

# **A-Z – Guideline**

## **of the Working Group Adhesive Bonding DIN 6701**

### **Foreword**

The A-Z Guideline is a compendium of the decisions of the “Working Group Adhesive Bonding DIN 6701”. It complements the procedure for acquiring a certificate for carrying out adhesive bonding work on rail vehicles and parts of rail vehicles in accordance with DIN 6701-2 and contains supplementary definitions, temporary regulations, restrictions and interpretations relating to the DIN 6701 series of standards.

When certification bodies (recognised by the German Federal Railway Authority) certify user-companies in accordance with DIN 6701-2, it is mandatory to use the A-Z compendium.

The A-Z Guideline is managed and kept up to date by the working group. Applications for inclusion of items must be sent in written form to the secretary of the working group.

According to the AZ collection, a transitional period was valid for the application of the DIN 6701-2, -3, -4 standards (in the version 12/2015) by the end of March 2017. For this reason, all resolutions were deleted with revision No.37, which are obsolete meanwhile, since these are now found in the standard parts (reference was made in revision No.37 to standard points in each case). Within this revision No. 39 all references to the deleted notes of revision No. 37 were completely removed. The numbering of the notes has been adjusted and therefore does not correspond exactly to the last version.

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### Version No. 42

## Versions:

Changes since the last version are underlined. The dates the decisions were made and all changes are shown via the version numbers. The version numbers correspond to the working group meetings.

Version	Meeting	Date	Version	Meeting	Date
1	1 <sup>st</sup> Meeting	23.05.2006	35	35 <sup>th</sup> Meeting	13.06.2016
2	2 <sup>nd</sup> Meeting	26.07.2006	36	36 <sup>th</sup> Meeting	02.12.2016
3	3 <sup>rd</sup> Meeting	10.08.2006	37	37 <sup>th</sup> Meeting	23.03.2017
4	4 <sup>th</sup> Meeting	12.09.2006	38	38 <sup>th</sup> Meeting	07.06.2017
5	5 <sup>th</sup> Meeting	13.10.2006	39	39 <sup>th</sup> Meeting	28.11.2017
6	6 <sup>th</sup> Meeting	20.12.2006	40	40 <sup>th</sup> Meeting	14.03.2018
7	7 <sup>th</sup> Meeting	07.02.2007	41	41 <sup>st</sup> Meeting	13.06.2018
8	8 <sup>th</sup> Meeting	14.06.2007	<u>42</u>	<u>42<sup>nd</sup> Meeting</u>	<u>22.11.2018</u>
9	9 <sup>th</sup> Meeting	10.12.2007			
10	10 <sup>th</sup> Meeting	14.11.2008			
11	11 <sup>th</sup> Meeting	09.03.2009			
12	12 <sup>th</sup> Meeting	08.06.2009			
13	13 <sup>th</sup> Meeting	10.09.2009			
14	14 <sup>th</sup> Meeting	14.12.2009			
15	15 <sup>th</sup> Meeting	15.03.2010			
16	16 <sup>th</sup> Meeting	12.07.2010			
17	17 <sup>th</sup> Meeting	20.09.2010			
18	18 <sup>th</sup> Meeting	13.12.2010			
19	19 <sup>th</sup> Meeting	28.03.2011			
20	20 <sup>th</sup> Meeting	19.09.2011			
--	21 <sup>st</sup> Meeting	--			
22	22 <sup>nd</sup> Meeting	16.04.2012			
23	23 <sup>rd</sup> Meeting	10.09.2012			
24	24 <sup>th</sup> Meeting	03.12.2012			
--	25 <sup>th</sup> Meeting	--			
26	26 <sup>th</sup> Meeting	03.09.2013			
27	27 <sup>th</sup> Meeting	03.12.2013			
28	28 <sup>th</sup> Meeting	06.03.2014			
29	29 <sup>th</sup> Meeting	11.09.2014			
30	30 <sup>th</sup> Meeting	27.11.2014			
31	31 <sup>st</sup> Meeting	10.03.2015			
32	32 <sup>nd</sup> Meeting	16.06.2015			
33	33 <sup>rd</sup> Meeting	10.12.2015			
34	34 <sup>th</sup> Meeting	01.03.2016			

## Abbreviations

EBA	German Federal Railway Authority
SAB	Supervisor Adhesive Bonding (equivalent to Deputy of SiC)
SiC	Supervisor Adhesive Bonding in Charge
WG	Working Group Adhesive Bonding DIN 6701

English version of the A-Z-Guideline of the Working Group Adhesive Bonding DIN 6701, version 42.

