



Guideline

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 1

**Products subject to
quality inspection**

**Electrical
systems**

Version from the 2nd June 2025

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 2

Contents

Part 1: General rules

1	Purpose, general information	3
2	Products subject to inspection	4
3	Quality capability of Contractor	5
4	Inspection levels	6
5	Processes for product creation, measuring equipment, special processes/production methods	7
6	Manufacturer-related product qualification (HPQ)	8
7	Quality engineering (QE) methods	9
8	Special production methods	11
9	Regular inspections	12
10	8D report	13
11	Documentation and proofs of conformity	14
12	Special cases (see Part 2)	15
13	List of abbreviations	16

Part 2: Defining the minimum scope of the quality assurance measures for products (elements, components, and systems)

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 3

Part 1: General rules

1 Purpose, general information

- | | |
|--|--------------------------|
| <p>(1) The list of products subject to quality inspection (LgP) is part of Deutsche Bahn AG's (DB AG) Policy 120.0381 "Quality assurance in procurement". It includes all infrastructure products to be procured in the subsystem concerned that are subject to mandatory quality assurance by DB AG and specifies the quality assurance measures and their scope.</p> | Basis |
| <p>(2) The rules in place apply to the procurement of these products both by DB AG and its affiliated companies, and by Contractor or its subcontractors for the purposes of orders placed by DB AG and its affiliated companies.</p> | |
| <p>(3) The list of products subject to quality inspection (LgP) consists of</p> <ul style="list-style-type: none"> - Part 1: General rules - Part 2: Defining the minimum scope of the quality assurance measures for products (elements, components and systems) | Constituent parts |
| <p>(4) This LgP applies to the procurement of products for the construction of new equipment used in control-command and signalling as well as for maintenance measures performed on existing equipment used in this field, i.e. it also applies to contractors engaged in overhaul work.</p> | Scope |
| <p>(5) The contractually agreed provisions (e.g. supplementary contractual terms, DIN, EN, UIC, DBS, drawings, checklists, specifications) constitute the basis for action.</p> | Basis for action |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 4

2 Products subject to inspection

- | | |
|---|---|
| <p>(1) The LgP is drawn up jointly by a team of subject matter experts and representatives of the relevant product line support team from the end user and the quality assurance department at DB AG.</p> | Creation |
| <p>(2) The products subject to inspection are evaluated according to the following criteria and the resulting risks, with the results being documented internally in an evaluation matrix.</p> <ol style="list-style-type: none"> 1. Safety 2. Reliability 3. Supply reliability 4. Special processes/production methods 5. Expenses for unscheduled maintenance work 6. Customer relevance | Evaluation criteria |
| <p>(3) According to this risk assessment, the products subject to inspection are assigned to inspection levels (IL) I or II. The quality assurance measures to be carried out by Contractor result from the inspection level. Products assigned to</p> <ol style="list-style-type: none"> 1. IL I: are always subject to product-specific inspection 2. IL II: products do not require continuous product-specific inspection. | Meaning of the inspection levels |
| <p>(4) Corresponding appropriate quality assurance measures shall be allocated to new products that are not listed in Part 2 but are comparable with the products listed.</p> | New products |
| <p>(5) COTS (<i>commercial off-the-shelf</i> or <i>components-off-the-shelf</i>) products that are not manufactured in large quantities specifically for DB or the railway market (non-railway-specific requirements) and which can be used unchanged are generally not subject to inspection and are therefore generally not subject to quality assurance measures.</p> | COTS products |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 5

