



Guideline

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**This English version is a translation for information purpose.
Only the German version of this document published by the
Deutsche Bahn is binding.**

(http://www.deutschebahn.com/en/business/supplier_portal/information_service/documents.html)

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PART A

1. Purpose

This document describes the minimum quality-assurance measures to be applied and substantiated to the client (AG) throughout the supply chain during the procurement of rail vehicles and their components. The contract or order may contain supplementary requirements.

Description

The validity of other instructions to be observed remains unaffected by these regulations.

Restriction

2. Principles of quality assurance

The contractor (AN) must apply, maintain and substantiate his own suitable quality assurance measures throughout the entire supply chain.

Responsibility

DB AG conducts its own quality assurance measures, which include inter alia monitoring the contractor's quality assurance measures.

The scope of quality assurance measures by DB AG depends upon four factors:

Variables

- The product testing level (PK)
- The contractor's quality capability (Q status)
- Manufacturing and production methods, and
- The stability of the contractor's relevant processes

Allocation to a testing level depends upon the complexity of the product and its suitability for testing. There are three testing levels, defined as follows:

Testing levels

Testing level (PK)	Content
PK 1	Quality-dependent supplier monitoring (QLÜ) First article inspection, Inspection Certificate 3.1 (compliant with EN 10204)
PK 2	First article inspections, Inspection Certificate 3.1 (compliant with EN 10204)
PK 3	Inspection Certificate 3.1 (compliant with EN 10204)

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Further quality assurance measures may be required, independently of the testing level (also for products without a testing level).

DB AG contractors who are to supply products with a testing level are assessed for their quality capability.

Contractor's quality capability (Q status)

The quality capability is assessed by DB AG Quality Assurance on behalf of Purchasing, ending with the award of status Q1, Q2 or Q3.

- Q1: Fulfills the requirements of Deutsche Bahn AG
- Q2: Fulfills the requirements of Deutsche Bahn AG; improvements necessary in some areas
- Q3: Fails to fulfill the requirements of Deutsche Bahn AG; quality capability insufficient

The Q assessment applies to the entire project period for the purposes of procurement of rail vehicles.

Validity of the Q assessment

The Q assessment is usually valid for one year for the purposes of procurement of rail vehicles.

The following criteria are used to assess quality capability:

- Results of the audit
- Product trial data
- Complaint data
- Quality data and
- The results of QLÜ, EMP and STBP (welded structure testing) 2

It is possible for the client to change the classification in the event that the contractor's quality capability or the quality of the products and services changes.

The quality assurance declaration is a tool of the client with which he can request the contractor to implement specific corrections and preventive measures following approval by the client. The quality assurance declaration is used for contractors with Q2 status.

Quality assurance declaration (QSE)

Corrective and preventive measures can be both product- and process-related; and depend upon quality assurance standards.

Effective implementation of the corrective and preventive measures in the quality assurance declaration is the responsi-

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bility of the contractor and must be demonstrated to DB AG by the former.

DB AG may adjust or reduce the level and frequency of testing to meet requirements, on the basis of the effective quality assurance declaration.

Should no quality assurance declaration be agreed between the client and the contractor, suitable problem-specific product-and/or process-related measures may be introduced by the client's quality assurance system. This may also entail an audit of each individual delivery.

Absence of a quality assurance declaration

3. Quality assurance measures for rail vehicles and their components

Quality gates (QG) constitute a standard method of project and risk management, ensuring the effective execution of projects being applied systematically. Crucial results are synchronized and recorded by the contractor and the client at set time, with the objective of avoiding risks, particularly those which could affect quality, time or cost. If QGs identify risks at an early stage, suitable counter-measures must be taken.

Quality gates

Quality gates are the subject of contractual agreement between the contractor and the client.

QG area of application

The minimum constituents of the QG system are:

- Specification and positioning of the QGs in the procurement process
- Definition of checklists
- Determination of responsibilities
- QG monitoring
- Organization of QG meetings
- Specification of escalation mechanisms

Minimum constituents of the QG system

Quality engineering (QE) refers to specific, systematic application of principles, methods, analyses, etc, the purpose of which is to identify risks of and faults in products in the development phase and to avoid, reduce or control them in a suitable way.

Quality engineering (QE)

The bases of quality engineering are described in the German Railway Industry Association (VDB) guideline "Quality engineering in the development of rail vehicles and their systems".

QE must be applied to every product, in accordance with the contractual agreements. In this case, the contractor will be

Area of application of QE

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obliged to submit at least one quality engineering plan to the client's quality assurance department.

The QE method plan must include the following constituents, for example:

Constituents of the QE method plan

- All systems, components and parts (including software in each case) which play a developmental or integrative role
- The respective planned QE methods to minimize risk
- Their scheduling
- The schedule of necessary outlay

The following must be considered when applying quality engineering:

Maturity level and industrial experience

- Operational maturity level
- Integration maturity and
- Industrial experience

The supplier is obliged to conduct a process FMEA compliant with EN 60812 before the commencement of series production and record it as one of the requirements for internal approval of production.

Process FMEA

The use of VDA vol. 4 or AIAG "Potential Failure Mode and Effects Analysis" is recommended for the conduct of FMEA. The process FMEA must be submitted to Deutsche Bahn AG on demand, for inspection.

The following requirements apply to the introduction of IT systems in rail vehicles or their components:

Requirements for hedging IT systems

- Documentation of the vehicle IT architecture (to be submitted for CDR by the contractor), from which the client can recognize that the system limits between the SIL are decoupled and free of interference
- Reviews of the vehicle IT architecture (logical and technical architecture) in the design phase
- RAMS directory of the safety-critical partial systems and subsystems (to be submitted by the contractor after the CDR)
- Documentation of the safety-critical functions/processes/automatic procedures (to be submitted by the contractor before the FDR). On the basis of the documentation submitted, the client will decide the functions/processes/automatic mechanisms for which use-

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case discussions should be held. The use-case discussions of the selected functions/processes/automatic mechanisms in the safety-critical part- and subsystems are binding in the design phase.

Manufacturer-related product qualification (HPQ) is a demonstration of qualification which Deutsche Bahn AG demands from its contractors and their subcontractors (UAN) for certain processes and the manufacture of specified products. Qualification takes place on the basis of technical specifications such as EN and DIN standards, railway standards, Deutsche Bahn standards and UIC leaflets.

Manufacturer-related product qualification

Deutsche Bahn AG uses HPQ to qualify a manufacturer to supply specific products. Part B of this document contains corresponding references in the column headed "HPQ". An information sheet on HPQ available on the DB AG supplier portal (see link) must also be considered.

Area of application of HPQ

http://www.deutschebahn.com/en/business/supplier_portal/information_service/documents.html

Contractors must ensure that the necessary qualifications are available before accepting orders. The contractor is obliged to ensure that its subcontractors also have the necessary qualifications (HPQ).

Qualification of specialist capabilities usually consists of an audit of the production process and the product. The degree of detail of products for which an HPQ is demanded emerges from the supplier's manufacturing situation and the requirements of the applicable standards (EN, DIN, railway and Deutsche Bahn standards and UIC leaflets), in which the details of the products in question and the supplier's manufacturing conditions are specified.

Minimum constituents of the HPQ

The HPQ for manufacturers is implemented through DB AG's quality assurance system in response to an application by the manufacturer. The application forms can also be downloaded from the supplier portal.

HPQ implementation

HPQs are usually valid for three years. One extension is possible. Moreover, a new HPQ must always be carried out in cases of:

- A transfer of production
- Changes in production methods and/or processes

Withdrawal of qualification is possible at any time in the event of quality problems or a failure to observe relevant conditions.

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The applicant bears the cost of manufacturer-related product qualification.

The **welded structure inspection** (STBP) forms part of DB AG's quality assurance system. Within the scope of STBP, the contractor must demonstrate compliance with welding requirements in accordance with the contractual stipulations and observance of the prescriptive standards, as follows:

Welded structure inspection (STBP)

- Compliance with design specifications in accordance with CG 951.0010Z03 for STBP Part 1 and
- Compliance with design specifications in accordance with CG 951.0010Z04 for STBP Part 2

Deutsche Bahn AG uses STBP as substantiation that the procurement, design and production requirements stipulated for welded products are being fulfilled.

The contractor is obliged to demonstrate to the client's quality assurance department within the scope of an STBP that it is fulfilling the requirements incumbent upon it for specified products. In the case of subcontractors, the contractor must ensure that the necessary requirements are being fulfilled and that corresponding substantiation is available.

Area of application of STBP

Further information on STBP may be found in Part B of this document and in the "Memorandum on testing welded structures by DB AG under DB CG 951.0010", available at:

http://www.deutschebahn.com/en/business/supplier_portal/information_service/documents.html

Adhesive-bonded structure testing (KTBP) forms part of DB AG's quality assurance system. Within the scope of KTBP, the contractor must demonstrate compliance with adhesive-bonding requirements in accordance with the contractual stipulations and observance of the prescriptive standards, as follows:

Adhesive-bonded structure testing (KTBP)

- Observance of the design instructions under CG 951.0040Z03 by means of the adhesive-bonded structure design test (KKP), and
- Observance of the adhesive-bonded production requirements under CG 951.0040Z04 by means of the adhesive construction process test (KFP)

Deutsche Bahn AG uses KTBP as substantiation that the procurement, design and production requirements stipulated for products to be bonded or adhesive-bonded products are being fulfilled.

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The contractor is obliged to demonstrate to the client's quality assurance system within the scope of a KTBP that it is fulfilling the requirements incumbent upon it for specified products. In the case of subcontractors, the contractor must ensure that the necessary requirements are fulfilled and that the corresponding substantiation is available.

Area of application of KTBP

Further information on KTBP may be found in the "Memorandum on the conduct of adhesive-bonded structure tests in rail vehicle construction under CG 951.0040", available at:

http://www.deutschebahn.com/en/business/supplier_portal/information_service/documents.html

Type tests (Typ) are defined as the testing of one or more devices, a system or a complete vehicle to demonstrate that the design of which complies with the requisite specification and applicable standards.

Type tests (Typ)

Products subject to type tests are not marked in Part B of this document. The necessity of type certificates and the associated type tests emerges from the contract and prescriptive official or other requirements.

Area of application of Typ

The contractor/subcontractor must ensure the conduct of type tests before the first article inspection or the commencement of series production.

A (type) test schedule must be agreed with the client. In the case of subcontractors, the contractor must ensure that the necessary type tests are included in the test schedule.

Minimum constituents of Typ

The contractor/subcontractor must demonstrate to DB AG by means of type tests that the product produced provides the functions and characteristics in accordance with the specification. The contractor/subcontractor must submit a corresponding type certificate (or certificates) or type test report with an assessment by the assessor(s) responsible for testing.

Type tests are applied to components and systems in their delivery status configuration, in order to facilitate subsequent declarations of conformity of the compliant structure of the product. Should the configuration of the component or system change, the contractor will be obliged to verify whether existing certificates can be recognized or whether they should be re-issued. The test must be documented for the client.

First articles are parts, components, modules and systems which have been produced completely for the first time with series resources under series production conditions. **First article inspections (EMP)** are usually conducted on the first product/component/system to be produced under series conditions.

First article inspections (EMP)

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They are intended to demonstrate that the quality requirements agreed in drawings and specifications are being fulfilled.

Products subject to EMP are marked in Part B of this document.
The contractor is responsible for conducting EMPs.

Area of application of EMP

If no demand is made for an EMP in an advanced state of production in Part B of this document, the contract for rail vehicles/parts of rail vehicles or other applicable regulations, the contractor will not be relieved of conducting its own EMP and demonstrating its result to DB AG in documentary form.

The contractor is obliged to demonstrate to the client's quality assurance department that the necessary EMPs have been identified and conducted along the supply chain to be disclosed to the client (including the production stages and critical features). First article quality monitoring by the client is a measure which ensures inter alia that the production and testing processes are under control.

If an EMP is required, it must be conducted in the case of:

Conduct of the EMP

- Initial production
- Modifications of products (e.g. material or design changes)
- Transfers of production
- Changes to production methods or techniques
- Changes to production or process cycles
- Suspension of production (e.g. prior to options) for a period longer than 12 months
- New subcontractors
- Change of owner

The contractor/subcontractor is obliged to obtain and document internal release of the product before the EMP.

Invitations to EMP are usually issued by the contractor or subcontractor 20 working days before the inspection, but no later than ten working days beforehand. The documents required for the inspection must be submitted with the invitation. Should this not be possible, they must be available for the client's specified representatives at least five working days before the inspection date.

Organization of an EMP

The contractor must conduct the EMP with the involvement of the client's quality assurance department and his project manager and specialist department, if applicable.

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The EMP ends with one of the following decisions:

- Approved for series production
- Approved for series production with conditions
- Rejected

Fulfillment of requirements must be demonstrated by the contractor or the subcontractor.

The quality targets of the product to be documented by inspection certificate 3.1, (provided with each delivery by the contractor or the subcontractor) are specified within the scope of the EMP.

Setting quality targets

In rail vehicle projects, products with testing levels 1 and 2 receive supplier approval intended for the recipient of the products. Supplier's approval takes place on the basis of an EMP conducted and/or recognized and is usually restricted to one year. On expiry of its validity, the contractor applies to the client for an extension of supplier approval (also for its subcontractors along the supply chain).

Supplier approval in the rail vehicle procurement project

DB AG examines whether the conditions of the EMP subsist and decides whether a recognition, a repeat of the EMP or a delta EMP is necessary. Supplier approval is extended as a result of the decision and the approach emerging from it.

Quality-dependent supplier monitoring includes product- and process-related inspections of suppliers of rail vehicle components and requires a successful EMP. The inspections are controlled on the basis of quality.

Quality-dependent supplier monitoring (QLÜ)

QLÜ is applied to products with testing level 1 (c.f. Part B) during the procurement of rail vehicle components and must be conducted on the contractor. If appropriate inspection of the contractor is not possible, it must be applied to the corresponding subcontractor.

Area of application of QLÜ

In the case of products with testing level 1, the QLÜ includes:

Constituents of QLÜ

- A product inspection to confirm compliance with the order
- An inspection of the processes relevant to manufacture of the product (e.g. goods received, staff qualification, control of documentation, etc)
- An inspection of the relevant manufacturing method (e.g. forging, welding, adhesive bonding, etc)

Production process stages at subcontractors must be verified with the contractor within the scope of this product inspection by

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means of the documentation supplied. Should this inspection fail to produce sufficiently plausible results, DB AG will demand further, more extensive measures from the subcontractor.

At test levels 2 and 3, DB AG will regard the contractor's documented series inspections as sufficient.

The contractor must inform the DB AG quality test engineer (QPI) of imminent delivery dates in good time.

The contractor must inform the quality test engineer of the desired inspection date at least ten working days (20 working days in the case of delivery from abroad) in advance.

Quality-dependent supplier monitoring times must be between 07.00 and 17.00 hrs, Monday to Friday.

Quality-dependent in-process inspection (QFÜ) contains firm inspections in the form of milestones ("arrest and reporting points") and variable, process-dependent inspections (process monitoring) throughout the entire rail vehicle production process. The inspections are controlled on the basis of quality.

Quality-dependent in-process inspection is applicable to rail vehicle projects, but is also used for constituent products (at least car bodies and trucks [bogies]) in isolated cases. Products and test points for which a quality-dependent in-process inspection (A/M point) is required are marked in Part B of this document.

The contractor is obliged to inform the client's quality assurance department in good time of when production reaches one of the test points so that an inspection can take place, in accordance with specifications.

The test points are:

- Arrest (A) points subject to agreement and
- Reporting (M) points

Reportable test points subject to agreement in the production process must be agreed between the client and the contractor within the scope of quality planning, in accordance with Part B of this document.

The extent of the test points to be observed is defined by the process capability and product quality, and controlled in the respective procurement process. The quality status for determining the frequency and extent of inspections is taken into account on commencement of the project.

The following conditions apply: the A and M points represent milestones in the contractor's inspection process which conclude a preceding production phase or sub-process. You should

Conditions of the QLÜ

Quality-dependent in-process inspection (QFÜ)

Area of application of QFÜ

Constituents of QFÜ

Conditions of the QFÜ

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ensure that the contractor's production phase has been concluded successfully and that the results of the relevant inspection processes comply with the applicable technical specifications.

Preceding inspections (M points) may be combined and carried out later within the respective A points by agreement with the quality test engineer. The quality test engineer may reduce the frequency and the extent of the inspections or waive them, depending on the documented process capability and the extent of the inspection.

The quality test engineer will decide on attendance and inspection at a direct inspection appointment.

In the event that the inspection is waived during production and commissioning, it must then either be carried out by the quality test engineer or checked basing upon the respective documentation at the following A point in the production process which facilitates a corresponding review, by agreement with the contractor.

The contractor must report an imminent test point to the responsible quality test engineer in writing. The contractor must agree the inspection appointment with the quality test engineer in advance.

Test point inspection appointments requiring agreement must be between 07.00 and 17.00 hrs, Monday to Friday. Should several inspections take place at the same time, the contractor will be obliged to agree with the appointments with the quality test engineer so that the inspection dates can be observed.

Should major shortcomings be detected, the test point will be repeated (after completion of corrective measures by the manufacturer).

4. Documentation

The contractor must deliver documentation, a certificate or evidence with certain products. It will be used by recipients as evidence that the requisite quality assurance measures have been carried out in accordance with instructions.

Documentation as certification for recipients

Inspection certificate 3.1 (in accordance with EN 10204): the contractor must confirm compliance with the order to the client, stating the results of specific inspections and the modification status of the product. Any deviations and special approvals and the contractually-agreed documents must be appended to the APZ 3.1.

Inspection certificate 3.1 (APZ 3.1)

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Delivery approval: The contractor may only send deliveries to the client if DB AG's quality assurance department has issued delivery approval (with the exception of products for which delivery approval is not required, e.g. products with test level 3, provided that the contractor has status Q1).

Delivery approval

Delivery approval must be included with every delivery, to facilitate receipt by the client. It is used by the reception point as certification that all the necessary quality assurance measures have been taken.

Delivery approval is component-related and subject to a time limit, which depends upon the following factors:

Delivery approval time limits

- The contractor's Q status
- Availability of an accepted quality assurance declaration (QSE)
- The test level
- Conduct of an EMP
- Freedom of the product from defects
- The contractor's process capability

The maximum time limits should be taken from the table below, depending upon the Q status, QSE and test level:

	PK1	PK2	PK3
Q1	12 months	24 months	None No delivery time limit required
Q2 with QSE	12 months	24 months	24 months*
Q2 without QSE	Every delivery must be inspected	12 months	12 months*
Q3/not assessed	Every delivery must be inspected		

*The transitional period for products with test level 3 (see below) must be observed.