# 1. Applications

## 1.1. Classification of safety pictograms

DIN 6701 applies. The SiC specifies a possible classification.

(Revision 15)

## 1.2. Laminated safety glass

Other bonded joints and seals involving laminated safety glass are subject to the standard.

(Revision 10, 11, 27, 30, 37)

## 1.3. FRP

DIN 6701 does not apply when a bonded part is wrapped by the laminate and all the forces are taken up by the laminate itself. If the laminate cannot take up all the forces by itself DIN 6701 will apply.

(Revision 28, 37)

## 1.4. Bonded parts in pressure vessels area

Bonded parts at pressure vessels are subject to the standard DIN 6701.

(Revision 40)

# 2. Work specimens

## 2.1. Organisations for testing bonded joints (Test labs)

Companies or laboratories who offer services for testing bonded joints, design validation, processing properties and process monitoring must demonstrate their suitability for these tasks (e.g. a certificate of competence).

**Note:** With regards to demonstration of suitability, see also under “Miscellaneous: External testing laboratories

(Revision 17, 22)

## 2.2. Work specimens for repair work

These work specimens are required. The nature and number of the work specimens are determined by the SiC.

In the case of repair companies which only subcontract bonding work to third parties (A1/A2), who have an external SiC who is responsible for taking random samples and for problems with the production and who have a European Adhesive Bonder as contact person on-site, the SiC makes a decision and if necessary commissions tests by the third party, an approved testing laboratory or carries out tests himself.

The SiC decides where the specimen should cure/harden.

(Revision 14, 17, 37)

## **3. Repairs/Maintenance**

### **3.1. Maintenance**

**Maintenance in the sense of DIN6701 refers to components which have suffered damage in use. According to the ECM guideline, this applies outside the warranty.**

**(Revision 36)**

### **3.2. Repair carried out by the manufacturer after expiration of warranty**

**For repair work according A1 and A2 standard a SAB at least level 2 qualification needs to be on-site.**

**(Revision 23, 28, 37)**

### **3.3. Work carried out by third parties**

**In this case, the SAB can be responsible for several sites.**

**The Safety Directive 2016/798 / EU stipulates the responsibility for the maintenance of the ECM (the responsible maintenance body). The vehicle must be held by means of a maintenance system in a safe condition, that is, the ECM must ensure by methods and processes that the requirements of DIN670 are complied with.**

**(Revision 7, 9, 37)**

### **3.4. Repair carried out by the manufacturer for warranty**

**For repair work according A1 and A2 standard a SAB at least level 2 qualification needs to be on-site.**

**(Revision 7, 9, 16, 28, 37)**

### **3.5. Transfer of a rail vehicle**

**Apart from the certified company, repair work to bonded joints is permissible to allow temporary operability and ensure safe transfer of a rail vehicle to a certified site.**

**(Revision 22)**

### **3.6. Change of adhesive system for repair compared to that indicated in the repair manual**

**Demonstration of equivalent effectiveness must be carried out, according to § 2 of the EBO. The operator/manufacturer of the vehicle is responsible. Relevant proof (calculations, drawings, work instructions, etc.) must be presented on request**

**(Revision 14)**

### **3.7. Third parties contracted to undertake bonding work**

**Third parties contracted to undertake repair work require at least SAB qualified to the level like for the production of new bonded joints.**

**In singular cases, repair work can also be carried out in company workplaces which are not certified in accordance with DIN6701.**

In this case, the SiC of the third party must ensure that all conditions for undertaking the adhesive bonding work are met.

The personnel used to carry out the repair work must be qualified to at least level 3.

(Revision 7, 12, 20, 33, 37)

## **4. Supervision of bonding work**

### **4.1. Change of SAB (person relinquishing the position of SAB)**

If the requirements of DIN 6701 are no longer fulfilled, then within 3 months the company must submit a plan for supervising the adhesive bonding work in compliance with the standard.

