



TÜVRheinland®

DIN CERTCO

Genau. Richtig.



Certification Scheme

Use of Thermal Insulation Products for Buildings

according to

DIN 4108-10

(Edition: October 2016)

Foreword

DIN CERTCO was founded in 1972 by DIN the German Institute of Standardization e.g. for the awarding of DIN marks and offers the certification of products and persons, services and enterprises on the basis of the DIN Standards and similar specifications.

In order to prove our impartiality, independence and competence, we are voluntarily accredited according to DIN EN ISO/IEC 17065. For the satisfaction and trust of our clients and their data, we maintain furthermore a certified

- Quality Management System according to DIN EN ISO 9001
- Environmental Management System according to DIN ISO 14001
- Information Security Management System according to DIN ISO/IEC 27001
- Occupational Health and Safety Management System according to OHSAS 18001

This certification scheme was created as a part of a quality offensive by XPS-manufacturing companies, which was initiated jointly with the FPX Professional Extruder Foam Association and FIW, the Research Institute for Thermal Insulation or Forschungsinstitut für Wärmeschutz e.V.

In conjunction with the General Terms and Conditions of DIN CERTCO, this certification scheme forms the basis for suppliers of thermal insulation products for buildings, to identify their products with the "DIN-Geprüft Anwendung nach DIN 4108-10" certification mark in addition to KEYMARK thermal insulation mentioned in the area of application. This is done to document that their products fulfil all the requirements of the European Product Standard and the German application standard DIN 4108-10 and exceed these in many cases.

The certification mark "DIN-Geprüft Anwendung nach DIN 4108-10" creates consumer confidence, in that an independent, neutral and competent body has carefully examined and assessed the product on the basis of the test criteria of the standard DIN 4108-10. Third-party monitoring, also during the on-going production process, further ensures that the quality of the product is maintained. In this way, the customer receives an added value, which he can take into consideration in deciding on his purchase.

Thermal insulation products for buildings shall receive the certification mark DIN-Geprüft Anwendung nach DIN 4108-10 on meeting the requirements listed under Section 3 according to the procedure described in this certification scheme.

All certificate holders can be viewed on the DIN CERTCO homepage that is updated daily (www.dincertco.de).

Start of validity

This certification scheme comes into effect on 2016-10-01.

Amendments

None

Previous Editions

None

CONTENTS

1	Scope	4
2	Test and Certification Specifications.....	4
3	Product Requirements.....	4
	3.1 Satisfying the European Product Standard (KEYMARK)	4
	3.2 Additional requirements in addition to KEYMARK certification.....	4
	3.3 Areas of application according to DIN 4108-10.....	4
4	Testing	6
	4.1 General Information	6
	4.2 Types of Testing.....	6
	4.2.1 Initial Test (Type Test, Product type determination (PTD))	6
	4.2.2 Verification Test (Control Test)	6
	4.2.3 Supplementary test (Broadening of the product type determination).....	6
	4.2.4 Special Test.....	7
	4.3 Sampling	7
	4.4 Test Report	7
5	Certification	8
	5.1 Application	8
	5.2 Definition of Types and Sub-Types.....	9
	5.3 Conformity Assessment	9
	5.4 The Certificate and the Right to Use the Mark	9
	5.5 Publications.....	10
	5.6 Validity of the Certificate.....	10
	5.7 Renewal of the Certificate	10
	5.8 Expiry of the Certificate	10
	5.9 Alterations/Amendments	10
	5.9.1 Alterations/Amendments to the Product.....	10
	5.9.2 Alterations to the Basic Test Specifications	11
	5.10 Product Defects.....	11
6	Factory Production Control (FPC)	12
7	Surveillance by DIN CERTCO	12
	7.1 General Information	12
	7.2 Factory Inspection.....	12
	7.3 Verification Tests (Control Tests)	13
Annex A	Manufacturer's Declaration	14
Annex B	Declaration Supplier/Distributor	15
Annex C	Scope of testing, FPC and third-party surveillance for thermal insulation products made of XPS for buildings	16

1 Scope

This certification scheme is applicable to thermal insulation products for buildings and contains, in conjunction with the basic documents mentioned below, all of the requirements for awarding the certification mark "DIN-Geprüft".

- Factory made extruded polystyrene foam (XPS) products

The certification scheme presented here states the requirements for the product itself as well as for the testing, monitoring and certification of same.

