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Explanation of „Fire Protection“-Technical Terms from the perspective of Sealants and Joints purged with sealants

Previous versions are no longer valid. The latest version is available at www.abdichten.de

Content

0 Policy Statements on Standardization and Quality

Legal Framework

The following statements refer to the standard EN 15651 anticipated to come into force in 2012.
The following requirements resulting from the standard (e.g. use of CE-marking) are also expected to come into force in 2012 together with the standard.

Sealants as a construction product succumb to the European Construction Products Directive (in Germany transposed into national law by the Construction Products Act). Building products are by definition intended to remain permanently in the building. The Construction Products Directive forms the legal basis for defining the requirements for a general fitness of the products and the elimination of technical barriers to trade within the EU.
The directive itself only states targets, but not how to achieve them. These targets are summarized in the six essential requirements:

1. Mechanical resistance and stability
2. Fire Protection
3. Hygiene, health and environmental protection
4. Safety in use
5. Sound insulation
6. Energy saving and thermal protection

These essential requirements provide the basis for the creation of so-called "harmonized" standards. Such standards are prepared on the basis of a mandate from the European Commission, by CEN. The necessary compliance of a construction product with the harmonized standard is documented by the CE-mark. Without CE-mark a product must not be placed onto the market!
In developing the harmonized standards, the different circumstances of member states have to be taken into account via the introduction of classes, so that local products can still be placed on the market, i.e. the CE-mark only indicates suitability for distribution in the EU, which does not necessarily imply a high quality standard.

The harmonized standards are created as EN standards and then adopted as DIN EN standards in Germany. Possibly conflicting national standards shall be withdrawn from that date. However, some further parts of the national standards continue to exist as a so-

called "residual rules". Thus, if essential national building code regulations are affected, a product not compliant with these rules may not be used in this country, despite the CE-mark.

1 Preamble

The experience with fire protection in existing buildings on the one hand and the complex architecture and building on the other hand, make applicable standards and guidelines essential.
For this reason, great importance is attached to preventive fire protection in buildings. This begins at the planning stage and continues in the selection of building materials or components to be used. Thus it concerns inter alia the sealing materials and their use.
In order to assess the necessary fire protection and construction, using the latest findings in all cases, the most important points are codified in standards, regulations and laws.
Experience in practice again and again shows, that fundamental concepts from this literature are often not very well known or are misinterpreted. This will result in errors in the execution, which in case of a fire may lead to unnecessary and avoidable damage to property and possibly even to injury. If these effects of an error in the execution of a joint are caused by a material not approved or by disregard of requirements, the processor is liable personally. No liability insurance will cover such losses, as it is based on a grossly negligent behavior!
In the following some of the terms used in connection with fire protection will be discussed and the relationship with the joint sealing will be explained as far as possible.
It must be stressed that neither the planner nor the manufacturer and / or the processor can deal with these issues “along the way”. Anyone dealing with this must be aware of his personal responsibility:

StGB – Strafgesetzbuch – (German Criminal Code), § 319 Baugefährdung – (Causing danger during construction works):
„Whosoever during planning, management or execution of the construction or the demolition of a structure violates generally accepted engineering standards and thereby endangers the life or limb of another person shall be liable to imprisonment not exceeding five years or a fine.”

2 European Standardization

The usability of construction products and types of construction which have to meet fire protection requirements due to building code requirements are standardized in Germany by DIN 4102 with its more than 20 parts.
The aim of the EU Construction Products Directive is, however, to reduce technical barriers to trade within the EU and to achieve mutual recognition.

Fire protection in turn is an essential safety requirement, which is indeed one of the most important protection objectives of the construction laws, on the other hand, due to previously not comparable tests and requirements had let to major trade barriers.

Since 2002, the previous requirements in the German construction law have been supplemented little by little by new European classifications.

The introduction of a European classification system into German construction law with the relevant requirements and classifications is achieved in the Building Rules List.
The previous German classification system, based on the standard DIN 4102 and the EU system can be applied tantamount and alternatively for a transition period still undetermined.

2.1 Testing of Sealants

After completion of all testing standards, manufacturers and processors will have the opportunity to provide proofs regarding fire protection or fire resistance either according to DIN 4102 or
DIN EN 13501
During a transitional period until the disappearance of DIN 4102.

DIN EN 13501: Fire classification of construction products and building elements
Is available in five parts and has the status of a German standard.