(Revision 13)

### **4.2. Qualifications of the SiC**

For a transition period, persons who are undertaking EAE/EAS training can also be appointed as SiC if the training already has started by the time of the company audit.

If the training has not started by the time of the company audit and only a registration for EAE/EAS training was signed, the SiC must at least be qualified to level 2 (for requirement SiC level 1) or level 3 (for SiC level 2).

In this case, the period of validity of the certificate must be limited to this transition period, until the SiC is fully qualified.

(Revision 13, 15, 37)

### **4.3. Appointment of company owners, managing directors, production and production managers**

Company owners, managing directors, production and production managers can be appointed as SiC in the areas of design, process planning, purchasing, trade and assembly as well as commissioning of third parties for class A1.

The scope of repair is considered like production. In this case the restrictions apply for small-scale bonding work.

(Revision 39)

## **5. Classification**

### **5.1. Bonded joints without safety requirements**

Bonded joints without safety requirements are not subjected to the standard

(Revision 7, 10, 22, 37)

## 6. Personnel Qualification

### 6.1. Recognition of the KGL qualification of the former GDR

Weeks 0 and 1 of the KGL training course qualifications are recognised as equivalent to qualification level 3 (EAB) for adhesive bonding with code F or L.  
(Revision 8, 15, 20)

### 6.2. Contracted in staff carrying out adhesive bonding work

Contracted in staff are subject to the same qualification requirements as the company's employees.

Note: This refers to staff contracted in to carry out the adhesive bonding work.  
(Revision 12)

### 6.3. Extensive technical knowledge (Level 1: equivalent qualification)

Proof via a written and oral examination before an examination committee of the WG

Composition of the examination committee:

- 3 representatives of the "Workgroup Adhesive Bonding DIN 6701" with assistance of the EBA.

(Revision 13, 20, 28)

### 6.4. Specific knowledge according DIN 6701-2:2015 table 3

The footnote "d" of table 3 of DIN 6701-2:2015 (or proof of specific knowledge) is specified by:" or comparable specific *technical* knowledge" corresponds to qualification level 2 according table 1 of DIN 6701-2:2015

For the area of application 4 (purchasing, trading and assembly) following is valid for the representative of class A1 and A2: if constant availability of SIC is required, otherwise a non-equal representative without qualification level is possible, which ensures that no bonding decisions are made during the absence of the SIC.

This regulation has to be implemented by the companies until 30 September 2018.  
(Revision 36)

### 6.5. Qualification of the deputy SIC in case of commissioning of third parties

A deputy without adhesive bonding qualification can be appointed in the scope of commissioning of third parties if it is ensured that the SIC is involved in the assignment and the SiC is present at the execution.

(Revision 41, 42)

## **7. Miscellaneous**

### **7.1. Design and production documentation**

**Design and production documents (e.g. drawings, orders for parts) for the parts / rail vehicles in the production must comply with DIN 6701.**

**(Revision 19)**

### **7.2. Silicone-containing release agents**

**In areas used to manufacture classified bonded joints, only paste-like silicone adhesives, lubricants and sealants and hardened silicone materials are permitted, provided a risk of carry out of these materials is ruled out.**

**(Revision 20)**

### **7.3. Silicone-free release agents**

**Silicone-free release agents such as teflon spray are only permitted if a risk of carry out into the bonding area can be ruled out.**

**(Revision 22)**

### **7.4. Release procedure concerning adhesive bonding**

**A class assignment on the drawing suffices. The release must be recorded (for example electronically). It must be ensured that subsequent releasers (e.g. design department) confirm the decision.**

**(Revision 19)**

### **7.5. Certification of adhesive manufacturers**

**A certification within the scope of design is necessary for adhesive manufacturers who design the bonded joint for a user-company and carry out an evaluation of the joint dimensions.**

**(Revision 17, 37)**

### **7.6. Contract Review**

**In the case that it is not evident if DIN 6701 must be fulfilled, the contractual partners have to determine whether this is the case or not.**

**(Revision 30)**

### **7.7. External test laboratories**

**If no official certificate of competence is available, the user-company must check the following criteria when commissioning a test laboratory to test bonded joints of classes A1 and A2:**

- Personnel (organisation structure / responsibilities of those undertaking the testing work / certification of personnel operating testing equipment, certification in the area of adhesive bonding (e.g. for own specimen preparation))**

- Testing equipment (regular monitoring, testing using own and other guidelines, report preparation, traceability of the data)
- Workplace conditions (cleanliness, climate, limitations on access)
- Management of samples and products that are provided.