If defects in category A and/or B in the VDB fault list are detected in products or processes, the validity of delivery approval will be restricted to the date of issue (i.e. the respective delivery) after rectification of the defect.

Product and process defects

Any category C defects will reduce the maximum admissible time limits by 50%.

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The first delivery approval to be granted for new suppliers without prior joint experience will be reduced to 50% of the period determined hitherto.

Delivery approval for new suppliers

If major defects are detected in the course of a product inspection, delivery will not be approved. The delivery must be submitted again after corrective measures. If series defects are detected on inspection, delivery approvals already issued by DB AG will be withdrawn if necessary.

Refusal and withdrawal of delivery approval

If complaints are made, the delivery approval granted will be audited and may be withdrawn.

Complaints

A transitional period of 12 months (from the date of introduction of the guideline) will be granted for products with test level 3, for the purpose of issuing delivery approval for Q2 suppliers. During this transitional period receipt as incoming goods from Q2 suppliers is possible for products with test level 3, even in the absence of delivery approval (with 3.1 certificate only) (the date of order is crucial). Should product-specific quality risks be identified with such a supplier, the supplier must be classified as Q3 for these products in the transitional period. Delivery will then only be possible with delivery approval and a 3.1 certificate. After one year, the system must be changed and applied to meet the requirements specified in these regulations and. The changeover from the transitional solution to that in these regulations will be announced in a separate implementation letter.

Transitional period for products with test level 3

Final inspection certificate: documentation of final inspection by the DB AG quality assurance department to confirm that all the agreed requirements have been fulfilled and that the rail vehicle has been manufactured in accordance with the conditions and the contract. The final inspection confirms that the requirements for provision for contractual acceptance have been fulfilled.

Final rail vehicle inspection certificate

In-process inspection certificate: Should the requirements for a final inspection compliant with DB AG quality assurance measures not yet be fulfilled or should the product be transferred to another manufacturing facility, the quality test engineer will usually issue an in-process inspection certificate. An in-process inspection certificate will be issued in rail vehicle projects when the vehicle is to be delivered and the conditions for provision for the contractual acceptance test have not been fulfilled.

In-process inspection certificate (FüB)

Contractual acceptance test certificate: Following successful conclusion of the acceptance test, the client will usually declare contractual acceptance, if the conditions of acceptance demonstrably subsist and the contractor acknowledges the listed ob-

Contractual acceptance test certificate

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jections in documentary form.

5. Sub-testing applications

If products for which an EMP, STBP part 2 or an adhesive-bonded structure test is required are made at other manufacturing facilities by the contractor responsible for the principal delivery or if they are procured from subcontractors, sub-testing applications must be made by the contractor.

Should it not be possible to carry out quality-dependent supplier monitoring on the contractor (e.g. due to the absence of production and inspection facilities), a sub-testing application must also be made by the contractor to implement quality-dependent supplier monitoring.

Sub-testing applications

6. Terminology and abbreviations

Summary of terms used and their meaning for the purposes of this document

Terms and meaning

Term	Meaning
Client	Deutsche Bahn AG or its affiliates
Client's quality assurance department	means the responsible quality assurance department of Deutsche Bahn AG or its contractors
Contractor	means the direct contracting party of Deutsche Bahn AG
Subcontractors	refers to the contractor's suppliers. Subcontractors may themselves have further subcontractors along the supply chain. Pre- and auxiliary suppliers must be treated as subcontractors for the purposes of this instruction. N.B. A subcontractor involved in the procurement of an entire rail vehicle may be considered a contractor for the purposes of procurement of a rail vehicle component.

Summary of abbreviations used and their meaning for the purposes of Part A of this document:

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Abbreviation	Meaning
A point	Arrest point requiring agreement
AG	Client
AIAG	Automotive Industry Action Group
AN	Contractor
APZ 3.1	Inspection certificate 3.1
CDR	Conceptual Design Review
DB AG	Deutsche Bahn AG
DIN	German Institute for Standardization
EMP	First Article Inspection (FAI)
EN	European Standard
EVB	Supplementary Contractual Conditions for Procurement
FDR	Final Design Review
FMEA	Failure Mode and Effects Analysis
FüB	In-process inspection certificate
HPQ	Manufacturer-related product qualification
IT	Information technology
KFP	Adhesive-bonded production inspection
KKP	Adhesive-bonded structure design test
KTBP	Adhesive-bonded structure testing
LgP	List of rolling stock products subject to quality inspection
M point	Reporting point
PK 1	Testing level 1
PK 2	Testing level 2
PK 3	Testing level 3
QE	Quality Engineering

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QFÜ	Quality-dependent in-process inspection
QG	Quality Gate
QLÜ	Quality-dependent supplier monitoring
QPI	Quality test engineer from DB AG or a commissioned testing agency
QSE	Quality assurance declaration
RAMS	Reliability, Availability, Maintainability, Safety
Ril	DB AG corporate guideline (CG)
SIL	Safety integrity level
STBP	Welded structure test
Type	Type test
UAN	Subcontractor
UIC	Union Internationale de Chemins de Fer - International Union of Railways
VA	Contractual acceptance test certificate
ADV	German Association of the Automotive Industry
VDB	German Railway Industry Association

Summary of abbreviations used and their meaning for the purposes of Part B of this document:

Abbreviations and meaning Part B

Abbreviation	Meaning
4 QS	4-quadrant chopper
A 1	Classification of an adhesive bond under DIN 6701-2
AFB	Automatic traction and braking control system
AQF	Active lateral suspension
AQZ	Active lateral centering and damping system
AS	Driven end
ASG	Drive controller

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ASR	Output converter
ATB	Dutch train control system
BS	Non-driven end
CAN	Controller Area Network
CCU	Configurable Control Unit
CL 1	Certification level under EN 15085-2
CL 2	Certification level under EN 15085-2
DBNV	Onboard three-phase AC power system
DC / DC	DC-to-DC converter
DCPU	Diagnostic Central Processing Unit
DG	Truck (bogie)
DSE	Digital logger
DSK	Data storage cassette
DÜ	Data transfer
E-Anteil	Electrical proportion
EBA	German Federal Railway Authority
EBICAB	Train protection system
EBULA	Electronic timetable display
EFA	Elastomer spring linkage
EFG	Elastomer spring link
ESG	Toughened safety glass
ETCS	European Train Control System
EVA	Speed measurement and logging system
EVB	Energy supply box
FIS	Passenger information system
DSK	Data storage cassette

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DÜ	Data transfer
E-Anteil	Electrical proportion
EBICAB	Train protection system
EBULA	Electronic timetable display
EFG	Elastomer spring link
EIU	Rail infrastructure manager (IM)
EP	Electro-pneumatic
ESG	Toughened safety glass
ETCS	European Train Control System
EVC	European Vital Computer
FIS	Passenger information system
FMZ	Frequency-division multiplex train control
GME	Speed measurement and logging system
GNT	Speed monitoring for tilting trains
GMR	Speed measurement and logging system
GPRS	General Packet Radio Service
GSM-R	Global system for mobile communication - Rail
GTO	Gate turn off
HBU	Auxiliary system converter
HF	High frequency
HGST	Control module for tilting trains
HLK	Heating, ventilation, air conditioning
HSM	Microprocessor-controlled braking system by Messrs. Knorr
HWR	Auxiliary inverter
IBIS	Integrated on-board information system
IFZ	Integrated vehicle bus

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ISG	Train control device
JRU	Juridical recording system
KWS	Conventional push-pull control train system
KVB	French train control system
LAR	Location Added Routing
LTE	Long-Term Evolution
LWL	Fiber optic cable
LZB	Linear train control system
M-Anteil	Mechanical proportion
MBS	Modular brake control
MFA	Modular cab display unit
MFD	Multifunctional display
Mg	Electromagnetic rail brake
MMS	Man-machine interface (MMI)
MPK	Central buffer coupling
MTD	Mechanical and Technical Display
MVB	Multifunction Vehicle Bus
NBÜ	Emergency brake override
PZB	Intermittent train control system
RIS	Passenger information system
SB	Quick-acting brake application
SE - Gerät	Transceiver
SIBAS	Siemens railway automation system
SDU	Speed and Distance Unit
SIFA	Automatic vigilance device
SO	Running surface of the rail

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STM	Specific Transmission Module
TAV	Technology-based dispatch system
TCC	Train Control Computer
TEMA	Traction energy measurement and charging
UG	Lower rack
UMTS	Universal Mobile Telecommunications System
UV	Ultraviolet
VB	Full brake application
VSG	Laminated safety glass
VCU	Central vehicle control unit
WK	Car body
WLAN	Wireless Local Area Network
WR	Inverter
WB	Eddy-current brake
ZBF	Track-to-train radio
ZBS	Berlin rapid transit train control system
ZDS, ZWS, ZMS	Time-division multiplex double-heading, push-pull and multiple-heading control system
ZS	Train bus
ZSU	Converter for train line bus bar
ZSG, ZFG, VCU, ZWF	Central vehicle control unit (current names differ)
ZUB	Swiss and Danish train control system
Zub	Conductor
ZWG	Central distance and speed logging system

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Part B

Part B of this document provides additional information on individual quality assurance measures described in Part A. It is divided into three categories:

Purpose

- **General materials** procured for rail vehicles
- **Entire rail vehicles** procured within the scope of projects
- **Rolling stock components** procured for projects or as spare parts

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1. List: General materials

Consecutive no.	Product category	Minimum DB AG requirement/additional information
A1a	Bolts: <ul style="list-style-type: none"> From property class 8.8 from M 16; From property class 10.9 (including anti-fatigue and reamed bolts) From property class grade 5 from 5/8" From property class grade 8 all (including anti-fatigue and reamed bolts) Nuts: <ul style="list-style-type: none"> From property class 8 from M 16; All from property class 10 	PK3 [APZ 3.1 (in accordance with EN 10204)]
A1b	Bolts: <ul style="list-style-type: none"> All those not covered by A1a Nuts: <ul style="list-style-type: none"> All those not covered by A1a 	None
A2a	Sheet metal/semi-finished products/sections (structural steels) <ul style="list-style-type: none"> Steels and steel products within the scope of application of DBS 918 002-01 (EN 10025) 	Certificates compliant with DBS 918 002-1
A2b	Sheet metal/semi-finished products/sections (non-ferrous metals)	Certificates compliant with Guideline 951.0010Z04

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Consecutive no.	Product category	Minimum DB AG requirement/additional information
A3a	Coating materials (wet finishes) <ul style="list-style-type: none"> Coating materials compliant with DBS 918 300 (Terms and conditions of delivery), in accordance with project-specific supplementary sheets and supplementary sheets for mountings and parts provided under DBS 918 301 (Terms and conditions of production) 	Certificates for product qualification and individual deliveries compliant with the demands of DBS 918 300
A3b	Coating materials (powder coating) <ul style="list-style-type: none"> Qualification of powder coating in accordance with BN 918 340 	Product qualification certificates compliant with the demands of BN 918 340
A3c	Rail vehicle labeling (external) <ul style="list-style-type: none"> Self-adhesive transfers for external labeling and advertising in accordance with DBS 918 020 	Certificates for product qualification and individual deliveries compliant with the demands of DBS 918 020
A3d	Rail vehicle labeling (internal) <ul style="list-style-type: none"> Self-adhesive transfers for internal labeling in accordance with DBS 918 021 	Certificates for product qualification and individual deliveries compliant with the demands of DBS 918 021

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Consecutive no.	Product category	Minimum DB AG requirement/additional information
A3e	Other coating materials <ul style="list-style-type: none"> E.g. marker pens, temporary masking lacquer 	None
A4a	Lubricants <ul style="list-style-type: none"> Axlebox greases in accordance with DBS 918 310-01 	Certificates compliant with DBS 918 310-01
A4b	Lubricants <ul style="list-style-type: none"> All those not covered by A4a 	<p>Only greases of which the used has been legitimized by DB maintenance documents may be procured (e.g. maintenance documentation from component or vehicle manufacturer, DBS, lubrication plans, etc)</p> <p>If lubricants are to be procured or used which have not yet been approved by DB maintenance documents, their procurement and use must be agreed with the lubricant purchasing department (I.EVE 3, johann.schuster@deutschebahn.com) and the DB Systemtechnik GmbH tribology OU (T.TVI33(3), simon.zimmermann@deutschebahn.com).</p>
A5	Welding filler materials <ul style="list-style-type: none"> Welding filler materials in accordance with EN 15085-4 	Certificates compliant with CG 951.0010Z04, delivery labeled with the CE mark and DB approval number
A6	Standard and equivalent parts for unspecified use <ul style="list-style-type: none"> E.g. studs, bushes and sleeves 	None

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2. List of rail vehicles

Complete vehicles, e.g. locomotives, multiple units, railcars, DVTs, passenger cars, freight cars and special vehicles are subject to routine testing and are not listed separately in Part B (Classification of parts, components and systems).

Testing rail vehicles

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- tive	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1	0	Vehicle (complete)												Heading
2	0.1	Car body manufacturing process as far as blasting (shell)												Heading
3	0.1.1	Principal components of car body shell		X	X (in accordance with A/.M points)		3.1			EN 15085-2 - CL 1	X	X	3.1	
4	0.1.1.1	CL 1 test following welding, inc. measurement of each component			A point					EN 15085-2 - CL 1	X	X	3.1	
5	0.1.1.2	CL 2 test following welding, inc. measurement of each component			M point					EN 15085-2 - CL 2	N/A	N/A	2.2	
6	0.1.2	Car body shell complete		X	X (in accordance with A/.M points)		3.1			EN 15085-2 - CL 1	X	X	3.1	
7	0.1.2.1	Testing prior to welding following tacking			M point									
8	0.1.2.2	Testing after welding (after blasting), inc. measurement			A point									
9	0.2	Car body manufacturing process from the shell to completion of assembly												Heading
10	0.2.1	Coating		X	X (in accordance with A/.M points)		3.1							
11	0.2.1.1	Pre-coating treatment			M point									

Organization and management systems	Quality
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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
12	0.2.1.2	Priming surfaces for safety-critical joints (e.g. bolts, adhesive bonds)			M point									
13	0.2.1.3	Priming other surfaces			M point									
14	0.2.1.4	Coloring			A point									
15	0.2.1.5	Protection against corrosion (cavity preservation)			M point									
16	0.2.1.6	Fireproof coating			M point									
17	0.2.1.7	Soundproof coating			M point									
18	0.2.2	Adhesive bonding		X	X (in accordance with A/.M points)		3.1							
19	0.2.2.1	Cementing in windows A1			M point									
20	0.2.2.2	Adhesive bonding of principal components A1			M point									
21	0.2.3	Assembly		X	X (in accordance with A/.M points)		3.1							
22	0.2.3.1	Heat insulation/insulation			M point									
23	0.2.3.2	Laying pipes (pipes for safety-critical components)			M point									
24	0.2.3.3	Assembly using screwed connections in risk class H			A point									
25	0.2.3.4	Assembly using screwed connections in risk class M			M point									
26	0.2.4	Car body measurement before erection on trucks		X	X (in accordance with A/.M points)									
27	0.2.4.1	Car body measurement (EN 13775-x; EN 25043 inter alia)			M point									
28	0.2.4.2	Four-point measurement (passenger cars)			M point									

Organization and management systems	Quality
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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
29	0.2.4.3	Measurement of critical points of the loading gage calculation			M point									
30	0.2.5	Completion of assembly of all safety-critical joints, systems and plant in the power compartment and passenger saloon of the car body prior to erection on the trucks		X	A point									
31	0.2.6	Evidence of the certificates and test documentation of bought-in parts required			M point		3.1							
32	0.3	Truck manufacturing process												Heading
33	0.3.1	Truck frame		X	X (in accordance with A/.M points)		3.1			EN 15085-2 - CL 1	X	X	3.1	
34	0.3.1.1	Truck frame test prior to welding after tacking			M point					EN 15085-2 - CL 1	X	X	3.1	
35	0.3.1.2	Testing after welding (after blasting)			A point					EN 15085-2 - CL 1	X	X	3.1	
36	0.3.1.3	Truck frame measurement			M point		3.1							
37	0.3.1.4	Testing after blasting			M point									
38	0.3.1.5	Coating surfaces for safety-critical joints (e.g. bolts, adhesive bonds)			M point									
39	0.3.2	Truck assembly		X	X (in accordance with A/.M points)		3.1							
40	0.3.2.1	Assembly using screwed connections in risk class H			A point									
41	0.3.2.2	Assembly using screwed connections in risk class M			M point									
42	0.3.3	Testing on the compression rig			M point									
43	0.3.4	Final truck test		X	A point		3.1							

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
44	0.4	Erection and completion of vehicle or set assembly												Heading
45	0.4.1	Erection of car bodies on trucks; Car body/truck assembly			A point									
46	0.4.1.1	Assembly using screwed connections in risk class H			M point									
47	0.4.1.2	Assembly using screwed connections in risk class M			M point									
48	0.4.1.3	Car body measurement after erection on trucks			M point									
49	0.4.2	Train formation			M point									
50	0.4.3	Test on completion of assembly		X	A point		3.1							
51	0.5	Operation												Heading
52	0.5.1	Electrical system commissioning (complete)		X	A point									
53	0.5.1.1	High-tension and insulation test			M point									
54	0.5.1.2	Electrical resistance and short-circuit tests			M point									
55	0.5.1.3	Bus systems communication test			M point									
56	0.5.1.4	Battery system/on-board grid commissioning			M point									
57	0.5.1.5	Battery system/on-board grid (short-circuit to ground) commissioning			M point									
58	0.5.1.6	Auxiliary drive commissioning			M point									
59	0.5.1.7	Main power supply commissioning (inc. pantograph, main switch and locomotive protective switch)			M point									
60	0.5.2	Brake system commissioning (complete)		X	A point									
61	0.5.2.1	Brake commissioning (inc. emergency and full brake pressures, any load dependency)			M point									
62	0.5.2.2	Brake test (user-controlled, automatic)			M point									
63	0.5.2.3	Compressed air supply inc. drying air (control system, leakproofing)			M point									
64	0.5.2.4	Parking brake (spring loading)			M point									
65	0.5.2.5	Additional braking systems (e.g. magnetic or eddy-current brake)			M point									

