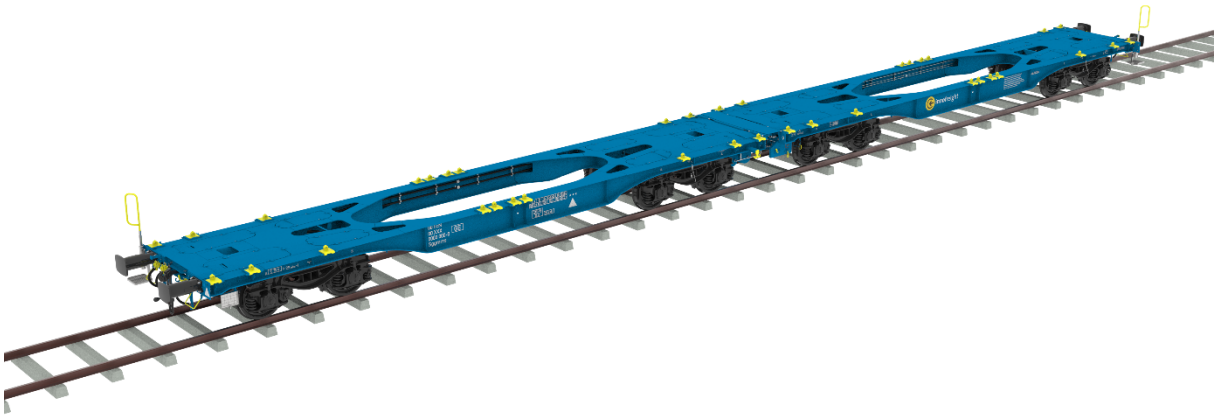
Operating Concept
IW90ft
Sggmrrs



	Function	Name	Date	Result
Version created	Modular Solutions	Lukas Geßelbauer	29.06.2023	
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LIST OF CHANGES

Revision-number	Changes	Performed by	Date of change
Rev 3.00	Update – User Manual	LGE	27.04.2022
Rev 4.00	Typeplan update – Variant names changes	LGE	31.05.2022
Rev 5.00	Typeplan update – Layout & document name changes	LGE	15.07.2022
Rev 6.00	Typeplan update – REV02	LGE	22.08.2022
Rev 7.00	Typeplan update – REV03	LGE	16.09.2022
Rev 8.00	Update – Point 3	LGE	29.12.2022
Rev 9.00	Update Figure 1	LGE	22.02.2023
Rev 10.00	General Update (Layout etc.)	LGE	10.03.2023
Rev 11.00	Update of Tara weight	LGE	29.06.2023

LIST OF ABBREVIATIONS

Abbreviations	Long form
IW	InnoWaggon
UIC	International union of railways
HLL	Main air pipe / Hauptluftleitung
HBL	Main pipe of air reservoir / Hauptluftbehälterleitung
TEN	Transeuropean net
TSI	Technical specification interoperability
G1, GE, …	Boundary lines according to TSI

1 EXPLANATIONS OF ABBREVIATIONS

IW (InnoWaggon)
Innovative freight wagon that can transport different goods with different upper structures. The upper structures are mounted by UIC carrying pins or connected to the wagon via screw system (e.g., stanchion systems).

ECM
„Entity in Charge of Maintenance" – entity responsible for maintenance

Tare weight (Own weight)
IF upper structures and intermodal loading units are always included in the tare weight of the wagon. (ISO containers are not included in the tare weight).

Loose wagon parts:
Upper structures of the wagon

Loading limits grid / Track limits grid:
Display for the maximum possible load weight depending on route class and speed.

Loading limits / Track limits:
The load limits are labelled on the wagon. The relevant load limit is determined by the lowest route class on the transport route and may therefore not be exceeded.

Combined transport (CT) (Kombinierter Ladungsverkehr (KV)):
In CT, codified intermodal loading units (ILU) are carried on special wagons on special tested and approved routes in trains with a max. profile number. All intermodal loading units are codified according to UIC Leaflet 596-6. This codification ensures compatibility with the profiles permitted on the CT routes.

TSI-License owner:
InnoWaggon GmbH, Grazer Straße 11, 8600 Bruck an der Mur, Austria is the legal owner of the TSI license and all documents required for the license.