(Revision 22)

## 8. Company audits

### 8.1. Version of standard used for certification

The series of standards DIN 6701-2, -3, -4 (versions 12/2015) have to be implemented into all certification processes starting at April 01st 2017 latest. Annex 4 provides an overview of the fundamental changes.

(Revision 34, 35, 37)

### 8.2. Application for issue of a certificate

For the homologation and surveillance an application as shown in Annex 1 (changed) is needed, together with a business description.

The certification body has to check that the application complies with the requirements of DIN 6701.

(Revision 8, 20, 27, 29, 31, 33, 34, 35, 37)

### 8.3. Example of a bonded joint

During company inspection in the areas of production and repair, companies must manufacture at least one bonded joint of the applied class. This must be agreed beforehand with the certification body. In case of the commissioning of third parties, the example of the adhesive bond (at the discretion of the certification body) can be dispensed with. (Revision: 26, 31, 32, 37, 42)

### 8.4. Scope of the company audit

For company audits, the quality requirements on user-companies must be reviewed using Table "Tasks" of DIN 6701-2.

Company audits will be carried out randomly on selected applications or processes.

The scope of a company audit may include:

- Details on the application for certification and company description
- Knowledge and understanding of generally accepted engineering practice (DIN 6701, other standards, guidelines, and technical bulletins);
- Company organization, authorities, responsibilities, rules for deputizing;
- Technical discussions with SAB, qualifications of the employees, training;
- Specifications, list of requirements, purchasing, sales, contracting third parties;



- **Classification, design, sizing, project planning, planning documentation and verification;**
- **Production, repairs/maintenance;**
- **Production conditions, workspace;**
- **Storage and logistics, incoming goods inspection;**
- **Production documents, work instructions;**
- **Quality assurance, testing, work specimens;**
- **Traceability;**
- **Measuring equipment monitoring.**

**(Revision 5, 15, 26, 33, 37)**

### **8.5. Surveillance**

**During the term of validity of the certificate the certification body supervises the company.**

**During the term of validity of the certificate, a minimum of one surveillance audit by the certification body is obligatory. In some cases, additional monitoring may be undertaken.**

**(Revision 6, 31)**

### **8.6. Surveillance audit**

**The execution of a surveillance audit has the same quality standards as the certification audit, although it usually takes only half the time.**

**The company bears the costs of the monitoring audit in accordance with the relevant fees of the certification body.**

**(Revision 7)**

### **8.7. Reports**

**The certification body is obliged to forward the audit reports to the company and the EBA. The forwarding of partial or incomplete reports is not permitted, neither is the passing of reports to non-authorized third parties.**

**(Revision 7)**

### **8.8. Details on the certificate**

**The details on the certificate must correspond to those given on the sample certificate in Annex 2 (changed).**

**(Revision 8, 15, 20, 22, 26, 31, 32, 33, 36, 37)**

### **8.9. Validity of the certificate**

**The certificate is valid for the site of the user-company, the scope (class and code), specified supervisors and is bound by any restrictions on the certification.**

**The certificate is valid for a maximum of three years.**

In reasoned cases, the certification body can make the validity of the certificate subject to different requirements (e.g. use of other SAB, other testing, use of other personnel to undertake the bonding work, additional quality assurance tests, production monitored by the certification body).

(Revision 26)

#### **8.10. Scope of validity**

Within the certified classes (A1, A2, A3), unless otherwise indicated on the certificate, the scope of validity is not restricted to certain assemblies or parts.

The specification of the scope of validity must be entered in accordance with the code table (see Annex 3).