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
66	0.5.3	Mechanical commissioning (complete)		X	X (in accord- ance with A./M points)									
67	0.5.3.1	Refueling, limit indicator, leakproofing			M point									
68	0.5.3.2	Filling other consumables, leakproofing (sand, water, oil, etc)			M point									
69	0.5.3.3	Diesel engine load settings			M point									
70	0.5.3.4	Exhaust measurement (including preheating and heating systems)			M point									
71	0.5.3.5	Sanding system (including sand flow measure- ment)			M point									
72	0.5.3.6	Wheel flange lubrication			M point									
73	0.5.3.7	Air pressure leakproofing			M point									
74	0.5.3.8	Pneumatic spring system setting			M point									
75	0.5.3.9	Weighing/wheel load			M point									
76	0.5.3.10	Ease of movement tests												
77	0.5.3.11	Waterproofing (sprinkling)			A point									
78	0.5.4	Functional commissioning (complete)		X	A point									
79	0.5.4.1	Setup conditions (e.g. automatic setup, stabled setup, energy-optimized stabling)			M point									
80	0.5.4.2	Safety system test sequences (fire alarm system, safety loops, SIFA, PZB, LZB, etc)			M point									
81	0.5.4.3	Cab functions (control panel, control elements, fault switch)			M point									
82	0.5.4.4	Emergency alarm and safety-critical conductor functions (public address system, driver's inter- com, etc)			M point									
83	0.5.4.5	Tilting system			M point									
84	0.5.4.6	Push-pull control system			M point									
85	0.5.4.7	Multiple heading			M point									
86	0.5.4.8	Mixed traction			M point									

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
87	0.5.4.9	Radio control			M point									
88	0.5.4.10	Train radio system			M point									
89	0.5.4.11	Main power circuit protection functions			M point									
90	0.5.4.12	Hydraulic or diesel-electric power protective functions			M point									
91	0.5.4.13	Emergency switching and control system (diesel engine, pantograph)			M point									
92	0.5.4.14	Automatic couplers, switching couplers			M point									
93	0.5.4.15	Air conditioning system (passenger saloon and cab)			M point									
94	0.5.4.16	Acoustic signal systems			M point									
95	0.5.4.17	Illuminated and visual signal systems			M point									
96	0.5.4.18	Windscreen wipers and washer			M point									
97	0.5.4.19	Single vehicle door control systems commissioning			M point									
98	0.5.4.20	On-train door control and monitoring system (including closing force, obstruction protection, emergency release, side selection, remote closure)			M point									
99	0.5.4.21	Remote step control (gap bridging)			M point									
100	0.5.4.22	Boarding aids for wheelchair users (ramps, elevators)			M point									
101	0.5.4.23	Self-loading and unloading systems for freight cars			M point									
102	0.5.4.24	Diagnostic systems (which form part of the vehicle's safety concept)			M point									
103	0.5.4.25	Diagnostic systems (which do not form part of the vehicle's safety concept)			M point									
104	0.5.4.26	Response to transposition, isolation or failure of safety-critical subassemblies and systems												
105	0.5.4.27	Kitchen/galley			M point									
106	0.5.4.28	WC system			M point									

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- rative	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
107	0.5.4.29	Passenger information system functions			M point									
108	0.5.4.30	Passenger service systems (emergency alarm, displays, service call)			M point									
109	0.5.5	Dynamic commissioning (depot trial run and/or test track)		X	A point									
110	0.5.5.1	Communication cord, emergency brake override			M point									
111	0.5.5.2	Train control systems (PZB, LZB, ETCS)			M point									
112	0.5.5.3	Automatic traction and braking control system			M point									
113	0.5.5.4	Coupling/uncoupling			M point									
114	0.5.5.5	Push-pull control system (double/multiple heading)			M point									
115	0.5.5.6	Emergency driving functions/towing circuits			M point									
116	0.5.5.7	Brake system efficiency (e.g. blended braking, special functions)			M point									
117	0.5.5.8	Traction block, system blocks, speed restrictions			M point									
118	0.5.5.9	Automatic vigilance device			M point									
119	0.5.5.10	Radio control system			M point									
120	0.5.5.11	On-train door control and monitoring inc. dispatching system			M point									
121	0.5.5.12	Reversing			M point									
122	0.5.5.13	Vehicle function from each cab			M point									
123	0.5.5.14	Drive control, braking and automatic train control			M point									
124	0.5.5.15	Train radio system			M point									
125	0.5.5.16	Passenger doors (release of side selection)			M point									
126	0.5.5.17	Passenger information system (PIS)			M point									
127	0.5.5.18	Characteristics of tractive effort, braking and speed			M point									
128	0.5.5.19	Driving characteristics/ride behavior			M point									
129	0.5.5.20	Tilting (DVT operation)			M point									
130	0.5.5.21	Vehicle stati (temperature, pressures, switching points, etc.)			M point									

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional remarks
secu- tive	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
131	0.5.5.22	Maximum speed/acceleration			M point									
132	0.5.5.23	Inspection following trial run (e.g. leakproofing, gearboxes, plant, damage, missing parts)			A point									
133	0.6	Final inspection												Heading
134	0.6.1	Fully-completed vehicle		X	A point		3.1							
135	0.6.1.1	Equipment (integrity, inspection date)			M point									
136	0.6.1.2	Inspection of remedy of defects			M point									
137	0.6.1.3	Condition on delivery (modification status, configuration)			M point									
138	0.6.1.4	Addresses			M point									
139	0.6.1.5	Documentation (EBA approval, software loading list, operating manual, etc)			M point									

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3. List of rail vehicle parts

Testing rail vehicle parts includes at least the EMP, QLÜ and DOK (APZ 3.1) in accordance with the quality assurance measures specified below, in accordance with the testing level specified.

Testing rail vehicle parts

A QFÜ is also stored for individual items on the list and must be conducted taking the A and M points into account (see the second list of rail vehicles). The necessity of an HPQ must also be taken from the list.

The requirements stored for welding have been included for the sake of integrity. In this case the lead regulation is DB AG CG 9511.0010 (and the respective appendices).

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- struc- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
140	1	Vehicle body												Heading
141	1.1	Vehicle body shell/body shell/vehicle body/structure	1	X	X (in accordance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
142	1.1.1	End/side walls (complete)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
143	1.1.1.1	Window corners, window pillars, mullions								EN 15085-2 - CL 1	X	X	3.1	
144	1.1.1.2	Side panel framework, side panel upright, side panel pillar, side panel seam								EN 15085-2 - CL 1	X	X	3.1	
145	1.1.1.3	Door frame								EN 15085-2 - CL 1	X	X	3.1	
146	1.1.2	Cab/vehicle head (complete)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
147	1.1.2.1	Driver's cab frame								EN 15085-2 - CL 1	X	X	3.1	
148	1.1.2.2	Plastic head - shell												
149	1.1.3	End wall	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
150	1.1.3.1	End wall framework, end panel upright, end panel seam								EN 15085-2 - CL 1	X	X	3.1	
151	1.1.3.2	Rear panel framework								EN 15085-2 - CL 1	X	X	3.1	
152	1.1.4	Vehicle roof (complete)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
153	1.1.4.1	Roof cowling/segment, lifting roof, sliding roof	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
154	1.1.4.2	Roof flap/skylight, ceiling flap								EN 15085-2 - CL 1	X	X	3.1	
155	1.1.4.3	Pantograph roof	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
156	1.1.4.4	Roof framework, roof arch, haunch								EN 15085-2 - CL 1	X	X	3.1	
157	1.1.4.5	Roller roof												
158	1.1.5	Frame (complete)	1	X	X (in accord- ance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
159	1.1.5.1	Frame - buffer beam	1	X	X (in accord- ance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
160	1.1.5.1.1	Buffer beam	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
161	1.1.5.1.2	Coupling carrier	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
162	1.1.5.2	Frame - central section	1	X	X (in accord- ance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
163	1.1.5.3	Main cross member	1	X	X	X	3.1			EN 15085-2 -	X	X	3.1	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
					(in accord- ance with A/.M points)					CL 1				
164	1.1.5.4	I-beam	1	X	X (in accord- ance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
165	1.1.5.5	Sheet metal floor, corrugated metal floor, beaded floor								EN 15085-2 - CL 1	X	X	3.1	
166	1.1.5.6	Floor mounting, floor framework, floor frame, floor pan								EN 15085-2 - CL 1	X	X	3.1	
167	1.1.5.7	Welded supporting frame for large components below/on the vehicle, e.g. the power pack, electric traction motor, diesel engine, self-supporting equipment boxes, etc.; supporting frame skeleton	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
168	1.1.6	Welded-on parts, vehicle body fittings and structures								EN 15085-2 - CL 1	X	N/A	3.1	
169	1.1.6.1	Snowplow	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
170	1.1.6.2	Equipment boxes (simple type)	3				3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
171	1.1.6.3	Bracket/bearer/suspension system (power transmission between the running gear/truck and the vehicle body)	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
172	1.1.6.4	Bracket/bearer/suspension system (simple type)								EN 15085-2 - CL 1	X	X	3.1	
173	1.1.6.5	Water drain/gutter								EN 15085-2 - CL 2	N/A	N/A	2.2	
174	1.1.6.6	Limit stops								EN 15085-2 - CL 1	X	X	3.1	
175	1.1.7	Energy absorption systems	3				3.1			EN 15085-2 - CL 1	X	X	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
176	1.1.7.1	Buffer stop	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
177	1.1.7.2	Anti-climb protection	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
178	1.1.7.3	Underride guard	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
179	1.1.8	(Removable) fittings								EN 15085-2 - CL 1	X	N/A	3.1	
180	1.1.8.1	Side wall ventilation grille								EN 15085-2 - CL 3	N/A	N/A	2.2	
181	1.1.8.2	Roof ventilation grille								EN 15085-2 - CL 3	N/A	N/A	2.2	
182	1.1.8.3	Roof paneling (simple type)								EN 15085-2 - CL 1	X	N/A	3.1	
183	1.1.9	Insulation, acoustic deadening												
184	1.1.9.1	Sound insulation												
185	1.1.9.2	Heat insulation												
186	1.1.10	Inserted ceiling/floor (e.g. in double-deck cars)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
187	1.1.11	Loading platform, load bed (e.g. load deck on a car carrier)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
188	1.1.12	Base frame	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
189	1.1.13	Partition wall/permanent bulkhead	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
190	1.2	External design												Heading
191	1.2.1	Projections, front-end hood	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
193	1.2.2	Labeling, signage, pictograms for safety fea- tures/safety functions												
194	1.2.3	Handles/handrails								EN 15085-2 - CL 2	N/A	N/A	2.2	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
195	1.2.4	Front flap system	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
196	1.2.4.1	Front flap (without drive)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
197	1.2.4.2	Front flap drive												
198	1.2.4.3	Front flap control and operation components												
199	1.2.5	Panel components (e.g. skirts, flaps and covers)								EN 15085-2 - CL 1	X	N/A	3.1	
200	1.2.5.1	Apron								EN 15085-2 - CL 1	X	N/A	3.1	
201	1.2.5.2	Spoiler								EN 15085-2 - CL 1	X	N/A	3.1	
202	1.2.5.3	Side frame flap/cover								EN 15085-2 - CL 1	X	N/A	3.1	
203	1.2.5.4	End wall flap/cover								EN 15085-2 - CL 1	X	N/A	3.1	
204	1.2.5.5	Apron flap								EN 15085-2 - CL 1	X	N/A	3.1	
205	1.2.6	Outside mirror												
206	1.2.7	Snow protection/protective grilles								EN 15085-2 - CL 3	N/A	N/A	2.2	
207	1.2.8	Bracket for signs (e.g. end discs)								EN 15085-2 - CL 3	N/A	N/A	2.2	
208	1.2.9	Handles and levers for various uses								EN 15085-2 - CL 3	N/A	N/A	2.2	
209	1.3	Entry/loading facilities												Heading
210	1.3.1	External doors												Heading
211	1.3.1.1	Driver's cab entry door (complete)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
212	1.3.1.2	Passenger entry door (door system complete with drive)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
213	1.3.1.3	Entrance door leaf/wing												

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
214	1.3.1.4	Loading/sliding door	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
215	1.3.2	Wheelchair ramp/loading ramp	2	X			3.1			ISO 3834-4	N/A	N/A	2.2	
216	1.3.3	Platform elevator	2	X			3.1			ISO 3834-4	N/A	N/A	2.2	Observe Section 33 EBO
217	1.3.4	Steps												Heading
218	1.3.4.1	Fixed step, shunter's step, shunter's handle								EN 15085-2 - CL 1	X	N/A	3.1	
219	1.3.4.2	Folding step, sliding step (complete with drive)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
220	1.3.4.3	Step cover, step grating, floor grating								EN 15085-2 - CL 3	N/A	N/A	2.2	
221	1.3.4.4	Entry ladder								EN 15085-2 - CL 2	N/A	N/A	2.2	
222	1.3.4.5	Entrance steps, access steps, other steps, handles (handrails) and external railings on the rail vehicle (excluding shunter's steps and handrails)								EN 15085-2 - CL 2	N/A	N/A	2.2	
223	1.3.5	Loading and unloading facilities/aids												Heading
224	1.3.5.1	Conveying equipment								EN 15085-2 - CL 1	X	N/A	3.1	
225	1.3.5.2	Tipping system								EN 15085-2 - CL 1	X	N/A	3.1	
226	1.3.5.3	Loading and unloading facility for dangerous goods	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
227	1.3.5.4	Sliding door, sliding partition, appropriate jib for freight cars	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
228	1.3.5.5	Sliding roof, canopy, appropriate jib for freight cars	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
229	1.3.5.6	Operating and locking facilities								EN 15085-2 - CL 3	N/A	N/A	2.2	
230	1.3.5.7	Rail for sliding partition	2	X			3.1			EN 15085-2 -	X	N/A	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 1				
231	1.3.5.8	Trestle for semi-trailers	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
232	1.3.6	Freight protection												Heading
233	1.3.6.1	Tie-down facilities (lashing winches, chains, belts), retainers	2	X			3.1							
234	1.3.6.2	Lashing lugs	3				3.1			EN 15085-2 - CL 1	X	N/A	3.1	
235	1.3.6.3	Coil retaining facility, retaining arm	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
236	1.3.6.4	Lockable partitions	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
237	1.3.6.5	Loading cradles, coil cradles	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
238	1.3.6.6	Side load securing facility	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
239	1.3.6.7	Stanchions	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
240	1.3.6.8	Stanchion holders								EN 15085-2 - CL 1	X	X	3.1	
241	1.3.6.9	Stanchion socket								EN 15085-2 - CL 1	X	X	3.1	
242	1.3.6.10	Stanchion foot	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
243	1.3.6.11	Stanchion skids	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
244	1.3.7	Entry lighting												
245	1.3.8	Drives												Heading
246	1.3.8.1	Passenger door												
247	1.3.8.2	Step, sliding step												
248	1.3.8.3	Wheelchair ramp, platform lift, loading ramp												
249	1.3.8.4	Loading facility												

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
250	1.3.8.5	Unloading device												
251	1.3.9	Control components for operation of the entry/loading facilities												Heading
252	1.3.9.1	Operating element, door button, opening button												
253	1.3.9.2	Conductor's switch												
254	1.3.9.3	Emergency unlocking								EN 15085-2 - CL 2	N/A	N/A	2.2	
255	1.3.9.3.1	Button for emergency unlocking, emergency switch												
256	1.3.9.3.2	Emergency release operating sensor												
257	1.3.9.4	Motion detector												
258	1.3.9.5	Door obstruction system, obstruction protection system, contact strip												
259	1.3.9.5.1	Light beam, light curtain												
1561	1.3.9.5.2	Warning lights, sound generator for (passenger) doors												
261	1.3.9.6	Control/operating system for wheelchair ramp, platform lift, loading ramp												
262	1.3.9.7	Control/operating system for loading/unloading facility												
263	1.3.9.8	Door control unit, including operating software												
264	1.3.10	Protection and monitoring sensors												
265	1.3.11	Rail freight car vessel and pipe systems with compressed air discharge systems								ISO 3834-4	N/A	N/A	2.2	Observe Section 33 EBO
266	1.4	Buffing and draw gear, coupler												Heading
267	1.4.1	Mechanical coupler/central buffer coupler (automatic coupler, switching coupler, close and adapter coupler, freight traffic coupler)	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with	EN 15085-2 - CL 1	X	X	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
									LgP					
268	1.4.1.1.1	Coupler head/coupling head/coupling head housing/catcher	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
269	1.4.1.1.1	Front plate												
270	1.4.1.1.2	Locking mechanism (components in the power train (e.g. the centerpiece, coupling link, gripper elements, dog)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
271	1.4.1.1.3	Locking mechanism (components in the power train (e.g. the coupling link pins, main pins)	2	X			3.1							
272	1.4.1.2	Coupling rod/energy- consuming loads												Heading
273	1.4.1.2.1	Coupling screw, telescopic device, drawbar, drawbar housing/intermediate pipe (in the power train)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
274	1.4.1.2.2	Drawbar castle nut	3				3.1			EN 15085-2 - CL 1	X	N/A	3.1	
275	1.4.1.2.3	Tapered ring, ring nut	3				3.1							
276	1.4.1.2.4	Energy-consuming loads (e.g. collapsible tube, mechanical, hydrostatic, gas-hydraulic and polymer spring elements)	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
277	1.4.1.2.5	Bowl sleeve	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
278	1.4.1.3	Hinged	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
279	1.4.1.3.1	Bearing block	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
280	1.4.1.3.2	Bearer pins	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
281	1.4.1.3.3	Elastomer spring linkage (EFA)	1	X		X	3.1							
282	1.4.1.3.4	Spherical bearing, spring housing, spring housing nut, spring element	3				3.1			EN 15085-2 - CL 1	X	N/A	3.1	
283	1.4.1.3.5	Elastomer spring link (EFG, e.g. shells)	1	X		X	3.1							
284	1.4.1.3.6	Elastomer spring link (EFG, e.g. studs, center	1	X		X	3.1			EN 15085-2 -	X	N/A	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		section)								CL 1				
285	1.4.2	Central articulated joint, car body articulated joint	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
286	1.4.3	Electric coupling, cable coupling enclosure, self-supporting junction boxes	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
287	1.4.3.1	Built-in, non-self-supporting junction boxes and cable coupling enclosures for automatic couplings								EN 15085-2 - CL 2	N/A	N/A	2.2	
288	1.4.4	Data transfer coupling												
289	1.4.5	Pneumatic /hydraulic coupling								EN 15085-2 - CL 1	X	X	3.1	
290	1.4.5.1	Uncoupling valve												
291	1.4.6	Buffing gear	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	
292	1.4.6.1	Side/self-contained buffers, complete, crash buff- ers	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	
293	1.4.6.1.1	Components such as sleeves, plungers and buff- er heads	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
294	1.4.6.2	Impact protection elements												Heading
295	1.4.6.2.1	Impact protection element (steel, reversible, e.g. annular springs, friction springs)	2	X			3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
296	1.4.6.2.2	Other impact protection elements (e.g. elasto- mers, hydrostatic and hydrodynamic springs)	2	X			3.1							

