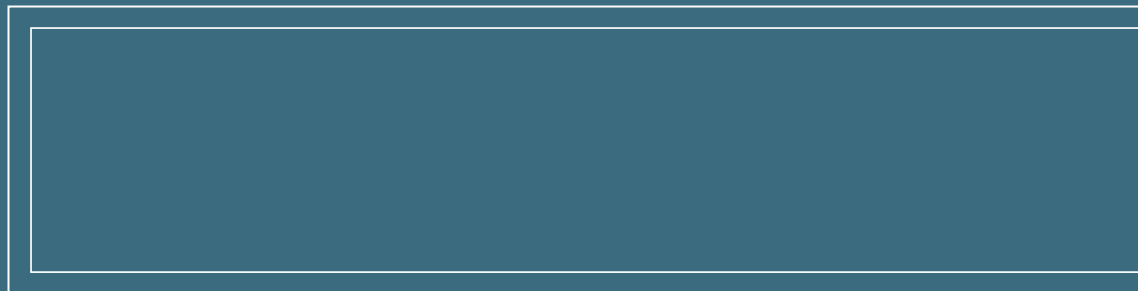
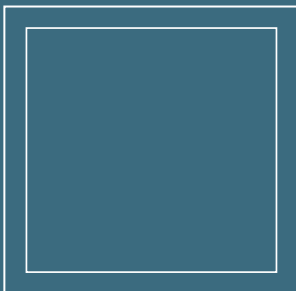

POINT. LINE. SEALED!

THE NEW STANDARD FOR COMPOSITE SEALING OF SHOWER CHANNELS AND POINT DRAINS.



ASSURED PLANNING AND HANDLING OF
COMPOUND SEALS AT THE SHOWER CHANNEL AND POINT DRAIN

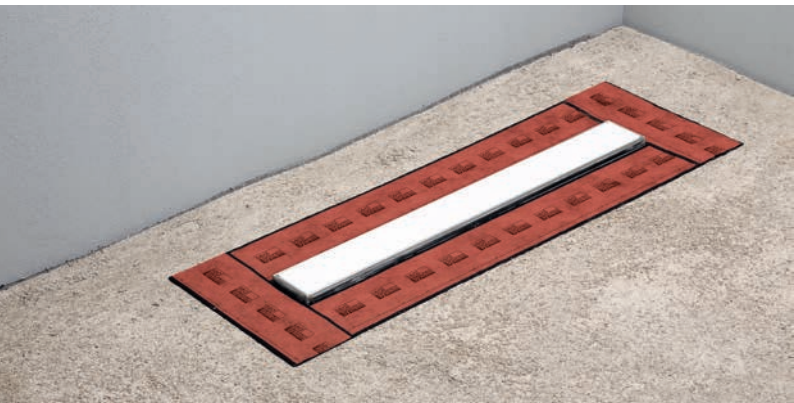




AN INSURANCE POLICY ALL ABOUT FLOOR DRAINS

Standardization does not always find it easy to keep pace with technical developments: this is even the case for floor drains in bathrooms and sanitary facilities. The success of the shower channel has had an enduring influence on the construction of bathrooms – and led to the floor-level drain in a tiled floor becoming a leader in its field. At the same time, laying tiles in a thin-bed procedure has prevailed in recent years. The building services industry and manufacturers of chemicals used in construction have been introducing individually tested products into practice. But when compound seals and a shower channel come together in an actual floor on site, a gap suddenly opens up in standardization as there is a wide range of products and no common standardized basis anywhere to be found. The question arises: is this truly sealed? And what should be done if not?

Seal System tackles this problem – and offers a solution: With comprehensive combination testing of market leading products in shower channels, point drains – and with the widest variety of compound seals, both planners and builders can be assured: “It is sealed”



▲ Sealing elements: Seal System comprises the sealing tape (left) and the sealing sleeve (right). Compound seals are combination tested in conjunction with these sealing elements.

