipment was shut down for volume production for 6 months or longer;
- following a request from BERCO S.p.A. to suspend shipment based on doubtful Supplier quality;
- any other activity likely to cause the Supplier's Control Plan to be modified;
- loss or withdrawal of the third-party quality system registration.

The Supplier shall use the derogation/concession request form (MOD_001_QAM - link <https://www.thyssenkrupp-berco.com/it/company/downloads>) to inform the Supplier Quality entity of BERCO S.p.A. about any of the events above occurring (write an e-mail to: deroghe_concessioni.berco@thyssenkrupp.com). The request shall be reviewed by BERCO S.p.A., after which the PPAP may be asked to be submitted again, either fully or partially.

6.4 Special processes

Heat treatments - The Supplier shall have a laboratory equipped to check compliance with the requirements set forth in the technical documentation. Where this is not the case or the need exists to have tests performed by an external laboratory, the Supplier:

- shall inform the Supplier Quality entity of BERCO S.p.A. and obtain approval before sending the quotation;

- may only avail of the services of laboratories accredited against standard ISO/IEC17025 or an equivalent national standard.

The Suppliers of outsourced heat treatments shall deliver each supplied lot with a heat treatment certificate with the following information:

- test report number and date;
- name and address of test laboratory;
- customer's name and address;
- code, description and material of tested product;
- reference to purchase order (for products fully manufactured by Supplier) or BERCO production order (for outsourced heat treatments);
- Supplier's transport document number;
- heat treatment type and date;
- number of heat treated products (where applicable) and number of products per heat treatment;
- heat treatment oven/system;
- tests performed;
- number of products tested;
- tested element: product (non destructive tests), portion of product (cut product for destructive testing), or specimen.
- specimen dimensions, where required;
- type of surface subjected to surface hardness or case hardness depth tests: ground or not ground (where applicable);
- instructions/reference standards used for tests;
- instruments used for the tests, test results, and corresponding acceptance criteria;
- a statement indicating the outcome of the heat treatment (conforming/nonconforming), based on the required acceptance criteria, as specified in the certificate (ref. previous item).

Upon request of BERCO S.p.A., the Supplier shall also notify:

- the hardening medium used (with respect to case-hardened and tempered components);
- performance of the heat cycle (temperature and carbon potential over time);
- specimen used for testing.

The information above shall in any case be available at the Supplier's factory even if it is not disclosed in the sampling documentation.

Where requested, the samples used for testing shall be delivered.

Surface coatings - The Supplier shall have a laboratory equipped to check compliance with the requirements specified in the technical documentation (e.g. corrosion resistance, thickness of surface overlay, cross-cut tests). Where this is not the case or the need exists to have tests performed by an external laboratory, the Supplier may only avail of the services of laboratories accredited against standard ISO/IEC17025 or an equivalent national standard.

The Supplier shall provide the reports of all the tests performed at the PPAP stage without delays.

Welding – The Supplier shall have a certification of the production process and the operators involved in welding operations to confirm the integrity of welded joints.

This special process, i.e. welding, is defined by international standards that set forth the quality requirements (standard ISO 3834, Parts 1, 2, 3, and 4) and require the welding processes to be qualified (standard ISO 15607).

Welders shall be qualified against standard EN 9606-1, operators shall be qualified against standard EN 14732, and brazers shall be qualified against standard EN 13585 through the tests defined in these standards.

The welding procedure specifications (pWPS or WPS) shall be drafted according to the provision of standard EN ISO 15609, Parts 1 through 6.

The weld beads shall be subjected to laboratory tests, as specified in standard EN ISO 15614, Parts 1 through 14, to check welded joint compliance.

Non destructive testing of welded joints shall be performed by qualified staff, in accordance with the requirements laid down in standard EN 9712 or in equivalent national standards.

Where these tests cannot be carried out in-house, the Supplier shall refer to a laboratory accredited against ISO/IEC 17025 or an equivalent national standard to carry out the tests required to qualify the production process and to monitor it.

The Supplier shall provide all the reports pertaining to all the tests performed on welded joints at the sampling and PPAP batching stages without delays.

