

TILING MADE EASIER!

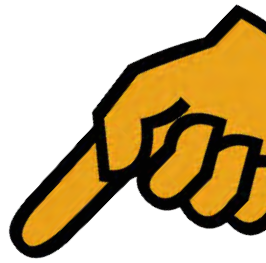


THE HOW TO GUIDE ON SIKA
TILE ADHESIVES, GROUTS & SYSTEMS

BUILDING TRUST

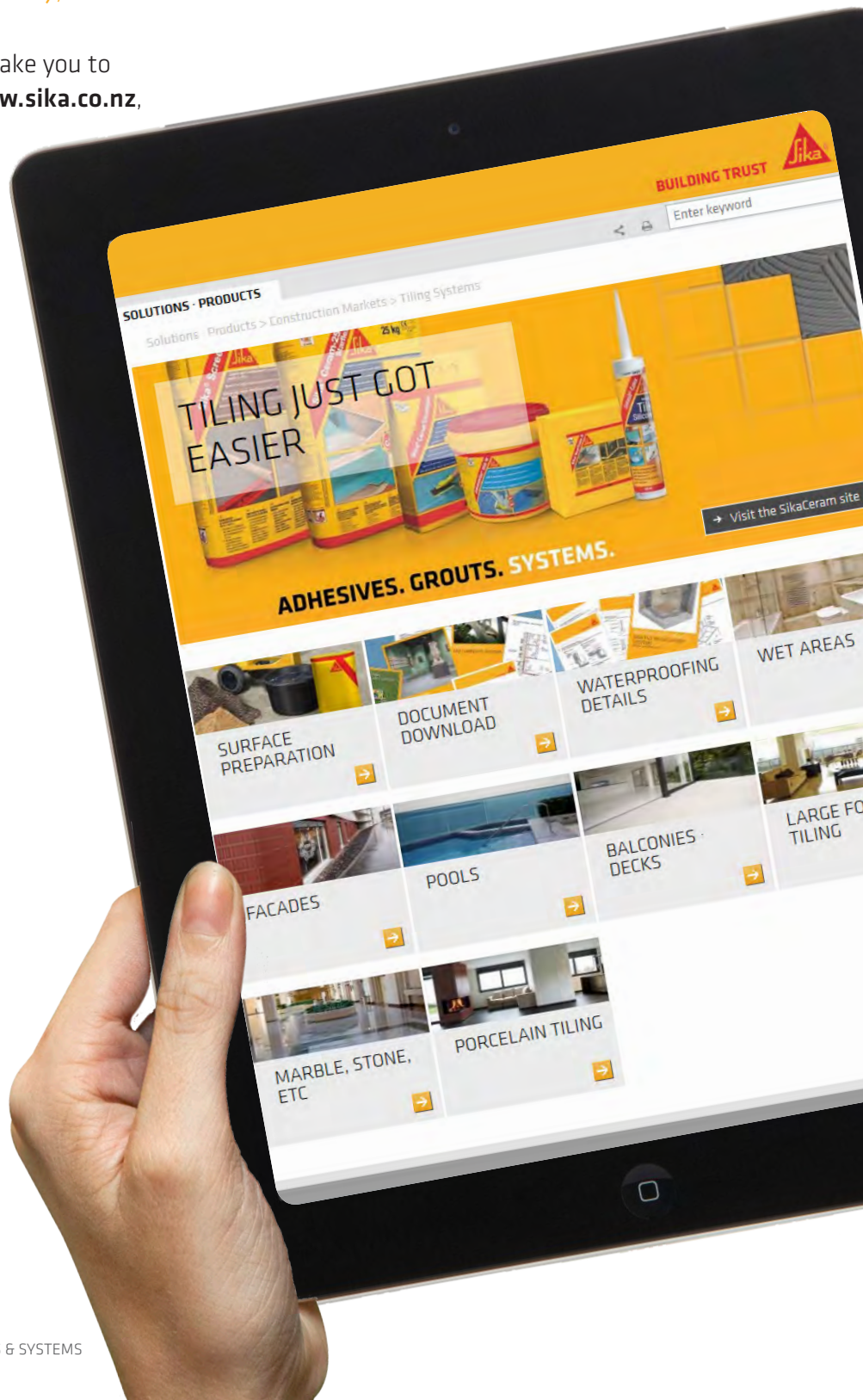


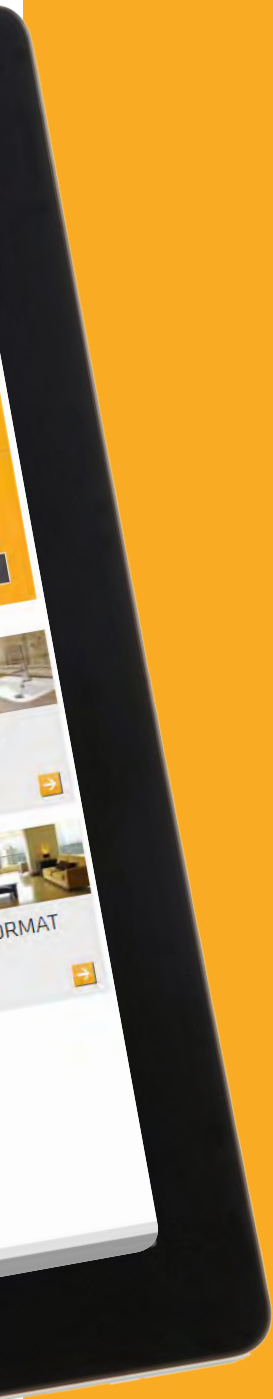
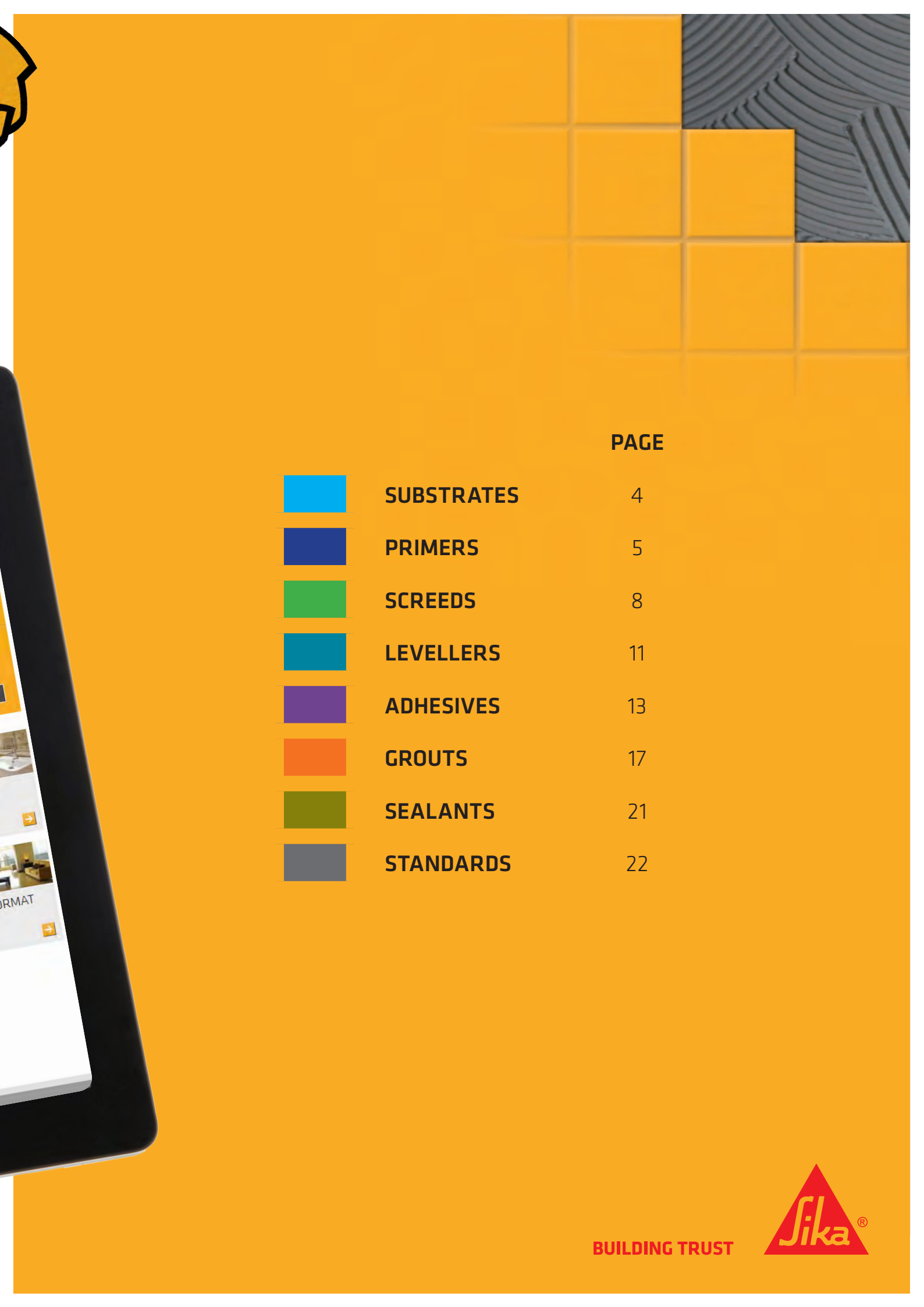
SIKA TILE INSTALLATION SYSTEMS AT YOUR FINGERTIPS ON THE WEB



HERE YOU WILL FIND LINKS TO ALL THE DIFFERENT APPLICATIONS - POOLS, FACADES, WET AREAS, ETC. EACH 'TILE' WILL TAKE YOU THROUGH TO THE PRODUCTS FOR THOSE APPLICATIONS, WITH ACCESS TO DATA SHEETS, SAFETY DATA SHEETS (SDSS), ETC.

Just scan this QR code and it will take you to the right spot, or simply go to www.sika.co.nz, click on **SOLUTIONS/PRODUCTS**, then choose **TILING SYSTEMS**.





PAGE

	SUBSTRATES	4
	PRIMERS	5
	SCREEDS	8
	LEVELLERS	11
	ADHESIVES	13
	GROUTS	17
	SEALANTS	21
	STANDARDS	22

SUBSTRATES

Q & A

Q1. Does it matter what the substrate is?

A1. Yes it does as the substrate will help to determine which products are put forward.

Q2. Can we tile over a timber substrate?