THE BRIDGE BETWEEN THE STANDARDS: MORE THAN 600 CERTIFICATES CREATE ASSURANCE

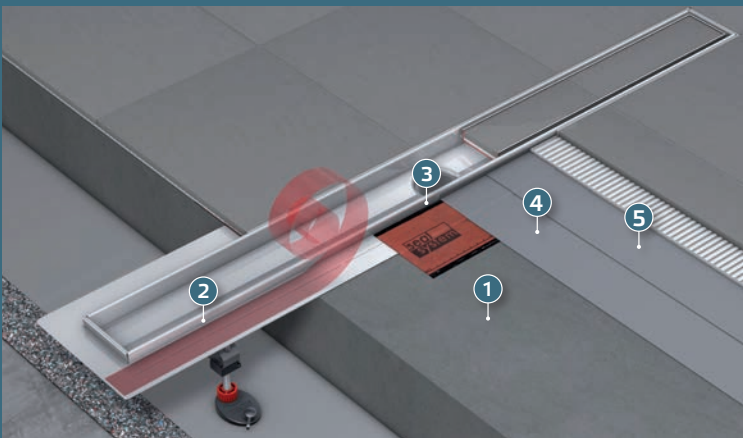
The special Seal System sealing tape and the Seal System sealing sleeve form the joint between the compound seal and the sanitary engineering. These sealing elements are a standardized interface for many floor drains commonly found on the market – both point drains and channel drainage. There have been 600 certificates confirming the interactive functioning of the product combinations.

BROAD BRAND COVERAGE: 17 SEAL MANUFACTURERS AND EIGHT BRANDS IN BUILDING SERVICES ENGINEERING COMBINED

Seal System combines products by 17 renowned branded manufacturers of sealing systems with eight brands from professional building services engineering. The sealing products include polymer dispersions, single and dual component polymer-cement-mortar combinations, sealing fabrics and liquid polymers. The shower channels include stainless steel channels with and without a visible edge, natural stone channels, straight and angled channels, dry lining channels, channels to be built directly into the wall or the room, super-flat renovation shower channels and even channels with especially high drainage capacity and DN70 waste water pipes.

COMPOUND SEALING – SIMPLY RETHOUGHT

Compound seals have imposed themselves on many applications in sanitary facilities. This is not surprising, as they offer a rapid and simple option for sealing. However, the market for compound seals is difficult to gain an impression of, the range is broad. Seal System has certified the transition to the floor drain with a combination test of the various available sealing products covering the market – point, line – sealed!



▲ Certified Seal System sealing edge at a shower channel with a two-layer thin-bed seal (4 + 5) and the Seal System sealing tape (3) to bridge the area between the stainless steel flange (2) and screed (1).

THE SEALING TAPE FOR THE CERTIFIED SHOWER CHANNEL

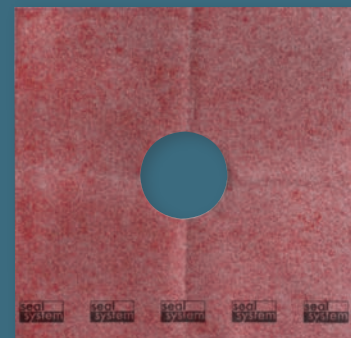
Seal System butyl rubber tape seals the transition between the screed and the stainless steel flange on the shower channel. The sealing tape is applied with an overlap and ensures the seal absolutely with all tested compound seals.

