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Summary

GENERALITY

This Operating Instruction aims to define methods and tools to ensure the quality of components in the A1 production state that BERCO SpA purchases from external suppliers. These components are intended to facilitate the verification and validation phases of the design and generally do not concern serial production.
The prototype characteristics must conform to the issued documentation, and the suppliers must provide BERCO SpA with documentary evidence of this conformity when expressly requested on the purchase order. BERCO SpA is responsible for verifying the conformity and accuracy of the received documentation.
The minimum control requirements identified in this Instruction do not exempt the supplier from the responsibility of providing products conforming to the drawings/technical specifications in their possession. Therefore, the supplier must implement any additional/supplementary checks deemed necessary to ensure the conformity of the supply to BERCO SpA.

1 SCOPE

The purpose of this Operating Instruction is to define the behavior that suppliers must adopt towards BERCO SpA when supplying components in the A1 production state. Detailed reference will be made to both the documentation attesting to the material's conformity to BERCO requirements, which suppliers will be required to send upon specific request, and the methods by which such documentation must be produced. Similarly, this instruction also addresses BERCO personnel, defining the standard behavior to be followed internally, specifically referring to the various entities involved in the conformity control activity of the supply and accompanying documentation.

2 SCOPE OF APPLICATION

This Operating Instruction applies to all experimental/prototype components identified by the A1 production state and to the activities of the entities connected to them, both external, such as suppliers, and internal, such as BERCO Offices/Departments tasked with overseeing the process of this type of component.

3 DEFINITIONS

Prototype Component: It is identified by both the design state and the production state "A1." It is a complete design intent element that is functionally compliant with certain project specifications and is generally created using provisional equipment or equipment not part of the production process (if produced using production equipment, it will follow procedure PS_001). The prototype component is used in the development phase of a project/production process for conducting durability, reliability tests, and more generally, for validation purposes. Exceptionally, it may also be used in a production environment, provided traceability is ensured.

It is noted that this A1 state does not generate a control lot like regular products in acceptance (such control is activated when transitioning to state "B").

4 RESPONSABILITIES

HPM (PMO): The Project Manager initiates the purchase request (RdA for Prototypes hereinafter) based on project requirements; it is then electronically forwarded (via SAP) to the Purchasing Department (PSM hereinafter) with explicit reference to any required XPAP level. They are responsible for directly receiving from the supplier any requests for waivers regarding deviations from specifications or component non-conformities, whether they are genuinely requested by the supplier for their process needs or due to BERCO's requirements. These requests are then forwarded to the Product Engineer Manager (PPC) for review and approval and to IID (Incoming Inspection) for incoming inspection.

PSM: The Purchasing Department is responsible for activating the XPAP procedure in SAP and indicating on purchase orders whether XPAP compliance is required (if affirmative, the level must also be specified on the order). PSM forwards to the supplier, along with the purchase order, all technical documentation related to the supplied components, notifying them of any subsequent changes.

SUPPLIER: The supplier is tasked with verifying the received documentation, manufacturing the supply according to specifications, performing necessary checks, and documenting them as required. Any modification related to the supplied components, even if communicated to the supplier in advance by the design entity, must

be formally requested by the supplier to BERCO Spa. Such requests will be granted through a waiver/concession document to be submitted to the Purchasing Department for non-conformities and to the Technical Department for changes required or necessitated by the supplier's process. It is the supplier's responsibility to send, along with properly identified experimental/prototype components, all technical documentation in their possession, including any documentation received after the order and indicating changes to be made concerning both component manufacturing and the required checks.

RIC: The material is dispatched to IID by the Goods Receipt Office (RIC hereinafter), which performs initial checks on packaging conformity and consistency between the supplier's transport documents, BERCO's expected delivery documents, and the actual supply.

IID: The Incoming Inspection is tasked with:

Verifying the completeness and formal correctness of the received documentation.
Arranging and conducting checks on components sent by suppliers based on the documentation received from them and previously provided to the design entity as needed.
Managing the XPAP electronically by granting or denying approval and archiving paper XPAP records.