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
297	1.4.6.2.3	Impact protection element/crash element (irreversible)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
298	1.4.6.3	Long-stroke shock absorbers								EN 15085-2 - CL 1	X	N/A	3.1	
299	1.4.7	Draw gear	1	X		X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
300	1.4.7.1	Coupling hook	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
301	1.4.7.2	Coupling hook guide								EN 15085-2 - CL 1	X	N/A	3.1	
302	1.4.7.3	Tension springs (annular springs, helical springs, leaf springs)	3				3.1							
303	1.4.7.4	Screw coupling	1	X		X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
304	1.4.7.4.1	Coupling pins, looped coupling links, coupling links, coupling nuts, coupling screws	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
305	1.4.7.4.2	Screw coupling end disc								EN 15085-2 - CL 1	X	N/A	3.1	
306	1.4.7.5	Central articulated joint, draw gear journal bearing	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
307	1.4.7.6	Coupling rod	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	

Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
308	1.4.7.7	Drawbar, forked drawbar	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
309	1.4.7.7.1	(Castellated) drawbar nut, spacer plate, pressure plate, spring seat	3				3.1			EN 15085-2 - CL 1	X	N/A	3.1	
310	1.4.7.7.2	Bearer, journal bearing	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
311	1.4.7.7.3	Coupling bolt	1	X		X	3.1	X						
312	1.4.8	Emergency/adapter coupling												Heading
313	1.4.8.1	Towing hitch								EN 15085-2 - CL 1	X	X	3.1	
314	1.4.8.2	Emergency coupling								EN 15085-2 - CL 1	X	X	3.1	
315	1.4.9	Coupler control and operation components												
316	1.4.10	Protection and monitoring, sensors												Heading
317	1.4.10.1	Mechanical coupling												
318	1.4.10.2	Electric coupling												
319	1.4.10.3	Pneumatic coupling												
320	1.4.11	Auxiliary device for coupling												
321	1.5	Transition												
322	1.5.1	Gangway bellows/corrugated bellows, joint bead												Heading
323	1.5.1.1	Bellows												
324	1.5.1.2	Double-articulated bellows												
325	1.5.1.3	Beading installation												
326	1.5.1.4	Pressure-proof gangway	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
327	1.5.2	Rotary elements								EN 15085-2 - CL 1	X	N/A	3.1	
328	1.5.3	Absorption elements								EN 15085-2 - CL 1	X	N/A	3.1	
329	1.5.4	Cladding								EN 15085-2 - CL 2	N/A	N/A	2.2	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
330	1.5.5	Operating and locking facilities								EN 15085-2 - CL 2	N/A	N/A	2.2	
331	1.5.6	Cable and hose glands												
332	1.5.7	Connecting walkway, linking walkway	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
333	1.5.8	Transition door	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
334	1.5.8.1	Drive												
335	1.5.8.2	Gangway door control and operating components												
336	1.5.8.3	Protection and monitoring, sensors												
337	1.6	Window system												Heading
338	1.6.1	Window safety glass (toughened, laminated)	3				3.1							
339	1.6.2	Window frame								EN 15085-2 - CL 3	N/A	N/A	2.2	
340	1.6.3	End wall window, windscreen (inc. heating sys- tem)	1	X		X	3.1	X						Observe 1.6.2
1571	1.6.4	Other windows (e.g. fixed, panorama, top-hung, hopper, vertical sliding, balanced, drop, sliding, winding, rear, roof and door windows)	3				3.1							Observe 1.6.2
351	1.6.5	Emergency exit, emergency exit window	2	X			3.1							Observe 1.6.2
352	1.6.6	Window pane heating system												
353	1.6.7	Windscreen wipers and washer								EN 15085-2 - CL 3	N/A	N/A	2.2	
354	1.6.7.1	Wiper blade												
355	1.6.7.2	Bars												
356	1.6.7.3	Wiper drive												
357	1.6.7.4	Water supply												
358	1.7	External lighting and indicators												Heading
359	1.7.1	Vehicle headcode and tail lamp	2	X			3.1							
360	1.7.1.1	Headlamp (headcode) and tail lamp LEDs	3				3.1							

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
361	1.7.1.2	Headlamp and tail lamp frame								EN 15085-2 - CL 3	N/A	N/A	2.2	
1562	1.7.1.3	Glass cover for head and tail lamps												
363	1.7.2	Headlight system	3				3.1							
364	1.7.2.1	Headlight glass cover heating system												
365	1.7.3	Indicators, flashers	3				3.1							
366	1.7.4	Other external lighting (e.g. position lights)												
367	1.7.5	Acoustic signal system (Makrofon, horn, Tyfon)	3				3.1							
368	1.8	Transformer boiler bridge, cantilevered for transport by Schnabel car	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
369	2	Chassis/running gear/truck (complete)	1	X	X (in accordance with A/.M points)	X	3.1			EN 15085-2 - CL 1	X	X	3.1	
370	2.1	Load-bearing structures												Heading
371	2.1.1	Frame/truck frame, running gear frame	1	X	X (in accordance with A/.M points)	X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
372	2.1.1.1	Solebar, truck side member	1	X	X (in accordance with A/.M points)	X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
373	2.1.1.2	Crossbeam	1	X	X (in accordance with A/.M points)	X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
374	2.1.2	Load bearing structure of the secondary suspension stage												Heading

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con-secutive no	Struc-tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica-tion	STBP ₁	STBP ₂	DOK	
375	2.1.2.1	Bolster, bolster system	2	X			3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
376	2.1.2.1.1	Suspension rod	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
377	2.1.2.1.2	Truck bolster/beam	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
378	2.1.2.1.3	Spring bracket, hollow shaft	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
379	2.1.3	Structural parts of running gear												Heading
380	2.1.3.1	Emergency stops, rotation limiter	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
381	2.1.3.2	Sole, intermediate and fifth wheel plates								EN 15085-2 - CL 1	X	X	3.1	
382	2.1.3.3	Straps	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
383	2.1.3.4	Locking pieces	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
384	2.1.3.5	Clamping screws	3				3.1							
385	2.1.3.6	Collar	3				3.1							
386	2.1.3.7	Stop plates								EN 15085-2 - CL 3	N/A	N/A	2.2	
387	2.2	Suspension, damping, wheel(set) mounting												Heading
388	2.2.1	Primary suspension												Heading
389	2.2.1.1	Primary springs												Heading
390	2.2.1.1.1	Coil springs	1	X		X	3.1	X						
391	2.2.1.1.2	Rubberized metal springs	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
392	2.2.1.1.3	Rubber leaf springs	1	X		X	3.1							
393	2.2.1.1.4	Composite springs	1	X		X	3.1							
394	2.2.1.1.5	Primary leaf springs	1	X		X	3.1							
395	2.2.1.1.6	Laminated suspension spring (complete)/spring leaf (individual)	1	X		X	3.1	X	HPQ for individual spring leaf only					
396	2.2.1.1.7	Shackles for suspension leaf springs	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
397	2.2.1.2	Spring suspension, spring bearing, spring guide	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
398	2.2.1.2.1	Support shackles, spacer	2	X			3.1							
399	2.2.1.2.2	Spring balance lever	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
400	2.2.1.2.3	Spring hanger	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
401	2.2.1.2.4	Spring bolt	1	X		X	3.1	X						
402	2.2.1.2.5	Spring shackle	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
403	2.2.1.3	Rubber bearing, Sphäribloc	2	X			3.1							
404	2.2.1.4	Spring retainer, spring seat								EN 15085-2 - CL 1	X	X	3.1	
405	2.2.1.5	Spring pin, spring seat								EN 15085-2 - CL 1	X	X	3.1	
406	2.2.2	Primary damping (vertical dampers, transverse dampers, horizontal dampers)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
407	2.2.2.1	Brackets for attaching vibration dampers/shock absorbers	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
408	2.2.3	Wheel(set) mounting and primary articulation												Heading
409	2.2.3.1	Sliding guide	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
410	2.2.3.2	Wheelset links, spring leaf, wheelset spring leaf,	1	X		X	3.1			EN 15085-2 -	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		link								CL 1				
411	2.2.3.3	Tooth plates, bearing for wheelset link	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
412	2.2.3.4	Hinge rod	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
413	2.2.3.5	Wheelset guide bushes	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
414	2.2.3.6	Wheelset bracket	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
415	2.2.3.6.1	Wheelset bracket web	3				3.1							
416	2.2.3.6.2	Support bracket	3				3.1			EN 15085-2 - CL 1	X	X	3.1	
417	2.2.4	Secondary suspension												Heading
418	2.2.4.1	Secondary springs												Heading
419	2.2.4.1.1	Coil springs	1	X		X	3.1	X						
420	2.2.4.1.2	Rubberized metal springs	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
421	2.2.4.1.3	Rubber leaf springs	1	X		X	3.1							
422	2.2.4.1.4	Composite springs	1	X		X	3.1							
423	2.2.4.1.5	Laminated suspension spring (complete)/spring leaf (individual)	1	X		X	3.1	X	HPQ for individual spring leaf only					
424	2.2.4.1.6	Suspension leaf spring shackle	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
425	2.2.4.2	Pneumatic spring system (complete)	2	X			3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	N/A	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
426	2.2.4.2.1	Beam, pneumatic spring bracket	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
427	2.2.4.2.2	Pneumatic spring plate, welded	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
428	2.2.4.2.3	Weld-free pneumatic spring plate												
429	2.2.4.2.4	Additional air reservoir								EN 15085-2 - CL 1	X	X	3.1	
430	2.2.4.2.5	Air suspension bellows												
431	2.2.4.2.6	Leveling valve, pneumatic spring control valve												
432	2.2.4.2.7	Clamping ring								EN 15085-2 - CL 1	X	N/A	3.1	
433	2.2.4.3	Pneumatic suspension control system, pneumatic spring level controller												
434	2.2.4.4	Emergency spring, overload spring	1	X		X	3.1							
435	2.2.4.5	Rubber bearing, Sphäribloc	2	X			3.1							
436	2.2.5	Secondary damping												Heading
437	2.2.5.1	Vertical damper	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
438	2.2.5.2	Horizontal damper	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
439	2.2.5.3	Transverse damper	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
440	2.2.5.4	Hydraulic dampers: engine, gearbox and between car bodies	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
441	2.2.5.5	Friction damper	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
442	2.2.5.6	Brackets for attaching secondary dampers	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
443	2.2.6	Rotation stabilization system, yaw stabilization system												Heading
444	2.2.6.1	Yaw damper bracket, rotation damper bracket	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
445	2.2.6.2	Yaw, rotation inhibition and rotation dampers	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
446	2.2.7	Friction torque inhibitor elements												Heading
447	2.2.7.1	Torsion shaft, torsion bar	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
448	2.2.7.2	Bearings, ball and socket joints, heel plates, slid- ing components	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
449	2.3	Wheel(set) system												Heading
450	2.3.1	Wheelset (complete)	1	X		X	3.1	X						
451	2.3.2	Wheel												Heading
452	2.3.2.1	Monobloc wheel	1	X		X	3.1	X						
453	2.3.2.2	Wheel with tire	1	X		X	3.1	X						
454	2.3.2.2.1	Wheel body	1	X		X	3.1	X						
455	2.3.2.2.2	Wheel	1	X		X	3.1	X						
456	2.3.2.3	Spring elements (rubber segments, rubber ring)	2	X			3.1							
457	2.3.2.4	Connectors (bead seat ring, clamping ring), lock washer												
458	2.3.2.5	Wheel noise absorbers												
1560	2.3.2.6	Anti-torsional vibration wheel damper	2	X			3.1							
459	2.3.2.7	Damper ring								EN 15085-2 - CL 1	X	X	3.1	
460	2.3.3	Axle												Heading
461	2.3.3.1	Axle without a central bore	1	X		X	3.1	X						
462	2.3.3.2	Axle with central bore	1	X		X	3.1	X						
463	2.3.3.3	Molybdenum-coated wheelset	1	X		X	3.1	X						
464	2.3.4	Wheel(set) bearing system												Heading
465	2.3.4.1	Axle box complete (axle roller bearing, wheelset roller bearing)	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with	EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
									LgP					
466	2.3.4.1.1	Axle box housing, axle bearing housing	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
467	2.3.4.1.2	Casing sleeves	2	X			3.1	X						
468	2.3.4.1.3	Roller bearing for axlebox	1	X		X	3.1	X						
469	2.3.4.1.4	Roller bearing components: inner raceway, outer raceway	3				3.1	X						
470	2.3.5	Attachment parts												Heading
471	2.3.5.1	Axle box housing cover, axlebox cover for locomotives, multiple units, passenger and freight vehicles	2	X			3.1							
473	2.3.5.2	Labyrinth rings, sealing rings												
474	2.3.5.3	Spacer rings												
475	2.3.5.4	Brackets	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
476	2.3.5.5	Pins and bushes, hardened							-					
477	2.3.5.6	Pressure disk	2	X			3.1							
478	2.3.5.7	Pressure cap	2	X			3.1							
479	2.3.5.8	Groove nut	2	X			3.1							
480	2.3.5.9	Grounding contacts	3				3.1							
481	2.3.5.10	Axle box mountings	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
482	2.4	Running gear-vehicle body connection												Heading
483	2.4.1	Articulation, tensile force articulation, lengthwise articulation	1	X		X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
484	2.4.1.1	Push-pull bar, link rod	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
485	2.4.1.2	Coupling element/coupling rod	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
486	2.4.1.3	Tensile force articulation system housing	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
487	2.4.1.4	Housing ring												
488	2.4.1.5	Truck stop block	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
489	2.4.1.6	Link for lengthwise articulation (e.g. housing, yoke and bracket)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
490	2.4.1.7	(Rubberized) metal elements or ball-and-socket articulated joints	2	X			3.1							
491	2.4.2	Truck pivot, central casting, slewing rim												Heading
492	2.4.2.1	Truck pivot, central casting pins	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
493	2.4.2.1.1	Truck pivot ring	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
494	2.4.2.1.2	Ring element												
495	2.4.2.1.3	Pivot bearing	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
496	2.4.2.1.4	Truck pivot - Rubber spring	2	X			3.1							
497	2.4.2.2	Central casting upper/lower	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
498	2.4.2.3	Slewing rim	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
499	2.4.3	Arresting cable for emergency suspension	2	X			3.1							
500	2.4.4	Anti-roll system	2	X			3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
501	2.4.4.1	Torsion bar (including level), torsion shaft	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
502	2.4.4.2	Drawbar for torsion bar	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
503	2.4.4.3	Roll bar bearing	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
504	2.4.5	Lift-off protection												
505	2.4.6	Supporting system, heel plate	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
506	2.4.7	Lateral bumper, lateral stop								EN 15085-2 - CL 1	X	N/A	3.1	
507	2.4.7.1	Curve-dependent transverse play control system												
508	2.4.8	Torque dampers	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	
509	2.4.8.1	Pendulum for torque support	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
510	2.4.9	Rubberized metal element (for coupling)	2	X			3.1							
511	2.5	Running gear - fittings/auxiliary function												
512	2.5.1	Flange lubricator								EN 15085-2 - CL 1	X	N/A	3.1	
513	2.5.1.1	Grease container								EN 15085-2 - CL 1	X	N/A	3.1	
514	2.5.1.2	Grease pump, pipes, nozzles												
515	2.5.1.3	Flange lubricator operating valve												
516	2.5.1.4	Control unit with pickup for flange lubricator												
517	2.5.1.5	Flange lubricator isolating valve												
518	2.5.2	Sander, sanding system	2	X			3.1			EN 15085-2 -	X	N/A	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 1				
519	2.5.2.1	Sand box	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
520	2.5.2.2	Sand box cover								EN 15085-2 - CL 1	X	N/A	3.1	
521	2.5.2.3	Sand pipe								EN 15085-2 - CL 1	X	N/A	3.1	
522	2.5.2.4	Sand pipe heating/sand box heating system												
523	2.5.2.5	Sand nozzle												
524	2.5.2.6	Control unit/automatic system for sander												
525	2.5.2.7	Sander operating valve												
526	2.5.2.8	Sander isolating valve												
527	2.5.3	Obstacle deflector, guard iron, snowplow												Heading
528	2.5.3.1	Obstacle deflector, guard iron, snowplow, self-supporting	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
529	2.5.3.2	Obstacle deflector, guard iron, snowplow, not self-supporting	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
530	2.5.4	Brackets, suspension systems												Heading
531	2.5.4.1	Brake suspension system (e.g. from brake beam inter alia)	1	X		X	3.1	X	HPQ for components with a supporting/count er-bearing role	EN 15085-2 - CL 1	X	X	3.1	
532	2.5.4.2	Damper mounting brackets	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
533	2.5.5	Mountings/brackets for train protection system	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
534	2.5.6	Wheel arch								EN 15085-2 -	X	N/A	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 1				
535	2.5.7	Paneling, shielding								EN 15085-2 - CL 1	X	N/A	3.1	
536	2.5.8	Lift locks, primary and secondary												
537	2.6	Protection and monitoring, sensors												Heading
538	2.6.1	Running gear monitoring system, truck diagnosis system												
539	2.6.1.1	Acceleration sensor, acceleration pickup (high-speed vehicles)												
540	2.6.2	Bearing temperature monitoring system, temperature sensor												
541	2.7	Tilt system												Heading
542	2.7.1	Actuating elements												Heading
543	2.7.1.1	Tilting mechanism, mechanical	2	X				3.1	X	HPQ only for sub-components in accordance with LgP EN 15085-2 - CL 1	X	X	3.1	
544	2.7.1.1.1	Tilting crossbeam including suspension	1	X		X		3.1	X	EN 15085-2 - CL 1	X	X	3.1	
545	2.7.1.1.2	Suspension rod, tilting pendulum	1	X		X		3.1	X	EN 15085-2 - CL 1	X	X	3.1	
546	2.7.1.1.3	Ball-and-socket joint, articulated joint	1	X		X		3.1	X					
547	2.7.1.1.4	Truck bolster	1	X		X		3.1	X	EN 15085-2 - CL 1	X	X	3.1	
548	2.7.1.1.5	Pendulum carrier, pendulum connection	1	X		X		3.1	X	EN 15085-2 - CL 1	X	X	3.1	
549	2.7.1.2	Tilting mechanism - electromechanical drive	2	X				3.1		EN 15085-2 - CL 1	X	X	3.1	
550	2.7.1.3	Tilting mechanism -hydraulic drive	2	X				3.1						