Loaded wagon:
The wagon is considered loaded as soon as an upper structure or another intermodal loading unit is placed or mounted, regardless of the loading status (loaded/unloaded) of the upper structure or the intermodal loading unit.

TVP:
Tatravagonka Poprad

2 SCOPE OF APPLICATION

The aim of this document is to regulate the safe use of the wagon in combination with the upper structures (configurations according to the type plan).
The operating concept refers to the operation of the wagon in the TEN GE (Trans European Network) for all the following wagon units, which are noted on the currently valid type plan.

The operating concept refers to the operation of the InnoWaggon Sggmmrrs 90ft vehicle (XX XX 4657 XXX-X) in TEN.

3 MARKING OF THE UPPER STRUCTURE

Depending on the configuration variant, the upper structures are equipped with yellow (internationally approved, UIC compliant), or red codification plates (nationally approved, not UIC compliant in all features, approval bi-/multilaterally agreed).

The following types of upper structures do not require a codification plate:

- The upper structure of the whole class „A“ Variants
- The upper structure of the whole class „B“ Variants
- The Variant „F01“
- The Variant „D09 & D16“
- The Variant „D14“
- The Variant „E01 & E03“
- The Variant „F03“

Variants with red codification labels:

- may be transported as an exceptional delivery **or**

the approved authorities/EVU are:

- listed next to the code license plate in the separate agreement grid, **or**
- listed in the associated loading example, where its number is indicated in the code license plate.

The profile number specified in the codification plate (e.g., C45) indicates which KV profile is applied.

4 PARTICULARITIES OF OPERATION

4.1 General

The wagon has an approval according to TSI with the address TEN GE or CW. The associated approval document requires that the wagon is only permitted to operate with at least one loose wagon component per wagon half.

In respect to fulfill the requirements, the upper structures are marked as loose wagon components with the international inscription for loose wagon components (Annex 2 – Additional wagon labels).

According to EN 16235, a minimum weight for 4-axle freight wagons of 4 tons per axle is required.

Due to the tare weight of approx. 14,95 tons per wagon element, the wagon must always operate with all upper structures (containers, pallets, stanchion systems) marked on the wagon.

If a loose wagon component is missing, it must be replaced; if this is not possible, the wagon must be suspended.

Chapter 6.1.7.7 of Annex 9 of the GCU (AVV) must not be applied.

The exchange of the upper structures from one variant to another is only allowed to be carried out by trained and authorized personal. The training and authorization in respect of the required personal must be carried out by the ECM, or the TSI license holder.

The transport of new configuration variants which are not shown on the type plan or which deviate from the type plan is not permitted without the approval of the TSI license holder. The transport of ISO containers is excluded.

Wagons operate according to the provisions of UIC loading guideline volume 1, section 1.1, the wagons of combined transport listed on the right half page and the resulting transport requirements in section 1.3.

4.2 F1 qualification (acc. to EN12663-2) – summary from test report (Annex 6)

The corresponding wagon is generally suitable for rolling or pushing in single wagon traffic.

Innofreight, as owner of the upper structures, authorizes the respective RU (EVU) to release the rolling and pushing prohibition for wagons from this scope and the specified upper structures and overtakes responsibility for the upper structures.
The following types of upper structure (variants) in combination with the wagon are suitable for rolling off or pushing off in single wagon traffic:

- Types of Group „A“ – Pallets
- Types of Group „B“ – Stanchion systems
- Types of Group „C“ – Container with pneumatical functions (e.g., RockTainers)
- All upper structures where the longitudinal forces are transferred to the stopper consoles during transport.

For the above-mentioned groups of upper structures, the wagon inscription (Annex 2 – Additional wagon labels) - signs for the prohibition of pushing off and running off - is not valid or, if necessary, must be covered.

4.3 ISO-Container Transport

Special rules for ISO containers are specified for the following variants:

- Variant "D14, BoxOnBox": Wagon halves that can be loaded with ISO containers are never allowed to operate without ISO containers.
- Variant "E02, ISO Container": Wagon halves that can be loaded with ISO containers are only allowed to operate without ISO containers if the specified ballast plates are mounted.

5 DAMAGE OF WAGON OR UPPER STRUCTURE

5.1 Reporting and processing of the wagon damage

In case of any damage to the wagon during the operation, the wagon keeper marked on the wagon must be informed.

