

A-Z - Guideline of the Working Group Adhesive Bonding DIN 2304

Foreword

The A-Z - Guideline is a compendium of the decisions of the “Working Group Adhesive Bonding DIN 2304”.

It complements the procedure for obtaining a certificate according to DIN 2304 and contains supplementary specifications, transitional provisions, restrictions and interpretations to the DIN 2304 standard and the applicable standards and regulations.

When user companies are certified according to DIN 2304 by the certification bodies participating in the Working Group Adhesive Bonding DIN 2304, the application of the A-Z - Guideline is binding for the user companies to be certified and the certification bodies.

The A-Z-Guideline is managed by the office of the working group and is updated continuously. Applications for inclusion of items must be sent in written form to the office via the certification bodies for forwarding to the working group.

The current A-Z - Guideline is published in the Onlineregister DIN 2304 (<https://www.din2304.de>). Only the version of the A-Z - Guideline published in the Onlineregister is binding.

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Revision status

Revision 03 from 24.09.2019 / published on 27th February 2020

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Revisions

Changes since the last revision 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
Draft	01	1 st meeting	23.05.2018
Draft	02	2 nd meeting	20.11.2018
Release	03	3 rd meeting	24.09.2019 / published on 27 th February 2020

Scope of application**Insulating glass panes**

DIN 2304 applies to the manufacture of insulating glass panes which are produced with the aid of adhesives and sealants.

Laminated safety glass

The production of laminated safety glass (e.g. glass laminate with PVB foil) itself is not subject to the regulations of DIN 2304. Further bondings/sealings of the laminated safety glass are subject to the standard.

Vulcanization

The production of vulcanizates is not covered by DIN 2304

Composite materials

DIN 2304 applies to the production of material composites (e.g. sandwich elements) with the aid of adhesives and sealants.

The production of plywood is not covered by DIN 2304

Composite materials

The production of FRP (Fibre Reinforced Plastics) is not covered by DIN 2304.

Bonding of fibre composites is regulated in DIN SPEC 2305-2 "Bonding technology - Quality requirements for bonding processes - Part 2: Bonding of fibre composites" and is subject to DIN 2304-1.

If a bonded add-on element is over-laminated during the production of FRP, so that this additional lamination would also meet all the requirements of the joint alone (e.g. in terms of strength and long-term resistance), this is considered to be part of the laminate. The fibre layers used for this must be able to absorb and transmit all forces. If not all forces can be transmitted by this covering laminate layers, this connection is considered as a bond and is subject to DIN 2304.

Applicable documents

The following additional standards and regulations apply in addition to DIN 2304-1:

DIN SPEC 2305-1

DIN SPEC 2305-2

DIN SPEC 2305-3

The current versions apply.

Terms

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Selection of the adhesive requirements

-

Requirements on the process chain

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Infrastructure

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Personnel**Personnel change at SAB (resignation from the function)**

If the requirements of DIN 2304 are no longer fulfilled, the responsible certification body must be informed immediately. Within two weeks, the company must submit a concept for ensuring that the bonding supervision complies with the standards.

Qualification of the SAB for S1 and S2:

For a transition period, persons who are undertaking EAE/EAS training can also be appointed as SAB 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 SAB must at least be qualified to level 2 (for requirement SAB level 1) or level 3 (for SAB level 2).

In such cases, the period of validity of the certificate must be limited to this transition period, until the SAB is fully qualified.

Temporary employment

The temporary staff which is carrying out adhesive bonding work, is subject to the same qualification requirements as the permanent staff.

Evaluation of the test results of production accompanying work samples for classes S1 and S2

The evaluation of work samples or their test results has to be carried out by personnel with adhesive bonding specific qualification. The personnel for the testing of work samples must be determined and instructed by the SAB. The evaluation must be carried out by an European Adhesive Specialist (EAS, or equivalent) or by an European Adhesive Engineer (EAE, or equivalent).

Contract Review

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Development process and construction

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Subcontracting

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Process planning

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Storage and logistics

-

Manufacturing

-

Maintenance

-

Monitoring of measuring, testing and production devices and tools

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Industrial safety and environmental protection

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Quality Management

Laboratory areas

Users or laboratories carrying out validation tests, validating design and process capability or performing continuous process control tests must provide an appropriate certificate of competence.

If no official certificate of competence is available (e.g. accreditation according to DIN EN ISO IEC 17025 or own certification according to DIN 2304), the user-company must check the following criteria when commissioning a test laboratory (internal or external) to test bonded joints of classes S1 and S2:

- Personnel (organisation, responsibilities of those undertaking the testing work, qualification of personnel operating testing equipment, qualification of adhesive bonding personnel (e.g. for in-house sample preparation),
- Testing equipment (monitoring, suitability),
- Procedures (order processing procedures, checks according to own and external guidelines, reporting, traceability of data,
- Workplace/laboratory conditions (cleanliness, climate, access restrictions)
- Management of samples and products that are provided.

Monitoring

Within the period of validity of the certificate, the certification body monitors the user company. Within the period of validity of the certificate one surveillance audit has to be carried out by the certification body. Additional monitoring shall be carried out in justified cases.

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 new expiry date of the certificate must be entered in the Onlineregister.

Example bonding / Auditing of bonding

At least for initial certification and recertification: During the audit, at least one bonded joint of the highest class applied for must be produced.

The bond must be typical for the bonds normally carried out in production. If there are several typical bondings (e.g. elastic 1-component bondings and bondings with a high-modulus 2-component system), the certification body or the auditor must be consulted in good time before the audit begins to determine which bondings will be audited.

In any case, a complete process documentation must be available for each bonding system.

If there is no corresponding bonding of the highest class carried out in regular production by the time of the audit, an example bonding needs to be prepared, which is based in type and

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documentation scope on a typical bonding of the highest class to be achieved. This shall be agreed with the certification body or the auditor in good time before the audit starts.

Miscellaneous

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Annexes

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