

IVD-Instruction Sheet No. 15

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The Maintenance of movement accommodating Sealants and affixed elastic Joint Tapes

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0 Policy Statements on Standardization and Quality



Legal Framework

The following statements refer to the standard EN 15651 anticipated to come into force in 2014.

The following requirements resulting from the standard (e.g. use of CE-marking) are also expected to come into force in 2014 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 Possibly conflicting national standards shall be withdrawn from that date.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

Just as it is self-evident for technical devices and equipment and part of the purchase agreement that regular maintenance must be carried out by the manufacturer, there are joint areas in which joint sealing materials have to fulfill outstanding tasks, which in addition to the protection of a building or part of a building against humidity and heat losses, especially serve the environmental protection and water protection.

In compliance with the essential conditions for the particular application for joint sealing systems such as:

- Joint designs according to valid standards and technical regulations (see Chapter No. 11 Reference List)
- Compliance with quality requirements of the manufacturers
- Proper handling according to the manufacturer's technical guidelines and regulations

a maintenance and / or regular monitoring of a seal usually is not necessary. A maintenance or monitoring is required, if certain joint areas according to experiences in practice cannot or can only be inadequately assessed regarding their applied load, e.g. due to too hard cleaning brushes or wrong nozzles or too high pressure, overdoses of cleaning and decontaminating substances, improper length of a strain as well as an intermittent impingement.

Such joints are considered joints requiring regular reviews and maintenance if necessary (see Chapter No. 3, Joint areas with Sealants and affixed elastic Joint Tapes to be maintained).

The review primarily relates to the regular monitoring of the surface of the joint sealing systems with regard to e.g. surface wrinkling, softening, stains, cracks in the seal (cohesive rupture), other mechanical damage or delamination of the adhesive surfaces (adhesion loss) which in the case of timely detection serves as damage prevention or mitigation.

The specific regulation of maintenance through maintenance contracts for particular sealing areas is imperative and is recommended for the future (see Chapter 9.1).

2 Scope

This leaflet is valid for

- Cold workable sealants of all types according to Chapter 5.1
- Cold workable sealants (according to DIN EN 26927)
- Joint tapes based on polysulfide and polyurethane according to approval principles for “Joint Sealing systems within facilities for storing, filling and transfer of substances hazardous to water“
- Joints with severe chemical and / or physical stress and joints with mainly physical stress
- This instruction sheet only applies to loads acting on the sealant / joint tapes and not for the components, their adjacent areas and the construction design of the joint.
- The instruction sheet does not apply to bituminous sealing systems processed hot, for butyl tapes according to IVD-Instruction Sheet No. 5 and Structural glazing.

3 Joint areas with Sealants and affixed elastic Joint Tapes to be maintained

Since a clear distinction between chemical and physical influences is not possible, this instruction sheet follows the classification into three groups:

3.1 Joints in handling water-injurious substances

3.1.1 According to Technical Regulations for water-injurious substances (TRwS) ATV-DVKW A 781, DWA-A 782, DWA-A 783, DWA-A 784 and DWA-A 786

3.1.2 ZTV Fug – StB 01 Additional technical contract conditions and guidelines for joints in traffic areas - cold processed sealants

3.1.3 LAU-Facilities (Facilities for storing, filling and transfer of substances hazardous to water)

- JGS-Facilities (slurry, manure, silage)
- Pipelines

3.1.4 HBV-Facilities (Production, treatment and utilisation facilities for substances hazardous to water)

3.1.5 Wastewater systems in accordance with design and test principles for wastewater plants

3.2 Floor Joints according to IVD-Instruction Sheet No. 1, IVD-Instruction Sheet No. 6, ZTV Fug – StB 01 and DIN EN 14188

3.2.1 Sealing of floor joints with elastic sealants

3.2.2 Joints in floor areas and in the adjacent plinth and edge areas

3.2.3 Joints without chemical exposure

- Walkable floor surfaces
- Driveable floor surfaces
- Balconies, Terraces
- Warehouses

3.2.4 Joints with additional chemical exposure

- Parking decks
- Cleaning equipment, car washing bays

3.3 Joints in sanitary and wet areas

3.3.1 Construction and sealing of joints in sanitary / wet rooms according to IVD-Instruction Sheet No. 3

- Joints in the interior, which are not exposed to pressing water (bath, toilet, kitchen, showers, sauna areas, etc.)
- Not within the scope of IVD-Instruction Sheet No. 3 are joints in the pool area, as there is no technical information regarding the joint construction and the quality requirements of the joint sealing material
- The instruction sheet No. 3 does not apply to the sewer construction and sewage treatment plants

3.3.2 ZDB-Merkblatt (Instruction Sheet) – Hinweise für die Ausführung von Verbundabdichtungen mit Bekleidungen und Belägen aus Fliesen und Platten für den Innen- und Außenbereich

(References for the execution of composite seals with sheathings and coverings of tiles and slabs for interior and exterior)

The instruction sheet divides the humidity load classes into

- 0
- A0 1
- A0 2
- A 1
- A 2

4 Joint Areas where Sealants do not need Maintenance under normal Load

In the following fields of application the requirements for sealing systems and the other conditions are set out comprehensively and the mechanical and / or physical loads usually present in practice can be defined.