Proof regarding fire protection:

DIN EN 13501-1: Part 1: Classification using data from reaction to fire tests

Proof regarding fire resistance:

DIN EN 13501-2: Part 2: Classification using data from fire resistance tests, excluding ventilation services
DIN EN 13501-3: Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers

DIN EN 13501-4: Part 4: Classification using data from fire resistance tests on components of smoke control systems

DIN EN 13501-5: Part 5: Classification using data from external fire exposure to roofs tests

Fire behaviour of construction products – Building inspection nomenclature
DIN EN 13501-1: Part 1: Classification using data from reaction to fire tests
This European standard provides the assignment of the German building materials classes to the new European classes in the table below:

Building inspection nomenclature	**Additional requirements** **No smoke**	**No burning Droplets / dropout**	**European Class according to DIN EN 13501-1**	**Class according to DIN 4102-1**
nonflammable	X	X	A1	A1
	X	X	A2-s1 d0	A2
Low flammability	X	X	B, C-s1 d0	B1
		X	B, C-s3 d0	
			B, C-s1 d2	
			B, C-s3 d2	
Normal flammability		X	D-s3 d0 E	B2
			D-s3 d2	
			E-d2	
Easy flammability			F	B3

Tab 1: Comparison of the fire classes within DIN 4102 and DIN EN 13501-1

(Does not apply to flooring)

(The table as a comparison only gives an overview about a possible classification which products can be used).

This means:

If in a Building Rules List upon naming the standard or testing standard a reference is made to the appropriate annex, the terms of DIN 4012 are equal to the terms of DIN EN 13501-1, if they can be proven by a test.
Within the new Proofs of Applicability and Proofs of Usability (ABP, ABZ or ETC) the terms of the new standard are used.

Example:

Requirements:

- Normal flammability of building products
- No requirements regarding burning droplets
- No requirements regarding smoke
-

Classification:
Complies with DIN 4102-1: B 2
Or
- Complies with DIN EN 13501-1: E-d2

If there are requirements of d and / or s, testing has to be according to DIN EN 13823.
In addition to the tests for new classes of fire protection, DIN 13501-1 describes the additional requirements, particularly the Smoke generations and
-Burning droplets / dropout a test standard for this is European standard DIN EN 13823.

Burning droplets

The burning droplets are an additional requirement for the classification into the building inspection nomenclature of construction products:
Material that dissolves during a fire test of the sample and continues to burn for a minimum period specified in the test.

Construction products that are classified according to DIN EN 13501-1 in the construction product class A2, B, C, and D will receive a classification for
d0, d1 or d2.

The test is carried out according to DIN EN 13823.

Class	Testing method	Classification	Additional Classification
B (B1)	DIN EN 13823 und	FIGRA LFS THR	Smoke and Burning droplets/ dropout

	EN ISO 11925-2 Load = 30s	Fs	
C (B1)	DIN EN 13823 und	FIGRA LFS THR	Smoke and Burning droplets/ dropout
	EN ISO 11925-2 Load = 30s	Fs	
D (B2)	DIN EN 13823 und	FIGRA	Smoke and Burning droplets/ dropout
	EN ISO 11925-2 Load = 30s	Fs	
E (B2)	EN ISO 11925-2 Load = 15s	Fs	Smoke and Burning droplets/ dropout

Tab. 2: Fire tests of construction products (taking into account the fire classification of sprayable sealants

(Does not apply to flooring)

FIGRA - Heat release rate
LFS - Lateral spread of flames
THR - Total heat released during 600s
Fs - Flame spread (mm)

ETA European Technical Approval
(ETZ - Europäische Technische Zulassung)
Corresponds to the ABZ in Germany and is issued as a component testing in European testing and certification bodies

Fire resistance classes of construction products
DIN DIN EN 13501-2 and EN 13501-3 are introduced since January 2008 and March 2006.

Table 1 can be used as evidence of the assignment of fire resistance classes according to DIN 4102-2 to the new building inspection nomenclature.

Testing standards for the fire protection of construction products
DIN EN ISO 1182
Reaction to fire tests for products - Non-combustibility test

DIN EN ISO 9239-1
Reaction to fire tests for floorings - Part 1: Determination of the burning behaviour using a radiant heat source

DIN EN 13823
Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item

EN ISO 11925-2
Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test

Smoke (s)
The smoke emission is an additional requirement for the classification into the building inspection nomenclature of construction product classes:
Material that dissolves during a fire test of the sample and continues to burn for a minimum period specified in the test.
Construction products that are classified according to DIN EN 13501-1 in the construction product class A2, B, C, and D will receive a classification for
s1, s2 or s3

The test is carried out according to DIN EN 13823.