2 Test and Certification Specifications

The following referenced documents form the basis for testing and certification. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

DIN EN 13164 Thermal insulation products for buildings – Factory made extruded polystyrene foam (XPS) – Specification

DIN 4108-10 Thermal insulation and energy saving in buildings – Part 10: Application-related thermal insulation requirements – factory-made manufactured thermal insulation

- Specific CEN KEYMARK Scheme Rules for Thermal Insulation Products
- This certification scheme
- The General Terms and Conditions of DIN CERTCO
- The respective schedule of fees of DIN CERTCO

3 Product Requirements

3.1 Satisfying the European Product Standard (KEYMARK)

The prerequisite for the certification of thermal insulation for buildings for the standardized application code according to DIN 4108-10 is the fulfilment of the requirements, as defined in the European CEN KEYMARK Scheme Rules for Thermal Insulation.

Verification occurs in the form of a valid KEYMARK certificate issued by a KEYMARK certification authorized body.

3.2 Additional requirements in addition to KEYMARK certification

In addition to the KEYMARK certification, the manufacturer must fulfil the requirements for his internal production control and monitoring as defined in Annex C of this certification scheme.

3.3 Areas of application according to DIN 4108-10

DIN 4108-10 defines the codes and corresponding application examples for the various areas of application in Table 1.

Table 1 Areas of application for thermal insulation

Area of application	Code	Application examples
Roof, ceiling	DAD	External insulation of roof or ceiling, protected against elements, insulation underneath coverings
	DAA	External insulation of roof or ceiling, protected against elements, insulation underneath waterproofing
	DUK	External insulation of the roof, exposed to elements (inverted roof) ^a
	DZ	Common rafter insulation, double cavity roof, non walkable but accessible upper level ceilings
	DI	Insulation inside ceiling or roof (underneath side), insulation underneath rafters/load-bearing structure, suspended ceiling, etc.
	DEO	Insulation inside ceiling or floor slab (upper side) underneath floor screed without noise protection requirements
	DES	Insulation inside ceiling or floor slab (upper side) underneath floor screed with noise protection requirements
Wall	WAB ^a	Exterior insulation of wall behind cladding
	WAA	Exterior insulation of wall behind waterproofing
	WAP ^{a, b}	Exterior insulation of wall underneath render ^b
	WZ	Insulation of double cavity walls, core insulation
	WH	Insulation of timber framed and timber panel construction
	WI	Internal insulation of wall
	WTH	Insulation between house separating walls with noise insulation requirements
	WTR	Insulation of room partition walls
Perimeter	PW	Externally situated thermal insulation of walls against earth (outside of waterproofing) ^c
	PB	Externally situated thermal insulation underneath floor slab against soil (outside of waterproofing) ^c
<p>a Also for application cases from underneath against outside air</p> <p>b Area of application/WAP code does not apply to thermal insulation panels in external thermal insulation composite systems (ETICS). ETICS are not a standardised application.</p> <p>c The stipulations according to DIN 4108-2 shall apply.</p>		

The corresponding and application-related requirements for thermal installation for buildings are stipulated in DIN 4108-10 and attached as levels, categories or limiting values. The subsequently shown requirements shall apply.

Table Application-related requirements

Insulation type	Product standard	Application-related requirements
XPS	DIN EN 13164	DIN 4108-10, Table 5

4 Testing

4.1 General Information

For the performance of the tests required as the basis for the assessment and certification of the products, DIN CERTCO avails itself of the testing laboratories to which it has awarded recognition.

4.2 Types of Testing

4.2.1 Initial Test (Type Test, Product type determination (PTD))

The initial test is a type test (design test, type test), which serves to determine whether the product meets the requirements laid down in Section 3 of this certification scheme.

The test scope is specified in Annex C. Within the context of the KEYMARK Scheme Rules, the samples used to test for the requirements of EN 13164 are additionally taken from the inspection or test site.

4.2.2 Verification Test (Control Test)

The verification test is conducted repeatedly at determined intervals (once per year on occasion of the two inspections) and serves to ascertain whether the certified product corresponds to the type-tested product during the production phase.

The test is commissioned by DIN CERTCO (The basis for this is a monitoring agreement between the manufacturer and the test laboratory). The monitoring year matches the calendar year. The results of the monitoring tests must have been verified at DIN CERTCO by a positive test report no later than 10 months after the samples are received at the test laboratory).

If this period is not observed, then the certificate is initially suspended and then deleted after a further period of 2 months maximum.

The type, scope and frequency of the monitoring tests is specified in Annex C.