3 Quality capability of Contractor

- | | |
|---|---|
| (1) DB AG's quality assurance department assesses Contractor's quality capability and categorises the contractor as Q1, Q2 or Q3 (quality capability classification). | Quality capability of Contractor |
| (2) Quality capability is assessed by (system, process and product) audits on Contractor's premises, both at central production sites and at production sites relevant to the products concerned. The questionnaires used in the audits are available on the Supplier Portal of Deutsche Bahn AG. | Audits, audit locations |
| (3) This quality capability classification is usually valid for one year and can be updated on a regular basis if necessary. The rating is updated based on an evaluation of the quality data (e.g. complaints, product proving, quality data) and/or with reference to the result of unscheduled audits (see "Regular inspections"). | Updating |
| (4) The quality capability classification can be changed at any time in the event of changes in the quality capability of Contractor or its subcontractors, in the quality of the products or in company ownership. | Change |
| (5) If a contractor does not achieve the Q1 category in the quality capability classification or if a contractor has been downgraded to Q2, measures will be taken to stabilise or develop Contractor in consultation with the end user and the procurement department. | Failure to achieve Q1, downgrading |
| (6) Contractors of DB AG with no Q-rating shall be treated as Q3 contractors. | Contractors with no Q-rating |
| (7) DB AG's quality assurance department performs a quality capability classification on all contractors who introduce products subject to inspection into the infrastructure, i.e. this also includes contractors who do not manufacture or overhaul products subject to inspection themselves but merely procure them from subcontractors, e.g. dealers/distributors. | Overhaul contractors, dealers/distributors |
| (8) Separate quality assurance measures may be required for special processes/production methods in accordance with ISO TS 22163:2018-01 Section 8.5.1.2, e.g. manufacturer-related product qualification. | Special processes |
| (9) In individual cases or under certain conditions remote audits can be performed instead visiting Contractor's premises. | Remote audits |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 6

4 Inspection levels

- (1) Allocation of the products to IL I/IL II and Contractor's quality capability classification - Q1, Q2 or Q3 - determine the type and scope of the quality assurance measures to be carried out by DB AG's quality assurance department and by the Contractor.
- (2) The basic scope of the quality assurance measures is shown in the following tables.

Scope

Table 1: Quality assurance measures for products allocated to inspection level I

Products with inspection level	Contractor's Q-rating	Quality assurance measures
I	Q1	DB AG carries out sample testing of the deliveries for product inspection purposes. Delivery with inspection certificate 3.1 and DB AG delivery approval/inspection certificate.
	Q2	DB AG checks every delivery. Delivery with inspection certificate 3.1 and DB AG delivery approval/inspection certificate.
	Q3	Contractor is barred

Table 2: Quality assurance measures for products allocated to inspection level II

Products with inspection level	Contractor's Q-rating	Quality assurance measures
II	Q1	DB AG accepts full inspection by Contractor. Regular inspections of Contractor by DB AG. Delivery with certificate of conformity according to DIN EN ISO/IEC 17050-1*
	Q2	DB AG carries out sample testing of the deliveries for product inspection purposes. Delivery with inspection certificate 3.1 and DB AG delivery approval/inspection certificate.
	Q3	Contractor is barred

(*As a rule, these remain with the manufacturer and must be made available on request. Legal retention periods must be observed.)

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 7

5 Processes for product creation, measuring equipment, special processes/production methods

- | | |
|---|---------------------------------------|
| <p>(1) The complete product creation process - from enquiry to production and inspection to product shipment - is considered during the quality capability classification audits or regular review of Contractor's quality capability (see Regular inspection).</p> | Processes, product development |
| <p>(2) If special processes/manufacturing methods are used in production at Contractor's or subcontractor's company, special quality assurance measures such as a manufacturer-related product qualification (HPQ) are required. These are regulated in the relevant norms and DB standards.</p> | Special processes |
| <p>(3) Special processes/production methods are generally considered to be those manufacturing methods in which the conformity of the manufactured product cannot be easily (e.g. only destructively) verified or cannot be verified cost-effectively. With regard to quality assurance for DB AG, this includes processes and methods such as:</p> <ul style="list-style-type: none"> • Casting • Forging • Welding • Rolling • Heat treatment • Concrete production • Soldering • Crimping • Wire wrap connections | |
| <p>(4) Monitoring inspection criteria is a key task of quality assurance. Suitable measuring and inspection equipment is required to ensure the reproducibility of measurement and inspection results. Calibration is carried out by appropriate methods and institutions.</p> | Measuring equipment |
| <p>(5) The general requirements placed on the competency of inspection and calibration laboratories in accordance with DIN ISO 17025 are critical in quality assurance for all railway-specific and standard measuring and testing equipment.</p> | Testing laboratories |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 8