5 MANUFACTURING, INSPECTION, AND DOCUMENTATION

Components must be:

- **Manufactured** by the supplier in accordance with the documentation provided by the design entity (drawings, diagrams, sketches, electronic media, specific written instructions).
- **Inspected by the supplier** according to the required XPAP level (or specific requests), which specifies both the extent of the inspections to be carried out and the number of pieces to be subjected to examination. If specific or particular inspections are to be carried out by a subcontractor, the responsibility for the accuracy, validity of results, and any costs remains with the main supplier.
- **Sent to BERCO SpA** accompanied by the technical documentation required by the requested XPAP level, aimed at highlighting the supplier's inspection process. If the supplier is unable to produce all the

requested documentation, or if it does not conform to the project documentation, the components can only be sent upon the issuance of a waiver by the competent technical entity.

- **Appropriately identified** if they have undergone inspection or are part of the sample checked by the supplier.
- **Inspected at BERCO** by IID staff as needed (e.g., incomplete documentation) and in reference to the same technical documentation held by the supplier (including any updates), which T&I must necessarily copy to both PSM and IID (to enable component inspection). Documentation inspection is required at 100%.

6 XPAP LEVELS

There are four different application levels of the XPAP procedure, increasing in severity starting from level 1 (reduced), passing through level 2 (standard), to level 3 (strengthened), and level 4 (specific requirements). Each of them defines the size of the sample that the supplier must subject to inspection, the number of components inspected for which the supplier must provide documentation attesting to the performed inspections, and especially which inspection activities must be carried out.

Any specific requests not covered by the first three levels must be explicitly stated by the Project Manager requesting level 4 and reported on the purchase order or, in any case, forwarded to the supplier by the Purchasing Office; these requests will concern the type and extent of inspections and also the number of reports to be produced.

6.1 Determination of XPAP Level

BERCO SpA defines the level to refer to based on:

- the criticality of the component subject to supply
- the knowledge of the supplier who produces it
- the specific design phase to which the component refers.

The project manager is responsible for identifying the XPAP level to be requested from the supplier, generally autonomously. However, it is at the discretion of the Project Manager to seek the collaboration of other company departments (such as Purchasing, Quality, etc.) and the expertise of technicians knowledgeable about the component if deemed necessary. The level commonly used is Level 2.

6.2 Executive Activities of XPAP

Table 1 highlights the frequency of inspections to be carried out by the supplier, i.e., the size of the sample that the supplier must subject to inspection based on the number of components constituting the supply. In the specific case of raw casting components, regardless of the XPAP level, the inspections required will be carried out for one component per model (or one component for each figure in the case of a model consisting of multiple figures) unless specific requests are made.

Table 2 highlights the documentation that the supplier must produce for the three different levels of XPAP, referring to both the type and number of documents in relation to the number of samples inspected. The next chapter will examine in detail the individual documents mentioned here.

Table 1

	Size of Sample to be Checked (*)			
Size of Produced Lot	**Level 1 (Reduced)**	**Level 2 (Standard)**	**Level 3 (Reinforced)**	**Level 4 (Specific Requirements)**
From 1 to 10 components	50% of the components	50% of the components	50% of the components	Quantity requested
From 11 to 50 components	5 components	5 components	5 components	Quantity requested
From 51 to 250 components	10 components	15 components	20 components	Quantity requested
Over 250 components	15 components (1)	25 components (1)	40 components (1)	Quantity requested

(*) for raw cast components, limit the checks required to only one component per model (or figure) unless otherwise indicated

Extent of Checks to be Performed:	**Level 1 Reduced**	**Level 2 Standard**	**Level 3 Strengthened**	**Level 4 (req. Spec.)**
All dimensional characteristics per drawing and those deemed important by the supplier			√	Those requests
All dimensional characteristics per drawing, critical, important, and those identified by the supplier	√	√		Those requests
All tests, trials, and chemical/physical material analyses per drawing/specification	√(2)	√(2)	√(2)	Those requests
Documentation to be Sent to BERCO:	**LEV 1**	**LEV 2**	**LEV 3**	**LEV 4**
All drawings and specifications received from BERCO	√	√	√	√
Any technical modification authorizations through "Request for Waiver/Concession"	√	√	√	√
Supplier's certificate of conformity	√	√	√	√
Reports of checks and tests conducted, for: 5 COMPONENTS			√(2)	On request
Reports of checks and tests conducted, for: 2 COMPONENTS		√(2)		On request
Reports of checks and tests conducted, for: 1 single piece	√(2)			On request
Process capability studies report related to critical and important characteristics on a significant sample.	√(1)			On request

(1) The batch size to be inspected should be increased to at least 50 components solely for process capability studies to be carried out exclusively for critical and report characteristics.