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
551	2.7.1.4	HGST modules	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
552	2.7.2	Tilting mechanism control system												
553	2.7.2.1	Tilting mechanism computer, tilting mechanism control computer, including operating software												
554	2.7.2.2	Miscellaneous tilting mechanism control components, e.g. bus system, bus coupler												
555	2.7.2.3	Proportional valves, control valves	2	X			3.1							
556	2.7.3	Protection and monitoring, sensors												
557	2.7.3.1	Position encoder, angle transmitter, gyroscope, lateral acceleration meter	2	X			3.1							
558	2.7.4	Pantograph tracking device												
559	2.7.5	Active lateral suspension (lateral displacement)												
560	2.7.5.1	Actuating elements (e.g. AQZ/AQF cylinders)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
561	2.7.5.2	Control system (e.g. AQZ computer)												
562	2.7.5.3	Sensors												
563	2.7.6	Convenience control unit for tilting mechanism												
564	3	Energy supply												Heading
565	3.1	Power supply - Grid power system												Heading
566	3.1.1	Overhead line pantograph	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
567	3.1.1.1	Pantograph contact strip												
568	3.1.1.2	Pantograph base frame	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
569	3.1.1.3	Pantograph: upper arm, lower arm, guiding rod	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
570	3.1.1.4	Pantograph lift drive with solenoid valve	2	X			3.1							
571	3.1.1.5	Pantograph collector head								EN 15085-2 - CL 1	X	X	3.1	
572	3.1.1.6	Pantograph horn								EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- sec- utive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
573	3.1.1.7	Pantograph damper								EN 15085-2 - CL 1	X	X	3.1	
574	3.1.1.8	Electrical connectors/braids												
575	3.1.1.9	Post insulator 15 kV or 25 kV												
576	3.1.1.10	Pressure monitor												
577	3.1.1.11	Automatic lowering device including solenoid valve	2	X				3.1						
578	3.1.1.12	Pantograph tracking system for tilting mechanism												
579	3.1.2	Wiring system, cabling												
580	3.1.2.1	Roof cable												
581	3.1.2.2	High-tension gland												
582	3.1.2.3	Grid power cable, high-tensions cable > 1 kV												
583	3.1.2.4	Post insulators 15 kV or 25 kV												
584	3.1.3	Grounding system												
585	3.1.3.1	Current bridge												
586	3.1.3.2	Grounding contacts												
587	3.1.3.3	Grounding cable												
588	3.1.3.4	Grounding choke												
589	3.1.3.5	Grounding bolt												
590	3.1.3.6	Grounding switch												
591	3.1.4	Control and operation components												
592	3.1.5	Protection and monitoring, power supply sensors												
593	3.1.5.1	High-voltage converter												
594	3.1.5.2	Lightning protection, surge arrester												
595	3.1.5.3	Current transformer (primary current, return current, ground current)												
596	3.1.6	Third-rail collector shoe	1	X						EN 15085-2 - CL 1	X	X	3.1	
597	3.1.7	System switch												
598	3.2	Protective device, switchgear, logging system, grid power system												Heading

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
599	3.2.1	Main circuit breaker												Heading
600	3.2.1.1	Main circuit breaker (vacuum, gas-blast, expansion or compressed air fast circuit breaker)	2	X			3.1							
601	3.2.1.2	Main circuit breaker control system												
602	3.2.2	Separator												Heading
603	3.2.2.1	Disconnecter and grounding switch, disconnection tab												
604	3.2.2.1.1	Knife isolator												
605	3.2.2.2	Isolating contactor												
606	3.2.2.3	Main fuse												
607	3.2.3	Protection and monitoring system, sensor elements for protective, switchgear and logging device, grid power system												
608	3.2.3.1	Protective relay												
609	3.2.3.2	Energy consumption measurement system (e.g. TEMA box)												
610	3.2.3.3	Grid protection, locomotive protection unit, including operating software (e.g. LIM - linear interface module)												
611	3.2.3.3.1	Plug-in board, sub-assembly, hardware module for locomotive protective switch												
612	3.2.3.4	Ground short-circuit detection system												
613	3.3	Grid filter (complete)												
614	3.3.1	Grid filter choke												
615	3.3.2	Grid filter capacitor												
616	3.3.3	Grid filter, Buchholz relay												
617	3.3.4	Grid filter container												
618	3.4	Main transformer (complete)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
619	3.4.1	Transformer vessel	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
620	3.4.1.1	Suspension system for self-supporting transform-	1	X		X	3.1			EN 15085-2 -	X	X	3.1	

Organization and management systems	Quality
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Con- secu- tive no	Struc- tural level	List structure Description	Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks	
			PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK		
		er vessel (below/on the vehicle)									CL 1				
621	3.4.1.2	Suspension system for non-self-supporting trans- former vessel	2	X							EN 15085-2 - CL 1	X	N/A	3.1	
622	3.4.1.3	Main transformer (active component)													
623	3.4.1.4	Primary connections/glands/insulators													
624	3.4.1.5	Secondary connections/glands/insulators													
625	3.4.1.6	Oil pipes, welded									EN 15085-2 - CL 2	N/A	N/A	2.2	
626	3.4.2	Transformer cooling system									EN 15085-2 - CL 1	X	N/A	3.1	
627	3.4.2.1	Cooling tower	2	X							EN 15085-2 - CL 1	X	N/A	3.1	
628	3.4.2.2	Containerized cooling system									EN 15085-2 - CL 2	N/A	N/A	2.2	
629	3.4.2.2.1	Supporting frame for cooling system (in vehicle)									EN 15085-2 - CL 2	N/A	N/A	2.2	
630	3.4.2.2.2	Supporting frame for cooling system (below/on the vehicle)	1	X		X					EN 15085-2 - CL 1	X	X	3.1	
631	3.4.2.3	Circulation pump (oil circulation pump, transform- er oil pump), with drive motor													
632	3.4.2.4	Heat exchanger									EN 15085-2 - CL 1	X	N/A	3.1	
633	3.4.2.4.1	Cooling block									EN 15085-2 - CL 2	N/A	N/A	2.2	
634	3.4.2.4.2	Cooler partial block									EN 15085-2 - CL 2	N/A	N/A	2.2	
635	3.4.2.5	Transformer cooling fan with drive motor									EN 15085-2 - CL 2	N/A	N/A	2.2	
636	3.4.2.6	Air dryer									EN 15085-2 - CL 2	N/A	N/A	2.2	
637	3.4.2.7	Coolant pipe, welded									EN 15085-2 - CL 2	N/A	N/A	2.2	

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
638	3.4.2.8	Expansion joint												
639	3.4.3	Protection and monitoring system, main trans- former sensors												
640	3.4.3.1	Main transformer Buchholz relay	2	X										
641	3.5	Internal combustion engine system												
642	3.5.1	Internal combustion engine/diesel engine (com- plete)												
643	3.5.1.1	Engine housing												
644	3.5.1.2	Crank casing												
645	3.5.1.3	Oil sump								EN 15085-2 - CL 2	N/A	N/A	2.2	
646	3.5.1.4	Cylinder head												
647	3.5.1.5	Crankshaft												
648	3.5.1.6	Liner												
649	3.5.1.7	Connecting rod												
650	3.5.1.8	Piston												
651	3.5.1.9	Camshaft												
652	3.5.1.10	Rocker arm, tappet												
653	3.5.1.11	Torsional vibration damper												
654	3.5.2	Control system and display												
655	3.5.2.1	Electronic engine control system												
656	3.5.2.2	Motor regulator												
657	3.5.3	Auxiliary and supplementary system												
658	3.5.3.1	Venting pipe								EN 15085-2 - CL 2	N/A	N/A	2.2	
659	3.5.3.2	Ventilation hose												
660	3.5.4	Preheating system												
661	3.5.5	Starter												
662	3.5.5.1	Starter motor												
663	3.5.5.2	Starter motor controller												
664	3.5.6	Combustion air feed and conditioning								EN 15085-2 -	N/A	N/A	2.2	

Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 2				
665	3.5.6.1	Charging system												
666	3.5.6.2	Intake air filter												
667	3.5.6.3	Air intake pipe								EN 15085-2 - CL 2	N/A	N/A	2.2	
668	3.5.7	Fuel flow system, fuel system								EN 15085-2 - CL 1	X	N/A	3.1	Observe Section 33 EBO
669	3.5.7.1	Fuel tank	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
670	3.5.7.1.1	Supporting frame for fuel tank (below/on the vehicle)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
671	3.5.7.2	Fuel pump												
672	3.5.7.3	Injector pump												
673	3.5.7.4	Injection nozzle												
674	3.5.7.5	Fuel filter												
675	3.5.7.6	Fuel pipe								EN 15085-2 - CL 1	X	N/A	3.1	Observe Section 33 EBO
676	3.5.7.7	Fuel gage												
677	3.5.8	Cooling												Heading
678	3.5.8.1	Cooling water pump/cooling water circulation pump												
679	3.5.8.2	Cooling element								EN 15085-2 - CL 1	X	N/A	3.1	
680	3.5.8.3	Pipe conduit								EN 15085-2 - CL 2	N/A	N/A	2.2	
681	3.5.8.4	Hose												
682	3.5.8.5	Cooling water reservoir								EN 15085-2 - CL 2	N/A	N/A	2.2	
683	3.5.8.6	Charge air cooling								EN 15085-2 - CL 1	X	N/A	3.1	

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
684	3.5.8.7	Cooler ventilator												
685	3.5.8.8	Heat exchanger								EN 15085-2 - CL 1	X	N/A	3.1	
686	3.5.9	Exhaust system (complete)								EN 15085-2 - CL 1	X	N/A	3.1	
687	3.5.9.1	Exhaust manifold								EN 15085-2 - CL 1	X	N/A	3.1	
688	3.5.9.2	Sound damper								EN 15085-2 - CL 1	X	N/A	3.1	
689	3.5.9.3	Exhaust outlet (cowl, pipe)								EN 15085-2 - CL 1	X	N/A	3.1	
690	3.5.9.4	Pressurized metal hoses and expansion joints								EN 15085-2 - CL 1	X	N/A	3.1	
691	3.5.9.5	Other metal hoses (unpressurized)								EN 15085-2 - CL 2	N/A	N/A	2.2	
692	3.5.9.6	Engine and gearbox pipework								EN 15085-2 - CL 1	X	N/A	3.1	
693	3.5.10	Lubrication equipment								EN 15085-2 - CL 1	X	N/A	3.1	
694	3.5.10.1	Lubrication oil pre-pump												
695	3.5.10.2	Engine oil pump												
696	3.5.10.3	Lubricating oil circulating pump												
697	3.5.10.4	Engine oil filter												
698	3.5.10.5	Other filters												
699	3.5.10.6	Oil pipe/Valve												
700	3.5.11	Protection and monitoring, sensors for internal combustion engines												
701	3.5.11.1	Monitoring system, diesel engine												
702	3.5.11.2	Monitoring system, oil circuit												
703	3.5.11.3	Cooling system monitoring system												
704	3.6	Main generator system (traction generator)												Heading
705	3.6.1	Generator (complete) in the vehicle	2	X				3.1		EN 15085-2 -	N/A	N/A	2.2	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 2				
706	3.6.2	Generator (complete) below/on the vehicle	2	X			3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	N/A	3.1	
707	3.6.2.1	Supporting frame, supporting structure for generator, stator casing	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
708	3.6.2.2	Stator compression rings												
709	3.6.2.3	Stator winding												
710	3.6.2.4	Labyrinth seals, oil seals												
711	3.6.2.5	Bearing shield: driven and non-driven end												
712	3.6.2.6	Rotor shaft												
713	3.6.2.7	Rotor pressure ring												
714	3.6.2.8	Roller bearing												
715	3.6.3	Excitation system												
716	3.6.3.1	Diodes												
717	3.6.4	Control system/display												
718	3.6.5	Cooling												
719	3.6.6	Protection and monitoring system, sensors												
720	3.7	Energy storage system (with the exception of the fuel tank)												
721	4	Drive system												Heading
722	4.1	Drive control												Heading
723	4.1.1	Electronic drive control system												
724	4.1.1.1	Drive control unit (ASG), including operating software												
725	4.1.1.1.1	Plug-in board, sub-assembly, hardware module for drive control unit (ASG)												
726	4.1.1.2	Anti-slip, start monitoring unit												

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
727	4.1.1.3	Current and voltage converter (e.g. motor current converter)												
728	4.1.1.4	Synchronization components												
729	4.1.1.5	Auxiliary contactor												
730	4.1.1.6	Suppressor filter												
731	4.1.2	Electromechanical drive control system												
732	4.1.2.1	Change of direction control system												
733	4.1.2.2	Master controller change of direction control system												
734	4.1.2.3	Isolating contactor control system												
735	4.1.2.4	Switchgear actuation system												
736	4.1.2.5	Fluid transmission control system												
737	4.1.3	Protection and monitoring, sensors												
738	4.1.3.1	Power transmission monitoring system												
739	4.2	Electrical power converter												Heading
740	4.2.1	Mains rectifier including actuation system (complete), traction current rectifier (complete)	2	X				3.1						
741	4.2.1.1	Supporting frame, supporting structure for containers below/on the vehicle	1	X		X		3.1		EN 15085-2 - CL 1	X	X	3.1	
742	4.2.1.1.1	Containers for converter	2	X				3.1		EN 15085-2 - CL 1	X	X	3.1	
743	4.2.1.2	Components of a converter												Heading
1563	4.2.1.2.1	Phase modules for traction converters (e.g. thyristor, GTO, IGBT)												
1564	4.2.1.2.2	Diodes for traction power converters and traction rectifiers												
1565	4.2.1.2.3	Special control subassemblies in the traction current converter (e.g. gate units, power supply units)												
1566	4.2.1.2.4	Passive components for converters (e.g. condensers, chokes, resistors for the absorption circuit/intermediate circuit/backup circuit, charg-												

Organization and management systems	Quality
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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		ing/discharging)												
1567	4.2.1.2.5	Contactors for use in the power converter, such as charging/discharging contactors, input/output circuit breakers												
1568	4.2.1.2.6	Protective components and monitoring the power converter (e.g. current transformer, voltage transformer, AC/DC universal converter, toroidal transformer)												
768	4.2.2	Other power converters, including control system												
769	4.2.3	Switchgear, thyristor controller												Heading
770	4.2.3.1	Switchgear (tap selector)												
771	4.2.3.2	Fine-step switchgear												
772	4.2.3.3	Switchgear drive												
773	4.2.3.4	Thyristor setting device												
774	4.2.3.5	Load switch												
775	4.2.3.6	Base load choke												
776	4.2.3.7	Base load relay												
777	4.2.4	Motor switchgear												
778	4.2.4.1	Direction changer, direction switch												
779	4.2.4.2	Service brake changeover												
780	4.2.4.3	Motor isolating contactor												
781	4.2.4.4	Choke shorting contactor												
782	4.2.4.5	Shunt contactor												
783	4.2.4.6	Shunt resistance												
784	4.2.5	Brake adjuster												
785	4.2.5.1	Brake circuit rectifier												
786	4.2.6	Power converter cooler (complete)	2	X				3.1						
787	4.2.6.1	Coolant pump, power converter oil pump with drive motor												
788	4.2.6.2	Coolant hose								EN 15085-2 - CL 2	N/A	N/A	2.2	

Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
789	4.2.6.3	Grid filter cooling system												
790	4.2.6.4	Power converter fan with drive motor												
791	4.2.6.5	Heat exchanger												
792	4.3	Hydrodynamic and hydromechanical power con- verter system												Heading
793	4.3.1	Converter and gearbox												Heading
794	4.3.1.1	Transfer gearbox												
795	4.3.1.2	Fluid/hydraulic transmission system												
796	4.3.1.3	Electromechanical gearbox												
797	4.3.1.4	Hydromechanical gearbox												
798	4.3.1.5	Secondary gearbox (multi-step transmission and reversing gear)												
799	4.3.1.6	Wheelset gearbox with mounting (complete)	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	
800	4.3.1.6.1	Gearbox housing	1	X		X	3.1	X						
801	4.3.1.6.2	Spur gear												
802	4.3.1.6.3	Spur pinion shaft												
803	4.3.1.6.4	Bevel gear set	2	X			3.1							
804	4.3.1.6.5	Drive shaft/Cardan shaft	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
805	4.3.1.6.6	Other Cardan shafts	3				3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
806	4.3.1.6.7	Flange shaft								EN 15085-2 - CL 2	N/A	N/A	2.2	
807	4.3.1.6.8	Connecting flange								EN 15085-2 - CL 2	N/A	N/A	2.2	
808	4.3.1.6.9	Bevel pinion shaft												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
809	4.3.1.6.1 0	Bevel gear, ring gear												
810	4.3.1.6.1 1	Drive flange								EN 15085-2 - CL 2	N/A	N/A	2.2	
811	4.3.1.6.1 2	Roller bearing with an inside diameter equal to or greater than 160 mm												
812	4.3.1.6.1 3	Roller bearing with an inside diameter less than 160 mm												
813	4.3.2	Pipe system								EN 15085-2 - CL 1	X	N/A	3.1	
814	4.3.3	Cooling system												
815	4.3.4	Heat exchanger												
816	4.3.5	Protection and monitoring, sensors												
817	4.4	Drive, traction motor, gearbox												Heading
818	4.4.1	Electric traction motor, complete	2	X			3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	N/A	3.1	
819	4.4.1.1	Traction motor stator/winding												
820	4.4.1.2	Traction motor housing	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
821	4.4.1.3	Bearing shield: driven and non-driven end	3				3.1	X						
822	4.4.1.4	Rotor (complete)												
823	4.4.1.4.1	Rotor shaft												
824	4.4.1.4.2	One-piece rotor shaft with pinion												
825	4.4.1.5	Traction motor pinion												
826	4.4.1.6	Commutators												
827	4.4.1.7	Short-circuit rings (special alloys only)												
828	4.4.1.8	Labyrinth rings, sealing rings												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
829	4.4.1.9	Rotor press rigs, shrink rings												
830	4.4.1.10	Spherical bearing												
831	4.4.1.11	Traction motor bearing (roller bearing)												
832	4.4.1.12	Traction motor restrictor												
833	4.4.1.13	Drive end-shield												
834	4.4.1.14	Traction motor suspension/drive suspension system (complete)	1	X		X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	X	3.1	
835	4.4.1.14.1	Rubberized metal elements of the traction motor or drive suspension unit	3				3.1							
836	4.4.1.14.2	Traction motor and drive suspension system pendulum	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
837	4.4.1.14.3	Shock absorbers and vibration dampers in the vicinity of the drive	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
838	4.4.1.15	Engine cradle	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
839	4.4.1.16	Traction motor fan (impeller) for intrinsic ventilation												
1569	4.4.1.17	Engine terminal board												
1570	4.4.1.18	Motor wiring system												
840	4.4.2	Drive and gearbox (complete)	2	X			3.1	X	HPQ only for sub-components in accordance with LgP					
841	4.4.2.1	Drive shaft/Cardan shaft	1	X		X	3.1			EN 15085-2 -	X	X	3.1	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
										CL 1				
842	4.4.2.2	Other Cardan shafts	3				3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
843	4.4.2.3	Hollow drive shaft, hollow axle	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
845	4.4.2.4	Hollow shaft tube												
846	4.4.2.5	Hollow shaft casing	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
848	4.4.2.6	Thrust washers												
849	4.4.2.7	Star-shaped flange												
850	4.4.2.8	Gearbox housing	1	X		X	3.1	X						
851	4.4.2.9	Protective gearwheel casing, protective gearbox casing								EN 15085-2 - CL 2	N/A	N/A	2.2	
852	4.4.2.10	Bull gear (complete)												
853	4.4.2.10. 1	Bull gear body												
854	4.4.2.10. 2	Bull gear rim												
855	4.4.2.11	Small wheel												
856	4.4.2.12	Idler wheel												
857	4.4.2.13	Idler wheel shaft												
858	4.4.2.14	Bearing housing, roller bearing housing (gearbox)												
859	4.4.2.15	Bearing rings												
860	4.4.2.16	Labyrinth rings, sealing rings												
861	4.4.2.17	Connecting rod, lug link												
862	4.4.2.18	Pendulum driver	1	X		X	3.1							
863	4.4.2.19	Spherical bearing												
864	4.4.2.20	Spray and thrower rings												
865	4.4.2.21	Support arm	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
866	4.4.2.22	Driving wheel pin												