6 Manufacturer-related product qualification (HPQ)

- | | |
|--|------------------|
| (1) The manufacturer-related product qualification is a quality assurance tool used by DB AG and normally based on requirements from German and international railway-specific standards, regulations, and guidelines. | Basis |
| (2) The aim of the HPQ is to ensure that products manufactured using special processes/production methods are only supplied by manufacturers who have proven that they can fulfil requirements in terms of safety, reliability and process capability. The HPQ is usually required from manufacturers for special processes/production methods that supply directly or indirectly to DB AG. The products concerned are identified in Part 2 of this document. | Objective |
| (3) The HPQ is subject to a fee and must be applied for by the manufacturer of the products concerned in accordance with Part 2 of this document. | |
| (4) The HPQ is normally valid for three years. An HPQ must be re-acquired: <ul style="list-style-type: none"> - If production is relocated - If production methods or process cycles are changed - In the case of subcontractors with no direct supply relationships with DB AG after expiry of the 3-year validity period - After 6 years at the latest (a one-off extension can be granted after 3 years if the assumptions based on which the HPQ was issued have not changed). | Validity |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 9

7 Quality engineering (QE) methods

- | | |
|--|-----------------------------------|
| <p>(1) To support Contractor's quality planning during the entire product development process, DB AG's requirements re quality engineering methods are described below. QE methods should accompany quality assurance measures involving scrutiny, such as HPQ and regular inspections, and must supplement these through its preventive approach.</p> | Basis |
| <p>(2) The objective of the QE measures is to ensure the translation of requirements into product features and to appropriately manage the delivery quality of products subject to quality inspection through preventive quality assurance and the evaluation of design and manufacturing processes.</p> | Objective |
| <p>(3) Contractors with responsibility for development are obliged to document planned measures for the safeguarding of product and process quality during development in a QE plan. Suitable processes and components should be selected using a risk-based approach.</p> | Quality planning (QE plan) |
| <p>(4) Contractor's product and process development must result in design and process FMEAs according to DIN EN 60812 in which the progress of risk minimisation must be documented. The requirements of the current AIAG & VDA FMEA manual must be applied as a minimum. The equivalence of FMEAs based on standards other than those specified must be substantiated by Contractor. In addition to the above-mentioned standards, the following scale should be used to assess the importance of an error:</p> | FMEA |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 10

Table 3: Severity of errors

1	Very minor , very minor functional impairment, only detectable by skilled personnel
2-3	Minor , minor functional impairment of the components, elimination during the next maintenance session, functional limitation of operating and comfort systems
4-6	Moderate , functionality of components limited, immediate error-elimination not absolutely necessary, functional limitation of important operating and comfort systems, alternatives possible
7-8	Severe , severe functional limitation of components, immediate elimination mandatory, functional limitation of important subsystems, trains forced to run slowly or unable to run
9 - 10	Very severe , safety risk, statutory requirements not met, disproportionately high cost of replacement in the event of breakdown, damage, or maintenance work

- | | | |
|------|--|---|
| (5) | Consideration must be given in the design FMEA to maintainability and availability in operation, in accordance with DIN EN 50126. | Maintainability & availability |
| (6) | Contractor is obliged to implement an FMEA process prior to the commencement of series production and to document this as one of the conditions of internal production release. | Internal production release |
| (7) | The documentation of the QE measures must be kept constantly up to date, with account taken of field data, test results and internal and external complaints. In addition, design and process FMEAs must be revised in the following cases: <ul style="list-style-type: none"> - Design changes - Relocation of production - Change in production methods or process cycles | Updating |
| (8) | The effectiveness of the QE methods and the resulting QE measures must be reviewed on an annual basis by Contractor's internal audit. | Effectiveness checks |
| (9) | The QE plan and design and process FMEAs must be submitted to Deutsche Bahn AG for inspection, upon request. | Inspection |
| (10) | The QE plan and the design and process FMEAs shall be checked by Deutsche Bahn AG. An initial check of the process FMEA shall take place prior to series production at the latest, for example regarding the HPQ or initial sample inspection. | Initial inspection |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 11

