Fraunhofer WKI

© Manuela Lingnau

Testing | Monitoring | Certification

Certification E[D2020]®

According to the prohibitions and restrictions in the German Chemicals Prohibition Ordinance (»Verordnung über Verbote und Beschränkungen des Inverkehrbringens und über die Abgabe bestimmter Stoffe, Gemische und Erzeugnisse nach der Chemikalien-Verbotsverordnung«, ChemVerbotsV), there are special requirements in Germany for wood-based materials with regard to the emission of formaldehyde.

Since January 1, 2020, new limits and specifications for test methods* have been in effect:

- Coated and uncoated wood-based materials may not be placed on the market if the compensation concentration of formaldehyde in the air of a test room caused by the wood-based material exceeds 0.1 ppm.
- The formaldehyde concentration is tested by the chamber method according EN 16516 with special specifications for loading (1.8 m²/m³). Alternatively, chamber tests according EN 717-1 by halving the requirement value (0.05 ppm) is accepted.

The E[D2020]® certification serves as proof of compliance with the ChemVerbotsV and enables wood-based material manufacturers to provide prove to their customers, if necessary.

Furthermore, the E[D2020]® certification fulfills the IKEA guideline IOS-MAT-0181.

Contents of certification E[D2020]®

The type and scope of the product certification depends on the product category and type of certification procedures already in place for the product. Basically, all wood-based materials can be certified.

Due to their emission behavior, melamine-coated boards, or coated boards with demonstrably identical emission behavior are considered separately. Please refer to Table 1 to find required certification contents per product.

The responsibilities for the certification criteria can be found in Table 2. The required examinations for certification according to E[D2020]® of Fraunhofer WKI are listed in Table 3.

Limits for formaldehyde emission according to E[D2020]® certification of the Fraunhofer WKI:

EN 717-1	0,05 ppm (0,062 mg/m³)
EN 16516	0,10 ppm (0,124 mg/m³)

* Bundesanzeiger: »Bekanntmachung analytischer Verfahren für Probenahmen und Untersuchungen für die in Anlage 1 der ChemVerbotsV genannten Stoffe und Stoffgruppen« vom 5. November 2018.

Table 1: Contents of the E[D2020]® certification of Fraunhofer WKI

Product	Certification (Certificate)	Supervision (Attestation)
Coated and uncoated (except melamine and equivalent)	■ Initial examination ■ Establishing correlation (QCL) ■ On-site initial supervision	■ Annual supervision ■ Quarterly examination
NAF[1], glued without formaldehyde	■ CARB Executive Order or TPC Attestation for NAF ■ Initial examination ■ Manufacturer's declaration of the NAF (PMDI) Adhesive	■ Annual examination ■ CARB Executive Order or TPC Attestation for NAF for TSCA ■ Manufacturer's declaration of the NAF (PMDI) Adhesive
ULEF[2] **»exemption«**	■ CARB Executive Order or TPC Attestation for ULEF[2] for TSCA ■ Initial examination ■ Establishing correlation (QCL)	■ Annual examination ■ CARB Executive Order or TPC Attestation for ULEF[2] for TSCA
ULEF[2] **»exemption«**	■ CARB Executive Order or TPC Attestation for ULEF[2] for TSCA ■ Initial examination ■ CARB-/TSCA-certificate ■ Establishing correlation (QCL)	■ Annual examination ■ CARB-/TSCA-certificate ■ CARB Executive Order or TPC Attestation for ULEF[2] for TSCA
Faced with melamine (with CARB-/ TSCA-certification, E1 hEN + E[D2020]® for core/carrier material)	■ E1 hEN + E[D2020]® for core/carrier material ■ CARB Executive Order, CARB-/TSCA-certificate ■ Manufacturer's declaration for core/carrier material ■ Manufacturer's declaration of the application procedure	■ E1 hEN + E[D2020]® for core/carrier material ■ CARB Executive Order, CARB-/TSCA-certificate ■ Manufacturer's declaration for carrier material ■ Manufacturer's declaration of the application procedure ■ Annual testing

[1] No-added-formaldehyde-based resins (CARB/EPA)

[2] Ultra-low-emitting-formaldehyde resins (CARB/EPA)