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
867	4.4.2.23	Roller bearing												
868	4.4.3	Clutch												Heading
869	4.4.3.1	Curved-tooth coupling	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
870	4.4.3.2	Key packet coupling	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
871	4.4.4	Rod drive, chain drive												Heading
872	4.4.4.1	Connecting rod, coupling rod	1	X		X		X		EN 15085-2 - CL 1	X	X	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
							3.1							
873	4.4.4.2	Chain												
874	4.4.4.3	Torque dampers	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
875	4.4.4.3.1	(Rubberized) metal elements or ball-and-socket joints of the torque support	3				3.1							
876	4.4.4.4	Jackshaft with crank	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
877	4.4.5	Rubber ring spring drive, rubber ring Cardan drive (complete)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
878	4.4.5.1	Annular ring segment (including outer and inner segments)												
879	4.4.6	Cooling system												
880	4.4.6.1	Coolant radiator, cooling tower	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
881	4.4.6.2	Coolant pipe (welded)								EN 15085-2 - CL 2	N/A	N/A	2.2	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
882	4.4.6.3	Fan/traction motor fan with drive motor												
883	4.4.6.4	Heat exchanger												
884	4.4.7	Protection and monitoring, sensors												
885	4.4.7.1	Speed pickup, motor pulse generator												
886	4.4.7.2	Temperature monitoring system, temperature sensor												
887	4.5	Steam boiler system												Observe Section 33 EBO
888	5	Brake system												Heading
889	5.1	Brake control system												Heading
890	5.1.1	Brake control/operation components (service brake, parking brake, emergency brake)												Heading
891	5.1.1.1	Brake control device/brake control unit	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
892	5.1.1.2	Brake housing unit	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
893	5.1.1.3	Modular brake control system (MBS), brake unit panel complete, brake module including electronic actuation system	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
894	5.1.1.4	Electronic brake control system/brake control system/brake control computer (e.g. HSM), including operating software	1	X		X	3.1							
895	5.1.1.4.1.	Plug-in board, sub-assembly, hardware module for brake control system	3				3.1							
896	5.1.1.5	Drive/brake control system magnetic/eddy current	2	X			3.1							
897	5.1.1.6	Brake frame	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
898	5.1.1.7	Brake operating unit	1	X		X	3.1							
899	5.1.1.8	Driver's brake valve	2	X			3.1							
900	5.1.1.9	Additional brake valve	2	X			3.1							
901	5.1.1.10	Pilot valves (KE pilot valve), relay valve, weighing	2	X			3.1							

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Con- secu- tive no	Struc- tural level	List structure Description	Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
			PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		valve, quick-acting valve, etc)												
902	5.1.1.11	Analog converter	2	X			3.1							
903	5.1.1.12	Brake current valve	2	X			3.1							
904	5.1.1.13	Solenoid valve	2	X			3.1							
905	5.1.1.14	Driving brake changeover	3				3.1							
906	5.1.1.15	Isolating valve/straight-way valve												
907	5.1.1.16	Brake button, button for spring-loaded brake												
908	5.1.1.17	Pressure vessel system (air, nitrogen)												Observe Section 33 EBO
909	5.1.1.17. 1	Air reservoir, compressed air reservoir	3				3.1			EN 286-3; EN 286-4	N/A	N/A	3.1	Observe Section 33 EBO
910	5.1.1.17. 2	Air reservoir retaining strap (e.g. HYDAC clamps)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
911	5.1.1.17. 3	Air pipes, compressed air pipe								EN 15085-2 - CL 1	X	N/A	3.1	
912	5.1.1.17. 4	Brake pipe bracket	3				3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
913	5.1.1.17. 5	Compressed-air hose	3				3.1							
914	5.1.1.18	Emergency brake valve, emergency brake relay	2	X			3.1							
915	5.1.1.19	Emergency brake override, electropneumatic control system												
916	5.1.1.19. 1	Electropneumatic pipe, coupling, cable												
917	5.1.1.20	Saloon operating device, emergency brake handle, emergency brake train box												
918	5.1.1.21	Emergency stop strike button, emergency strike button												
919	5.1.1.22	Control leads												
920	5.1.2	Wheel slide protection system												Heading

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
921	5.1.2.1	Anti-slide system (mechanical, pneumatic)	2	X			3.1							
922	5.1.2.2	Wheel slide dump valve, wheel slide solenoid dump valve	2	X			3.1							
923	5.1.2.3	Speed pickup, pulse generator, wheel slide pickup, speed sensor												
924	5.1.2.4	Pulse wheel												
925	5.1.2.5	Wheel slide control unit, anti-skid control unit, anti-slide controller, anti-slide computer, including operating software	2a	X			3.1							
926	5.1.2.5.1	Acceleration sensor (high-speed)												
927	5.1.2.5.2	Plug-in board, sub-assembly, hardware module for anti-slide control system												
928	5.1.2.6	Housing								EN 15085-2 - CL 1	X	N/A	3.1	
929	5.1.2.7	Control leads												
930	5.1.3	Protection and monitoring components, brake control system sensors												
931	5.2	Brake actuating elements												Heading
932	5.2.1	Power generation												Heading
933	5.2.1.1	Brake cylinder	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
934	5.2.1.2	Brake cylinder with supporting frame	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
935	5.2.1.3	Spring-loaded brake cylinder	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
936	5.2.1.4	Eddy current brake/electromagnetic rail brake operating cylinder	3				3.1							
937	5.2.1.5	Pressure sensors, manometric switches for brake systems												
938	5.2.2	Power transmission												Heading
939	5.2.2.1	Brake rigging	3				3.1			EN 15085-2 - CL 1	X	X	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
940	5.2.2.1.1	Brake rigging adjuster	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
941	5.2.2.1.2	Brake pull rod, pull rod head, brake head	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
942	5.2.2.1.3	Polyamide sleeves and bushes for brake linkage												
943	5.2.2.2	Handbrake								EN 15085-2 - CL 2	N/A	N/A	2.2	
944	5.2.2.2.1	Cardan joint for handbrake or parking brake								EN 15085-2 - CL 2	N/A	N/A	2.2	
945	5.2.2.2.2	Brake screw								EN 15085-2 - CL 1	X	N/A	3.1	
946	5.2.2.2.3	Gearbox and brackets for handbrake operation	3				3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
947	5.2.2.3	Brake shaft, Hollow brake shaft	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
948	5.2.2.4	Brake disc (complete), hub	1	X		X	3.1	X	HPQ only for sub- compo- nents in accordance with LgP					
949	5.2.2.4.1	Hub, raw part, unmachined	1	X		X	3.1	X						
950	5.2.2.4.2	Brake discs, friction rings, segments, raw parts, unmachined -	1	X		X	3.1	X						
951	5.2.2.4.3	Connecting components in the power train for separate completion and which have their own drawings (small standard parts)	3				3.1							
952	5.2.2.5	Brake caliper unit	1	X		X	3.1	X	HPQ only for sub- compo- nents in	EN 15085-2 - CL 1	X	N/A	3.1	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
									accordance with LgP					
953	5.2.2.5.1	Brake caliper	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
954	5.2.2.5.2	Brake guide	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
955	5.2.2.5.3	Brake caliper/brake caliper lever	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
956	5.2.2.5.4	Bracket	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
957	5.2.2.5.5	Housing	2	X			3.1	X	HPQ for integral main suspension only					
958	5.2.2.5.6	Main suspension/mounting (pins, suspension bracket inter alia)	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
959	5.2.2.5.7	Connection components located in the power train (parts as per drawing, not standard parts)	3				3.1							
960	5.2.2.6	Brake block unit, block brake (self-contained)	1	X		X	3.1	X	HPQ only for sub-components in accordance with LgP	EN 15085-2 - CL 1	X	N/A	3.1	
961	5.2.2.6.1	Main suspension/mounting (pins, suspension lug, etc.)	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
962	5.2.2.6.2	Lever	2	X			3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
963	5.2.2.6.3	Housing	2	X			3.1	X	HPQ for					

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
									integral main suspension only					
964	5.2.2.7	Tie rods, crossbars (simple design), stops												
965	5.2.2.8	Spring-loading mechanism												
966	5.2.2.9	Brake hose (not brake hose coupling)	3				3.1							
967	5.2.2.10	Brake drum	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
968	5.2.2.11	Brake linings and brake shoe inserts												Heading
969	5.2.2.11.1	Brake blocks	2	X			3.1	X	HPQ for cast in- serts only					
970	5.2.2.11.2	Sintered brake linings and composite brake linings for high-speed trains	2	X			3.1							
971	5.2.2.11.3	Composite brake linings for other vehicles												
972	5.2.2.11.4	Brake block keys, sprung locking bars												
973	5.2.2.12	Brake lining bracket								EN 15085-2 - CL 1	X	N/A	3.1	
974	5.2.2.13	Brake block shoes								EN 15085-2 - CL 1	X	N/A	3.1	
975	5.2.2.14	Brake block unit, conditioning unit												
976	5.2.2.14.1	Main suspension/mounting (pins, suspension bracket inter alia)	3				3.1			EN 15085-2 - CL 1	X	N/A	3.1	
977	5.2.2.15	Brake-block hanger								EN 15085-2 - CL 1	X	N/A	3.1	
978	5.2.2.16	Brake tie bar, brake flange, brake triangles, brake beam	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
979	5.2.2.17	Brake hose coupling, pneumatic (complete)	3				3.1							
980	5.2.2.17.	Brake coupling hose	3				3.1							

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
	1													
981	5.2.2.17.2	Elastomer gaskets												
982	5.2.2.17.3	Coupling head (cast, machined)												
983	5.2.2.17.4	Air shutoff valve												
984	5.2.2.18	Brake lever, brake lever connector								EN 15085-2 - CL 1	X	N/A	3.1	
985	5.2.2.19	Pins and bushes, hardened												
986	5.2.2.20	Braking changeover box, G-P-R selector switch												
987	5.3	Regenerative brake												
988	5.3.1	Energy conversion system, brake resistance tower								EN 15085-2 - CL 1	X	N/A	3.1	
989	5.3.1.1	Brake resistance (complete)								EN 15085-2 - CL 1	X	N/A	3.1	
990	5.3.1.1.1	Brake resistor strip												
991	5.3.1.2	Brake excitation cabinet								EN 15085-2 - CL 3	N/A	N/A	2.2	
992	5.3.2	Cooling system												
993	5.3.2.1	Brake resistance fan with drive motor												
994	5.4	Hydrodynamic brake												
995	5.4.1	Energy conversion system (brake force converter, retarder)												
996	5.4.2	Cooling system												
997	5.5	Linear eddy-current brake (complete)	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
998	5.5.1	Integral beam	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
999	5.5.2	Support arm	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1000	5.5.3	Track holder complete, retaining bracket	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1001	5.5.4	Brake support, braking force support, complete	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1002	5.5.4.1	Spherical bearing												
1003	5.5.5	Eddy-current magnet (complete, including field coils, end caps)	1	X		X	3.1			EN 15085-2 - CL 1	X	N/A	3.1	
1004	5.5.6	Suspension/lowering system (complete)	2	X			3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	N/A	3.1	
1005	5.5.6.1	Clamp, bracket	2	X			3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
1006	5.5.6.2	Ring bellows	2	X			3.1							
1007	5.6	Electromagnetic rail brake (complete)	1	X		X	3.1	X	HPQ only for sub- compo- nents in accord- ance with LgP	EN 15085-2 - CL 1	X	X	3.1	
1008	5.6.1	Support frame	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1009	5.6.2	Trackholder (complete)	1	X		X	3.1	X		EN 15085-2 - CL 1	X	X	3.1	

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1010	5.6.2.1	Trackholder head	1	X		X	3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
1011	5.6.2.2	Trackholder rod	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
1012	5.6.3	Pull bow, thrust bow	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1013	5.6.4	Driver, driver stem, driver stop	2	X			3.1	X		EN 15085-2 - CL 1	X	N/A	3.1	
1014	5.6.5	Suspension stand	2	X			3.1	X		EN 15085-2 - CL 1	X	X	3.1	
1015	5.6.6	Suspension system												Heading
1016	5.6.6.1	High suspension system (e.g. spring suspension, linkage)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
1017	5.6.6.2	Low suspension system (e.g. springs, connecting rod)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
1018	5.6.6.3	High/low suspension system (e.g. ring bellows)	2	X			3.1			EN 15085-2 - CL 1	X	X	3.1	
1019	5.6.7	Sectional or monobloc magnet (complete)	1	X		X	3.1							
1020	5.6.7.1	Coil (ready for installation)	2	X			3.1							
1021	5.6.7.1.1	Magnet frame/coil core (without winding)	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	
1022	5.6.7.2	Intermediate sections and end caps	2	X			3.1							
1023	5.6.7.3	Sintered pole shoes (intermediate and end sections)	1	X		X	3.1							
1024	5.6.7.4	Rail shoes (monobloc magnet)	2	X			3.1							
1025	5.6.7.5	Non-sintered pole shoes, steel pole shoes (intermediate and end sections)	2	X			3.1							
1026	5.6.7.6	Intermediate spacers/intermediate strips (non-magnetic)												
1027	5.6.7.7	Manometric switch for magnetic rail brake	3				3.1							
1028	6	Auxiliary and secondary operating power supply												Heading
1029	6.1	Compressed-air supply												Heading

Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1030	6.1.1	Air compression system, compressed air system												Observe Section 33 EBO
1031	6.1.1.1	Main air compressor (piston and screw compres- sors)												
1032	6.1.1.2	Main air compressor with integral supporting frame	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1033	6.1.1.3	Auxiliary air compressor												
1034	6.1.2	Compressed air reservoir system												Heading
1035	6.1.2.1	Air reservoir								EN 286-3; EN 286-4	N/A	N/A	3.1	Observe Section 33 EBO
1036	6.1.3	Compressed air distribution												Heading
1037	6.1.3.1	Main air reservoir pipe and its components								EN 15085-2 - CL 1	X	N/A	3.1	
1038	6.1.3.2	Main air pipe and its components								EN 15085-2 - CL 1	X	N/A	3.1	
1039	6.1.3.3	Isolator												
1040	6.1.4	Compressed air treatment/drying												Heading
1041	6.1.4.1	Air filter												
1042	6.1.4.2	Air cooler												
1043	6.1.4.3	Liquid separator, condensate system, water col- lector												
1044	6.1.4.4	Air dryer												
1045	6.1.4.5	Supporting frame for condensate system or air dryer (in the vehicle)								EN 15085-2 - CL 2	N/A	N/A	2.2	
1046	6.1.4.6	Supporting frame for condensate system or air dryer (on/below the vehicle)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1047	6.1.5	Components for controlling, protecting and moni- toring, and sensors for, the compressed air supply												
1048	6.1.5.1	Safety valve												
1049	6.2	Pressure vessel system (hydraulic fluid)												Observe

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con-secutive no.	Struc-tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica-tion	STBP ₁	STBP ₂	DOK	
														Section 33 EBO
1050	6.2.1	Hydraulic pressure generation system												Observe Section 33 EBO
1051	6.2.2	Hydraulic accumulator, fluid reservoir	2	X			3.1			EN 15085-2 - CL 1	X	N/A	3.1	Observe Section 33 EBO
1052	6.2.3	Pipe system								EN 15085-2 - CL 1	X	N/A	3.1	Observe Section 33 EBO
1053	6.2.4	Fluid treatment/cooling												Observe Section 33 EBO
1054	6.2.5	Control, protection, monitoring and sensor system components												Observe Section 33 EBO
1055	6.3	Battery system												Observe Section 33 EBO
1056	6.3.1	On-board battery	3				3.1							
1057	6.3.2	Starter battery												
1058	6.3.3	Battery charger												
1059	6.3.4	Battery box with ventilation	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1060	6.3.4.1	Battery box supporting frame below/on the vehicle	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1061	6.3.5	Energy distribution												Heading
1062	6.3.5.1	Battery bus bar, cable												
1063	6.3.5.2	Main battery switch, main battery contactor												
1064	6.3.6	Components for controlling, protecting and monitoring, and sensors for, the battery system												

Organization and management systems	Quality
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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1065	6.4	Auxiliary electricity supply												Heading
1066	6.4.1	Tran bus bar (complete)												
1067	6.4.1.1	Train bus bar changeover system												
1068	6.4.1.2	Train bus bar contactor												
1069	6.4.1.3	Train bus bar leads, coupling, cable												
1070	6.4.2	Transformer for auxiliary power supply												
1071	6.4.3	Converter, rotary converter, auxiliary power supply converter (HBU), three-phase on-board power supply (DBNV), energy supply modules (EVB), train bus bar converter (ZSU)												Heading
1072	6.4.3.1	Energy supply module, three-phase on-board power supply, auxiliary converter, including container/cabinet (in the vehicle)	2	X				3.1		EN 15085-2 - CL 2	N/A	N/A	2.2	
1073	6.4.3.2	Energy supply module, three-phase on-board power supply system converter, including container/cabinet (on/below the vehicle)	1	X		X		3.1		EN 15085-2 - CL 1	X	X	3.1	
1074	6.4.3.3	Inverter, secondary inverter (HWR)												
1075	6.4.3.4	Converter (rotary)												
1076	6.4.3.5	Converter (static)												
1077	6.4.3.6	Actuator, DC/DC transformer for auxiliary power supply												
1078	6.4.3.7	Input current converter, current inverter, output power converter, rectifier, link reactor for auxiliary current converter, three-phase on-board power supply, energy supply modules, etc.												
1079	6.4.4	Control system/pilot current system												Heading
1080	6.4.4.1	High-voltage relay												
1081	6.4.4.2	Energy supply module control system, three - phase on-board supply, auxiliary power supply converter, including operating software												
1082	6.4.4.2.1	Plug-in board, sub-assembly, hardware module for auxiliary power supply converter, three-phase												