6.5 Documentation certifying compliance with safety and environmental legislation

All the supplied items (materials, semi-finished products, assemblies, etc.) shall comply with the legislation on safety and the environment existing in the receiving Country. The Supplier shall provide evidence of compliance with the application legislation.

6.5.1 Regulation (EC) n. 1907/2006 REACH

Regulation (EC) n. 1907/2006 REACH concerning the registration, evaluation, authorisation, and restriction of chemical substances establishes specific duties and obligations for producers, importers and downstream users of substances, as such or as components of preparations or articles (as defined in Article 3 of the Regulation).

The Regulation is in force in the countries of the European Economic Area, which includes the Member states of the European Union (Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Holland, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Hungary), Northern Ireland, Norway, Island, and Liechtenstein.

The movement of chemical substances within the REACH area is free, as it is equalised to a domestic market, and specific requirements exist for imports from countries outside such area (Switzerland, Turkey, China, India, USA, Brazil, etc.). Exporters to this area willing to continue to do business merely have to register the chemical substances directly through a company having its registered office within the area or appoint an Only Representative with registered office within the area.

Suppliers both in and outside Europe shall comply with the requirements laid down in the REACH Regulation and further amendments, and they shall notably adhere to the requirements set forth in Articles 33, 67, and 56 of the Regulation.

As part of the PPAP (Production Part Approval Process), the Suppliers shall produce a statement on the presence in the supplied article of "Substances of Very High Concern" eligible for authorisation (SVHC in Candidate List) in amounts greater than 0.1% in weight, as required by Article 33 of the Regulation, and shall draft the following documents:

- MOD_003_QAM (Request_for_supplier's_declaration_on SCIP_articles);

- MOD_004_QAM (Request for information on REACH SVHC_substances and_mixes).

which are available on the website of BERCO S.p.A. <https://www.thyssenkrupp-berco.com/it/company/downloads>.

6.5.2 Safety Data Sheet

In accordance with the requirements laid down in Regulation (EC) n. 1907/2006 (REACH) and Regulation (EC) n. 1272/2008 (CLP), as further amended, the Supplier shall provide the safety data sheets of all substances and mixes making up the supplied articles together with the first delivery for the sake of their safe use.

The safety data sheets shall be drafted according to the requirements specified in the reference standards: nonconforming safety data sheets shall not be accepted.

Whenever the safety data sheets are updated, the new versions shall be timely sent for all the products delivered in the 12 months before the update.

6.5.3 SCIP European Database

Suppliers selling or importing articles into the European Union (as defined in Article 3 of Regulation n. 1907/2006 REACH) which contain "SVHC in candidate list" in amounts greater than 0.1% in weight must register these articles in the European Database known as SCIP (Substances of Concern In articles, as such or in complex objects - Products) and must provide information for article identification, the name of the substance, the concentration range, and information for safe use.

Suppliers having their registered office within the European Union must notify BERCO S.p.A. the SCIP identification number for all the supplied articles. Suppliers from outside the European Union are required to notify BERCO S.p.A. the information required for notification, which must be sent to the Supplier Quality entity.

For additional information on the SCIP Database, refer to the ECHA website: <https://echa.europa.eu/>.

6.5.4 Directive 2011/65/EU and Directive 2012/19/EU

Directive 2011/65/EU of the European Parliament and of the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS - Restriction of Hazardous Substances Directive) and Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE) discipline the use of hazardous substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE), bis (2-ethylhexyl)phthalate (DEHP), benzyl butyl phthalate (BBP), dibutyl phthalate (DBP) and diisobutyl phthalate (DIBP), as well as recovery and disposal of such equipment.

The Suppliers of products falling within the scope of the above-mentioned directives shall, at the time of the product approval process, submit a certification attesting to the fulfilment of the obligations resulting therefrom.

6.5.5 Information on the chemical composition of the product

The Supplier shall enter data on the chemical composition of the products supplied to BERCO S.p.A. in the International Materials Data System (I.M.D.S. <http://www.mdsystem.com>). May the Supplier be informed that the ID of BERCO S.p.A. for this purpose is 31594.