Translation Tables
Table 1 gives as a comparison an overview of a possible assignment of the properties classified within DIN EN 13501-1 to the building inspection nomenclature of DIN 4102.

2.2 Tests for sealed Joints

In addition to the examination of sealants, there is also the possibility to test the joint in its actual installation situation - as described in Chapter 3 in the fire resistance classes.

The following standards are applied here:

EN 1363-1: Fire resistance tests - Part 1: General requirements
EN 1363-2: Fire resistance tests - Part 2: Alternative and additional procedures

Procedure

EN 1366-3: Fire resistance tests for service installations - Part 3: Penetration seals
EN 1366-4: Fire resistance tests for service installations - Part 4: Linear joint seals
EN ISO 13943: Fire safety - Vocabulary

The construction product is exposed to flame according to the desired configuration from below (floor / ceiling) or from the side (wall). The oven temperature follows a standard curve with temperature rising by time. The surface temperature of the unexposed side is measured, and the permeability of the joint for hot combustion gases:

Brick Partition:

Duration in completed minutes for which the specimen during the test retains its partitioning function without either

a) to cause the ignition of a cotton pad held against it
b) to enable the penetration of a feeler gauge or
c) exhibit sustained flaming

Heat insulation

Duration in completed minutes for which the specimen retains its partitioning function during the test, without developing temperatures on its unexposed side, either

a) increase the average temperature by more than 140 ° C over the initial average temperature

b) increase the initial average temperature at any point by more than 180 ° C.

There is a decisive influence of the product design on the results:

- Material and thickness of the supporting construction (concrete, wood, metal, plaster ...)
- Width / depth of the joint
  Type and amount of backfill material (mineral wool, fire protection cord, PE-Round Cord ...)

3 Terms

Allgemeines Bauaufsichtliches Prüfzeugnis, ABP (General Appraisal Certificate)

Issued for non-regulated construction products, whose use does not serve to fulfil substantial requirements for the safety of building structures or which are judged in accordance with generally accepted test methods.
A product with an ABP can only be used without a General technical approval (ABZ) if it has been expressly made known in the Bauregelliste (Building Rules List) A of the DiBt, Berlin, in agreement with the Oberste Bauaufsichtsbehörde (Building Supervisory Board). The ABP can be prolonged limited to a five year period.

Allgemeine Bauaufsichtliche Zulassung, ABZ (General technical Approval)

Issued for non-regulated construction products. After passing the fire resistance test it as certified in the test certificate the DiBt, Berlin will issue an ABZ, which is revocable and limited to a specific period, usually 5 years. It may be extended for another five years upon request. The DiBt grants an ABZ for non-regulated construction products, whose usability has been proven (§ 3, Para 2 of the MBO).

Anlagen - Technical Installations

Technical Installations are made of construction products and components in order to be permanently incorporated into buildings and structures (eg heating, air conditioning, sewage systems)
and to be connected to the ground (eg prefabricated houses, prefabricated garages).

Anwendbarkeitsnachweise/Verwendbarkeitsnachweise (documented evidence of conformity for application / usability)

This refers for example to the General Appraisal Certificate (ABP) and the General technical Approval (ABZ).

Aufbau einer Fuge - Build-up of a Joint

The structural design of a sealed joint has a decisive influence on its fire resistance. Therefore, within the component test will be recorded in detail:

- into which components the joint system may be integrated (type of component and its position)
- which construction products (joint edge and adhesive areas)
- which joint dimensioning (depth and width of the joint)
- which backing-up material (e.g. polyurethane foam, sealing cord, mineral wool or other materials with a reaction to fire of at least “normal flammability” B2)
- which sealant system (sealant and primer)
- which joint type (e.g. perimetre joint, glazing joint, area section joint)
- Deviations from a structure determined in a testing certificate can change the fire behavior and can thus negatively change the fire resistance and are therefore not permitted (see also "fire resistance")

Bauordnungs- und Richtlinienstruktur im Bauwesen - Building regulations and policy structure in construction

Federal law:
Musterbauordnung (MBO) – Model building regulation

Mustersonderbauordnungen – Special Model building regulation

State law:
Landesbauordnung (LBO) – State building regulation

Sonderbauordnungen – Special State building regulation

Eingeführte Technische Baubestimmungen bzw. Durchführungsverordnungen (ETB/DVO) – Established technical Building Regulations

Related regulations, recommend practices, and standards (e.g. Fire protection, DIN 4102 and DIN EN 13501)

Bauprodukte - Building products

The term Building products covers only those products that are used within the scope of the Model building code (MBO).