4.2.3 Supplementary test (Broadening of the product type determination)

A supplementary test shall take place when additions, extensions or modifications (see Section 5.9) are made to the certified product, which may influence the product's conformity with the pertinent, fundamental requirements.

The type and scope of the supplementary test shall be laid down on a case by case basis by DIN CERTCO in conjunction with the testing laboratory.

4.2.4 Special Test

A special test is conducted if

- defects are detected
- the production has been suspended for a period of more than 6 months
- required by DIN CERTCO - reasons to be specified
- requested in writing by a third party if a particular interest in the maintenance of proper conduct of market procedures in relation to competition or quality is involved.

The type and scope of the special test shall be laid down in accordance with the specific, respective purpose on a case by case basis by DIN CERTCO in conjunction with the testing laboratory.

Should defects be detected in the course of the special test or because of the suspended production, the certificate holder shall bear the costs of the examination procedure.

Should the special test at the request of a third party reveal no defects, the costs shall be borne by the said third party.

4.3 Sampling

The samples for the different kind of tests for certificate holders are typically taken from manufacturer's current production or from the certificate holder's stock (however, only after release by QA).

In complicated cases (in case of proven violations), inspections and sampling can also be performed unannounced during normal office hours (see Scheme Rules and EN 13172).

The manufacturer or his representative must be given the opportunity to be present in the case of unannounced inspections.

The number of samples for the product test shall be agreed between DIN CERTCO and the testing laboratory in so far as this is not already laid down in the basic test stipulations according to Section 3 of this certification scheme.

The samples must be submitted to the test laboratory at the latest 4 weeks after sampling. If this deadline is not met, the certificate is initially suspended; it is deleted after a further maximum period of 2 weeks.

The costs of sampling and sending the samples to the test laboratory are borne by the manufacturer/distributor.

4.4 Test Report

The testing laboratory shall inform the principal of the test and examination results in the form of a test report. This must be submitted to DIN CERTCO in the original form.

As a rule, the test report may not be older than 6 months on submitting the application. In individual cases, older test reports can be recognized if the testing laboratory provides written confirmation of the current validity of the information given in said test report.

The test report must be in conformity with DIN EN ISO/IEC 17025, Section 5.10 and contain at least the following information:

- Name and address of the manufacturer
- Name and address of the applicant (if different from the manufacturer)
- Test basis (standard and certification scheme) with date of issue
- Type of test (e.g. type-test, complementary examination, etc.)
- Date of examination
- Test result and assessment
- Name and signature of the person responsible for the examination

5 Certification

Certification in the sense of this certification scheme relates to the assessment of conformity of a product by DIN CERTCO on the basis of test reports submitted by testing laboratories recognized by DIN CERTCO. To this end, the products to be certified are examined and subsequently monitored in respect of conformity with the requirements laid down in Section 3.

The right to use the certification mark "DIN-Geprüft" will be granted by the issuing of the respective certificate.

5.1 Application

Both manufacturers according to the German Product Liability Act (ProdHaftG) and distributors, who, with the written consent of the certificate holder, bring the products onto the market under their own responsibility in the sense of the Product Liability Act, may apply.

The applicant must submit the following documents to DIN CERTCO:

- application for certification in the original complete with legally binding signature
- an up-to-date test report according to Section 4.4 concerning an Initial Examination (see Section 4.2.1), in so far as the test was not commissioned by DIN CERTCO
- monitoring agreement between the testing laboratory and the manufacturer (this can be submitted at latest 3 months after the certificate was issued)
- valid KEYMARK certificate for the product to be certified, insofar as the KEYMARK is not applied for at the same time at DIN CERTCO
- Declaration of Performance (DoP) according to Annex ZA of the product standard

The distributor must submit the following documents to DIN CERTCO:

- Application for certification in the original complete with legally binding signature
- for supplier/distributor certificates furthermore legally binding declaration of the main certificate holder according to Annex A and a legally binding declaration of the sub-certificate holder according to Annex B
- monitoring agreement between the testing laboratory and the applicant (this can be submitted at latest 3 months after the certificate was issued)
- valid KEYMARK certificate for the product to be certified, insofar as the KEYMARK is not applied for at the same time at DIN CERTCO
- Declaration of Performance (DoP) according to Annex ZA of the product standard

The applicant shall receive from DIN CERTCO, following receipt of the application, a confirmation of order with a process number and notes regarding the further course of the procedure and, as applicable, queries concerning any missing documents

5.2 Definition of Types and Sub-Types

Products that are distinguishable on the basis of certification-relevant characteristics shall be defined as type or model. Certification-relevant characteristics are, for example, those that substantially influence the safety, function or handling of a product, which can thus be distributed under its own trade name. For each type an independent certificate shall be issued.