(11) The Contractor is obliged to assess its subcontractors using risk-based criteria. Points (1) - (10) apply analogously to subcontractors making a substantial contribution to the success of the final product. The application of points (1) to (10) by the responsible subcontractors must be checked by Contractor. **Subcontractors**

(12) Any of points 7 (1) to 7 (3) or a new call for tender will result in the immediate application of the requirements of this guideline. A design FMEA is only required for newly developed products that are approved by DB Netz AG after 31 December 2018. **Transition period**

8 Special production methods

(1) Special production methods are regulated in the respective standards and DB Standards. **DB standards**

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 12

9 Regular inspections

- | | |
|--|---|
| <p>(1) To secure the quality interests of Deutsche Bahn AG, all contractors with IL II products and a Q1 status as well as an existing supply agreement shall be monitored by DB AG's quality assurance unit. Product and/or process audits shall be carried out as part of these regular inspections. Audits can also take place in the form of unannounced inspections.</p> | <p>Regular inspections at Contractors' premises</p> |
| <p>(2) If quality risks or quality shortcomings are identified during regular inspections, this can result in a change in the Q-rating and/or retraction of the HPQ.</p> <p>Purchasing will review the direct impact on existing delivery and performance contracts once the results are available and initiate appropriate action.</p> | <p>Shortcomings & validity</p> |
| <p>(3) For subcontractors who supply DB AG's contractors with products subject to quality inspection as per this list, the respective contractor must carry out the defined number of regular inspections or arrange for these to be carried out (see "FAQs on regular inspections by DB contractors" in Purchasing's Supplier Portal). Deutsche Bahn AG must be provided with evidence of the planning and results of the regular inspections (including findings and measures) as part of the assessment of quality capability or regular inspections of Contractor.</p> | <p>Regular inspections at subcontractors' premises</p> |
| <p>(4) If risks and/or shortcomings are identified regarding subcontractors, the impact on the Q-rating of one or more contractor(s) and further measures to be taken re the subcontractor(s) shall be determined by Purchasing in coordination with Contractor's quality assurance team.</p> <p>Contractor shall bear any additional expenses incurred by Deutsche Bahn AG as a result of this.</p> | <p>Shortcomings</p> |

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 13

10 8D report

- (1) Within the framework of complaints, an 8D report will be exchanged between Contractor and DB AG. The process covers the following elements:

Basics

- D1: Team definition
- D2: Error description
- D3a: Immediate measures by DB AG
- D3b: Immediate measures by supplier
- D4: Error causes
- D5: Possible remedial measures
- D6: Remedial measures implemented
- D7: Preventive measures
- D8: Documentation, lessons learned

- (2) (D1) Depending on the character of the problem, an interdisciplinary team must be appointed with sufficient product and process knowledge.

Implementation

(D2) The description of the error should be based on facts.

(D3) In order to directly avert additional damage, immediate action (e.g. blocking the material or 100% testing) should be taken if necessary both by Contractor (and/or its subcontractor) and by DB AG.

(D4) The probable causes of the error should be analysed by Contractor (subcontractor) based on data and facts.

(D5) Contractor is responsible for selecting remedial measures to remove the cause of the error. Based on the root cause analysis, measures should be identified, which permanently fix the error in the interests of DB AG and do not give rise to any undesired side effects. Before any measure is implemented, its effectiveness must be checked, with a particular focus on error avoidance and error detection.

(D6) According to their verified effectiveness under D5, remedial measures should be determined which will reliably prevent the error from re-occurring. The effectiveness of the measures implemented should be monitored over a reasonable period. Once their effectiveness has been substantiated, immediate measures (e.g. additional inspections) that are still ongoing can be retracted.

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 14

(D7) To preclude the reoccurrence of the error that occurred/similar errors, preventive measures must be taken by Contractor (and/or its subcontractor(s)), such as recording the error in the design and/or process FMEA, adapting guidelines, work instructions, and internal processes, and checking additional production lines or related processes for robustness.