(Revision 8, 15, 37)

#### **8.11. Changes during the period of validity**

The certification body must be informed immediately if there is a change to the company address, class of certificate, SAB and deliberate change or addition to the “main function of the bonded joint”. After the certification body checks the situation, the certificate is changed accordingly.

The certification body must be informed if there is a change or addition to any of the areas for which the certificate is valid: “pre-treatment methods”, “production processes”, “test methods”, “degree of mechanisation” and if there are changes to main processes. The certification body decides whether to check the changes on-site and whether it is necessary to change the certificate.

(Revision 8, 22)

#### **8.12. Revoking certificates**

The certification body can revoke a certificate if:

- there are serious shortcomings, which are not immediately rectified, in the execution of the adhesive bonding work that falls under the DIN 6701 series of standards;
- there are serious shortcomings with the supervision of the adhesive bonding work that falls under DIN 6701;
- an appointed SiC is no longer present/available;
- there is no valid proof of the qualifications of the personnel carrying out the adhesive bonding work as specified in DIN 6701;
- other requirements laid down in the DIN 6701 series of standards are no longer fulfilled;
- the period of validity has expired;
- the user-company resigns the certificate.

(Revision 26)

### **8.13. Short form of the certificate (deed)**

If desired a short form of the certificate will be issued to the company. This is only valid in conjunction with the certificate

(Revision 8, 20)

### **8.14. Internet register**

The certification bodies are obliged to keep details of the issued certificates in an online register (<https://www.din6701.de>). The certificates are automatically no longer displayed 90 days after the expiry date (but are not deleted).

(Revision 13, 37)

### **8.15. Audit adjournment**

In principle, it is not possible to extend the validity of a certificate. In exceptional cases, if timely agreement of an audit date is not possible, a certificate can be extended for a maximum of 3 months without a company audit. The company is informed of this in writing. The new expiry date of the certificate must be entered in the online database.

(Revision 13, 24)

### **8.16. Waiting period**

The issuer of this certificate can refuse to reissue a "certificate for bonding rail vehicles and parts of rail vehicles" to an applicant for a period of 2 – 5 years if:

- 1) The certification body, in relation to a company keeping an existing certificate or acquiring a new certificate, is deceived with false facts or with the distortion/concealment of real facts in order to suggest that the conditions for keeping or acquiring a certificate are satisfied by that company.
- 2) This is particularly the case if:
  - a) a qualified SiC is no longer present;
  - b) no valid proof of the qualifications of the people carrying out the adhesive bonding work, in accordance with this standard, is available;
  - c) this is not reported, so breaching the obligation to notify the certification body.
- 3) The length of the waiting period is subject in some cases to the decision of the EBA and the WG

The imposition of a waiting period is reported in writing to the applicant.

(Revision 16, 28, 37)

### **8.17. Approved bonding areas**

There must be a list of the bonding areas approved by the vKAP. The designation of the adhesive areas in the certificate is reserved to the recognized body.

(Revision 37)

### **8.18. Number of auditors**

**For the following scope of combinations two auditors are mandatory for testing at initial certification, recertification audits and extension audits:**

- **Production + construction, at class A1**
- **Repair + construction, for class A1**

**For all other combinations for bonding class A1, as well as for all scopes and their combinations of classes A2 and A3 one auditor is intended. For audits of companies with small-scale bonding work also one auditor is intended, regardless of the scope and class.**

**In surveillance audits one auditor is provided in each case.**

**(Revision 39)**

# Appendix 1 – Application form

## Application

for the issuance of a certificate for adhesive bonding  
of rail vehicles and parts in accordance with DIN 6701

For the attention of: *[Certification body]*

company:

street, no.:

ZIP code, town,

http://

contact:

phone:

fax.:

E-mail:

The application is being made for the production

facility:

(only specify if different from above)

street, no.:

ZIP code, town,

Application for certification for the following areas:		class
	Design of bonding	
	Process planning of bonding	
	Production of bonding	
	Repairworks of bonding	
	Purchasing, trading and assembly of work pieces with classified bonding joints	
	Third party contracting for bonding	

### Application:

- First application
- Follow-up application (Recertification), expiry of current certificate on:
- Due to change of the following requirements:

Have you already been certified in accordance with DIN 6701 by another certification body?