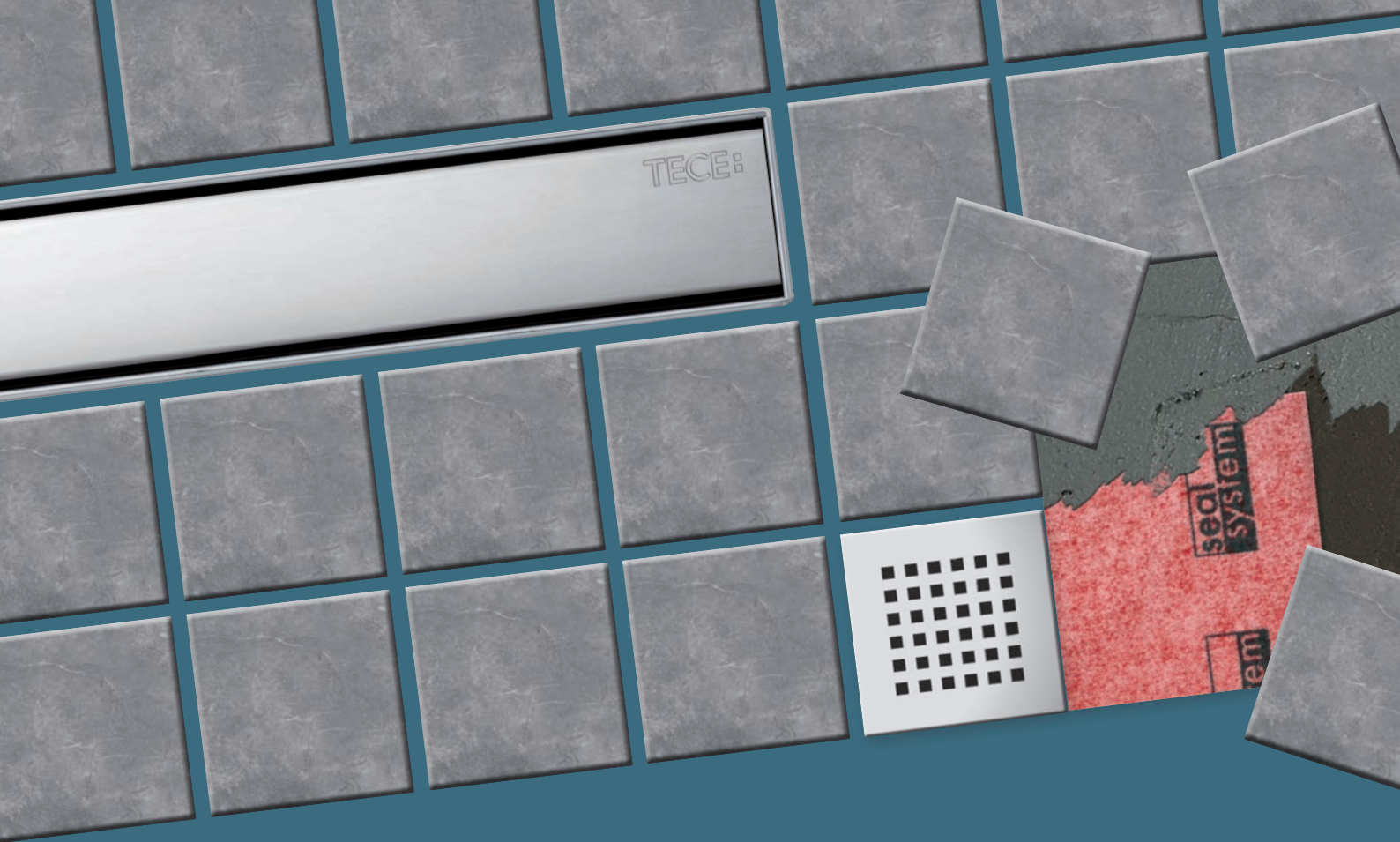


▲ Certified Seal System sealing edge at a shower channel with a point drain on screed (1). The sealing sleeve (3) is laid on the first coat of slurry seal (2), embedded and later overcoated with a second coat (4).

THE SEALING SLEEVE FOR THE CERTIFIED POINT DRAIN

The Seal System sealing sleeve is laid in the first coat of the compound seal while it is still wet and then overcoated with another coat.





9 providers with
12 drain and shower
channel ranges

17 providers with
50 different
composite seals

12 x 50 = 600*

Certified combinations

**POINT. LINE.
SEALED!**

* The new formula for composite seals in sanitary facilities



www.sealsystem.net

Other products are currently being tested. Contact us if you have any questions on providers not listed here yet.