A2. Yes however it is recommended that the timber be covered with a Tile & Slate Underlay to reduce the amount of movement and effectively give a cementitious surface to tile onto.

If there is no chance that a Tile & Slate Underlay can be used due to height restrictions then it is still possible to tile to timber directly using a two component adhesive.

PRIMERS

There are two primers in the range:

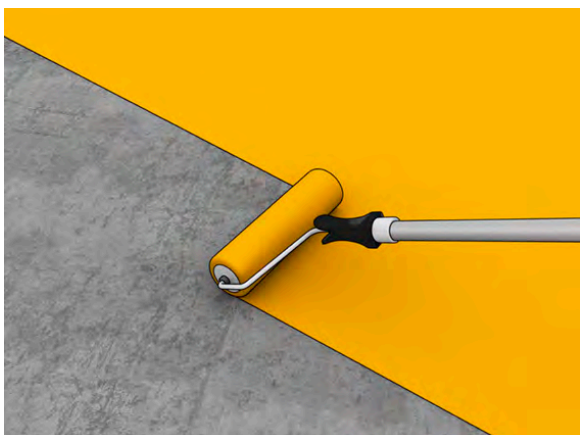
1. Sika Primer-11 W+ for porous substrates
2. Sika Primer-21 W for non-porous substrates

Key information

	Substrate type		Chemical Basis	Colour	Waiting time (at 23°C /50% RH)
	Porous	Non-porous			
Sika Primer-11 W+	Yes	No	Synthetic resin	Red	2 hours
Sika Primer-21 W	Yes	Yes	Epoxy	Blue	1-3 hours

Consumption

	Consumption	Pack Size	Price
Sika Primer-11 W+	100-200 g/m ²	5 kg	\$
Sika Primer-21 W	100-150 g/m ²	5 kg	\$\$\$



WHEN TO PRIME

The following table summarises when a primer is required, based on what material is being laid over what substrate.