(D8) The most important findings from the 8D are documented as lessons learned. An 8D report can only be concluded by appropriately authorised personnel and with the agreement of Client (DB AG).

- | | | |
|-----|---|--------------------------|
| (3) | In order to provide the departments affected with the opportunity to coordinate with each other, the introduction of the 8D report within the framework of complaints provides for a transition period of one year beginning on 1 January 2016. | Transition period |
| (4) | The "Supplier guidelines for completing the 8D report" in the Supplier Portal can be used to create an 8D report. | Form |

11 Documentation and proofs of conformity

- | | | |
|-----|--|-------------------------------|
| (1) | With regard to products and components according to the list "Products subject to inspection: electrical systems" Part 2, the supplier must always provide documentation/certificate of conformity relating to the inspection level of the product (IL I or IL II) and its classification (Q1 or Q2) for each delivery or partial delivery. The supplier must retain the proofs of conformity for at least 10 years. | Inspection certificate |
|-----|--|-------------------------------|

Proof for inspection level I products:

- as a Q1 supplier: inspection certificate 3.1 in accordance with DIN EN 10204 and DB AG delivery release/inspection certificate
- as a Q2 supplier: inspection certificate 3.1 in accordance with DIN EN 10204 and DB AG delivery release/inspection certificate

Proof for inspection level II products:

- as a Q1 supplier: certificate of conformity in accordance with DIN EN 17050
- as a Q2 supplier: inspection certificate 3.1 in accordance with DIN EN 10204 and DB AG delivery release/inspection certificate

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 15

12 Special cases (see Part 2)

(1) The following additional rules apply to contractors who wish to supply products subject to inspection in accordance with Section 5 (Lighting equipment) from Part 2. Contractors may only supply lamps and lighting systems to DB that are included in the lamps and lighting systems selection list (LAWL). The lamps and lighting systems on this list are all subject to inspection. This means that every contractor that delivers products from the LAWL to DB must have a valid quality capability classification. The LAWL is the overview of all lamps and lighting systems approved by the relevant DB technical committee.

(2) In deviation from the standard process in Section 3 above, auditing is carried out exclusively on parties placing on the market products from the lighting systems section of this list of products subject to inspection. Only companies that are under the obligation to compensate DB AG for any damage it may cause, as specified in the German Product Liability Act (*Produkthaftungsgesetz*), i.e. parties placing products on the market in the European Economic Area, are audited. Dealers, installers, planning offices and similar players are excluded from this. Not excluded are production facilities of affiliated companies. The quality capability classification is commissioned directly by the team responsible for the product line following technical approval.

(3) With regard to the products 5.1.3, 5.1.4 and 5.1.6, the following records must be presented for inspection on request:

- DB technical approval
- VDE/ENEC certificates incl. inspection report
- Welding certificates, if required

With regard to the products 5.1.1 and 5.1.2, the following records must be presented for inspection on request:

- DB technical approval
- Structural inspection report from a test engineer approved by the German Federal Railway Authority (EBA)
- Welding certificates

Link to the LAWL:

<https://mediendienste.extranet.deutschebahn.com/Leuchtauswahllisten/>

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 16

13 List of abbreviations

AIAG	Automotive Industry Action Group
DB AG	Deutsche Bahn AG
DBS	Deutsche Bahn standard
DIN	German Institute for Standardisation
EBA	German Federal Railway Authority
EN	European norm
FMEA	Failure mode and effects analysis
HPQ	Manufacturer-related product qualification
LgP	List of products subject to quality inspection
IL I	Inspection level 1
IL II	Inspection level 2
QE	Quality engineering
RI	Regular inspections
TSI	Technical specifications for interoperability
UIC	(French) Union International des Chemins de Fer (International Union of Railways)
VDA	German Association of the Automotive Industry

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 17

Part 2: Defining the minimum scope of the quality assurance measures for products (elements, components and systems)