DIN 18540

Abdichten von Außenwandfugen im Hochbau mit Fugendichtstoffen

DIN 18545

Sealing of glazings with sealants

DIN 18349, VOB Vergabe- und Vertragsordnung für Bauleistungen

German construction contract procedures (VOB) - Part C: General technical specifications in construction contracts (ATV) - Repair work on concrete structures

IVD-Instruction Sheet No. 4

Sealing of outside wall Joints with elastomeric Joint Tapes

IVD-Instruction Sheet No. 5

Sealing with Butyl-Tape

IVD-Instruction Sheet No. 7

Elastic Joint Seals in Facades of Ceramic Tiles fixed with Mortar

IVD-Instruction Sheet No. 8

Mechanical Construction and Sealing of Joints in wooden Floors

IVD-Instruction Sheet No. 9

Sealants in perimetre Joints of Windows and exterior Doors

IVD-Instruction Sheet No. 10

Glass sealing of wooden Window frames with Sealants

IVD-Instruction Sheet No. 13

Glass sealing of wooden-metal Window designs with sealants

IVD-Instruction Sheet No. 16

Perimetre Joints in dry construction- applications of sprayable sealants

5 The Materials (Sealants / Joint Tapes)

5.1 Cold workable Sealants (according to DIN EN 26927)

The following commodity groups can be applied:

- Silicone
- Polyurethane
- Polysulfide
- Hybrid Polymer

or combinations of these commodity groups.

Sealants in joints dealing with water-injurious substances (see paragraph 3.1 Joints in handling water-injurious substances) must meet the approval principles of the DIBt »Fugenabdichtungssysteme in LAU-Anlagen, Teil 1« (Joint sealing systems in facilities for storing, filling and transfer of substances hazardous to water, Part 1) and the EOTA approvals.

Sealants in floor joints (see paragraph 3.2 Floor Joints according to IVD-Instruction Sheet No. 1, IVD-Instruction Sheet No. 6 and ZTV Fug-StB 01) must meet the requirements of the IVD-Instruction Sheet No. 1, the ZTV Fug - StB 01 or DIN EN 14188.

Sealants in sanitary and wet areas must meet the requirements of IVD-Instruction Sheet No. 3 (see Paragraph 3.3 Joints in sanitary and wet areas) and of the ZDB-Merkblatt (Instruction Sheet)

5.2 Joint Tapes using Adhesives

Affixed joint tapes in joints dealing with water-injurious substances (see Paragraph 3.1 Joints in handling water-injurious substances) must meet the approval principles of the DIBt »Fugenabdichtungssysteme in LAU-Anlagen, Teil 2, Fugenbänder« (Joint sealing systems in facilities for storing, filling and transfer of substances hazardous to water Part 2, Joint Tapes) and the EOTA Approvals

5.3 System Components

System components to be applied such as adhesives, primers and back-up material are part of the joint sealing system and have to be used according to the manufacturer's recommendations and in accordance with the approval principles.



6 Release of the Seal to use

For the determination of the date of the earliest use the information given by the Sealant / Joint Tape manufacturer is binding.

7 Documentation of the Progress of Work

The processing of joint sealing systems has to be documented in a construction site log countersigned by the client or his representative.

Site protocols (IVD-Fachinformation Nr. 1/2006) for the sealing of joints with sealants / joint tapes without chemical exposure and for sealing of joints with sealants / joint tapes approved by the building authorities for LAU systems (s.a., including petrol stations) are available from the IVD on the internet at www.ivd-ev.de in the publications section.

8 Warranties

- According to BGB (German code of civil law) with a limitation period of 5 years
- According to VOB/B 2002 including supplement in 2005 with a limitation period of generally 4 years.

If warranty claims for Sealants / Joint Tapes become time-barred after one of the two limitation periods, processors only have limited possibilities to assess unforeseen and long-term improper overloading and to respond in order to avoid potentially serious subsequent damages.