		Substrate / material being over coated				
		Porous Substrate		Non-Porous Substrate	Screed	Self-Leveller
		High absorbency	Low absorbency			
Material being laid	Bonded screed	No primer is needed for a bonded screed. The SikaCeram-T Latex bonding primer or the Sikadur-32 tie-coat can be applied directly to the substrate.				
	Un-bonded screed	Sika Primer-11 W+	Sika Primer-11 W+ diluted 1:1 with water	Sika Primer-21 W	Sika Primer-11 W+ diluted 1:1 with water	
	Self-Leveller	Sika Primer-11 W+	Sika Primer-11 W+ diluted 1:1 with water	Sika Primer-21 W	Within 48 hours of the screed being laid, no priming required. If longer than 48 hours, then prime with Sika Primer-11 W+ Sika Primer-11 W+ diluted 1:1 with water	
	Adhesive	Sika Primer-11 W+	Sika Primer-11 W+ diluted 1:1 with water	Sika Primer-21 W	Within 48 hours of the screed being laid, no priming required. If longer than 48 hours, then prime with Sika Primer-11 W+	

PRIMING Q & A

Q1. Which porous substrates (such as concrete, fibre cement sheet, etc.) need to be primed?

A1. You must prime any dry, porous substrate that will “suck” water out of the material that is going to be laid.

If the material being laid loses moisture to the substrate, then the material becomes difficult to lay, and the bond of the material to the substrate is reduced.

In general, it is our recommendation that all porous substrates should be primed.

Q2. Which non-porous substrates (such as existing ceramic tiles floors, linoleum, etc.) need to be primed?

A2. All non-porous substrates must be primed, except when a bonded screed is being applied to the substrate using a tie-coat.

Q3. When can I apply the material to be laid onto the primed surface?

A3. When the primer is tack-free. At 23°C / 50% RH this will be after approximately 2 hours for Sika Primer-11 W+ and 1-3 hours for Sika Primer-21 W.

Q4. Can Sika Primer-11 W+ and Sika Primer-21 W be interchanged?

A4. You can use Sika Primer-21 W in place of Sika Primer-11 W+, but you cannot use Sika Primer-11 W+ in place of Sika Primer-21 W. (That is, Sika Primer-21 W can be used on porous and non-porous substrates, but Sika Primer-11 W+ can only be used on porous substrates.)

Q5. If Sika Primer-21 W can be used on all substrates, why do we need Sika Primer-11 W+ in the range?

A5. Sika Primer-21 W is an epoxy-based primer that isn't cost-effective for priming porous substrates. The cheaper Sika Primer-11 W+ is perfectly adequate for porous substrates.

Q6. What do the primers do?

A6. On porous substrates the main function of the primer is to reduce the absorbency of the substrate. In addition, the material being laid is able to achieve a better bond to the primed substrate.

On non-porous substrates, the main function of the primer is to act as an adhesive bridge. The primer places an adhesive film on the substrate. The material being installed, in turn, is able to bond to the primer.

Q7. Can Sika Primer-11 W+ and Sika Primer-21 W be used as tie-coats?

A7. No, Sika Primer-11 W+ and Sika Primer-21 W are not tie-coats. If a tie-coat is required then use a cementitious bonding-coat incorporating SikaCeram-T Latex or an epoxy tie-coat like Sikadur-32.

Q8. Sika Primer-11 W+ can't be used on concrete masonry blocks. How come?

A8. Concrete masonry blocks are too porous for Sika Primer-11 W+ to adequately seal. Use Sika Primer-21 W diluted 1:1 with water.

Q9. The main function of the primer on a porous substrate is to reduce the absorbency of the substrate. Therefore, is it acceptable to simply saturate the surface and install onto a saturated surface dry (SSD) substrate?

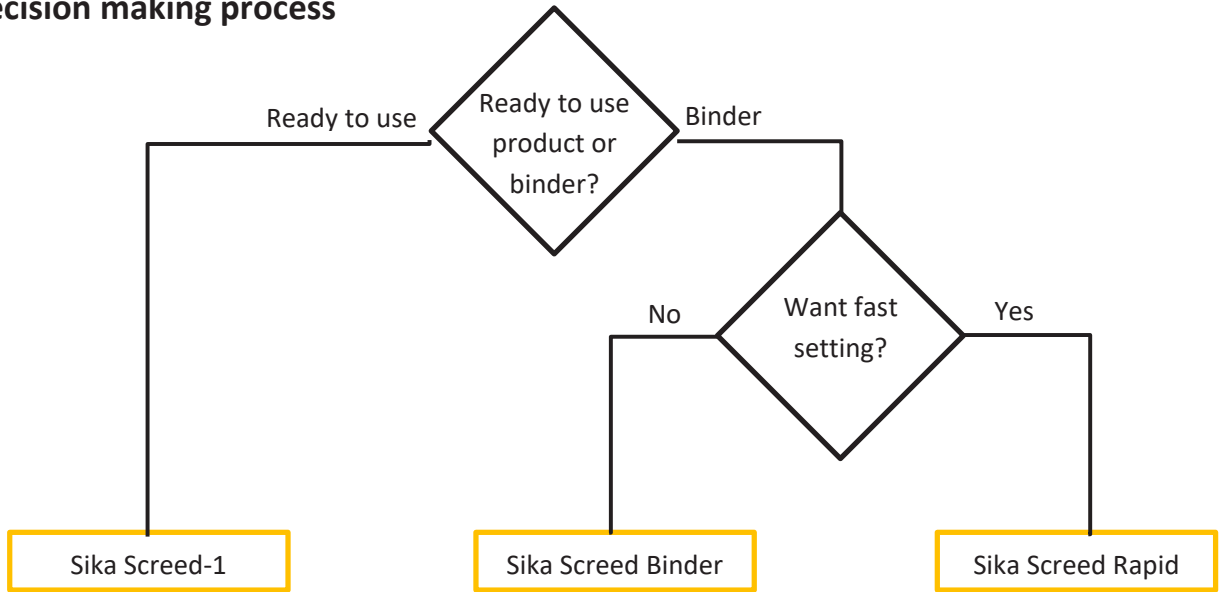
A9. A properly saturated but surface dry porous substrate does provide an acceptable surface to install screeds, adhesives, etc. However, to achieve an SSD surface requires a high level of attention to detail, and is rarely achieved. It is therefore always our recommendation to use Sika Primer-11 W+ on porous substrates.