Sub-types are, as a rule, those models/types of a product that are only distinguishable in terms of size or performance, in formal or non-certification-relevant characteristics. These may be summarised under one certificate.

With reference to the thermal insulation for buildings, these are, e.g. various delivery thicknesses or dimensions of an insulation material.

5.3 Conformity Assessment

On the basis of the documents submitted, DIN CERTCO conducts the conformity examination. To this end, an assessment is made with the aid of the examination report as to whether the product meets the requirements of the certification scheme and of the standard.

The applicant shall receive written notification from DIN CERTCO in the event of any possible deviations.

5.4 The Certificate and the Right to Use the Mark

After successful testing and conformity assessment of the submitted documents, DIN CERTCO issues a certificate to the applicant and awards the right to use the certification mark "DIN-Geprüft" in conjunction with a corresponding registration number.



Format of Registration No.: **7D000**

Thermal insulation products for buildings, for which the right to use the certification mark "DIN-Geprüft" has been awarded, in addition to KEYMARK must be marked with the respective certification mark "DIN-Geprüft" and the respective registration number.

The mark and the registration number may only be used for the type for which the certificate has been issued and which corresponds to the type-tested product.

For each respective type, a registration number shall be issued. For design types (sub-types) of a type, the same registration number shall be issued (see Section 5.2).

In addition to this, the General Terms and Conditions of DIN CERTCO shall apply.

5.5 Publications

All certificate holders can be viewed on the daily up-dated homepage of DIN CERTCO (www.dincertco.de) under <Certificate Holders>. Manufacturers, users and consumers use this research possibility for obtaining information on certified products.

Besides the contact details of the certificate holders (telephone, telefax, e-mail, homepage), it is also possible to view the certified areas of application of the thermal insulation for buildings.

5.6 Validity of the Certificate

The certificate is valid for 5 years and is based directly on the validity of the KEYMARK certificate, which is also valid for 5 years and whose validity is confirmed annually. The period of validity is shown on the certificate. On expiry of the certificate, the right to use the mark also expires.

5.7 Renewal of the Certificate

If the certification shall continue to apply beyond the date shown on the certificate, an up-to-date, positive test report and an application for renewal must be submitted in good time to DIN CERTCO. On the basis of the documents submitted, DIN CERTCO conducts the conformity examination.

The test and inspection report must relate to the penultimate audit or newer before the expiry of the certificate and must not be older than 8 months.

5.8 Expiry of the Certificate

In the event that the new standard conformity examination according to Section 4.2.2 has not been completed before expiry of the validity period, the right to use the certification mark "DIN-Geprüft" and the registration number expires without the necessity for explicit notification by DIN CERTCO.

Furthermore, the certificate can also expire if:

- The surveillance according to Section 7 is not performed punctually or completely,
- The certification mark "DIN-Geprüft" is misused by the certificate holder,
- The requirements laid down in the certification scheme or its accompanying documents are not fulfilled,
- The certification fees are not paid on the due date
- The prerequisites for the issuing of the certificate are no longer fulfilled.

5.9 Alterations/Amendments

5.9.1 Alterations/Amendments to the Product

The certificate holder is obliged to notify DIN CERTCO of all alterations to the product (which affect the product properties) without delay. The testing laboratory in conjunction with DIN

CERTCO shall decide on the scope of an examination that shall be conducted according to Section 4.2.3 and whether it is a matter of a substantial alteration. The respective test report shall be forwarded to DIN CERTCO by the testing laboratory.

Should the testing laboratory determine a substantial alteration, the certificate with the corresponding registration number shall expire. For the modified product, a new application for initial certification authorising the use of the certification mark "DIN-Geprüft" may be submitted.

The certificate holder remains obliged to notify of any changes in the formal details (e.g. certificate holder or his address).

The certificate holder may apply to DIN CERTCO for an extension of the existing certificate for further design-types (sub-types) of the same type. It is for DIN CERTCO to decide whether these amendments require a complementary examination. The design-types shall be entered in the certificate for the already certified product and, provided that the conditions are fulfilled, shall be regarded as an integral part of same.

5.9.2 Alterations to the Basic Test Specifications

If the basic test specifications for the certification is modified, an application for the alteration of the certification shall be submitted within 6 months of receiving notification from DIN CERTCO and, as a rule, after 12 months, proof of conformity with the modified examination specifications shall be submitted in the form of a positive test report (see Section 4.2.3).