6.5.6 Conflict Minerals

Section 1502 of the Dodd-Frank Wall Street Act, a US Federal Law, introduced the concept of “Conflict minerals”, which include gold, columbite-tantalite, cassiterite, wolframite, and their by-products (tantalum, tin and tungsten) coming from the Democratic Republic of Congo (DRC) and its bordering regions (Rwanda, Burundi, Angola, the Central African Republic, Sudan, Tanzania, Uganda, and Zambia), the activities associated with which (extraction, processing, etc.) finance armed conflicts.

The United States Dodd Frank Act paved the way for regulations intended to discipline the use of Conflict Minerals. These regulations do not prohibit the use of these minerals, but establish the obligation for companies doing business on the American territory or exporting to the USA to inform consumers on the origin of minerals so that they can decide which companies to buy products from. For this to happen, businesses must track the origin of potential Conflict Minerals used in their products throughout their supply chain.

Although this is not expressly specified in the existing regulations, cobalt can be considered as yet another Conflict Mineral, for which a due diligence needs to be started similarly to the above-mentioned minerals.

European Regulation 2017/821 sets forth the due diligence requirements across the Supply Chain for importers into the European Union of tin, tantalum, tungsten and its minerals, and gold originating in either conflict-affected or high-risk areas. The Regulation requires the importers to implement management systems and, more specifically, to put in place processes for materials originating from conflict areas which are suitable to identify and assess risks across the Supply Chain, and can help design and implement a strategy to minimise the identified risks; the importers are also required to have a third-party independent audit of the Supply Chain performed and to produce a yearly report on the Supply Chain due diligence. For further information, please refer to the “OECD guidelines on due diligence for a responsible supply chain of minerals from conflict-affected or high-risk areas” available on the institution website: <https://trade.ec.europa.eu/>.

Where required, the Supplier shall declare whether conflict minerals (including cobalt) are present in the product and, where this is the case, shall provide information on the origin of the conflict minerals, as well as the due diligence policies the Supplier implements.

6.5.7 Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act of 1986 (also known as Proposition 65) is a law of the State of California intended to discipline the presence of chemical substances in the products sold in California. The list of substances that might be carcinogenic or toxic for reproduction is updated on a yearly basis by the Office of Environmental Health Hazard Assessment (OEHHA) and it is available on OEHHA website: <https://oehha.ca.gov/>. The law does not prohibit use of these substances, but requires products containing the listed substances to be identified with labels bearing standardised pictograms so that users and consumers are informed about the risks.

Where required, the Supplier shall check for the substances defined in Proposition 65 in the supplied articles and shall produce the relevant declaration.

6.5.8 Toxic Substances Control Act (TSCA)

The Toxic Substance Control Act (TSCA) is a law on the control of chemicals in the United States of America and acknowledges the authority of the Environmental Protection Agency (EPA) to take normative actions for new and existing chemical substances.

This law on “industrial chemical substances” does not apply to specific products such as tobacco, nuclear materials, ammunitions, food, food additives, pharmaceuticals, cosmetics, and substances exclusively used as pesticides.

The Toxic Substances Control Act (TSCA) requires EPA to fill out, keep up to date, and publish a list, known as “TSCA Inventory”, of each chemical substance either produced or processed, including imports into the United States.

For the purpose of regulation under the TSCA, a chemical substance is considered as “existing” if it is listed in the inventory and as “new” if it is not.

In addition to defining whether a specific substance is “new” or “existing”, the inventory also contains information on existing chemical substances that are subject to constraints in terms of production or use.

Any person willing to manufacture (and export) a new chemical substance and trade it on the territory of the United States must check if the chemical substance is listed in the inventory. If it is not, it must send EPA a product manufacturing notice (PMN) at least 90 days before starting the production.

Possible outcomes of the PMN review by EPA include:

- release or approval - no additional normative action required;
- withdrawal;
- request for additional information;
- approval, including some forms of constraints (authorisation orders);
- approval, including significant new use rules (SNUR) setting some types of constraints. Constraints shall apply to both the recipient and the other producers and exporters of the substance.

The exporter to the USA must also certify that the chemical substances are compliant with the TSCA (“positive certification”) or that the chemical substances are not subject to the TSCA (“negative certification”).

6.6 Authorisation to supply direct materials of chemicals

The qualification of chemicals and the verification of suitability for use are performed directly in the areas where the chemicals are used.