Building products are divided into:

- Building materials
- Building elements
- Components

Baustoffe - Building materials

Building materials are unshaped materials (eg. sand, lime, cement, joint sealants) or shaped materials (eg. brick, wood beams) which are used to manufacture components or are used for the construction, alteration or repair of buildings.

According to DIN 4102-1 building materials are classified due to their fire behaviour as not inflammable (A) and inflammable (B).

According to EN 13501-1 building materials are classified as not inflammable (A) and inflammable (F).

Baustoffklassen - Building material classes

See fire behaviour of building materials.

Bauteile - Components

Components are made of building materials, such as windows, doors, ceilings, walls and prefabricated components.
Joint sealants thus are always a part of a component.

Components are classified according to their fire resistance into individual fire resistance classes.

Bauteilprüfung - Testing of Components

Tests are carried out according to standardized guidelines, which currently are specified in DIN 4102 Part 2. The measured fire behaviour of components is known as fire resistance and stated as such.
The fire resistance of a component is the minimum duration in minutes, whilst the component meets the requirements of DIN 4102. Fire resistance is expressed as multiples of 30 minutes.
Since the various components are distinguished according to their design and load capacity, the DIN 4102 is divided into more than 20 parts. The fire resistance is stated e.g. as

- F 90 for components which absorb loads
- W 90 for fire walls, non load-bearing exterior walls, parapets
- G 90 for fire-resistant glazing
- I 90 for installation shafts
- S 90 for cable separations
- T 90 for fire separations (doors)
- R 90 for pipe separations

The fire resistance duration (fire resistance classes) only applies to components. Sealants are no components, thus sealants themselves are not classified in fire resistance classes. If a joint is executed within a component of a certain fire-resistance rating, the joint must be at least display the same fire resistance as the surrounding component (see also "fire behaviour" and "fire resistance").

Brandabschnitt - Fire zone

A fire zone is an area which in the event of damage (fire) burns out as intended and may therefore not allow flashover fire to other fire zones. The fire spread to adjacent sections is prevented by fire-resistant components.

Brandgase - Fumes

The fire and smoke gases emerging from a fire play a crucial role for fire fighting. Smoke and toxic fumes complicate fire fighting and endanger humans, animals and the environment. The potential of smoke emerging from sealants is being assessed during their building material as well as component testing.

Brandschutz - Fire Protection

Protection objective of the legislature with different weightings for all types of buildings: For residential buildings according to the height of that building

- Low height buildings
- Medium height buildings
- High-rise buildings

Special buildings or buildings of special nature and use, eg. Hospitals, schools, industrial buildings, places of assembly.
Regardless of the particular building height special buildings or buildings of special nature and use are divided into fire zones.

Brandverhalten von Baustoffen – Fire behaviour of Building Materials

The fire behaviour for building materials, thus also for joint sealants, is specified in building material classes according to DIN 4102-1 and DIN EN 13501-1.

DIN 4102 distinguishes:

Building material class A	not inflammable building materials
Building material class A1	
Building material class A2	
Building material class B	inflammable building materials
Building material class B1	flame-resistant
Building material class B2	normally inflammable
Building material class B3	easily inflammable

Din EN 13501-1 distinguishes:

Building material class A1	not inflammable
Building material class A2	not inflammable
Building material class B	flame-resistant
Building material class C	flame-resistant
Building material class D	normally inflammable
Building material class E	normally inflammable
Building material class F	easily inflammable

The fire behavior is not identical with the fire resistance and should not be put on a level with the fire resistance or fire resistance time. Similarly, one can not judge from the classification into a building material class on a fire resistance class or derive it from the classification, eg in fire class B1 (flame resistant).

Brandverhalten von Dichtstoffen - Fire behaviour of sealants

The allocation of building materials into fire protection classes is done by fire tests.