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
1	Overhead line equipment									
1.1	Overhead line supports									
1.1.1	Concrete overhead line support	TL 889.0163 (DBS 918 163)	Yes	II	1	-	-	Yes	10511010	-
1.1.2	Steel overhead line support	TL 889.0166 (DBS 918 166)	No	II	1	-	-	Yes	10511010	In accordance with Ebs 14/05/04
1.1.3	Mast base adapter	-	No	II	1	-	-	-	10511010	-
1.2	Cantilever for overhead lines									
1.2.1	Pipe fittings for cantilevers	-	No	II	1	-	-	-	10511010	-
1.2.2	Fastenings on the mast	-	No	II	1	-	-	-	10511010	-
1.2.3	Steady arms for overhead lines	-	No	II	1	-	-	-	10511010	-
1.3	Cables and wires for overhead lines									
1.3.1	Catenary wire (copper or bronze)	-	No	II	1	-	-	-	10511010	-

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 18

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
1.3.2	Contact wire (except CuMg)	-	No	II	1	-	-	-	10511010	-
1.3.3	Stitch wire	-	No	II	1	-	-	-	10511010	-
1.3.4	Dropper	-	No	II	1	-	-	-	10511010	-
1.3.5	Power connector/switch line	-	No	II	1	-	-	-	10511010	-
1.3.6	Clamps and butt splices	-	No	II	1	-	-	-	10511010	-
1.3.7	Contact wire (CuMg)	-	No	II	1	-	-	-	10511010	-
1.4.	Insulator									
1.4.1	Insulator 15kV	TL 889.0022 (DBS 918 022)	No	II	1	-	-	Yes	10511010	Manufacturer's logo on the 1st shed
1.5	Welded constructions for overhead lines									
1.5.1	Boom	Inclusion in TL 889.0166 (DBS 918 166) planned	No	II	1	-	-	-	10511010	-
1.5.2	Portal cross-beam	Inclusion in TL 889.0166 (DBS 918 166) planned	No	II	1	-	-	-	10511010	-

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 19

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
1.5.3	Drop tube	Inclusion in TL 889.0166 (DBS 918 166) planned	No	II	1	-	-	-	10511010	-
1.5.4	Multi-track cantilever	Inclusion in TL 889.0166 (DBS 918 166) planned	No	II	1	-	-	-	10511010	-
1.6	Earthing and return circuit									
1.6.1	Rail connection system	-	No	II	1	-	-	-	10511010	-
1.7	Foundations for overhead line support									
1.7.1	Pile foundation (welded)	-	No	II	1	-	-	-	10511010	-
1.7.2	Prefabricated mast foundations	TL 889.0163 (DBS 918 163)	Yes	II	2	-	-	-	10511010	-
1.8	Section insulators									
1.8.1	Section insulators	-	No	II	1	-	-	-	10511010	-
1.9	Mast disconnectors									
1.9.1	Switch for mast disconnector	-	No	II	1	-	-	Yes	10511010	Nameplate
1.9.2	Drive for mast disconnector	-	No	II	1	-	-	Yes	10511010	Nameplate
2	Points heating system									

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 20

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
2.1	Electric point heating systems									
2.1.1	Precast concrete station	-	No	II	1	-	-	-	10575100	-
2.1.2	Transformer	-	No	II	1	-	-	-	10575100	-
2.1.3	Distribution	-	No	II	1	-	-	-	10575100	-
2.2	Point heating rods									
2.2.1	Point heating rods	TL 889.0156 (DBS 918 156)	No	II	1	-	-	-	10575100	-
3	Rail power supply systems 16.7 Hz (DB Energie GmbH)									
3.1	Transformers 110 kV / 15 kV for traction substations	GL 955; specifications for power transformers	No	I	0	Transformer book	-	-	10530100	These products are entire systems, not individual components.
3.2	110 kV/15 kV transducer for traction substations	GL 955; specifications for transducers	No	II	1	-	-	-	10530100	