As these materials are subjected to a chemical transformation during the production process in which they are involved, BERCO S.p.A. shall preliminarily check:

- compliance with the statutory requirements concerning safety and health in the work place, in connection with environmental, hygienic and technical aspects;
- documentary compliance with the provisions of law concerning classification and labelling of hazardous substances and preparations;
- the existence, for the sake of prevention, of ecological issues and their implications at management level, pursuant to Italian Legislative Decree D.Lgs. 39/2016.

The Supplier shall provide, free of charge and by email, the safety data sheet drafted in conformity with Annex II to Regulation n. 1907 of 18/12/2006, and shall also deliver an updated copy of the safety data sheet where it has become aware of new relevant information.

6.7 Quality and Conformity Certificate (QCC)

The Quality and Conformity Certificate is the document the Supplier uses to certify the quality of the supplied product and its conformity to the requirements. BERCO S.p.A. considers it as the official document by which the Supplier provides evidence of having implemented a “Quality Assurance System”.

BERCO S.p.A. reserves the opportunity to request this certificate, which shall be drafted in accordance with standard UNI EN 10204.

By this document the Supplier:

- certifies the quality of the delivered product and provides references to the records with the measurements of the features as successfully checked/tested - the records shall be stored in the

Supplier's files to be made available to BERCO S.p.A. for consultation and, with exclusive regard to dimensional features, to be attached to the certificate;

- declares the product conformity with the intended requirements, as guaranteed by the checks/tests performed on the product.

6.8 Outsourced operations

This section applies to Outsourced Suppliers who carry out specific work processes on the (raw or semi-finished) components delivered by one of the factories of BERCO S.p.A..

Additional information on how outsourcing is managed is given in the "Direct delivery and outsourcing procedure" named PS_003_PSM (available at the following link: <https://www.thyssenkrupp-berco.com/it/company/downloads>).

The Supplier shall specify in detail the quantities of all the products returned to BERCO S.p.A. in the transport document, including:

- number of conforming products;
- number of returned unmachined products;
- number of waste products following machining by the Supplier (machining waste);
- number of waste products due to the material supplied by BERCO S.p.A. to the Supplier (waste material).

The number of products specified in the transport document must match the number of products physically delivered by the factory of BERCO S.p.A. at the beginning of the process.

6.8.1 Nonconforming products identified by Suppliers

i. Suspicious products

If the Supplier identifies "suspicious", i.e. nonconforming, products which may however be accepted, the Supplier shall notify the Quality entity of the receiving BERCO S.p.A. factory, specifying the identified problem and asking whether the products can be accepted, before their return.

If the answer is positive, the Supplier shall:

- mark "suspicious" products as conforming in the transport document;
- specify in the transport document that the "suspicious" products must be submitted to the Supplier Quality entity for examination;
- mark the "suspicious" products with a yellow sign as necessary to clearly indicate that the products are nonconforming and pending assessment;
- place the "suspicious" products in containers so as to separate them from conforming products.

ii. Waste products

All waste products (machining and material), as identified by the Suppliers, shall be returned to the factory of BERCO S.p.A. that owns them.

They shall be delivered together with the relevant production order. Waste forming part of miscellaneous production orders shall not be stacked together and returned periodically. The waste products (machining or material) shall:

- be individually sprayed with red paint to prevent their use by mistake. As an alternative, they may be marked with a red label or a permanent decal;
- be delivered separately from containers storing conforming products. If one single transport document is issued to deliver waste products forming part of miscellaneous production orders, the products may be placed in one single container, but they shall be separated and duly identified by their production order number to prevent mixing.

6.9 Quality requirements

6.9.1 Field failure

The warranty obligations vested on the Suppliers for nonconforming parts identified in the field shall be specified in the sales contract in force between the Supplier and BERCO S.p.A.. When a critical failure is identified in the field, the next steps of the process need to be identified, based on various criteria, including criticality, quantity, costs, and the other failure-specific factors.

Having made this assessment, BERCO S.p.A. may request that:

- defective parts are repaired/replaced in the field by BERCO S.p.A.;
- defective parts are repaired/replaced in the field by the Supplier;
- the product is recalled and either repaired or replaced;
- any labour costs incurred by BERCO or its customers due to defects ascribable to the Suppliers and identified in the field are acknowledged.