The corresponding contact address of the wagon keeper can be found on the website: http://www.gcubureau.org/welcome (search for the contracting party).

All wagon repairs are allowed to be carried out only by authorized workshops. The type of repair work has to be decided by the wagon keeper in agreement with the responsible ECM in according to the GCU (AVV).
For example:

1. DE_Details of GCU contact
Rail Cargo Wagon - Austria GmbH
Halter
Österreich
Am Hauptbahnhof 2 Wien 1100 Österreich
ATU51274106
01. 07. 2006.

Figure 1 Example of contact data from the wagon which took damage

5.2 Reporting and processing of the upper structure damage

If damage to the upper structure is caused during operation of the wagon, the Innofreight damage hotline must be informed immediately.

Innofreight - Damage hotline (Schadenshotline)
Email: support@innofreight.com
Phone: +43 / 3862 8989 242
Fax: +43 / 3862 8989 241

All repairs to loose wagon components are only allowed to be carried out by authorized and trained workshops. The type of repair work has to be decided by the Innofreight claims hotline.

6 LIST OF ANNEXES

- Anlage 1 – Typeplan
- Anlage 2 – Additional Wagon labels
- Anlage 3 – Examples of codification plates
- Anlage 4 – Stopper consoles
- Anlage 5 – User manual InnoWaggon IW90ft Sggmrrs
- Anlage 6 – Test report on single-wagon qualification of the upper structure

6.1 Annex 1 – Typeplan

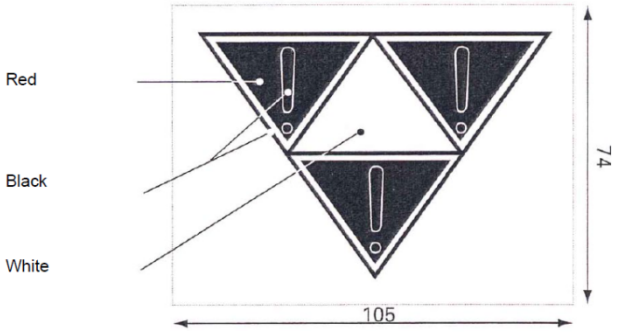
The type plan is a separate document.

Document name: Type plan IW90ft Sggmrrs

The reference of the type plan is always corresponding to the latest and valid version.

6.2 Annex 2 – Additional wagon labels

5.5 Sign for wagons that must not be fly- or gravity-shunted



Position: On the left of each solebar, or on parts covering the solebar or on special boards fitted at the same height as the solebars.

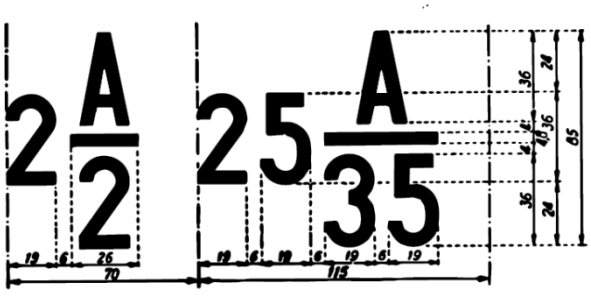
Meaning: Wagon
- must not be fly- or gravity-shunted,
- must be marshalled by a motive power unit,
- must not be loose-shunted and must be protected against buffing by other rolling stock.

N.B.: Point 5.3.4.1 of the RID states that in place of the shunting label (shown in model 15) the wagon may instead carry permanent shunting signs (wagon markings) providing they conform precisely to the prescribed example.

Figure 2 Appendix 11, – Inscriptions and signs on wagons, 5.5

2.13 Sign for removable wagon accessories

Removable wagon accessories

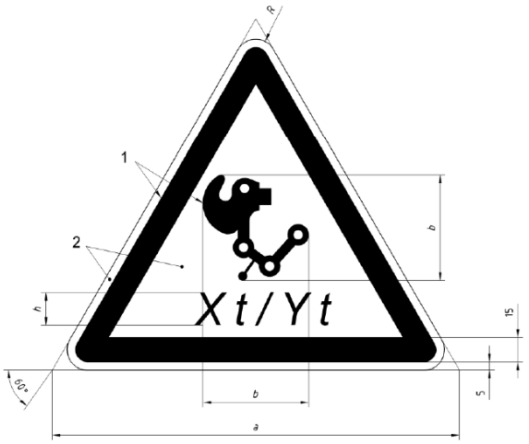


Position: On the right of each side wall.