INDEX OF THE SEALING MATERIALS TESTED IN A SYSTEM

(AS OF MARCH 2013, OTHERS IN PREPARATION)

Bostik GmbH

ARDAL Ardalon 1K plus
ARDAL Ardalon 2K plus
ARDAL Flexdicht Flüssige Dichtfolie

ARDEX GmbH

ARDEX SK 100 W TRICOM Dichtbahn
ARDEX 8+9 Dichtmasse
ARDEX S 1-K Dichtmasse
ARDEX S 7 Flexible Dichtschlämme

BOTAMENT Systembaustoffe GmbH

BOTACT DF 9 1K Dichtfolie
BOTACT MD 1 Flexible Dichtungsschlämme
BOTACT MD 28 Spezial-Abdichtung

FERMACELL GmbH

FERMACELL Flüssigfolie

Henkel AG & Co. KGaA

Ceresit CL 50 Alternative Abdichtung
Ceresit CL 51 Dichtfolie
Ceresit CR 72 Flexschlämme

KEMPER SYSTEME GmbH

KEMPEROL 022 Abdichtung

Kiesel Bauchemie GmbH & Co. KG

Okumul DF Flüssige Dichtfolie
Servoflex DMS 1K
Servoflex DMS 1K-schnell SuperTec

MAPEI GmbH

Mapegum WPS
Mapelastic
Monolastic Ultra

Hermann Otto GmbH

OTTOFLEX Dichtungsschlämme
OTTOFLEX Flüssigfolie

PCI Augsburg GmbH

PCI Lastogum
PCI Pecilastic W Flexible Abdichtungsbahn
PCI Seccoral 1K Flexible Dichtschlämme
PCI Seccoral 2K Sicherheits-Dichtschlämme

Ramsauer GmbH

1220 FLEX Dichtfolie
1240 FLEX Dichtungsschlämme
1280 FLEX 2-K Dichtungsschlämme

RYWA GmbH & Co. KG

Rywalit DS 01 X Flexible Dichtungsschlämme
Rywalit DS 99 X Flexible Dichtungsschlämme
Rywalit Lastodicht Dichtfolie

SAKRET Trockenbaustoffe Europa GmbH & Co. KG

SAKRET Flexible Dichtschlämme FDS
SAKRET Objektabdichtung OAD

SCHOMBURG GmbH

AQUAFIN-1K-FLEX
AQUAFIN-2K
AQUAFIN-2K/M
AQUAFIN-RS300
SANIFLEX

SCHÖNOX GmbH

SCHÖNOX 2K DS RAPID
SCHÖNOX HA

Sopro Bauchemie GmbH

Sopro AEB 640 Abdichtungsbahn
Sopro DSF 423 DichtSchlämme Flex 2-K
Sopro DSF 523 DichtSchlämme Flex 1-K
Sopro DSF 623 DichtSchlämme Flex 1-K schnell
Sopro FDF FlächenDicht flexibel
Sopro TDS 823 TurboDichtSchlämme 2-K

Saint-Gobain Weber GmbH

weber.tec 822, Flüssige Dichtfolie
weber.tec 824, Flexible Dichtungsschlämme, 1-K
weber.tec D 2 Fliese, Flex Dichtschlämme, 2-K



Other products are currently being tested.

Contact us if you have any questions on providers not listed here yet.



TESTING UNDER WATER: TAKEN FROM PRACTICE – FOR PRACTICE

Kiwa TBU GmbH, Greven was responsible for testing and certification. It is a testing house accredited by the Deutsches Institut für Bautechnik (DIBt). The tests were performed in accordance with the testing principles for the award of general construction supervisory inspection certificates for seals in conjunction with tile and slab floor coverings.

Water tightness was demonstrated in a bath test. The various shower channels or point drains were fitted in the test bath and then combined with the sealing tape or sealing sleeve and the composite seal. The drains, sealing element and composite seal were then subjected to a 20 centimetre high column of water for several weeks.

▲ Certificates for all product combinations, issued by Kiwa TBU in Greven, are collated in the book and may be downloaded from the Internet.