SCREEDS

There are three screed systems in our range:

1. **Sika Screed-1** (pre-blended powder that you add water to)
2. **Sika Screed Rapid** (powder that you add water and aggregate to)
3. **Sika Screed Binder** (powder that you add water and aggregate to)

Decision making process



Note: Sika Screed Rapid cannot be used outside

Question	Possible reasons
Ready to use product or binder?	- How big is the area that needs a screed? Screed binders are cheaper, but less convenient so most tilers would only use them on large areas.
Want fast setting?	- Do you have the room available to store the bulk aggregate, and mix the screed? What is the project time frame? Will other trades be trying to quickly gain access to the tiled area?

Key Information

	Bag Size (kg)	Ready to use	Outdoor Use?	THICKNESS OF SCREED			
				Bonded screed		Un-bonded screed	
				Min. (mm)	Max. (mm)	Min. (mm)	Max. (mm)
Sika Screed-1	25	Yes	Yes	10	60	40	60
Sika Screed Binder	20	No	Yes	10	100	40	100
Sika Screed Rapid	20	No	No	10	100	40	100

Waiting Time / Hardening Time

	APPROXIMATE HARDENING / DRYING TIMES			
	Trafficable	Laying of		
		Ceramic tiles	Natural Stone	Parquet
Sika Screed-1	12 hours	24 hours	72 hours	5 days
Sika Screed Binder	12 hours	24 hours	48 hours	4 days
Sika Screed Rapid	2-3 hours	4 hours	4 hours	24-48 hours

Consumption

	DOSAGE					
	Under Parquet or Resilient Flooring			Under Tiles or Natural Stones		
	Screed	Clean Aggregate (0-8mm)	Water	Screed	Clean Aggregate (0-8mm)	Water
	(kg)	(kg)	(litres)	(kg)	(kg)	(litres)
Sika Screed-1	25	-	1.8 - 2.0			
Sika Screed Binder	20	80		20	80	
Sika Screed Rapid	20	80		20	80	

SCREEDS Q & A

Q1. When installing screeds, do the substrates need to be primed?

A1. When installing bonded screeds, a primer is not required. The bonding or tie-coat (a SikaCeram-T Latex modified cementitious bonding-coat or a Sikadur-32 epoxy tie-coat) can be applied directly to the un-primed substrate. (Note that although a primer is not required, the substrate still has to be properly prepared.)

When installing un-bonded screeds over polythene (or some other bond breaker), or onto a non-porous substrate, a primer is not required. However, when installing an un-bonded screed onto a porous substrate, priming is always recommended. (An un-primed porous substrate may “suck” water out of the screed, negatively affecting the screed’s physical properties).

Q2. Why can't Sika Screed Rapid be used outside?

A2. Sika Screed Rapid contains fast setting materials that may swell when in contact with water.

Q3. Why is there a minimum thickness for un-bonded screeds?

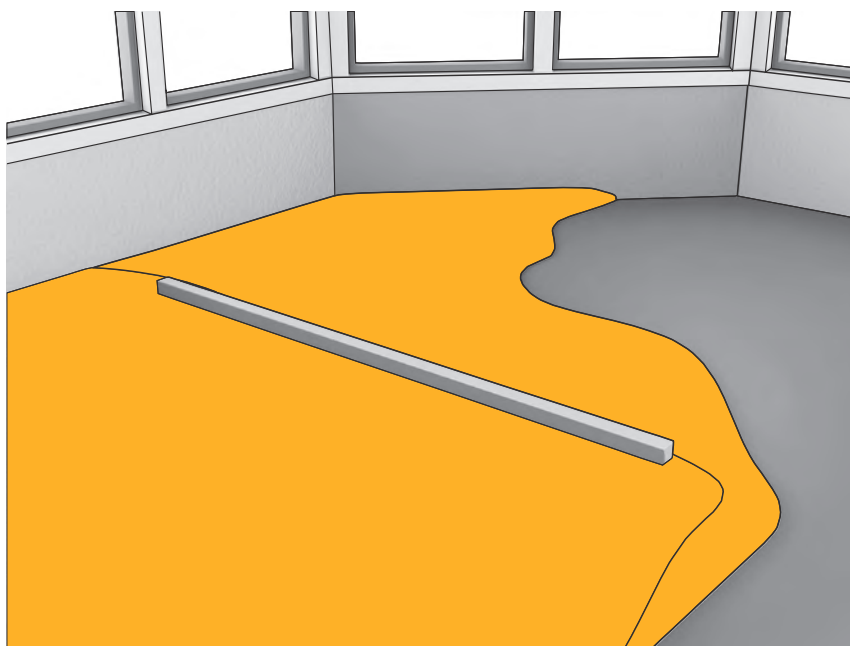
A3. Screeds that are bonded to the substrate have the full structural support of that substrate. However, un-bonded screeds cannot rely on the strength of the substrate and have to be strong enough to fully resist the expected loads. There is too great a risk that a very thin un-bonded screed will crack and fail under the loading. Furthermore, there is a risk that an un-bonded screed may curl (due to potential shrinkage). If the screed curls, then it is easily cracked and will fail under loading.

Q4. Why is there a maximum screed thickness?

A4. This is mainly due to shrinkage. Most screeds can be more than stated but this has adverse effects such as shrinkage, cracking or delamination through bowing.

Q5. How should the screeds be finished?

A5. The screed is first struck off. It can then be left un-floated, or can be float finished (including using a helicopter/power float).



LEVELLING

Sika have three levelling compounds

- **Sikafloor Level-15** – 1mm-15mm, inside only, not wet areas
- **Sikafloor Level-30** – 4mm-30mm, inside and outside (with conditions), okay in wet areas
- **Sika Level-315 F** – 3mm-15mm, inside only, can use direct onto timber substrates (not the others – they need to go onto a cementitious substrate), specifically designed to be flexible