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 21

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
3.3	Hybrid modules and circuit breakers 110 kV	GL 955; Specification for hybrid modules	No	II	1	-	-	-	10530100	These products are entire systems, not individual components.
3.4	Disconnectors and earthing switch 110 kV	GL 955; specifications for disconnectors	No	II	1	-	-	-	10530100	
3.5	Switchgear 15 kV	GL 955; specifications for 15 kV system	No	II	1	-	-	-	10530100	
3.6	Circuit breaker 15 kV	GL 955; specifications for 15 kV system	No	II	1	-	-	-	10530100	
3.7	Station control systems, field control and protective equipment 16.7 Hz	GL 955.0103; specifications for station control systems	No	II	1	-	-	-	10550300	
3.8	Electric train preheating units	GL 954.9102	No	II	1	-	-	-	10577010	
4	Rail power supply systems, S-Bahn (DB Energie)									

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 22

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
4.1	50 Hz switchgear 30 kV for S-Bahn power supply	Conceptual design for converter substation, specifications for medium-voltage system	No	II	1	-	-	-	10530700	These products are entire systems, not individual components.
4.2	Switchgear 750 V and 1200 V for converter substation and converter station	Conceptual design for converter substation, specifications for DC system	No	II	1	-	-	-	10530700	
4.3	Circuit breaker 750 V and 1200 V for converter substation and converter station	Conceptual design for converter substation, specifications for DC circuit breaker	No	II	1	-	-	-	10530700	
4.4	Earthing short-circuiting device, S-Bahn, for traction substations	Conceptual design for converter substation	No	II	1	-	-	-	10530700	
4.5	DC station control systems, field control and protective devices	GL 955.0103; specifications for station control systems	No	II	1	-	-	-	10550500	

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 23

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
5	Lighting equipment (e.g. track area lighting, depot lighting, lighting for passenger stations, tunnel safety lighting)									
5.1	Lighting systems									
5.1.1	Steel lighting mast	EI1 drawings	No	II	1	-	-	-	21260400	Now there are only fully galvanised steel masts;
5.1.2	GRP lighting mast	EI1 drawings	No	II	1	-	-	-	21260400	Now there are only fully galvanised steel masts; with the exception that GRP masts are permitted in the Berlin and Hamburg S-Bahn systems (direct current)

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 24

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
5.1.3	Foundations for lighting masts	GL 954.9103	No	II	1	-	-	-	21260400	DB Netz AG only; mast base adapter prefabricated foundations (monoliths)
5.1.4	Lamps and lighting systems	Guideline 954.9104 Lamps and lighting systems lists (LAWL)	No	II	1	-	-	-	21260300	All lamps and lighting systems from the lamps and lighting systems selection lists DB Netz AG and DB S&S see link to LAWL in Section 12 (2)
5.1.5	LED lamps	-	No	II	1	-	-	-	21260300	LED module

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 25

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
5.1.6	External electronic control gear with own technical approval for LED lamps	GL 954.9103	No	II	1	-	-	-	21260300	DB-specific standardised control gear for DB Netz AG exterior lighting systems
5.2	Electrical power systems for rail tunnels									
5.2.1	Power supply for tunnel safety lighting (uninterruptible power supply for emergency lighting in tunnels)	GL 954.9107 and specifications for tunnel safety lighting	No	II	1	-	-	-	21260300	DB-specific components for tunnel safety lighting
5.2.2	Lighting control/monitoring for tunnel safety lighting (tunnel monitoring unit)	GL 954.9107 and specifications for tunnel safety lighting	No	II	1	-	-	-	21260300	DB-specific components for tunnel safety lighting
5.2.3	Socket combination	GL 954.9107 and specifications for socket combination	No	II	1	-	-	Yes	10571100	Manufacturer's mark according to specifications for Socket combination
6	Power cables									

Organisation and management systems	Quality
Basic quality assurance principles	120.0381 V12
List of products subject to quality inspection: electrical systems	Page 26

Structure level	Product groups/products	Applicable documents	HPQ	Inspection level	Number RI/year*	Documentation		Manufacturer's mark	Commodity group number	Remarks
						for Q1	for Q2			
6.1	Power distribution cables for digital signalling in track area	DLST.038	No	II	1	-	-	Yes	10570040	Manufacturer's mark pursuant to DLST.038 standard