Table 3: Examinations within the scope of certification E[D2020]® of Fraunhofer WKI

<table>
<tr><th>NAF / glued without formaldehyde (e.g. PMDI)</th><th>ULEF »exemption«</th><th>ULEF »reduced«</th><th>Uncoated and coated (except Melamine and equivalent)</th><th>Melamine-faced and equivalent with CARB-/TSCA-/NAF-/E1 hEN-/ E[D2020]®-carrier material</th></tr>
<tr><td colspan="5">Initial examination</td></tr>
<tr><td>Plywood/MDF/OSB:
■ 1 thickest board per thickness range*</td><td colspan="3" rowspan="2">■ 5 panels, distributed over the thickness range</td><td rowspan="2">■ 1 thickest panel</td></tr>
<tr><td>Particleboard:
■ 1 thinnest board per thickness range*</td></tr>
<tr><td>No correlation</td><td colspan="3">■ Determination of the correlation between the factory test method (fpc) and the 5 chamber tests of the Fraunhofer WKI.</td><td>■ No correlation</td></tr>
<tr><td colspan="5">Examinations during supervision period</td></tr>
<tr><td>Plywood/MDF/OSB:
■ 2 test specimens</td><td>■ 1 thickest board per year per thickness range*</td><td rowspan="2">■ 1 panel quarterly, each from one thickness range,
■ in case of more than 4 thickness ranges, 1 panel each from each additional thickness range</td><td rowspan="2">■ 1 thickest panel annually</td></tr>
<tr><td>Particleboard:
■ 1 thinnest board per thickness range*</td><td>■ 1 thinnest board per year per thickness range*</td></tr>
</table>

* 3 samples for EN 717-1 or 4 samples for EN 16516, sample size 600 x 600 mm. A tolerance of two millimeters is accepted.

** The following thickness ranges are distinguished: < 12 mm; > 12 mm - < 25 mm; > 25 mm < 40 mm; > 40 mm < 60 mm; > 60 mm.

Note: In the case of coated boards, the thickest produced panel per thickness range must always be tested. A tolerance of two millimeters is accepted.

Table 2: Responsibilities for the criteria of certification E[D2020]® of Fraunhofer WKI

Certification criteria	Responsibility	
	Fraunhofer WKI	**Manufacturer**
Initial examination / Initial type testing	■ Assignment of IDs for the samples ■ Examination of the panels sent by the manufacturer ■ Examination reports	■ Sampling, labeling and shipping of the samples
Examinations during supervision period	■ Assignment of IDs for sampling ■ Examination of the panels sent by the manufacturer ■ Examination reports	■ Sampling, labeling and shipping of the samples
Establishing the product correlation	■ Determination of the correlation between the factory test method (fpc) and the 5 chamber tests at Fraunhofer WKI	■ Per thickness range: fpc results are sent to Fraunhofer WKI
Initial surveillance	■ Review of the fpc ■ Control of self-monitoring ■ Surveillance report	■ Establishing the fpc according to the checklist ■ Continuous self-monitoring
Annual supervision	■ Review of the fpc ■ Control of self-monitoring ■ Surveillance report	■ Maintenance and improvement of the fpc ■ Continuous self-monitoring
Manufacturer's declaration for carrier material	-	■ Confirmation of the product type of uncoated plate including its certifications and markings
Manufacturer's declaration on the application procedure	-	■ Declaration on the lamination process, coating type and adhesive used
Valid »CARB Executive Order«, CARB-/TSCA-/E1-/E[D2020]-certificate	-	■ Submission to the certifying body if not known
Confirmation of compliance	■ Initial certification by certificate, ■ Maintenance of certification through attestations	-

Further information

Fraunhofer WKI:
https://www.wki.fraunhofer.de

Quality Assessment:
https://www.wki.fraunhofer.de/en/departments/qa/profile.html

Testing | Monitoring | Certification:
https://www.wki.fraunhofer.de/en/departments/qa/profile.html

Contact

qa-info@wki.fraunhofer.de

Fraunhofer WKI
Riedenkamp 3
38108 Braunschweig
Germany
www.wki.fraunhofer.de

10/2023