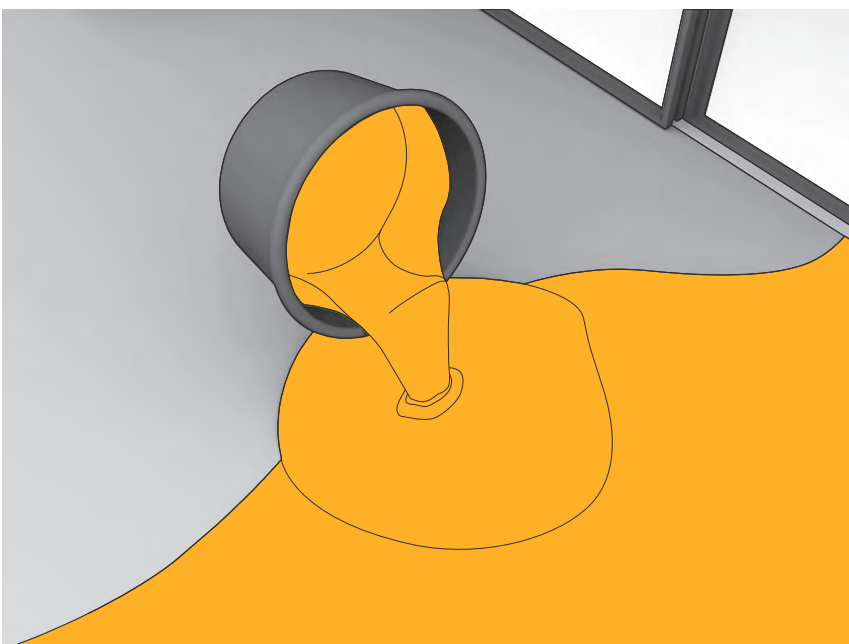
LEVELLING Q & A

Q1. Can I use a levelling compound outside?

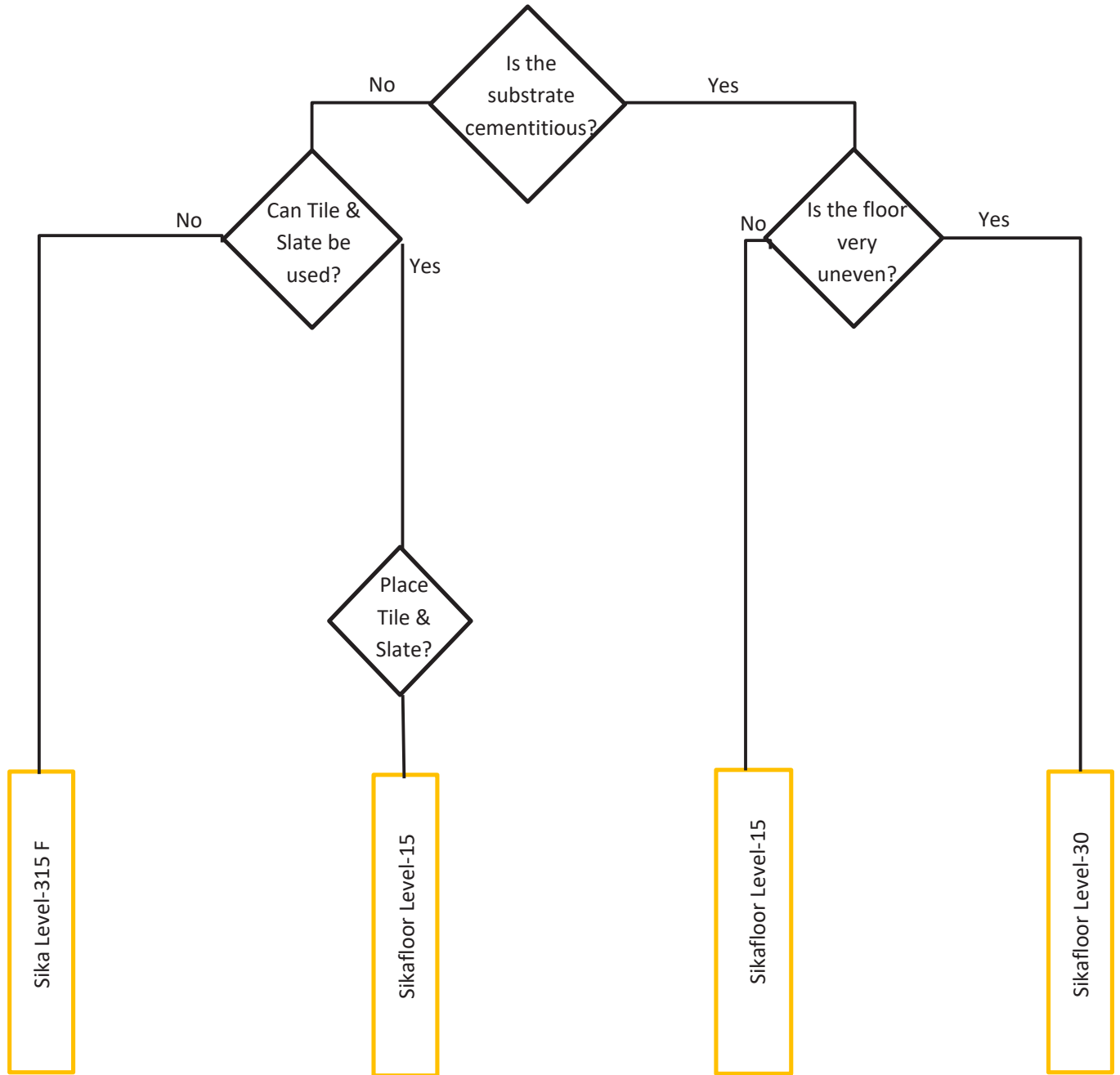
A1. It is not recommended that levelling is used outside, however, Sikafloor Level-30 may be used with conditions.

Q2. Why are levelling compounds not able to be used outside?

A2. As a rule levelling compounds contain high amounts of fast-curing additives, and as such when they get wet they are susceptible to expanding and so tend to blow apart rendering them useless.