5.10 Product Defects

In the event that a certified product is detected to be defective, the certificate holder shall be summoned in writing by DIN CERTCO to rectify the defects. In conjunction with the testing laboratory, DIN CERTCO shall decide whether it is a serious or a minor defect.

In the case of defects having a direct or indirect effect on the technical safety or functionality of the product (serious defects), the manufacturer must ensure that, until the defects have been rectified, the products are no longer marked with the certification mark.

The defects must also be rectified without delay in installed products or products in storage. The manufacturer must submit proof to DIN CERTCO within 10 months, in the form of a test report on a special test in accordance with Section 4.2.4, that the defects have been rectified and that the product in question again fulfils the stipulated requirements.

In the case of defects that have no influence on the technical safety or functionality of the product (minor defects), the manufacturer must submit suitable proof to DIN CERTCO within 10 months that the defects in the product in question have been rectified.

Should the manufacturer fail to observe these deadlines, he and the distributor of product will no longer be permitted to use the certification mark "DIN-Geprüft".

Should grounds for complaint continue to exist, DIN CERTCO shall initially suspend the certificate and at the same time issue a final deadline for the rectification of the defects. Should the certificate holder fail to meet this demand, or fail to meet it within the period of grace, or if it is again not possible to prove that the defects have been rectified, the certificate shall be annulled.

6 Factory Production Control (FPC)

The manufacturer must use suitable quality assurance system to ensure that the product characteristics confirmed during the certification are remained. This must be ensured by a factory production control (FPC) on the product or production in line with KEYMARK requirements.

Factory production control is the continual monitoring of the production sequences by the manufacturer, which ensures the manufactured products coincide with the stipulated requirements.

Appropriate records shall be submitted to DIN CERTCO or its authorised representative on request. These records must contain at least the following information:

- Designation of the test object
- Date of manufacture
- Date of examination
- Result of the examination and, if envisaged, comparison with the stipulated requirements
- Signature of the person responsible for the examination
- Date of report

In the event of a negative test result, the manufacturer shall take all necessary steps to rectify the defect. Faulty products are to be marked and set apart. The test shall be repeated regularly to verify whether the defect has been rectified.

DIN CERTCO recommends the formation and certification of a quality management system in accordance with the international standard DIN EN ISO 9001.

7 Surveillance by DIN CERTCO

7.1 General Information

The constant surveillance of the certified product during the entire duration of the certification period is an integral component of the certification itself. The monitoring normally occurs twice annually in the form of two inspections and one test of every product type at regular intervals of one year in each case.

DIN CERTCO examines the conformity of the product with the requirements laid down in the certification scheme as well as, where applicable, within the framework of plant inspections, the effectiveness of the factory production control according to Section 6.

7.2 Factory Inspection

Within the framework of factory inspections, DIN CERTCO, or one of its authorised representatives, inspects the manufacturing and testing facilities as well as the quality assurance measures (QA measures)

The factory inspection also serves to determine whether the technical manufacturing pre-requisites are met for the continual conformity of the products with the requirements laid down in Section 3.

A separate, special monitoring report shall be issued on the results of the factory inspection.

Should the results of the factory inspection prove insufficient, the applicant shall be informed accordingly without delay. In this case, the scope of additional measures needed to fulfil all

requirements shall be determined between the certification body and the applicant. Should the applicant be unable to implement the necessary measures, the procedure shall be terminated.

7.3 Verification Tests (Control Tests)

In addition, or instead of factory inspections, regular verification tests on randomly selected products may be established.

The verification tests shall take place according to Section 4.2.2.

Annex A Manufacturer's Declaration

DIN CERTCO Gesellschaft
für Konformitätsbewertung mbH
Alboinstrasse 56
D-12103 Berlin

MANUFACTURER'S DECLARATION

Herewith, we declare,

Company: _____
Street: _____
Postal code/city: _____

that we agree that our certified thermal insulation products with the

Type name: _____
Registration No.: 7D

can be used for the certification of the following supplier/distributor:

Company: _____
Street: _____
Postal code/city: _____

under the following

Type name: _____

We furthermore agree that the supplier/distributor mentioned above, is permitted to apply for a certificate on his own with a separate registration number on the basis of our valid DIN-certification.

DIN CERTCO is permitted to use our available test reports and further certification relevant documents for the conformity assessment.