Meaning: The number and type of removable accessories are to be indicated. In the case of carboy wagons and wagons with removable recipients, the number of such recipients should be indicated. The figure placed before the fraction indicates the number of removable accessories belonging to the wagon; the letter "A" indicates that the accessories are removable, and the denominator of the fraction gives the serial number assigned to the removable accessory in the list below. The names of the accessories may also be added in letters alongside these signs.

Figure 3 Appendix 11, – Inscriptions and signs on wagons, 2.13

5.14 Sign for strengthened screw coupling



Taille	Dimensions			
	a	b	h	R
1	400	130	30	22
2	200	65	20	11

Position: At each extremity of the side faces of the wagon or on frame girder. This marking must be chosen according to the reserved space for that purpose.

Meaning: Wagon with strengthened screw coupling – X t is related to coupling resistance, Y t to coupling hook. A strengthened screw coupling is described in EN 15566:2009, paragraph 4.1, table 1. System's recognition is over 1 MN.

Figure 4 Appendix 11, – Inscriptions and signs on wagons, 5.14

4.4 Signs for wagons fitted with composite brake blocks

Position: On both sides of the wagon, directly to the right of the marking indicating the type of brake.

Meaning: Marking for vehicles fitted with composite brake blocks with a

- high coefficient of friction ('K' type block)
- medium coefficient of friction ("L" type block)
- low coefficient of friction ("LL" type block)

Ivory to yellow

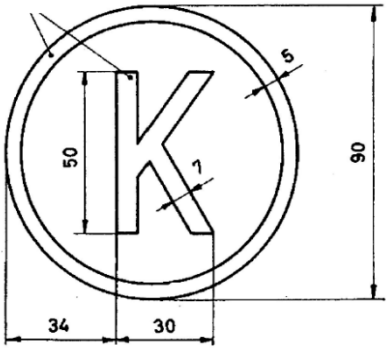


Figure 5 Appendix 11, – Inscriptions and signs on wagons, 4.4

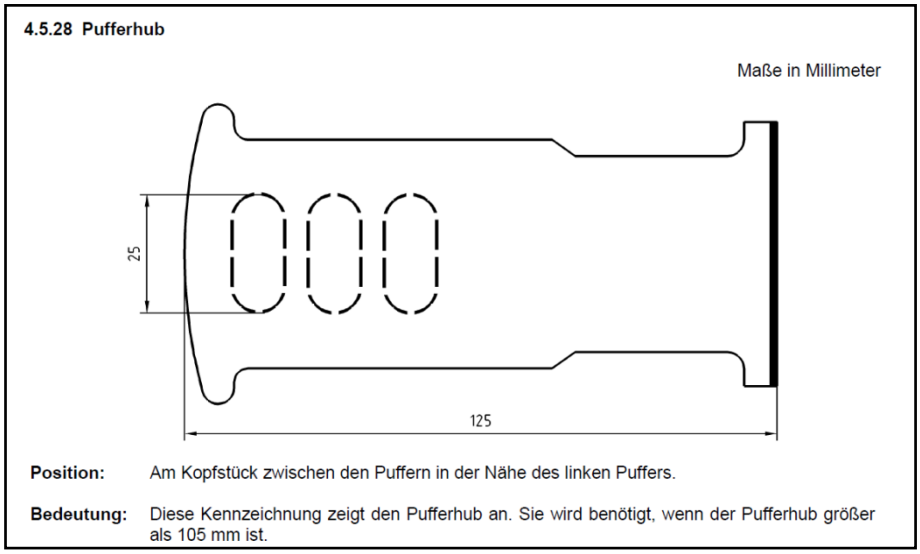


Figure 6 EN15877-1:2012, – Marking on railway vehicles, 4.5.28

The information of buffer stroke greater than 105mm has to be written on the wagon only when using Cat. - L buffers.