Decision-making process



ADHESIVES

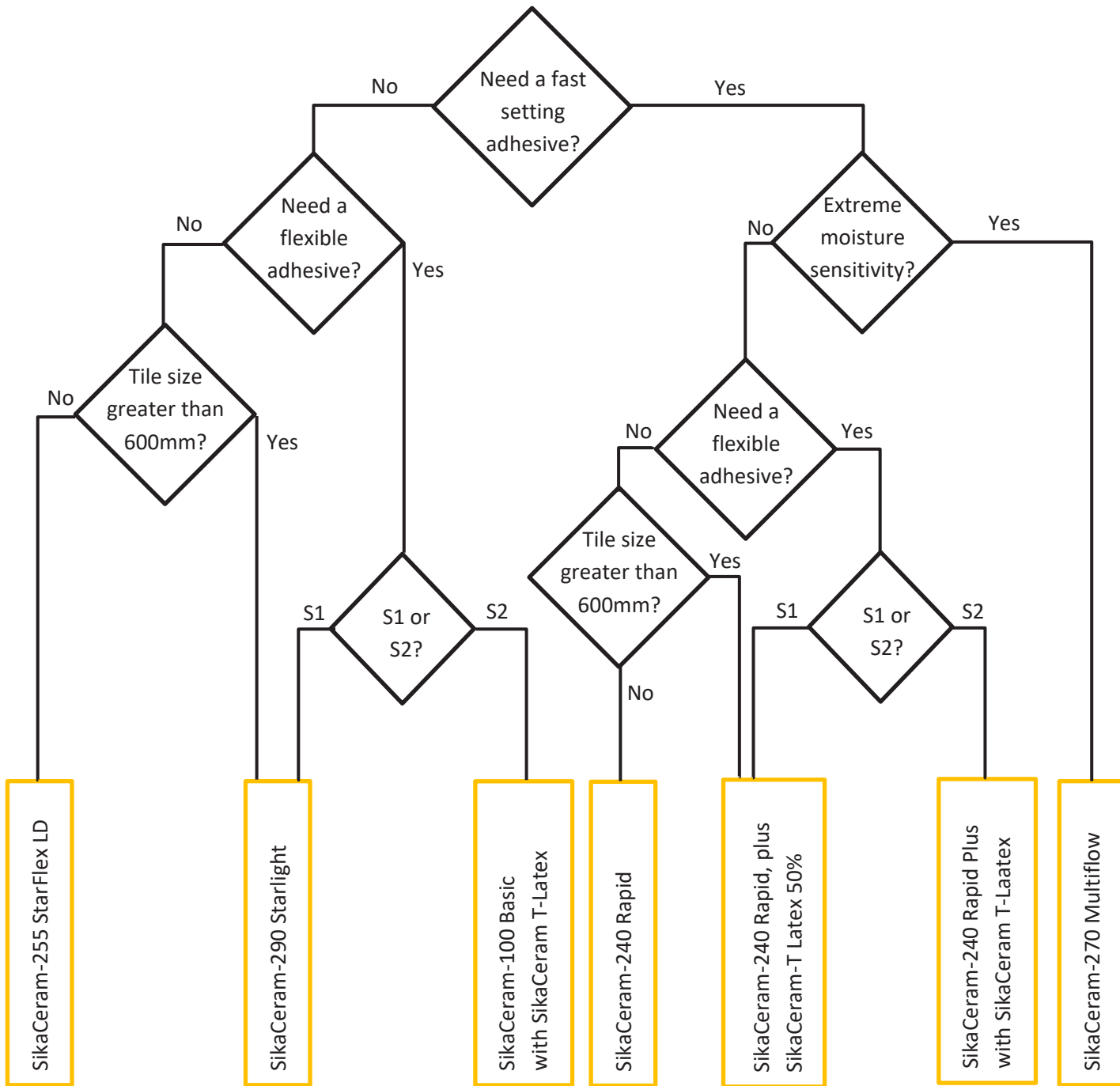
The adhesive range includes the following products:

- SikaCeram-100 Basic
- SikaCeram-255 StarFlex LD
- SikaCeram-240 Rapid
- SikaCeram-270 Multiflow
- SikaCeram-290 Starlight

Decision-making process

- First question: What is the substrate?
- Second question: What type of tile is to be installed?
- Third question: Are there timeframe constraints?

Question	Things to consider
What is the substrate?	Concrete substrates don't generally require the use of a flexible adhesive. Floors supported by timber joists will require a flexible adhesive. Timber sheet flooring (such as particle boards or plywood) should have Tile & Slate Underlay applied over the top, and when Tile & Slate Underlay is used, an S1 adhesive is acceptable. If our recommendation to use Tile & Slate Underlay is not followed then an option is to use SikaCeram-240 Rapid or SikaCeram-100 Basic mixed with SikaCeram T-Latex (which achieves S2). Note that this method isn't ideal, because adhering directly to timber poses potential problems with movement.
What type of tile is to be installed	Moisture sensitive tiles require the use of a fast setting adhesive. Extremely moisture sensitive tiles require the use of SikaCeram-270 Multiflow.
Are there timeframe constraints?	Timeframe constraints may necessitate the use of fast setting adhesives.
Need a fast setting adhesive?	Short time available to complete project. Tiles are moisture sensitive.
Extreme moisture sensitivity?	Most extremely moisture sensitive stone tiles are a light colour, and therefore a white adhesive is preferable.
Need a flexible adhesive?	If substrate movement is likely (e.g. when laying tiles on floors laid on timber joints) then a flexible adhesive is required.
S1 or S2?	If you are bonding directly to timber floor sheets, then you must use an S2 rated adhesive.



Key Information

	Setting time	Colour	1 or 2 comp
SikaCerem-100 Basic	Normal setting	Grey	1
SikaCerem-255 StarFlex LD		Grey or White	1
SikaCerem-290 StarLight		Light Grey	1
SikaCerem-240 Rapid	Fast setting	Grey	1 or 2
SikaCerem-270 Multiflow		White	1

Adhesive Classification

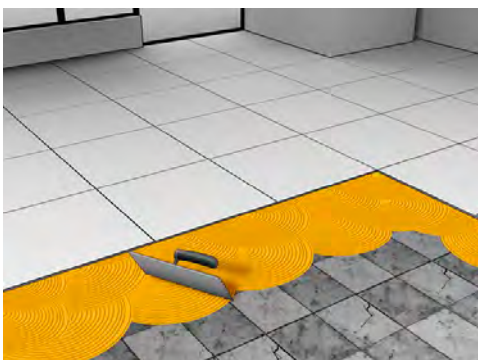
	CLASSIFICATION				
	As supplied		Mixed with SikaCeram T-Latex		
	EN 12004	EN 12002	EN 12004	EN 12002	Latex mix ratio
SikaCeram-100 Basic	C1	-	C2	S2	Undiluted
SikaCeram-255 StarFlex LD	C2TE	S1	n/a		
SikaCeram-240 Rapid	C2FT	-	C2FT	S2	Undiluted
SikaCeram-290 Starlight	C2TE	S1	n/a		
SikaCeram-270 Multiflow	C2FT	S1	n/a		