6.9.2 Nonconformities/Corrective action reports

The Supplier is responsible for keeping contact information updated as appropriate within the global corrective action report system (8D Report).

When BERCO S.p.A. puts forward a request for a corrective action, the Supplier shall receive an email from the Supplier Quality entity of BERCO S.p.A. for information.

The Supplier's reply to requests for corrective actions shall include the identification of the root cause, the containment action (short-term corrective action or temporary action), and the permanent corrective action (long-term corrective or final action).

As part of the corrective action, a final implementation plan shall be added, including the implementation dates.

The containment action (steps D1 and D3 in the 8D Report) shall be notified to BERCO S.p.A. within 24 hours from receiving the request for a corrective action. The analysis of errors, which helps define the root cause, shall be completed within a reasonable period of time, as agreed with the Supplier Quality entity at BERCO S.p.A.. The 8D Report shall be deemed finalised only after approval of the proposed corrective and preventive action by BERCO S.p.A..

The need for a formal 8D Report shall be evaluated in terms of corporate impact on production costs, quality costs, performances, reliability, safety, and customer's satisfaction. BERCO S.p.A. requires the Supplier to submit a corrective action plan in writing in order to solve specific nonconformities identified both at the factory and in the field using the electronic global corrective action report system (8D Report).

Where the nonconformity identified affects urgent parts or parts already introduced in the transformation process for production needs, BERCO S.p.A. may reserve the right to sort or rework such nonconforming parts in-house and to consequently charge the incurred costs prior timely notification emailed to the Supplier.

Where no urgency criteria apply and failing a reply after 3 business days from the emailing of the notification, BERCO S.p.A. shall deem the proposed in-house repair or scrapping and charging of the resulting costs to have been accepted.

The Supplier shall have 15 days after notification emailing to ask for waste material, if any, to be returned. The request shall be submitted by answering the nonconformity notification email, keeping all the addressees for

information. Where a specific request for return is not submitted as specified, BERCO S.p.A. reserves the right to scrap waste material.

6.10 Standard requirements

6.10.1 Cleaning and protection against oxide

Machined parts shall not show any residual chips, burrs and/or other foreign matter, with special reference to: inner or outer OR ducts and/or clamping ring seats, threaded holes, including blind holes, through holes (drill output), cracks, cavities and milled surfaces, chambers for oil reservoirs. Unless otherwise specified, machined parts shall always be protected during sandblasting, where this process is required.

Where not otherwise provided, parts shall be protected against rust using antioxidant oil.

The protection shall meet the following requirements:

- no silicone and silicone containing compounds;
- stability within the temperature range -20 °C to +70 °C;
- easy to remove;
- protection time:
 - 6 months when stored outdoors and under a shelter;
 - 12 months when stored indoors.

Where required, these areas shall be safeguarded against collision and damage by vehicles using suitable protections approved by BERCO S.p.A..

7 CLIENT'S RESPONSIBILITY

7.1 Assessment of Supplier's suitability

Before a supply contract with a new Supplier is entered into, BERCO S.p.A. needs to have successfully assessed the Supplier's Quality System and the positive outcome needs to be formalised in form MOD 001_PSM e MOD 002_PSM (Questionnaire of Supplier Qualification e Berco Standard of Supplier Evaluation), as available at the following link: <https://www.thyssenkrupp-berco.com/it/company/downloads>).

When a new product line / a new production process / changes in the production process are introduced, suitability shall be checked by BERCO S.p.A. through a formal process audit, unless otherwise decided and formally notified in writing by BERCO S.p.A..

A Supplier is qualified if the total score of the assessed Quality System is greater than or equal to 60% conforming points to the maximum achievable percentage.

The Supplier is qualified under reserve if the total score of the assessed Quality System is between 51% and 59% conforming points to the maximum achievable percentage.

Positive assessment is only a preliminary step in the assessment of the Supplier's organisation and processes, and it does not mean component approval, which the Supplier achieves through the PPAP process, as described herein.