Baustoffklasse normalentlammbar – Buiding material Class normally inflammable

Building material class B2 according to DIN 4102-4
Building material class C and D according to DIN EN 13501-1.
Sealants as defined in DIN EN 26 927 unfoamed, polyurethane-based without tar or bitumen additives and polysulfide, silicone, and hybrid polymer as well as acrylic emulsion, built in between building materials of class B2, are classified as normally flammable, building material class B2 and are listed in chapter 2.3.2 p of DIN 4102-4. Therefore, this fire behaviour has not to be tested for each product individually. Building materials to be used in construction in Germany must at least meet the building material class B2.

Baustoffklasse schwerentflammbar – Building material Class flame-resistant

Building material class B2 according to DIN 4102-4
Building material class C and D according to DIN EN 13501-1.
The requirement B1 or B and C for sprayable sealants is not regulated by the building regulations of the federal states. It is in each case specified by the architect or requested or prescribed by the contracting authority.
The DIN 4102 as a national standard regulates the usability of building products in relation to the fire safety requirements to be met.
The DIN EN 13501 regulates as a European standard the possible use of building products and building elements.

Baustoffklasse leichtentflammbar - Building material Class easily inflammable

Building material class B2 according to DIN 4102-4
Building material class C and D according to DIN EN 13501-1.
An easily inflammable building material may only be installed in a building if it is connected to another building material so that the composite material is not easily inflammable anymore.

Einheits-Temperaturzeitkurve (ETK) nach DIN 4102-2 – Standard temperature-time curve

The classification into fire resistance classes depends, among other, on how long a component can withstand the fire load according to the standard temperature time curve.

Fire resistance
Fire resistance time
Fire resistance classes F

The fire resistance of components is characterized by its fire resistance and is specified by the fire resistance class. The fire resistance period is the minimum duration in minutes, during which the tested component meets the specified requirements for fire resistance. The components are classified according to the fire resistance time shown during testing into the following classes:

Feuerwiderstandsklasse –		
Fire resistance class	F 30	feuerhemmend – fire retardant
Fire resistance class	F 60	feuerhemmend – fire retardant
Fire resistance class	F 90	feuerbeständig – fire resistant
Fire resistance class	F 120	feuerbeständig – fire resistant
Fire resistance class	F 180	hochfeuerbeständig – highly fire resistant

Feuerwiderstandsklassen – Bauaufsichtliche Benennungen – Fire resistance classes – Terms used by the Bauaufsicht / Building Supervisory Board

Fire retardant and significant parts made of combustible materials	Fire resistance class F 30	F 30 - B

Fire retardant and load bearing parts made of non-combustible materials		F 30 - AB
Fire retardant and made of non-combustible materials		F 30 - A
Fire resistant and significant parts made of non-combustible materials	Fire resistance class F 90	F 90 - AB
Fire resistant and made of non-combustible materials		F 90 - A

The fire resistance is always given for the entire component when installed. This also includes any component in the existing longitudinal and transverse joints as well as connectors and fixing materials. The design of a joint, its dimensions and the building materials used can be of crucial importance for the fire resistance. Therefore, in these cases, either the Bauaufsichtliche Zulassung – General technical Approval or the Allgemeines Bauaufsichtliches Prüfzeugnis - General Appraisal Certificate (depending on the component different Verwendbarkeitsnachweise - proofs of usage are required), specifies the exact structure of the joint and the building materials allowed for it. These informations, which in the proofs are worded as general as possible, are to be adhered to. If deviations from this are planned, a new certificate is required. The certificate of equivalence of another building material by the manufacturer is not suitable, because the equivalence must relate to the stress in the event of fire. If the exchange of named products is permitted, the conditions to be met for other products are specified in the General technical Approval.

Geregelte Bauprodukte – Regulated building materials

Products that do not differ or do not differ significantly from certain technical rules, for example, DIN standards for certain uses (fire safety rules of DIN 4102) or VDI guidelines.

Hinterfüllmaterial – Back-up material

Back-up material in a joint is a crucial part of the fire test. On the building site an exchange with other materials must not be made. (See also "Build-up of a Joint").
For all back-up materials (eg, cords made of polyethylene and polyurethane, polyurethane foams) the minimum requirement is class B2 according to DIN 4102.

Landesbauordnung (LBO) - State building regulation

State law consists of a multitude of laws, regulations, guidelines and administrative regulations. Associated to these are in turn by-laws from other areas of legislation (eg. federal law) and regulatory standards associated with building inspection. In addition, there are an almost incalculable number of circulars and instructions from superiors to the regulating authorities. These do not actually have by-law character, however they create internal instructions. Some fire departments, for example firefighters issue their own instruction sheets, which then form the base of their expert’s opinions.