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		on-board power supply and energy supply module control												
1083	6.4.4.3	Energy supply changeover contactor												
1084	6.4.4.4	Main train bus bar final control equipment												
1085	6.4.4.5	Electronic field governor												
1086	6.4.5	Grounding system												
1087	6.4.6	External power supply installation												
1088	6.4.7	Energy distribution												Heading
1089	6.4.7.1	Cables, cable protectors, sockets, plugs												
1090	6.4.7.2	Circuit breakers, (air gap) contactors, relays												
1092	6.4.8	Filter												
1093	6.4.9	Auxiliary diesel engine												
1094	6.4.10	Generators												Heading
1095	6.4.10.1	Heating generator, on-board generator, wheelset generator												
1096	6.4.10.2	Heating generator excitation system												
1097	6.4.10.3	Alternator, dynostarter												
1098	6.4.10.4	Axle generator												
1099	6.4.11	Auxiliary electrical load cooling system												
1100	6.4.11.1	Auxiliary load fan with drive motor												
1101	6.4.12	Protection and monitoring components, auxiliary power supply sensors												
1102	7	Interior												Heading
1103	7.1	Internal fittings												Heading
1104	7.1.1	Supporting frame, rack and brackets for internal fittings (e.g. power converters, electrical, air conditioning and compressed air system)	3					3.1		EN 15085-2 - CL 2	N/A	N/A	2.2	
1105	7.1.2	Floor/floorcovering												Heading
1106	7.1.2.1	Bottom plate												
1107	7.1.2.2	Insulation (insulating materials), sub-floor												
1108	7.1.2.3	Carpet, fitted carpet												

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1109	7.1.2.4	Floorcovering												
1110	7.1.2.5	Staircase (internal)								EN 15085-2 - CL 1	X	N/A	3.1	
1111	7.1.3	Paneling (internal paneling)												Heading
1112	7.1.3.1	Cab wall paneling	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1113	7.1.3.2	Saloon wall paneling	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1114	7.1.3.3	WC wall paneling	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1115	7.1.3.4	Galley wall paneling	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1116	7.1.3.5	Cab ceiling lining	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1117	7.1.3.6	Saloon ceiling lining	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1118	7.1.3.7	WC ceiling lining	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1119	7.1.3.8	Galley ceiling lining	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1120	7.1.3.9	External door drive and control system paneling	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1121	7.1.4	Seats												Heading
1122	7.1.4.1	Driver's seat (complete)	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1575	7.1.4.2	Other seats (e.g. secondman, passenger, folding, child's seat, bench seats and stools)								EN 15085-2 - CL 3	N/A	N/A	2.2	
1576	7.1.4.2.1	Handles												
1577	7.1.4.2.2	Headrests, pillows												
1578	7.1.4.2.3	Seat covering, upholstery												
1579	7.1.4.2.4	Armrest								EN 15085-2 - CL 3	N/A	N/A	2.2	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1580	7.1.4.2.5	Seat shell												
1581	7.1.4.2.6	Seat frame, underseat box, supporting frame								EN 15085-2 - CL 2	N/A	N/A	2.2	
1582	7.1.4.2.7	Footrest								EN 15085-2 - CL 3	N/A	N/A	2.2	
1583	7.1.4.2.8	Seat adjustment								EN 15085-2 - CL 3	N/A	N/A	2.2	
1135	7.1.4.3	Seat-back table, side-wall table								EN 15085-2 - CL 3	N/A	N/A	2.2	
1136	7.1.5	Folding table												
1137	7.1.6	Partition												Heading
1138	7.1.6.1	Non-load bearing partition												
1139	7.1.6.2	Load-bearing partition, room divider	3					3.1		EN 15085-2 - CL 2	N/A	N/A	2.2	
1140	7.1.6.3	Glass partition	3					3.1						
1141	7.1.7	Interior layout												Heading
1142	7.1.7.1	Driver's control panel/desk	2	X				3.1		EN 15085-2 - CL 2	N/A	N/A	2.2	
1143	7.1.7.2	Thermal compartment												
1144	7.1.7.3	Cupboards, equipment boxes, control cabinets								EN 15085-2 - CL 3	N/A	N/A	2.2	
1145	7.1.7.4	Baggage rack												Heading
1146	7.1.7.4.1	Baggage rack (overhead)								EN 15085-2 - CL 3	N/A	N/A	2.2	
1147	7.1.7.4.2	Baggage space (floor level)								EN 15085-2 - CL 3	N/A	N/A	2.2	
1148	7.1.7.4.3	Safety glass for baggage racks (toughened, lami- nated)	3					3.1						
1149	7.1.7.5	Grab rails, steps, handles and railings in the rail vehicle								EN 15085-2 - CL 3	N/A	N/A	2.2	
1150	7.1.7.6	Special vehicle safe deposit box/locker												
1151	7.1.7.7	Conductor's workplace/special vehicle												

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1152	7.1.8	Interior design												Heading
1153	7.1.8.1	Bed, couchette								EN 15085-2 - CL 3	N/A	N/A	2.2	
1154	7.1.8.2	Table												
1155	7.1.8.3	Glass cabinet												
1156	7.1.8.4	Wardrobe								EN 15085-2 - CL 3	N/A	N/A	2.2	
1157	7.1.8.5	Blinds, curtains												
1158	7.1.8.6	Garbage can								EN 15085-2 - CL 3	N/A	N/A	2.2	
1159	7.1.8.6.1	Supporting frame for refuse bin								EN 15085-2 - CL 2	N/A	N/A	2.2	
1160	7.1.8.7	Mirror, metal frame												
1161	7.1.8.8	Advertisement holder (glazed)												
1162	7.1.8.9	Cupholder												
1163	7.1.8.10	Bicycle rack, ski rack, wheelchair fixture								EN 15085-2 - CL 2	N/A	N/A	2.2	
1164	7.1.8.11	Special features (fire extinguishers, emergency equipment)												
1165	7.1.8.12	Ladder, escape ladder, escape ramp								ISO 3834-4	N/A	N/A	2.2	
1166	7.1.8.13	Labeling, signage, pictograms for safety features/safety functions												
1167	7.2	Heating/ventilating/air conditioning (HLK)												Heading
1168	7.2.1	Saloon heating, ventilating and air conditioning system (complete)												
1169	7.2.1.1	Air treatment unit/assembly, air heating unit								EN 15085-2 - CL 1	X	N/A	3.1	
1170	7.2.1.2	High-voltage heating system												
1171	7.2.1.3	Secondary heating system												
1172	7.2.1.4	Floor heating system												
1173	7.2.1.5	Convection heating system												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1174	7.2.1.6	WC heating system												
1175	7.2.1.7	Vestibule heating system												
1176	7.2.1.8	Galley heating/ventilation system												
1177	7.2.1.9	Steam heating system												
1178	7.2.1.10	Radiators/heaters												
1179	7.2.1.11	Ventilators, fans (suitable for railway use)												
1180	7.2.1.12	Cooling unit												
1181	7.2.1.13	Valve/louvre												
1182	7.2.1.14	Air filter												
1183	7.2.1.15	Hot water pipe								EN 15085-2 - CL 2	N/A	N/A	2.2	
1184	7.2.2	Saloon heating, ventilating and air conditioning control components												
1185	7.2.2.1	Air conditioning/heating control system												
1186	7.2.2.2	Control panel												
1187	7.2.2.3	Compartment fittings												
1188	7.2.2.4	Trans. control system												
1189	7.2.3	Protection and monitoring components, saloon heating, ventilation and air conditioning sensors												
1190	7.2.3.1	Heating monitoring system												
1191	7.2.3.2	Safeguard against lack of air												
1192	7.2.3.3	Flow controller/pressure cell												
1193	7.2.4	Cab heating, ventilating and air conditioning system (complete)												
1194	7.2.4.1	Cab air conditioning system								EN 15085-2 - CL 1	X	N/A	3.1	
1195	7.2.4.2	Floor/recessed heating		Floor /reces- sed heat- ing										

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1196	7.2.4.3	Driver's cab heating												
1197	7.2.4.4	Cab high-pressure fan (suitable for railway use)												
1198	7.2.5	Cab heating, ventilating and air conditioning control unit												
1199	7.2.6	Protection and monitoring, sensors for cab heating, ventilation and air conditioning												
1200	7.2.7	Heating, ventilating and air conditioning for baggage compartment												
1201	7.2.8	Baggage compartment heating, ventilating and air conditioning control system												
1202	7.2.9	Protection and monitoring, sensors for baggage compartment heating, ventilation and air conditioning												
1203	7.2.10	Pressure-proofing												Heading
1204	7.2.10.1	Fan (exhaust, incoming air) with motor												
1205	7.2.10.2	Flaps												
1206	7.2.11	Oil heaters, oil burners												Observe Section 33 EBO
1207	7.2.12	Heating boiler, steam boiler												Observe Section 33 EBO
1209	7.2.13	Heating oil tank	2	X				3.1		EN 15085-2 - CL 1	X	N/A	3.1	
1208	7.2.14	Heat exchanger												
1210	7.3	Internal door system												Heading
1211	7.3.1	Internal door (e.g. machine room, cab, gangway, compartment, WC, galley, bar and partition door)												Heading
1572	7.3.1.1	Internal door without glazing								EN 15085-2 - CL 2	N/A	N/A	2.2	
1573	7.3.1.2	Internal door with glazing	3					3.1		EN 15085-2 - CL 2	N/A	N/A	2.2	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1574	7.3.1.3	Safety glass (toughened, laminated) for internal doors	3				3.1							
1218	7.3.1.4	Locking system												
1219	7.3.2	Fire door	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1220	7.3.3	Control and operation components for the internal door system												
1221	7.3.3.1	Door operating element												
1222	7.3.3.2	Pressure reducing device												
1223	7.3.4	Drive												
1224	7.3.5	Control and monitoring components and sensors for the internal door system												
1225	7.3.5.1	Motion detector												
1226	7.4	Water and sanitary system												Heading
1227	7.4.1	Fresh water system (complete)	1	X		X	3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1228	7.4.1.1	Circulating pump												
1229	7.4.1.2	Water tank with overflow (fresh water tank)								EN 15085-2 - CL 2	N/A	N/A	2.2	
1230	7.4.1.3	Supporting frame for fresh water tank (below/on the vehicle)	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1231	7.4.1.4	Filling nozzle												
1232	7.4.1.5	Water heater												
1233	7.4.2	WC installation, toilet (complete)	1	X		X	3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1234	7.4.2.1	Commode								EN 15085-2 - CL 2	N/A	N/A	2.2	
1235	7.4.2.2	WC seat set												
1236	7.4.2.3	Flushing valve												
1237	7.4.2.4	Vacuum spoon												
1238	7.4.2.5	Toilet roll holder												

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1239	7.4.2.6	Vacuum system								EN 15085-2 - CL 2	N/A	N/A	2.2	
1240	7.4.2.7	Feces tank	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1241	7.4.2.8	Feces tank heating system												
1242	7.4.2.9	Supporting structure for feces tanks below/on the vehicle	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1243	7.4.3	Wastewater installation (complete)	1	X		X	3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1244	7.4.3.1	Drainage system								EN 15085-2 - CL 2	N/A	N/A	2.2	
1245	7.4.3.2	Water outlet/drain								EN 15085-2 - CL 2	N/A	N/A	2.2	
1246	7.4.3.3	Wastewater level display												
1247	7.4.3.4	Wastewater changeover												
1248	7.4.3.5	Wastewater tank, gray water tank	2	X			3.1			EN 15085-2 - CL 2	N/A	N/A	2.2	
1249	7.4.3.6	Supporting structure for waste water/gray water tanks below/on the vehicle	1	X		X	3.1			EN 15085-2 - CL 1	X	X	3.1	
1250	7.4.4	Washing and showering installation, washroom												Heading
1251	7.4.4.1	Washbasin/vanity unit, nappy-changing table												
1252	7.4.4.2	Shower												
1253	7.4.4.3	Towel rail/towel dispenser												
1254	7.4.4.4	Soap dispenser												
1255	7.4.4.5	Hand dryer												
1256	7.4.5	Water and sanitary system control/operation components												
1257	7.4.5.1	WC control panel												
1258	7.4.5.2	Washing and showering installation pressure re- ducer												
1259	7.4.6	Protection and monitoring components, water and sanitary installation sensors												

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- sec- utive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1260	7.5	Galley fittings, catering												Heading
1261	7.5.1	Galley appliances												
1262	7.5.1.1	Coffee machine												
1263	7.5.1.2	Water heater												
1264	7.5.1.3	Microwave oven												
1265	7.5.1.4	Dishwasher												
1266	7.5.1.5	Steamer												
1267	7.5.1.6	Toaster												
1268	7.5.1.7	Hotplate												
1269	7.5.1.8	Hot cupboard												
1270	7.5.1.9	Heated cabinet												
1271	7.5.1.10	Boiler												
1272	7.5.1.11	Dispenser												
1273	7.5.1.12	Glass washer												
1274	7.5.2	Fittings, cash register, mobile vending machine												
1275	7.5.3	Ventilation and extraction												
1276	7.5.4	Drinking water installation (complete)												
1277	7.5.4.1	Pressure water pump												
1278	7.5.4.2	UV installation												
1279	7.5.4.3	Decalcifier												
1280	7.5.5	Bar installation, beverage dispensing system (complete)												Observe Section 33 EBO
1281	7.5.5.1	Bar installation cooling system												
1282	7.5.6	Standard cooling components												Heading
1283	7.5.6.1	Cooling system												
1284	7.5.6.2	Chill cabinet												
1285	7.5.6.3	Refrigerator												
1286	7.5.7	Deep-freezing components												Heading
1287	7.5.7.1	Freezer												
1288	7.5.7.2	Freezer												

List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1289	7.5.8	Bottled or natural gas installation (complete)												Observe Section 33 EBO
1290	7.5.8.1	Gas bottle												
1291	7.5.8.2	Gas pipes												
1292	7.5.8.3	Gas stove												
1293	7.5.9	Components for protection and monitoring, galley fitting and catering sensors												
1294	7.6	Interior lighting system												Heading
1295	7.6.1	Driver's cab lighting system												
1296	7.6.2	Machine room lighting system												
1297	7.6.3	Corridor lighting system												
1298	7.6.4	Compartment/main lighting system, saloon lighting system												
1299	7.6.5	Galley lighting system												
1300	7.6.6	WC lighting system												
1301	7.6.7	At-seat lighting system												Heading
1302	7.6.7.1	Driver's control panel/instrument panel lighting system												
1303	7.6.7.2	Secondman side lighting system												
1304	7.6.7.3	Reading light												
1305	7.6.7.4	Cabinet lighting system												
1306	7.6.7.5	Bar lighting system												
1307	7.6.8	Emergency lighting system												
1308	7.6.9	Chokes												
1309	7.6.10	Step level lighting system												
1310	7.6.11	Lighting control system												
1311	7.7	Service facility												Heading
1312	7.7.1	Vending machines												
1313	7.7.1.1	Ticket canceling device												
1314	7.7.1.2	Ticket vending machines, ticket machines												

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1315	8	Central control and communications system												Heading
1316	8.1	Train and vehicle instrumentation and control systems												Heading
1317	8.1.1	Central control system components												Heading
1318	8.1.1.1	Central/integrated control units, vehicle computer, car computer, including operating software if applicable (e.g. central control unit, ISG, ZFG, VCU, ZWF)												
1319	8.1.1.1.1	Plug-in board, sub-assembly, hardware module for central control system												
1320	8.1.1.2	Control system cable (not bus cable)												
1321	8.1.1.3	Relay, contactor for control purposes												
1322	8.1.2	Internal/external vehicle identification components (e.g. transponder)												
1323	8.1.3	Components for data communication on the train												Heading
1324	8.1.3.1	Train bus (e.g. WTB, TCN, ETB), bus coupler, gateways and switches, including operating software												
1325	8.1.3.2	UIC/IS line, coupling, cable												
1326	8.1.3.3	Fiber optic cable, fiber optic cable router												
1327	8.1.4	Components for data communication on the train												Heading
1328	8.1.4.1	Vehicle bus (e.g. MVB, IFZ, CAN), bus coupler, gateways including operating software												
1329	8.1.4.2	Input/output module (e.g. CAN bus modules, IFZ modules, SIBAS CLIP routers, measurement logging (MES), brake signal processing (SVB)), including operating software												
1330	8.1.5	Change of direction control system												
1331	8.1.6	Control system for double-/multiple heading, push-pull working, multiple unit control												Heading
1332	8.1.6.1	Components for conventional control, double-/multiple-heading, KWS push-pull working, multi-												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		ple unit control system (complete)												
1333	8.1.6.1.1	KWS line, coupling, cable												
1334	8.1.6.2	Time-division multiplex double-/multiple heading, push-pull control ZDS/ZMS/ZWS, including operating software (complete)												
1335	8.1.6.2.1	Plug-in board, sub-assembly, hardware module for ZDS/ZMS/ZWS												
1336	8.1.6.3	Frequency-division multiplex train control FMZ (complete)												
1337	8.1.6.3.1	Plug-in board, sub-assembly, hardware module for FMZ												
1338	8.1.7	Driver's safety device/DSD (complete)	2	X				3.1						
1339	8.1.7.1	Automatic vigilance control unit												
1340	8.1.7.2	Vigilance device controls and display elements												
1341	8.1.7.3	Fault switch (automatic vigilance device)												
1342	8.1.7.4	Automatic vigilance device - brake valve	2	X				3.1						
1343	8.1.8	Train and vehicle instrumentation control and display systems												Heading
1344	8.1.8.1	Displays in the cab (e.g. MFD, MTD)												
1345	8.1.8.2	Modular cab display (MFA)												
1346	8.1.8.3	Master controller												
1347	8.1.8.4	Target speed selector												
1348	8.1.8.5	Tractive effort selector												
1349	8.1.8.6	Auxiliary master controller, switching controller, side controller												
1350	8.1.8.7	Line circuit breaker, motor circuit breaker												
1351	8.1.8.8	Starter switch												
1352	8.1.8.9	Tachometer, odometer	3					3.1						
1353	8.1.8.10	Display/automatic cutout, operating panels on the driver's desk												
1354	8.1.8.11	Stage display, galvanometer for motor volt-												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con-secutive no.	Structural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classification	STBP 1	STBP 2	DOK	
		age/surges ammeter for motor current/harmonic current												
1355	8.1.8.12	Direction changer, direction switch												
1356	8.1.8.13	Signal lamp (operationally necessary)												
1357	8.1.8.14	Emergency stop button												
1358	8.1.8.15	Other switches/buttons on the driver's desk												
1359	8.1.9	Automatic driving and braking control (AFB)												
1360	8.1.9.1	Plug-in board, sub-assembly, hardware module for automatic driving and braking control anti-slide control system												
1361	8.1.10	Central distance and speed logging system (ZWG)												
1362	8.1.10.1	Wheel/distance pickup including connecting leads	3					3.1						
1363	8.1.10.2	Radar unit including connecting leads												
1364	8.1.10.3	Plug-in board, sub-assembly, hardware module for wheel/distance pickup												
1365	8.2	Diagnostic system												Heading
1366	8.2.1	Components of the central diagnostic system (e.g. DC PU, CCU diagnosis, DAVID, ZEUS)												Heading
1367	8.2.1.1	Diagnostic computer including operating software												
1368	8.2.2	Diagnostic system display elements												
1369	8.2.2.1	Diagnostic system display												
1370	8.2.2.2	Voice outputting components												
1371	8.2.2.3	Vehicle/subsystem man-machine interface												
1372	8.2.3	Service interface for maintenance												
1373	8.3	Data transfer system												Heading
1374	8.3.1	Actuation system												
1375	8.3.2	Wireless modem, wireless gateway, GPS receiver												
1376	8.3.3	Antenna, including connecting leads												
1377	8.3.4	Power supply												
1378	8.4	Information and communication systems												Heading