For this reason, a maintenance contract is recommended in order to inspect the Sealants / Joint Tapes used in agreed intervals during the warranty period and to assess and eliminate any deficiencies.

9 Content of a Maintenance Contract

Sealants / Joint Tapes in maintenance are exposed to specific chemical and / or physical loads. For this reason they have to be inspected at regular intervals and may be renewed in whole or in parts to avoid subsequent damages.

Within the maintenance contract the parties agree that the contractor, after consultation with the client or the builder, conducts a regular inspection for a fee. Billing takes place as agreed.

These measures are designed to preserve the joints and their functional reliability.

9.1 Sample Maintenance Contract

A sample maintenance contract is available on the Internet at the IVD www.ivd-ev.de in the publications section (IVD-Fach-Information No. 2 / 2006).

For joints handling substances hazardous to water (see Chapter 3.1) the control and maintenance duties are duties of the operator. They can be subcontracted to certified specialists. For repairs there is always an obligation to use certified specialists in accordance with WHG (water management law) § 19 g et seq.

10 Terms

According to DIN 52 460 "Sealing and Glazing; Terms" a maintenance joint is defined as follows:

"Maintenance joint is a joint exposed to strong chemical and / or physical impacts, whose sealant has to be inspected at regular time intervals and if necessary be renewed to prevent subsequent damage."

With this definition in practice two problems are associated:

- There is no clear-cut definition what constitutes a joint (seal, quality and consistency of the components, how far the area adjacent to the joint is being counted)
- In technical documentations in various trades and professions (e.g. painters, plumbers and glaziers) the field of maintenance is mentioned with very vague terms and for any number of joints

For this reason, this Instruction Sheet specifies the following definition:

"Maintenance of motion accommodating sealants and affixed elastic Joint Tapes".

11 Reference List

DIN EN 14188

Joint fillers and sealants
Beuth-Verlag GmbH, 10787 Berlin

DIN EN 26927

Building construction; jointing products; sealants; vocabulary
Beuth-Verlag GmbH, 10787 Berlin

DIN 18540

Sealing of exterior wall joints in building using joint sealants
Beuth-Verlag GmbH, 10787 Berlin

DIN 18545

Glazing with sealants
Beuth-Verlag GmbH, 10787 Berlin

DIN 18349, VOB Vergabe- und Vertragsordnung für Bauleistungen

German construction contract procedures (VOB) - Part C: General technical specifications
in construction contracts (ATV) - Repair work on concrete structures
Beuth-Verlag GmbH, 10787 Berlin

DIN 52460

Sealing and glazing - Terms
Beuth-Verlag GmbH, 10787 Berlin

DIBt-Zulassungsgrundsätze (Approval Principles)

Fugenabdichtungssysteme in LAU-Anlagen
(Joint sealing systems in facilities for storing, filling and transfer of substances hazardous
to water)

Teil 1 – Fugendichtstoffe

(Part 1 – Joint Sealants)

Teil 2 – Fugenbänder (aufgeklebte Fugenbänder gemäß Prüfnorm)

Abwasser-Anlagen

(Part 2 – Joint Tapes (affixed Joint Tapes according to test standard) sewage works)

ZTV Fug – StB 01

Zusätzliche Technische Vertragsbestimmungen und Richtlinien für Fugen in
Verkehrsflächen

(Supplementary technical directives for joint filling in roads)

CUAP

Common Understanding of Assessment Procedure

EOTA

European Organisation for Technical Approvals

TRwS 781 (technical regulations for volatile liquids)

Tankstellen für Kraftfahrzeuge
(Filling stations for motor vehicles)

TRwS 782 (technical regulations for volatile liquids)

Tankstellen für Schienenfahrzeuge
(Filling stations for rail vehicles)

TRwS 784 (technical regulations for volatile liquids)

Betankungsstellen für Luftfahrzeuge
(Refueling points for aircraft)

TRwS 786 (technical regulations for volatile liquids)

Ausführung von Dichtflächen
(Execution of sealing surfaces)

DAf Stb-Richtlinie (German commission for reinforced concrete)

Betonbau beim Umgang mit wassergefährdenden Stoffen
(Concrete construction when dealing with substances hazardous to water)

ZDB-Merkblatt (Instruction Sheet)

Hinweise für die Ausführung von Verbundabdichtungen mit Bekleidungen und Belägen
aus Fliesen und Platten für den Innen- und Außenbereich
(References for the execution of composite seals with sheathings and coverings of tiles
and slabs for interior and exterior)

ZTV Beton – StB 01

Zusätzliche Technische Vertragsbedingungen und Richtlinien für den Bau von
Fahrbahndecken aus Beton
(Supplementary technical directives and guidelines for the construction of concrete road
pavements)