Waiting Time / Hardening Time

	Waiting time before grouting (at 23° C / 50% RH)		Hardening Time (at 23° C / 50% RH)	
	Floor Tiles	Wall Tiles	Trafficable	Ready to use
SikaCeram-100 Basic				
SikaCeram-290 Starlight	24-36 hours	4-6 hours	24-36 hours	14 days
SikaCeram-255 StarFlex LD				
SikaCeram-240 Rapid	4-6 hours	2 hours	4-6 hours	48 hours
SikaCeram-270 Multiflow				

Maximum recommended tile size

	MAXIMUM RECOMMENDED TILE SIZE					
	Indoors		Outdoors		Walls (without clamping)	
	Area (mm ²)	Size of tile	Area (mm ²)	Size of tile	Area (mm ²)	Size of tile
SikaCeram-100 Basic	2,100	450 x 450	900	300 x 300	-	-
SikaCeram-255 StarFlex	10,000	1,000 x 1,000	4,200	700 x 700	3,600	600 x 600
SikaCeram-240 Rapid	3,600	600 x 600	2,100	450 x 450	1,600	400 x 400
SikaCeram-270 Multiflow	10,000	1,000 x 1,000	4,200	700 x 700	3,600	600 x 600
SikaCeram-290 Starlight	10,000	1,000 x 1000	10,000	1000 x 1000	6,400	800 x 800



Range Comparison

Tile Size	Normal Setting	Quick Setting	Moisture Sensitive
600 x 600	SikaCeram-255 StarFlex LD	SikaCeram-240 Rapid	SikaCeram-270 Multiflow
1,000 x 1,000	SikaCeram-290 StarLight SikaCeram-100 Basic with Sika Ceram T-Latex	SikaCeram-270 Multiflow	SikaCeram-270 Multiflow

ADHESIVES Q & A

Q1. How do you tell if a tile is moisture sensitive?

- A1. Test by putting drops of water on tile.
If still any concern then test adhesive on the tile, or contact the tile manufacturer.

Q2. Are there situations when you can't use an S2?

- A2. When you need reasonable compressive strength, i.e. don't use S2 in commercial floor areas

Q3. What adhesive do we use in a pool?

- A3. Apart from 100 Basic, all in Sika's range can be used in a pool

Q4. Which of our adhesives are frost proof?

- A4. They're all frost proof. (Note that not all competitor adhesives are frost proof.)

GROUTS

Allowable Joint Size

	Joint Size (mm)																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SikaCeram SmallGrout	█	█	█	█	█																
SikaCeram CleanGrout		█	█	█	█	█	█	█	█												
SikaCeram MediumGrout			█	█	█	█	█	█	█	█	█	█	█								
SikaCeram LargeGrout				█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
SikaCeram StarGrout		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█					

	Held in stock?	Product Type	EN 1388 Classification	EN 12002 Classification when mixed with SikaCeram LatexGrout
SikaCeram SmallGrout	No	Cement	CG2	S1
SikaCeram CleanGrout	Yes	Cement	CG2	S1
SikaCeram MediumGrout	No	Cement	CG2	S1
SikaCeram LargeGrout	No	Cement	CG2	S1
SikaCeram StarGrout	Yes	Epoxy	RG	n/a

Waiting Time / Hardening Time

	WAITING TIME BEFORE GROUTING (at 23° C / 50% RH)				HARDENING TIME (at 23° C / 50% RH)	
	Adhesive laid flooring	Quick-setting adhesive laid flooring	Adhesive laid wall cladding	Quick-setting adhesive laid wall cladding	Trafficable	Ready to use
SikaCeram SmallGrout						
SikaCeram CleanGrout	24 hours	4-6 hours	5-6 hours	2 hours	24 hours	7 days
SikaCeram MediumGrout						
SikaCeram LargeGrout						
SikaCeram StarGrout	24 hours	12 hours	24 hours	12 hours	24 hours	4 days

GROUTS Q & A

Q1. Other than the allowable joint size, what is the difference between the performances of the following cementitious grouts?

1. SikaCeram SmallGrout
2. SikaCeram CleanGrout
3. SikaCeram MediumGrout
4. SikaCeram LargeGrout

A1. There is no substantial difference in the performance of these four cementitious grouts. The major difference between them is the size of the aggregate that they contain. SikaCeram SmallGrout has the finest fillers, and SikaCeram LargeGrout has the coarsest fillers. These fillers affect the physical properties (such as compressive strength and abrasion resistance) but the differences are relatively insignificant in terms of the overall performance of the grouts.

Q2. Does SikaCeram CleanGrout have better resistance against bacteria and mould growth than the other cementitious grouts?

A2. No, all of the cementitious grouts have similar, excellent performance against bacteria and mould growth.

Q3. What are the comparative costs of the following three grout options?

1. Cement-based grouts (when mixed with water).
2. Cement-based grouts that are mixed with SikaCeram LatexGrout.
3. SikaCeram StarGrout.

A3. As an approximate rule of thumb, you can assume that:

1. Cement-based grouts that are mixed with SikaCeram LatexGrout are about 3-4 times the price of cement-based grouts that are mixed with water.
2. SikaCeram StarGrout is about 8-10 times the price of cement-based grouts that are mixed with water.

Q4. SikaCeram StarGrout is more expensive than the cement-based grouts. When should SikaCeram StarGrout be used in preference to cement-based grouts?

A4. SikaCeram StarGrout should be used whenever:

1. The best possible standard of joint cleanliness is required.
2. The highest chemical resistance is needed (showers, commercial toilets, bathrooms, kitchens). (See the chemical resistance chart on the data sheet.)
3. The highest abrasion resistance is needed, such as in industrial warehouses, shopping centres and other areas with heavy traffic loads.

Q5. The use of SikaCeram LatexGrout (instead of using water) increases the adhesion, flexibility and abrasion resistance of the cement-based grouts, and reduces their porosity and absorption. How does the performance of the cement-based grouts, when mixed with SikaCeram LatexGrout, compare with the performance of SikaCeram StarGrout?

A5. When mixed with SikaCeram LatexGrout, the cement-based grouts have improved adhesion, flexibility and abrasion resistance, and reduced porosity and absorption. It is often considered that the latex modified grouts have performance levels, in respect of these properties, about two-thirds of the way between an unmodified cement-based grout and an epoxy grout.

Q6. Are there any situations when SikaCeram LatexGrout must be added to the cement-based grouts?