- Yes (please state the certification body):
- No

**Supervisor in charge of adhesive bonding work (SiC):**

First name, name:

Date of birth:

E-Mail address and phone no. of SiC:

**Qualification level of adhesive bonding:**

- European adhesive engineer (EAE)**
- European adhesive specialist (EAS)**
- European adhesive bonder (EAB)**
- none / under education / application for education is available**

\_ the SiC is an „external“ person

If the SiC is external: he is also supervisor in following companies/sites:

**Deputy of the supervisor in charge of adhesive bonding work (First Deputy):**

First name, name:

**Date of birth:**

E-Mail address and phone number of deputy:

- the deputy of the supervisor in charge of adhesive bonding has equal rights (otherwise „no equal rights“)**

**Qualification level of adhesive bonding:**

- European adhesive engineer (EAE)**
- European adhesive specialist (EAS)**
- European adhesive bonder (EAB)**
- none / under education / application for education is available**

\_ the person supervising the adhesive bonding an „external“ person

**If the deputy is external: he is also supervisor in following companies/sites:**

**The company**

- declares to observe the standard series DIN 6701 and the applicable technological standards,
- agrees that details will be published in the online register DIN 6701 (company, scope of application, personnel information about SIC and SAB [name, birth date, qualification], remarks).
- accepts the rules of the working group bonding DIN 6701 (A-Z-Guideline),
- accepts the necessary surveillance by the certification body for the period of validity,

**Declaration of liability of applicant**

The application becomes contractually binding upon submittal of the completely signed and stamped application to the certification body. As from thereon, the certification body is regarded as being authorized to carry out all steps and procedures required for the certification in accordance with DIN 6701-2.

\_\_\_\_\_  
**(Place, date)**

\_\_\_\_\_  
**(Stamp, name and signature of applicant)**

Please enclose:

- General description of the company
- Organisational scheme (with identification of SiC's position in the company)
- Description of adhesive bonding work (including assembly and classes)
- List of further supervisors for adhesive bonding technology (including their tasks and responsibilities)

English version of the A-Z-Guideline of the Working Group Adhesive Bonding DIN 6701, version 42.

## Appendix 2 – Certificate form

<b>Certification</b> in accordance with DIN 6701 to demonstrate the suitability of the user-company for manufacturing adhesive bonds on rail vehicles and parts of rail vehicles	<b>Logo</b>  <b>Certification body</b> in accordance with DIN 6701
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The production facility at **XXXX**  
of the company **XXXXXX**  
has been certified to carry out adhesive bonding work for  
**Class A(X)**

in accordance with **DIN 6701-2, -3, -4:2015**

### Area of validity

#### Main function of the bonded joints:

**Pre-treatment methods\*:** - *Not applicable*

**Production methods\*:** XXX

**Test methods\*:** XXX

**Degree of mechanization\*:** XXX

\* From the code table in Annex 3 to the A-Z compendium

**Supervisor in Charge (SiC):** XXXX

**Equally authorized deputy supervisor:** XXXX

**Other deputy supervisor:** XXXX

**Remarks:** - *s. reverse*

**Certification no.:** *Certification body/6701/class/N,F/year/no*

**Issued on:** *dd/mm/yyyy*

**Change on:** *dd/mm/yyyy*

**Valid until:** *dd/mm/yyyy*

This document is only valid in combination with the actual registration of the certificate in the Online-Register

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(Head of certification body, name, signature and stamp)

## Remarks

# General Regulations

The new application has to be submitted to the certification body at least **two month** before the certificate expires if the suitability of the user-company shall be certificated furthermore.

## Changes within the time of validity of the certificate

If the address of the user-company or company site, the class of the certificate, supervisors or the area of validity change, the certification body must be informed immediately. The certification body decides about the necessity of an inspection on the site and change of the certificate.

The certification body must be informed if there are changes or additions to main processes or to any of the areas for which the certificate is valid under "pretreatment methods", "production processes", "test methods" and "degree of mechanisation". The certification body decides whether to check the changes on-site and whether it is necessary to change the certificate.