7.2 Auditors of Supplier Quality

This term identifies the staff from BERCO S.p.A. designated to liaise with the Suppliers for the purpose of assessing their organisation and their production processes. The Auditors' scope of action with Suppliers includes:

- to assess the Supplier's suitability for each product line;
- to assess the quality potential of the system and each individual process, at the stage of investigation before the supplier is sourced, at the stage of product development, and at the stage of actual production;

- to participate in the sourcing decision, having the power to vote against the sourcing where unsatisfactory qualitative performances have been estimated;
- to be involved in the product development stage;
- to participate (including indirectly/as mere observer) in the component validation process for production;
- to check the process capability to manufacture whatever is needed in terms of products, in compliance with the volumes specified in the contract;
- to locate and examine together with the Supplier product-related criticalities, if any;
- to ask for extraordinary controls to be performed (by the Supplier or a third-party Entity) when production is started or criticalities and process deviations arise;
- to monitor the pre-audit qualitative results and to support/pilot the Supplier in striving for continuous improvement and taking timely and effective corrective actions to remedy deviations;
- to establish/suggest connections with the technical Entities at BERCO S.p.A. in order to support quick and objective resolution of the emerging qualitative problems.

7.3 Product conformity checks

BERCO S.p.A. reserves the right to carry out conformity checks on the supplied products:

- at the Supplier's premises;
- at BERCO's production factories;
- across the sales network;
- at end customers.

Should BERCO S.p.A. and/or one of its CUSTOMERS be willing to check the product conformity at the Supplier's/sub-Supplier's premises, the latter shall provide the support required to carry out the checks.

IMPORTANT:

For all components considered as functional class S (Safety), i.e., components essential for the correct functioning of the system and crucial for cost, company image, and customer satisfaction, where some characteristics are classified as SAFETY (related to safety and legislation), it is mandatory to record the results of conformity checks.

*BERCO S.p.A. will consider all **Safety Functional Class (S)** products as NON-CONFORMING if they are not accompanied by a certificate attesting to the conformity of the identified characteristic.*

Verification by BERCO S.p.A. does not absolve the Supplier from the responsibility of verifying and providing products that conform to the agreed specifications, nor does it exclude their possible rejection by the CUSTOMER.

The checks made by BERCO S.p.A. shall not relieve the Supplier from the responsibility of checking and supplying products conforming with the agreed specifications nor shall it exclude the opportunity for the CUSTOMER to reject the products.

7.3.1 Acceptance controls

Unless otherwise specified, BERCO S.p.A. shall carry out acceptance controls on all the lots by taking a significant sample of parts, based on the functional impact of the component under acceptance testing. The acceptance/rejection threshold of the controlled lot is 0/1.

Where the supply reliability is indisputable, BERCO S.p.A. reserves the right to accept the materials under SKIP LOT or FREE PASS conditions.

When a nonconformity arises during testing, BERCO S.p.A. may decide whether to:

- reject the lot;
- select a portion of or the entire lot (100%) if production needs are such that the lot cannot be rejected.

IMPORTANT: *The non conforming material must be collected by the supplier within 15 days of the non-conformity (NC) notification by Berco S.p.A. If the supplier does not collect the material within 30 days, Berco S.p.A. will proceed with the shipment of the NC material, charging the supplier for the related costs incurred.*

7.4 Suppliers' monitoring and development

Every year, BERCO S.p.A. shall inform its Suppliers about the target quality improvements they are required to achieve.

The Suppliers shall regularly monitor their quality performances and take instant action whenever they are reported a problem.

BERCO S.p.A. shall periodically assess the performances of its suppliers through a "Vendor Rating" procedure whose outputs include an analysis report that takes the following aspects into account:

- supply quality;
- punctual deliveries;
- cost improvement;
- supplier's support.

The assessment of these aspects shall enable BERCO S.p.A. to identify preferential Suppliers based on their performances, to whom new contracts are awarded, and problematic suppliers to be included in potential development plans.

BERCO S.p.A. shall identify which Suppliers are to be included in improvement schemes and shall provide for plans for their development.

7.5 Management of nonconforming products

BERCO S.p.A. is not required to carry out acceptance controls other than for locating evident damage on the product due to transport that is identifiable upon receiving. The Supplier shall be fully liable for the supplied products and agrees to carry out all the checks required to make sure that the products are free of flaws or defects (both visible and non visible) in connection with design, manufacturing and transport.