▲ 20 centimetres of water: the cellular concrete hexagonal standard container in practical testing.

➤ The new ZDB guideline for the planning and installation of bonded drains and gutters (AIV) demands proof by tightness certificate in case of doubt. Seal System already offers these certificates. Note: The guideline can be purchased via the Fördergesellschaft des Deutschen Fliesengewerbes mbH in Berlin.



NEW ZDB-GUIDELINE FOR BONDED SEALING: A PLEA FOR SEAL SYSTEM

The new ZDB-guideline requires use of sealing tapes, sealing sleeves or fabric mats between the floor drain and the bonded seals. Reaction-resins and two-component plastic-cement-mortar combinations are approved for adhesive connections on site. The previously used single-component plastic-cement-mortar combinations and polymer dispersions must be reviewed and released first. Seal System already offers these releases. 2K-MDS and 1K-MDS, as well as polymer dispersions and sealing sheets are among the more than 600 certified combinations of bonded seals and drain products. The manual „Point. Line. Sealed!“ provides detailed information on this.

POETIC LICENSE: THE 7 MOST COMMON MISCONCEPTIONS REGARDING SHOWER CHANNEL AND SECONDARY DRAIN

ERROR #1: Tiles have a functional task and guide water to the drain across a slope. The decisive sealing level is below them.

FACT: The standard designation of current bonded seals is „sealing in combination with tiles and plates“. This makes clear that the tile surface is the sealing level surface by definition. The idea of secondary drainage originates in times in which bituminous sealing strips were used for sealing below the screed. The mortar layer between the tile and bonded seal cannot and must not be drained in the shower area.

ERROR #2: When joints lose their sealing capacity, water will enter, damage the tile adhesive and cause tiles to come off.

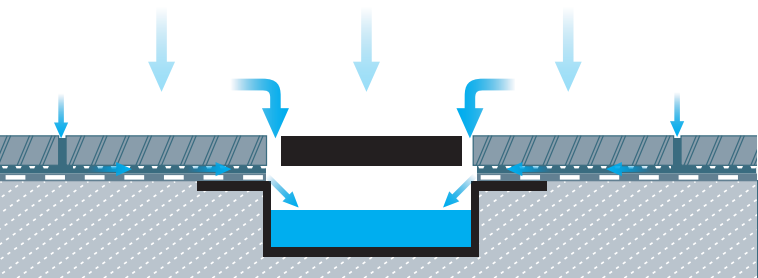
FACT: The water volumes that enter here are in the range of homeopathic quantities. The quality of current joint materials reliably prevents moistening. When joints or tiles break, the moisture that enters evaporates through the entry opening. All common tile adhesives are also suitable for the placement of tiles at the pool floor or on terraces. In contrast to showers, they are always wet. If tiles on terraces come lose, this is usually due to frost damage.

ERROR #3: If leachate collects below the tiles, it must be drained through an additional drainage level.

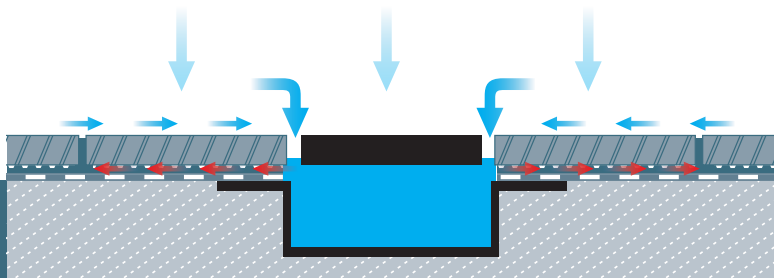
FACT: Damaged joints may permit water to enter in theory – but can it enter below the tiles as well? Not really. There is no defined drainage path either. A single transverse layer of tile adhesive is sufficient to prevent water from draining. Leachate can only drain if there are channels below the tiles. Such channels do not exist.

ERROR #4: Leachate drain makes shower channels safer.