6.3 Annex 3 – Examples of codification plates

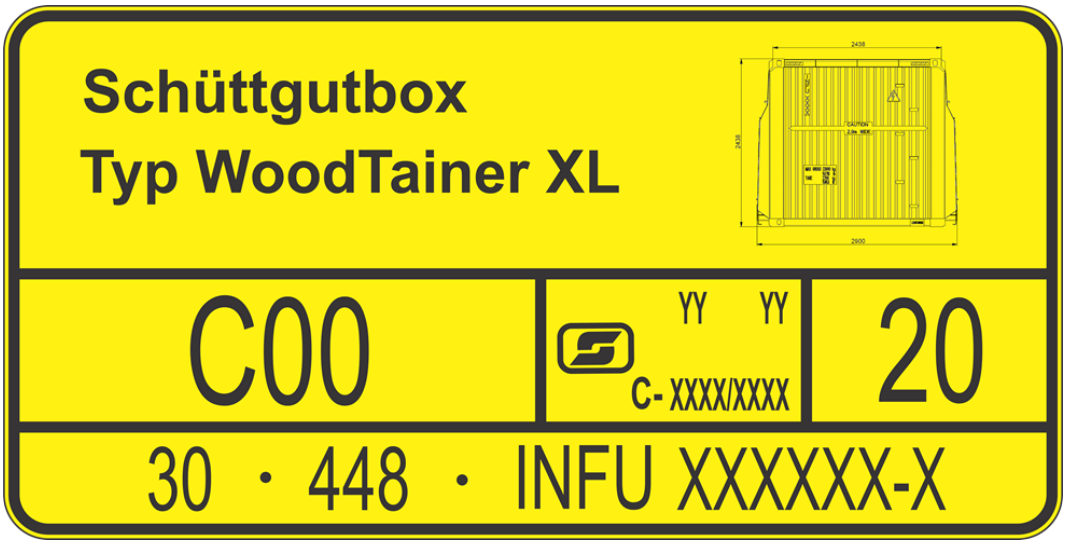


Figure 7 Example of yellow codification plate acc. UIC 596-6

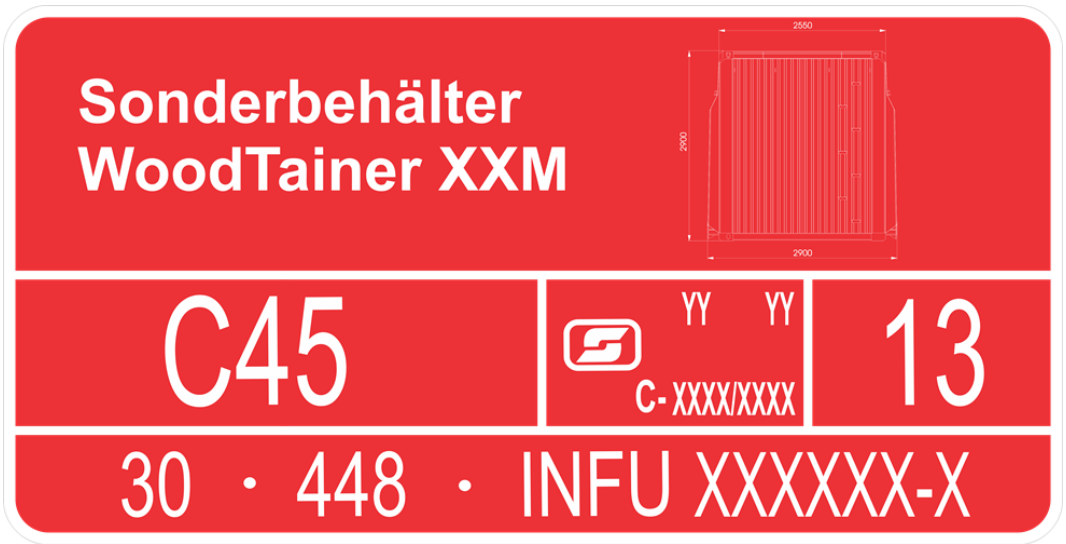


Figure 8 Example of red codification plate acc. UIC 596-6

6.4 Annex 4 – Stopper consoles

The stopper consoles are used to transfer the longitudinal forces to the wagon frame during transport of heavy-duty goods respective of the upper structures.