## Withdrawal of the certification

Authority or the certification body can withdraw certification if:

- 1) There is a serious shortcoming in the execution of the adhesive bonding work as required by this standard;
- 2) There is a serious shortcoming in the supervision of the adhesive bonding work (except for part class A3) as required by this standard;
- 3) There is no authorised supervision of the adhesive bonding work;
- 4) The employees carrying out the adhesive bonding work at the practical level do not have valid qualification certificates as required by this standard;
- 5) Other conditions required by this standard are no longer fulfilled;
- 6) The period of validity has expired;
- 7) The user-company does not have certification.

The user company must confirm attention of the withdrawal in written form towards the certification body. The certification body has to inform the German railway authority EBA.

## Distribution

1. Submitter (original)
2. EBA, German railway authority (copy)
3. Folder (copy)



## Appendix 3 – Code table

Group	Description	Code
Main function	Force transfer using high-modulus adhesives	F
	Balancing of substrate deformation using low-modulus	D
	Sealing	S
	Bonding large areas (lamination)	L
	Others (please describe):	
Surface pre-treatment	Blasting	BL
	Etching, Anodisation	ET
	Plasma treatment (LP plasma, AP plasma, corona, flame)	PL
	Laser treatment	LS
	Others (please describe):	
Production methods	Processing of solvent or water based systems (primers,	SO
	Processing of 2-C adhesives	TK
	Processing of 1-C moisture/humidity activated systems	HU
	Processing of heat-curing adhesives	HE
	Processing of hotmelt adhesives	HM
	Processing of radiation-curing adhesives	RA
	Processing of anaerobically curing adhesives	AN
	Lamination or processing of pressure sensitive adhesives	LA
	Others (please describe):	
Test methods	Destructive test methods	DT
	Non-destructive test methods	NDT
	Visible inspection (with test instructions)	VIS
	Application monitoring with electronic data processing	DC
	Tests with dynamic mechanic loads (fatigue)	CY
	Crash/impact tests	IM
	Physical-chemical ageing tests (e. g. climate test, UV, salt,..)	PC
	Rheology measurements	RH
	Spectroscopic analyses (e. g. IR, UV-VIS, ...)	RS
	Thermal analysis methods (DSC, DMA, TGA, etc.)	TA
	Wetting tests	WT
	Others (please describe):	
Mechanisation level	Fully mechanised/automated	VM
	Partly mechanised	TM
	Manual	M

## Appendix 4 – Summary of changes DIN 6701-2 version 2006 versus 2015

DIN 6701-2:2006 chapter	DIN 6701-2:2015 chapter	remarks
1. scope of application	1. scope of application	Specific cases added out of the A-Z guideline, „applications“
3.1 classification of bonded joints	-	Class A4: requirements placed in relevant classes of bonded joints Class “Z” added Classification of bonded joints placed in DIN 6701-3, chapter 4
4.2.4.1 qualification of SAB 4.2.4.2 duties and responsibilities in table 2	4.1.3.2 duties of SAB in table 2 4.1.3.3 requirements for SIC / SIC deputies in table 3	The definition of the minimum requirements for the qualification of the SIC and their deputies are separated into table 3 and newly defined. Chapter is completed by A-Z guideline “supervision of bonding work”
4.3 technical infrastructure	4.2 technical infrastructure	Content moved to DIN 6701-4, chapter 4.2 “general process instructions”
4.4 documents to be provided	4.5 documentation	Contents are now moved to DIN 6701-3, chapter 8.2 “documents for verification management” and DIN 6701-4, chapter 4.5, “production process documentation”
5 admission of user companies	-	The requirements are described now in A-Z guideline “company audits” including application (appendix 1)
6 conformity evaluation of bonded parts	-	Conformity is not within the content of this standard, is has to be obliged separately
Appendix A Requirement to user company	Table 3 and chapters 4.1.4 “executing personnel” and 4.1.5 “testing personnel”	Added by A-Z guideline “qualification of personnel”
Appendix B Business description	-	Application for granting a certificate is placed as appendix 1 of A-Z guideline
Table C.1 code table	Appendix A code table	Up to now used appendix 3 of A-Z guideline
Appendix D Working instruction for bonding	-	Requirements are placed in DIN 6701-4 chapter 4.4 „working instructions“