FACT: The opposite is the case. In contrast to closed and jointless channel bodies reaching to the edge of the tile (figures on the right), the leachate drain openings pose the danger of dandruff, soap residue and hair settling and even collecting in the cavities due to the capillary effects (figures on the left). A shower channel fills during a shower and the leachate openings come into contact with the shower water in the channel – with the negative consequences described above. For channels that are performed without tile edges for visual reasons, the area between the channel body and the tile must be permanently sealed.



⚠ **Grey theory:** Those promoting secondary drains of the mortar layer believe that water will flow below the tiles and has to be drained.



⚠ **In practice:** The water rising from the shower channel during a shower flushes dirt particles into cavities and below the tile edge due to capillary effects. Odour development threatens!

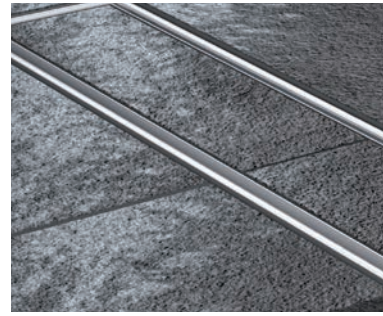
PROBLEM: RISK OF LEACHATE DRAIN



▲ **Unworldly:** Move the notched trowel in the other direction once and the leachate drain will be blocked.



▲ **Easy to clean:** Only „seamless and homogeneously closed channel body“ shower channels are actually easy to clean.



▲ **Efflorescence:** Natural stone does not discolour due to leachate. If it does anyway, it is due to the wrong embedding or joint material.



▲ **Sealing:** The victory of the shower channel has made the seal in combination with the shower tiles popular again.

ERROR #5: Leachate will cause efflorescence or discoloration in natural stone.

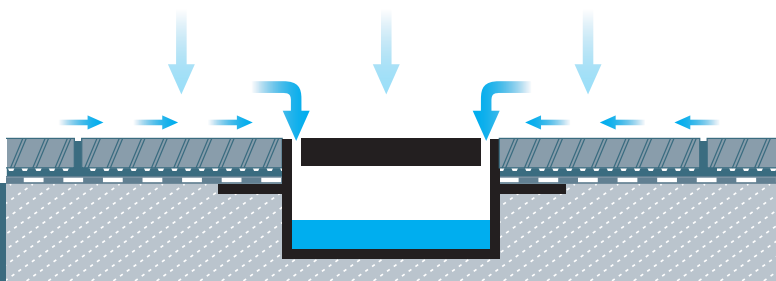
FACT: Efflorescence or discolorations in natural stone are not caused by water but usually by unsuitable embedding or joint material. True efflorescence that may occur outdoors due to weather does not occur in the shower area.

ERROR #6: Leachate openings are needed as ventilation openings so that the tile adhesive can dry in particular under large tiles.

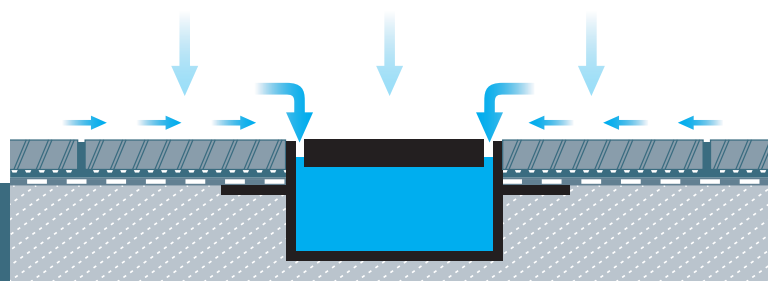
FACT: Tile adhesives cure cement-based. The chemical reaction works even if there is no air supply. If leachate openings were required to ventilate the mortar layer, large tiles would only be permitted along shower channels.

ERROR #7: Shower channels are hard to clean and tend to develop an odour.

FACT: Jointless and closed channel bodies of stainless steel like those offered by TECE are easy to clean and without corners or cavities that cannot be reached. They also contain no screws or thread parts on which pasty waste might catch. In particular the leachate-drain that is sometimes demanded contains such difficult zones: The microbiological disintegration of organic material in such shower channels may cause the formation of smells that will, in the worst case, require high renovation effort.