Most important pillars of the state law are the state building codes and fire- and fire prevention laws. The state building codes contain defined material requirements regarding the properties of standard buildings (residential, office buildings and similar).

Requirements for "technical installations of a special nature or use," which need due to their peculiarity either additional or less structural or safety measures are determined during the building permit process according to § 51 MBO "Physical structures and spaces of special type or use" or regulated in directives. There are also a number of technical and administrative executive codes. Most of the executive codes are based on an authorization within the state building codes and clarify general statements of the relevant building regulations. They contain, in many cases, both construction and operational requirements (**quote from "Brandschutza**tlas", Para 3.4 State law).

Musterbauordnung (MBO) - Model building regulation

Guide for the entire construction law.
On the basis of advice of the Federal Constitutional Court of 1954, the responsibility for fire protection has been transferred to the federal states. The introduction of fire regulations thus takes place in the national building regulations (LBO) of the individual federal states. Significant statements about fire protection in the MBO are:

- Building products are approved only if they satisfy the requirements of this law for a reasonable length of time and if they are fit for purpose.
- Building structures have to guard against the occurrence of fire and the spread of fire and smoke, the rescue of Humans and animals, and effective fire fighting must be possible.

Nicht geregelte Bauprodukte – Non regulated building products

Building products that differ materially from those specified in List A and the rules of construction and building products for which there are no general technical rules.
They may only be used for provisions against fire and smoke, if they have a proof of usability or applicability in the form of a General Appraisal Certificate (ABP) or a General Technical Approval (ABZ) or an individual approval.

Prüfzeichen PA III-Nummer – Mark of conformity PA III number

A sealant that has been successfully tested to fulfill the requirements of Class B1 in DIN 4102 Part 1, shall, upon request at an accredited materials testing institute receive an approval for use in fire protection (applicability statement). Connected with this approval is a periodic monitoring by an official external body on the premises of the sealant manufacturer. As an outside mark a PA III number is assigned to the product, which has to be stated on the packaging and in the data sheet.

Rauchgase – Smoke gas

See „Brandgase“ – “Fumes”.

RbBH Richtlinien für die Verwendung brennbarer Baustoffe im Hochbau - Guidelines for the use of flammable materials in buildings

These guidelines have been taken over in the administrative regulations under the building codes of the individual states, however without being mentioned in them. In the building regulations of NRW (Northrhine-Westphalia), it says, for example: "Building materials used to fill joints between space-enclosing walls (eg joints between building core- or building divider walls) must be at least flame retardant (B1) and non-flammable in high-rise buildings (A) to prevent fire spread, for the edge sealings or edge covers of such joints normally flammable materials (B2) may be used."

Temperaturbeständigkeit – Temperature resistance

For sealants usually also a temperature resistance is stated. It is influenced by the basic raw material and by the respective production recipe. It specifies the valid temperature range for the listed material parameters. The temperature resistance is not directly related to the fire behaviour.
Example:
A sealant rated as resistant up to 280° C is therefore not automatically also flame retardant, ie class B1 to DIN 4102-1. On the other hand, a product with a temperature resistance of 120° C may well pass the fire test according to DIN 4102-1 Class B1.

Ü-Zeichen / Übereinstimmungszeichen – Ü-Mark / Mark of compliance

Only when the usability of the building product has been proven via the evidence of the General appraisal certificate or the General technical approval, this building product may be marked with the mark of conformity (Ü-mark) clearly visible on the packaging.

Verwendbarkeitsnachweis – Proof of usability

See “Anwendbarkeitsnachweis” – “Documented evidence of conformity“

Zündpunkt / Zündtemperatur – Ignition point / Ignition temperature

It is the usual term for the temperature at which the materials, eg a sealing material on hot surfaces with no direct flame impingement, eg an aluminum window heated in a fire, will show self-ignition on the unexposed side (ignition temperature).
Therefore, the result of the fire test of a sealant with a PA III registration for joints between concrete structures cannot be applied unchecked on joints in or next to a component of e.g. metal, wood or other materials.

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Price of printed Instruction Sheet:

EUR 0,-*

Price on application.

Free download of all other IVD Instruction Sheets at:

www.abdichten.de

In addition, all information about the joint-sealing in the areas of soil, facade, windows, sanitary and water construction.

As well as the IVD term search, **the entire** sealant online lexicon **and continuously** updated news **about the topic.**

www.abdichten.de – Your internet platform for joint sealing.

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