(2) For chemical and/or physical analyses of the materials used, if they refer to the same casting/melting, it is sufficient to inspect only one piece and therefore produce a single report. The same applies to costly analyses such as welding certifications, etc., provided that this does not conflict with other specifications held by BERCO SPA.

The documentation required from the supplier, in case it needs to comply with the XPAP procedure, is detailed below and must always refer to the BERCO component code, indicating the modification level, date, supplier name, and the signature of responsible personnel for approval:

- For each supplied code, a Supplier Certificate of Conformity must be provided for the experimental components, completed in full and containing general data of the supplier, supplied components, controls, and test, trial, and analysis activities carried out, with possible reference to the sampling plan.
- Dimensional control certification, highlighting the use of adequate measuring equipment; if specified, the supplier will be required to provide calibration certificates issued by nationally recognized bodies;
- Results of functional, performance, and durability tests as well as activities related to the physical and chemical properties analysis of the materials used for manufacturing; for the latter, if the materials used for the supply derive from the same casting/melting, it is sufficient to produce a single report.
- Drawings and/or all reference documentation sent by BERCO at the time of purchase order; in case BERCO and the supplier have agreed on technical modifications after the documentation was sent, formalized on derogation/concession documents, the supplier must also attach such additional documentation.

The inspection must be carried out, based on the previous table, for each characteristic mentioned on the drawing, including specifications, notes, and any other reference even related to periods subsequent to the purchase order, for which evidence must be retained. Each characteristic must be referred to the drawing or documentation used, and the recorded values must be registered on the quality recording document. The component used for the inspection must be suitably identified (e.g., paint mark) to allow traceability to the inspection report. The quality recording documentation must be attached to the transportation documents to be easily identifiable.

7 INITIAL PRODUCIBILITY / MANUFACTURABILITY OF PROTOTYPES

If the supplier is aware that they cannot meet the specified requirements, not due to their own responsibility but due to manufacturing process needs, they are obliged to inform BERCO of this situation, possibly agreeing to a meeting with the design entity to establish which deviations can be accepted by BERCO. At the end of this feasibility assessment, the decisions reached must be formalized through two possible procedures:

a) by modifying the reference technical documentation (drawings/specifications) by the T&I design entity.

b) by acceptance from the technical entity via a deviation/concession document for these deviations from the technical documentation already held by the supplier. This deviation/concession must be agreed upon by both parties and explicitly reference "for prototype manufacturing needs", and must be requested by the supplier through the Purchasing Office.

8 SERIES COMPONENTS MODIFICATION MANAGEMENT

Whenever BERCO requests an experimental/prototype component to be realized by modifying a definitive one in any of its characteristics (dimensional, material, functional, and performance), the supplier is required to certify exclusively the modified characteristics unless otherwise instructed by BERCO.

9 NON-CONFORMITIES

If the supplier's inspection detects discrepancies or non-conformities with the specified requirements, the supplier must submit a deviation request following the process described in the DEROGATIONS/CONCESSIONS procedure, or send it to BERCO Quality (QAM) at the address deroghe_concessioni.berco@thyssenkrupp The supplier must await acceptance before sending the material.
The technical entity will authorize the material shipment or, alternatively, communicate instructions for any necessary restoration or rejection to BERCO Quality (QAM) via the deviation form; QAM will communicate BERCO's decision by forwarding a copy of the deviation/concession form to the respective supplier.

If the documentation inspection accompanying the supplier's delivery is found to be incomplete according to the specifications of this Instruction, the procedure to follow mirrors that related to product non-conformities.