Any nonconforming product shall be managed as specified below.

7.5.1 Nonconformity Report and charging of costs incurred in production

This document and the information contained in it, which must be shared by the Supplier, entitles the Factory of BERCO S.p.A. to recover from the Supplier any costs incurred as a result of parts being used that have proved nonconforming during or after their use in production (e.g. redevelopment, sorting, disassembly, reworking, etc.).

Management of nonconformities at the BERCO S.p.A. factories is disciplined by issuing a Nonconformity Report (NCR) that is emailed to the Supplier. This NCR shall be complete with pictures and any objective evidence that may help the Supplier understand what BERCO S.p.A. is notifying. The NCR shall clearly specify the costs incurred by BERCO S.p.A. to handle the problem. These costs shall include the charges to manage the nonconformity procedure, man-hour costs, machine costs, and any other ancillary charges suffered by BERCO S.p.A..

These costs may also include, but are not be limited to:

- charges for nonconformity management;
- costs of nonconforming products or of machining processes giving rise to the nonconformity;
- costs of moulded products or of semi-finished products undergoing the machining processes giving rise to the nonconformities;
- costs for nonconforming product management, including sorting, testing, reworking, disassembly, assembly, handling, transport, etc.;
- costs of potentially damaged materials in connection with the nonconforming products;
- costs associated with supplementary controls at the receiving factory of BERCO S.p.A., as defined by BERCO S.p.A. following repeated nonconformities and intended to protect both the product and the process of BERCO S.p.A. against additional Supplier's nonconformities;
- costs for potential line stops caused by the impossibility to use the nonconforming products;
- costs for any machining processes performed by BERCO S.p.A. or by other Suppliers before the nonconformity is located;
- potential costs charged by the customers of BERCO S.p.A. for nonconformity management, including, but not limited to, sorting, testing, reworking, disassembly, assembly, handling, and transport;
- warranty costs.

IMPORTANT: *The non conforming material must be collected by the supplier within 15 days of the non-conformity (NC) notification by Berco S.p.A. If the supplier does not collect the material within 30 days, Berco S.p.A. will proceed with the shipment of the NC material, charging the supplier for the related costs incurred.*

The provisions formalised herein apply to raw materials, finished and semi-finished components, moulded parts, and other components delivered by Suppliers to one of the factories of BERCO S.p.A..

7.5.2 Management of corrective actions

As soon as a nonconformity is identified, the receiving factory of BERCO S.p.A. shall issue a Nonconformity Report via its management system.

The Supplier shall find the causes of the nonconformity and shall put in place appropriate actions to remove them and to prevent their re-occurrence.

Where required to do so (by specific email for this purpose or in the same email used to send the nonconformity report), the Supplier shall fill out a corrective action report (8D Report). The Supplier shall use the form provided by BERCO S.p.A. or a form of its own containing at least the required information.

Unless otherwise required, the Supplier shall send the following documentation to the Supplier Quality entity of BERCO S.p.A.:

- evidence that the containment actions to be taken within 2 business days from receiving of the nonconformity report have been put in place;
- 8D Report with a plan of the long-term corrective actions no later than 14 days from the receiving of the nonconformity report. Where these deadlines cannot be met, the Supplier shall agree alternative deadlines with the Supplier Quality entity of BERCO S.p.A.;
- 8D Report documenting the effectiveness of the long-term corrective actions performed on the first lot, after they have been implemented.

8 REFERENCE DOCUMENTS

The Supplier IS responsible for checking that its operations take place in compliance with the provisions laid down in this Manual and in the procedures, instructions or any other document provided by BERCO S.p.A. as reference/specification.

The publications and tools mentioned in this Manual represent the literature available online or they can be ordered from the Automotive Industry Action Group (AIAG) on the following website: <http://www.aiag.org>.

Below is a list of the publications or tools:

- Advanced Product Quality Planning (APQP) and Control Plan (CP);
- Measurement System Analysis (MSA);
- Failure Mode and Effects Analysis (FMEA);
- Production Part Approval Process (PPAP);
- Statistical Process Control (SPC).



Berco S.p.A.

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