IVD-Merkblatt Nr. 1

Sealing of floor joints with elastic sealants
IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 3

Structural Design and sealing of Joints in sanitary and wet areas
IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 4

Sealing of outside wall Joints with elastomeric Joint Tapes
IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 5

Sealing with Butyl-Tape
IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 6

Sealing of floor joints with elastic Sealants in the drivable area of filling systems at Filling Stations

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 7

Elastic Joint Seals in Facades of Ceramic Tiles fixed with Mortar

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 8

Mechanical Construction and Sealing of Joints in wooden Floors

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 9

Sealants in perimetre Joints of Windows and exterior Doors

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 10

Glass sealing of wooden Window frames with Sealants

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 13

Glass sealing of wooden-metal Window designs with sealants

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

IVD-Merkblatt Nr. 16

Perimetre Joints in Dry Construction- applications of sprayable Sealants

IVD INDUSTRIEVERBAND DICHTSTOFFE E.V.

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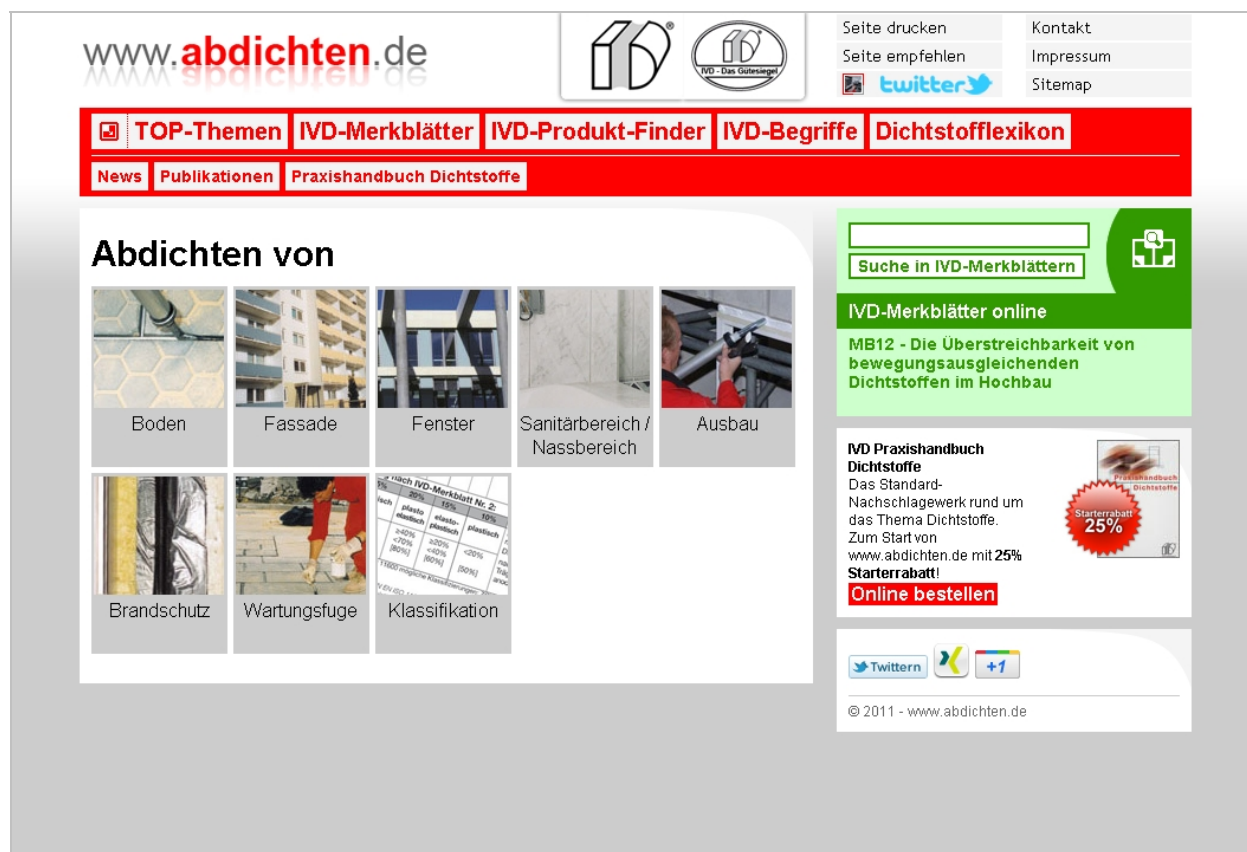
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In addition, **all information** about the **joint-sealing** in the areas of **soil, facade, windows, sanitary** and **water construction**.

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



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

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