▲ **The TECEdrainline shower channel principle:** Seamless, homogeneously closed channel bodies are easy to clean and securely tight.



▲ **In the shower:** There is no capillary effect even when water does rise – the homogeneously closed channel body shows its advantages here.

SOLUTION: CHANNEL BODY CLOSE TO THE TILE EDGE

POINT. LINE. SEALED!

ASSURED PLANNING AND APPLICATION OF COMPOSITE SEALS ON SHOWER CHANNEL AND POINT DRAIN

by Martin Krabbe, Reinhold P. Bäder et al.
272 pages, more than 100 test certificates
Seal System Emsdetten, available in German, 2013

CONTENTS

▣ PART 1:

Sealing building components and structural elements: composite seals

This part deals with fundamental questions relating to the sealing of structures: it deals with exposure classes, sealing materials, subsurfaces. It also explains composite seals using examples, describing how the seal should be made.

▣ PART 2:

Drainage in buildings

This part begins with an overview of relevant standards and an overview of the physical floor structures. This is followed by structural seals, with examples of installation, various pipe types and materials, standards requirements on sealing rings and leakage water ring as well as the loading classes for trafficked areas, covers and grates. It also provides important information on slip resistance on covers and grates, drainage capacity of drains and also sound insulation and standards and directives for fire protection along with the rules for operation and maintenance.

▣ PART 3:

Tileable showers as an alternative to the shower tray

Guides to deciding for a point drain or shower channel open this section. Tips on the tile pattern, a typology of shower channels and their positioning in the room follow. The section also deals with the integration of the shower channel in the composite seal with the help of the Seal System sealing tape and the same for the point drain and the Seal System sealing sleeve.

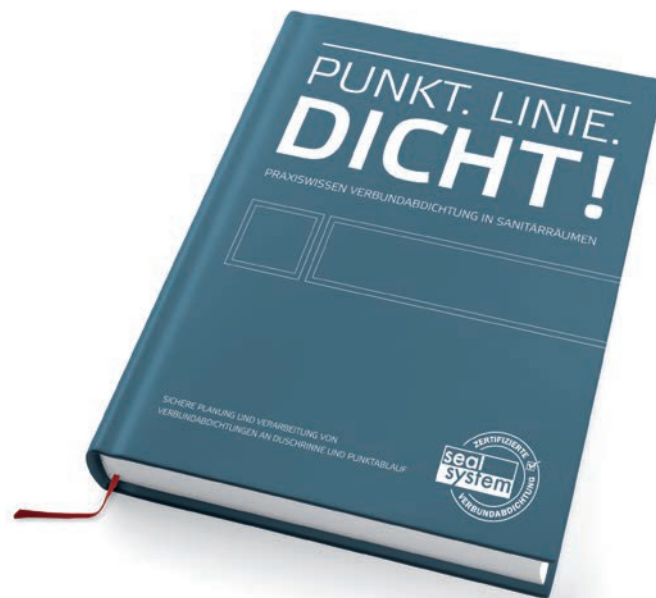
▣ PART 4:

Parallel worlds of the systems

This section describes the advantages of drainage integrated into the floor in combination with composite seals, and also the absence of harmonisation between the various regulations. It also describes how the Seal System tests were carried out.

▣ PART 5:

Certificates and systems



A standard work on composite seals: Punkt. Linie. Dicht! tells you all about certified compound seals in book form. Experienced practitioners from the trade and industry gather together all there is to know about composite seals in 272 pages. The Table of Contents may be found on the opposite page.

This book is only available in German language.



www.sealsystem.net

Seal System goes on: The certified drain/sealant combination system is being continuously updated and is thus also available on the Internet. The website: www.sealsystem.net is where you can view the test certificates and download them as PDF files.



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SAINT-GOBAIN



feinste Bauchemie

SEALING MANUFACTURERS INVOLVED (AS OF MARCH 2013, OTHERS IN PREPARATION)