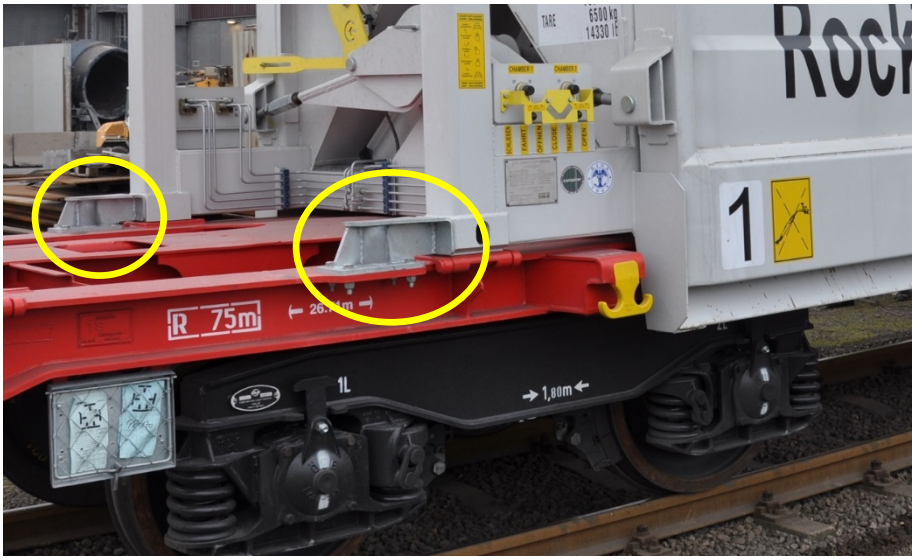


Figure 9 Mounted stopper consoles

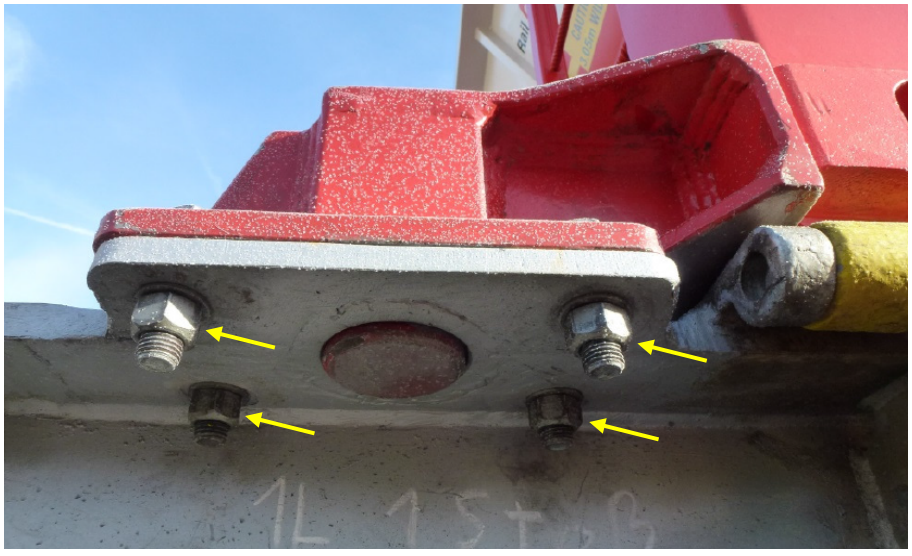


Figure 10 Mounted stopper consoles – screw connection

6.4.1 Check of stopper consoles

The following points must be checked as part of a wagon inspection or when necessary:

- **Stopper console**
  The stopper console must be checked if plastic deformation and/+or damage is present. A visual inspection is enough for this purpose.

- **Screw connection**
  The tightening torque of the screw connection used for mounting the stopper consoles must be checked with a suitable measuring instrument (calibrated torque wrench)!

Note:
For the assembly of the stop brackets, screw connections of the type M20x80 8.8 with a tightening torque of 420Nm or M20x80 10.9 with a tightening torque of 590Nm as well as self-locking nuts must be used.

6.5 Annex 5 – User Manual of IW90ft Sggmrrs

The user manual of the basic part and the corresponding appendices described in the type plan are separate documents.

Document name: User Manual Basic Part IW90ft Sggmrrs

The reference to the user manual is always corresponding to the latest and valid version.

6.6 Annex 6 – Cover sheet of test report on single wagon qualification of the upper structure

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INNOFREIGHT –

SCHWERLASTAUFBAUTEN -

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Figure 11 Cover sheet – Single-wagon qualification