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1379	8.4.1	Hazard alert and monitoring facilities												Hazard alert and monitoring facilities
1380	8.4.1.1	Fire alarm system												
1381	8.4.1.1.1	Smoke detector, fire detector												
1382	8.4.1.1.2	Central fire alarm systems												
1383	8.4.1.2	Firefighting system, fire extinguisher system												
1384	8.4.1.3	CCTV components												Heading
1385	8.4.1.3.1	Cameras in enclosures, including connecting leads												
1386	8.4.1.3.2	Central CCTV systems (e.g. recorders, server)												
1387	8.4.2	Passenger information, passenger information system (IBIS), complete												
1388	8.4.2.1	Passenger information system cabinet								EN 15085-2 - CL 3	N/A	N/A	2.2	
1389	8.4.2.2	Central passenger information and infotainment systems (e.g. central passenger information system computer, car passenger information system computer, speech memory, reservations computer)												
1390	8.4.2.3	Bus connections for passenger information system (e.g. data bus, speech bus)												
1391	8.4.2.4	Public address system components (e.g. loudspeaker, amplifier)												
1392	8.4.2.5	Train destination, stopping pattern information displays, external								EN 15085-2 - CL 2	N/A	N/A	2.2	
1393	8.4.2.6	Train destination, stopping pattern information displays, internal												
1394	8.4.2.7	Passenger information system and infotainment displays												
1395	8.4.2.8	Reservation displays, displays on compartment												

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Con- sec- utive no.	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		doors and at seats												
1396	8.4.2.9	Control panels/terminals for passenger information in the cab, conductor's compartment or similar (e.g. driver's desk interface FT 95)												
1397	8.4.2.10	Passenger counting system												
1398	8.4.3	Communications systems												Heading
1399	8.4.3.1	Central communications system (e.g. HICOM communications hub, intercom)												
1400	8.4.3.2	Bus connections for communication (e.g. HITRAIN)												
1401	8.4.3.3	Permanent intercom terminals (e.g. for conductor, in cars, driver's terminal)												
1402	8.4.3.4	Cordless telephone for conductor, pager, emergency alarm relay system												
1403	8.4.3.5	Passenger intercom terminals, emergency intercom terminals (e.g. disabled WC, wheelchair space, door intercom terminals)												
1404	8.4.4	Passenger communication system components												Heading
1405	8.4.4.1	Central passenger communication systems (e.g. on-train WLAN server)												
1406	8.4.4.2	Gateways, switches, routers and access points (e.g. for on-train WLAN)												
1407	8.4.4.3	Repeaters (e.g. for mobile communications using GSM, HTE, UMTS and GPRS)												
1408	8.4.4.4	Internal antenna (e.g. for WLAN access points and mobile phone repeater), including connecting leads												
1409	8.4.5	Passenger entertainment components												Heading
1410	8.4.5.1	Central passenger entertainment systems (e.g. HF train/car hub)												
1411	8.4.5.1.1	Players, sources of passenger entertainment (e.g. radio receivers, CD changers, video players)												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1412	8.4.5.2	Seat video and audio module												
1413	8.4.5.3	Wiring for passenger entertainment system (e.g. RF wiring)												
1414	8.4.6	Electronic timetable (complete)												
1415	8.4.6.1	Electronic timetable display												
1416	8.4.6.2	Electronic timetable computer												
1417	8.4.6.3	Electronic timetable power supply												
1418	9	Traffic management technology												Heading
1419	9.1	Operational communications												Heading
1420	9.1.1	Analog/digital track-to-train radio, GSM-R (complete)												
1421	9.1.1.1	Track-to-train radio vehicle terminal/GSM-R, radiotelephone, including operating software												
1422	9.1.1.1.1	Plug-in board, sub-assembly for track-to-train radio/GSM-R vehicle terminal												
1423	9.1.1.2	Track-to-train radio/GSM-R operating equipment, including individual keypad/display, including connecting leads												
1424	9.1.1.3	Miscellaneous components for track-to-train/GSM-R radio, e.g. main distribution frame, including connecting leads												
1425	9.1.1.4	Handset for track-to-train/GSM-R radio, including rest and connecting leads												
1426	9.1.1.5	Power supply for track-to-train/GSM-R radio, e.g. DC-DC transformer												
1427	9.1.1.6	Track-to-train radio/GSM-R antennae, including connecting leads												
1428	9.1.2	Analogue/digital GSM-R switching radio (complete)												
1429	9.1.2.1	Switching radio vehicle terminal, radiotelephone including operating software, if applicable with special mounting												

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1430	9.1.2.2	Control panels for switching radio, including special PTT buttons												
1431	9.1.2.3	Special loudspeakers for switching radio												
1432	9.1.2.4	Special swan-neck microphones for switching radio												
1433	9.1.2.5	Antennae for switching radio, including connecting leads												
1434	9.1.3	GSM-R radio data transmission system (complete)												
1435	9.1.3.1	GSM-R radio data system vehicle terminal, radio telephone including operating software												
1436	9.1.3.2	Power supply system for GSM-R data radio, e.g. DC/DC transformer												
1437	9.1.3.3	Data radio antennae including connecting leads												
1438	9.1.4	Portable track-to-train/switching radio set, analogue/digital (complete)	2	X				3.1						
1439	9.2	Remote control system, radio remote control system (complete)												
1440	9.2.1	Switching locomotive radio remote control system (complete)												
1441	9.2.1.1	Remote control unit, transmitter (mobile)												
1442	9.2.1.1.1	Tilt switches for remote control unit												
1443	9.2.1.1.2	Special rechargeable batteries for remote control unit												
1444	9.2.1.1.3	Special charger for remote control unit on the vehicle												
1445	9.2.1.2	Receiver/vehicle terminal, signal processing for radio remote control system, including connecting leads												
1446	9.2.1.2.1	Plug-in board, sub-assembly for radio remote control vehicle terminal												
1447	9.2.1.3	Antennae for radio remote control system, includ-												

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		ing connecting leads												
1448	9.2.2	Radio remote control system for hump switching locomotive (complete)												
1449	9.2.2.1	Receiver/vehicle terminal, signal processing system for hump switching locomotive radio remote control system, including connecting leads												
1450	9.2.2.1.1	Plug-in board, sub-assembly for radio remote control vehicle terminal												
1451	9.2.2.2	Special operating unit for hump switching locomotive radio remote control system												
1452	9.2.2.3	Antennae for radio remote control system, including connecting leads												
1453	9.3	Intermittent/linear (PZB/LZB) train control system (complete)	2	X				3.1						
1454	9.3.1	Signal logging and information transmission components for PZB/LZB												Heading
1455	9.3.1.1	PZB vehicle magnet including connecting leads	2	X				3.1						
1456	9.3.1.2	Wheel and distance pickup for PZB/LZB, including connecting leads	3					3.1						
1457	9.3.1.3	LZB transmission and reception antennae, including connecting leads	2	X				3.1						
1458	9.3.1.4	PZB/LZB radar sensor, including connecting leads	2	X				3.1						
1459	9.3.1.5	LZB acceleration sensor, including connecting leads												
1460	9.3.2	PZB/LZB data processing and analysis components												Heading
1461	9.3.2.1	PZB/LZB vehicle terminal complete (including vehicle system, switch cabinet, train protection system (cabinet), including PZ80R, I60 ER24, I60R, EBICAB 500, PZB 500, LZB 80, LZB 80E and EBICAB 2000 DES operating software	2	X				3.1		EN 15085-2 - CL 3	N/A	N/A	2.2	

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Con- secu- tive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1462	9.3.2.1.1	Plug-in board, sub-assembly for PZB/LZB vehicle terminal												
1463	9.3.2.1.2	Miscellaneous PZB/LZB components, e.g. connector panel, mains filter and fan module												
1464	9.3.2.1.3	PZB/LZB hardware module, including operating software, e.g. TCC, EVC, STM and SDU												
1465	9.3.2.1.4	Special PZB/LZB safety relay												
1466	9.3.2.2	PZB/LZB data logging systems, including operating and analysis software, e.g. DSK 10/20/22												
1467	9.3.2.3	Speed measurement/logging systems for PZB/LZB, including operating and analysis software, e.g. GMR 663/663.1, GME 8, EVA 21s1, DSE 8												
1468	9.3.3	PZB/LZB control systems												Heading
1469	9.3.3.1	Braking group, electropneumatic brake module, automatic braking output for PZB/LZB, including connecting leads	2	X				3.1						
1470	9.3.3.1.1	Special valves for automatic PZB/LZB braking output, e.g. EV 80, EV 140, exhaust and emergency valve	2	X				3.1						
1471	9.3.3.1.2	Special safety relay for automatic PZB/LZB braking output, e.g. train control output relay, brake override relay	2	X				3.1						
1472	9.3.3.1.3	Air filter												
1473	9.3.3.1.4	Special isolating valves/straight-way valves												
1474	9.3.3.1.5	Pressure regulator												
1475	9.3.3.2	Automatic braking valve/trip valve for Berlin rapid transit train stop, old	2	X				3.1						
1476	9.3.3.2.1	Train stop tripping lever												
1477	9.3.4	PZB/LZB operating and display elements												Heading
1478	9.3.4.1	PZB/LZB train data parameterization system												
1479	9.3.4.2	PZB/LZB button group												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1480	9.3.4.3	PZB/LZB disabling switch, PZB/LZB main switch												
1481	9.3.4.4	LZB emergency stop switch												
1482	9.3.4.5	PZB/LZB indicator lamp in the modular cab display unit (MFA)												
1483	9.3.4.6	Individual PZB/LZB indicator lamps												
1484	9.3.4.7	PZB/LZB display												
1485	9.3.4.8	Special PZB/LZB display units, e.g. AZ 720, CPFA 10, including operating software												
1486	9.3.4.9	Acoustic alarms for PZB/LZB, e.g. PIEZO alarm, horn, buzzer, speech output												
1487	9.4	Radio train control, European Train Control System (ETCS) (complete), including Berlin rapid transit train control system (ZBS) (complete)	2	X				3.1						
1488	9.4.1	ETCS/ZBS signal logging and data transmission components												Heading
1489	9.4.1.1	ETCS/ZBS balise reader/balise antenna, including connecting leads	2	X				3.1						
1490	9.4.1.2	ETCS/ZBS radar sensors, including connecting leads	2	X				3.1						
1491	9.4.1.3	ETCS/ZBS wheel and distance pickup, including connecting lead	3					3.1						
1492	9.4.2	ETCS/ZBS data processing and analysis components												Heading
1493	9.4.2.1	ETCS/ZBS vehicle terminal/cabinet, complete, including operating software	2	X				3.1		EN 15085-2 - CL 3	N/A	N/A	2.2	
1494	9.4.2.1.1	Plug-in board, sub-assembly for ETCS/ZBS vehicle terminal												
1495	9.4.2.1.2	Miscellaneous ETCS/ZBS components, e.g. patch panel, mains filter, fan module												
1496	9.4.2.1.3	ETCS/ZBS hardware modules, e.g. TCC, EVC, BTM, STM, SDU, STU, LTM, KBS												
1497	9.4.2.1.4	Special ETCS/ZBS safety relay												

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Con- sec- utive no	List structure		Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1498	9.4.2.2	ETCS/ZBS data logging unit, e.g. juridical recording unit (JRU)												
1499	9.4.2.3	GSM-R data radio for ETCS, see 9.1.3												
1500	9.4.3	ETCS/ZBS control systems												Heading
1501	9.4.3.1	Braking group, electropneumatic brake module, automatic braking output for ETCS/ZBS, including connecting leads	2	X				3.1						
1502	9.4.3.1.1	Special ETCS/ZBS automatic braking output valves	2	X				3.1						
1503	9.4.3.1.2	Special ETCS/ZBS automatic braking output safety relay	2	X				3.1						
1504	9.4.3.1.3	Air filter												
1505	9.4.3.1.4	Special isolating valves/straight-way valves												
1506	9.4.3.1.5	Pressure regulator												
1507	9.4.4	ETCS/ZBS operating and display elements												Heading
1508	9.4.4.1	ETCS/ZBS display, special ZBS display elements if applicable												
1509	9.4.4.2	External ETCS/ZBS controls												
1510	9.4.4.3	Acoustic alarms for ETCS/ZBS, e.g. speech output												
1511	9.5	Train control for tilted operation, speed monitoring for tilting system (GNT) (complete)	2	X				3.1						
1512	9.5.1	Signal logging and data transmission components for GNT												
1513	9.5.1.1	Vehicle GNT coupling coil, automatic train control system including connecting leads	2	X				3.1						
1514	9.5.1.2	GNT balise reader/balise antenna, including connecting leads	2	X				3.1						
1515	9.5.1.3	Wheel/distance pickup for GNT, including connecting leads	3					3.1						
1516	9.5.2	GNT data processing and analysis components												Heading
1517	9.5.2.1	GNT vehicle terminal/processor/cabinet, including	2	X				3.1		EN 15085-2 -	N/A	N/A	2.2	

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no.	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		operating software, e.g. ZUB 262								CL 3				
1518	9.5.2.1.1	Plug-in board, sub-assembly for GNT vehicle terminal												
1519	9.5.2.1.2	Miscellaneous GNT components, e.g. connector panel, mains filter and fan module												
1520	9.5.2.1.3	Special GNT safety relay												
1521	9.5.3	GNT control systems												Heading
1522	9.5.3.1	Braking group, electropneumatic brake module, automatic braking output for GNT, including connecting leads	2	X				3.1						
1523	9.5.3.1.1	Special GNT automatic braking output valves	2	X				3.1						
1524	9.5.3.1.2	Special GNT safety relay	2	X				3.1						
1525	9.5.3.1.3	Air filter												
1526	9.5.3.1.4	Special isolating valves/straight-way valves												
1527	9.5.3.1.5	Pressure regulator												
1528	9.5.4	GNT operating controls and display elements												Heading
1529	9.5.4.1	GNT indicator lamp in the modular cab display unit (MFA)												
1530	9.5.4.2	GNT display												
1531	9.5.4.3	GNT disabling switch												
1532	9.5.4.4	GNT line circuit breaker												
1533	9.5.4.5	Acoustic alarm for GNT, e.g. warning buzzer												
1534	9.6	Train control systems for other rail infrastructure systems (complete)	2	X				3.1						
1535	9.6.1	Signal logging and data transmission components for train control systems on other rail infrastructure systems												Heading
1536	9.6.1.1	Magnets for other rail infrastructure systems, including connecting leads, e.g. INTEGRA and the CROCODILE contact brush in Switzerland	2	X				3.1						
1537	9.6.1.2	LZB transmission and reception antennae for other rail infrastructure systems, including connecting	2	X				3.1						

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Con- secu- tive no	Struc- tural level	List structure Description	Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
			PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
		leads, e.g. Netherlands ATB												
1538	9.6.1.3	Balise reader/balise antenna for other rail infra- structure systems, e.g. KVB in France	2	X				3.1						
1539	9.6.1.4	Vehicle coupling coil for other rail infrastructure systems, e.g. ZUB in Switzerland/Denmark, in- cluding connecting leads	2	X				3.1						
1540	9.6.1.5	Wheel/distance pickup for other rail infrastructure train control systems, including connecting leads	3					3.1						
1541	9.6.2	Data processing and analysis components for train control systems on other rail infrastructures												Heading
1542	9.6.2.1	Vehicle terminal/processor/cabinet for train control systems on other rail infrastructures, including operating software	2	X				3.1			EN 15085-2 - CL 3	N/A	N/A	2.2
1543	9.6.2.1.1	Plug-in board for vehicle terminal for train control systems on other rail infrastructures												
1544	9.6.2.1.2	Miscellaneous components for train control sys- tems on other rail infrastructures, e.g. patch pan- el, mains filter, fan module												
1545	9.6.2.1.3	Special safety relays for train control systems on other rail infrastructures												
1546	9.6.2.2	Data logging unit for train control systems on oth- er rail infrastructures, e.g. ATESS in France												
1547	9.6.3	Train control systems for other rail infrastructures												Heading
1548	9.6.3.1	Braking group, electropneumatic brake module, automatic braking output for train control systems on other rail infrastructures, including connecting leads	2	X				3.1						
1549	9.6.3.1.1	Special valves for automatic braking output for train control systems on other rail infrastructures	2	X				3.1						
1550	9.6.3.1.2	Special safety relays for train control systems on other rail infrastructures	2	X				3.1						
1551	9.6.3.1.4	Air filter												

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List structure			Quality assurance measures,					Information on HPQ		Welding information (if a welded structure)				Additional Remarks
Con- secu- tive no	Struc- tural level	Description	PK	EMP	QFÜ	QLÜ	DOK	HPQ	Info	Welding classifica- tion	STBP 1	STBP 2	DOK	
1552	9.6.3.1.5	Special isolating valves/straight-way valves												
1553	9.6.3.1.6	Pressure regulator												
1554	9.6.4	Operating and display elements for train control systems on other rail infrastructures												Heading
1555	9.6.4.1	Controls and special operating units for train control systems on other rail infrastructures, e.g. in France and Italy												
1556	9.6.4.2	Operating displays in the cab, displays and special display units for train control systems on other rail infrastructures, e.g. France and Italy												
1557	9.6.4.3	Disabling/main switch for train control systems on other rail infrastructures												
1558	9.6.4.4	Train parameterization systems for train control systems on other rail infrastructure, e.g. Denmark and Sweden												
1559	9.6.4.5	Acoustic alarm for train control systems on other rail infrastructure, e.g. Belgium												