We furthermore confirm that we will only deliver such products to the applicant, which are identical in construction to those which are certified by us under the registration number mentioned above.

All certification relevant changes according to the current valid certification scheme will be immediately notified in writing by us to DIN CERTCO and the supplier/distributor.

Date

Company stamp and legally binding signature

Annex B Declaration Supplier/Distributor

DIN CERTCO Gesellschaft
für Konformitätsbewertung mbH
Alboinstrasse 56
D-12103 Berlin

SUPPLIER'S/DISTRIBUTOR'S DECLARATION

We herewith declare as supplier/distributor:

Company: _____
Street: _____
Postal code/city: _____

that the thermal insulation products which are distributed by us under the following

Type name: _____

produced by the manufacturer/certificate holder

Company: _____
Street: _____
Postal code/city: _____

and the Registration No.: _____

for which we have applied for DIN-certification are identical in construction to those products which are certified by the manufacturer/certificate holder under the registration number mentioned above.

We furthermore confirm that we will make any changes to those products supplied by the manufacturer or that we will not purchase other products with the same registration number.

Date

Company stamp and legally binding signature

Annex C Scope of testing, FPC and third-party surveillance for thermal insulation products made of XPS for buildings

Characteristic	Requirements and tests according to DIN EN 13164	Requirements according to DIN 4108-10 Table 5	FPC and surveillance	
			Manufacturer WPK ¹	Testing laboratory AT ²
Thermal resistance and thermal conductivity	Clause 4.2.1	-	x	x
Length and width	Clause 4.2.2	-	x	-
Rectangularity	Clause 4.2.2	-	x	-
Flatness	Clause 4.2.2	-	x	-
Thickness	Clause 4.2.3	x	x	x
Reaction to fire of marketed product	Clause 4.2.4, Table B.2	x	x	x
Dimensional stability at defined temperature	Clause 4.3.2	-	-	-
Dimensional stability at defined temperature and humidity conditions DS (70/90)	Clause 4.3.2	x ³	x	x
Deformation when exposed to defined pressure and temperature	Clause 4.3.3	x	x	x
Compressive stress or compressive strength	Clause 4.3.4	x	x	x
Tensile strength vertical to the panel plane	Clause 4.3.4	x ^{3,4}	x ³	x ^{3,4}
Long-term flow properties when exposed to pressure ⁴	Clause 4.3.6	x ⁵	x	x
Water absorption when fully submerged for lengthy period	Clause 4.3.7.1	x	-	x

¹ FPC: Factory Production Control (frequency, number of samples and test requirements according to DIN EN 13164 Table B.1)

² AT: Audit Test (Monitoring test within context of third party monitoring). The test frequencies are selected in such a way that every property, level or category identified by an x is tested at least once during the course of a monitoring year. The suitable, critical agent is selected in accordance with the European KEYMARK Scheme for Thermal Insulation Products Draft Revision 2.0 (2016-08-11) Appendix F, Product Grouping Examples.

The thickness range, the compressive strength, thermal conductivity level and propellant must be taken into consideration for this selection.

In the case of properties that may have a negative effect on one another, it may be necessary to test several critical agents prior to choosing.

³ Only for application codes with property requirements according to DIN 4108-10

⁴ If declared or vertical to the adhesive/welded seam level (in accordance with DIN EN 13163) for multi-layer panels (fresh and after F/T)

⁵ A parallel measurement must be taken annually at the manufacturer and the monitoring agency to examine the manufacturer's test equipment (20 month test period for initial test⁶; 3 test specimens with a rated load shall be examined over a period of 12 months during the annual control test, to ensure quality remains constant; if applicable)

⁶ once per year for multi-layer panels

Characteristic	Requirements and tests according to DIN EN 13164	Requirements according to DIN 4108-10 Table 5	FPC and surveillance	
			Manufacturer WPK ¹	Testing laboratory AT ²
Long-term water absorption due to diffusion	Clause 4.3.7.2	x	-	x
Frost-thaw stress after long-term water absorption due to diffusion	Clause 4.3.8.2	x	-	x
Frost-thaw stress after water absorption due to long-term immersion	Clause 4.3.8.3	-	-	-
Water vapour diffusion	Clause 4.3.9	-	-	x ⁶
Releasing of dangerous substances	Clause 4.3.10	-	-	-
Product's reaction to fire in normed subassemblies, which recreate the end application	Clause 4.3.11	-	-	-
Smouldering	Clause 4.3.12	-	-	-
Resistance to shearing	Clause 4.3.13	-	-	-