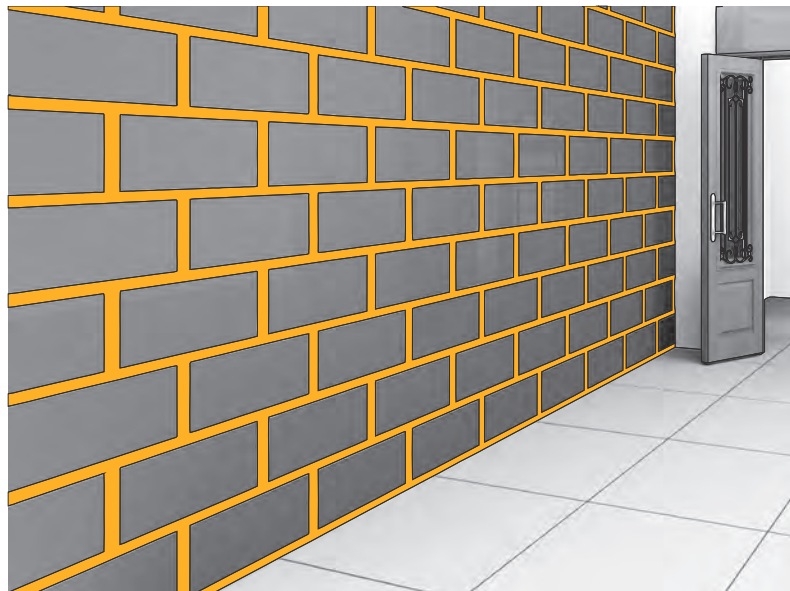
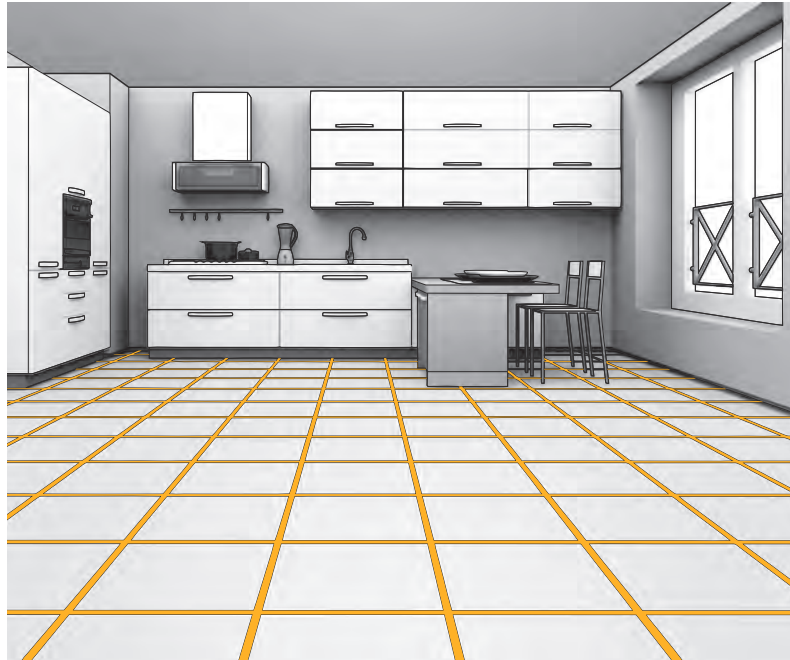
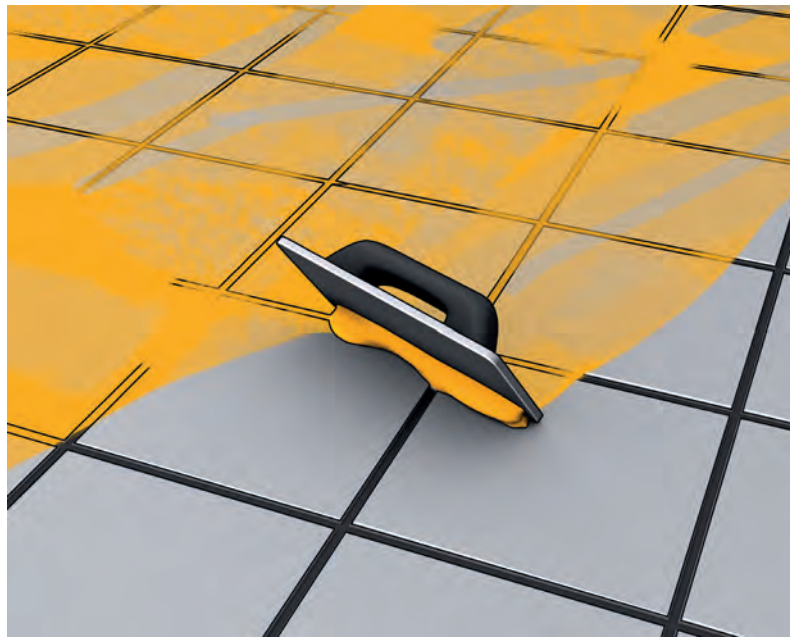
A6. Yes, you must add SikaCeram LatexGrout to cement-based grouts when there is a possibility of substrate movement, e.g. when tiling on timber substrates. (Note that in this circumstance you would definitely not use SikaCeram StarGrout as epoxy grout is too rigid.)

Q7. What grout should I use with tiles that are easily scratched, such as some of the highly polished porcelain/marble/granite tiles?

A7. Ideally you should use SikaCeram SmallGrout with tiles that are easily scratched. The very fine fillers in SikaCeram SmallGrout are much less likely to damage the surface of tiles that are easily scratched. Even so, it is always recommended to carry out a trial. For joints over 4mm wide, however, you will need to use SikaCeram CleanGrout. As the fillers in SikaCeram CleanGrout are slightly coarser, it is even more important that a trial is carried out.

Q8. What grout should I use with tiles that are moisture sensitive?

A8. You should only use cement-based grouts, mixed with water, to grout tiles that are moisture sensitive. Do not use SikaCeram StarGrout, and do not add SikaCeram LatexGrout to the cement-based grout. If in doubt about the moisture sensitivity of the tile, carry out a trial.



SEALANTS

There are a number of sealants in the Sika range, in the tiling arena two are most commonly used.

- **Sikasil Color** is an acetic-crosslinking silicone sealant that is solvent-free and resistant to mildew.
- **Sikasil Pool** is a neutral curing silicone sealant for use in swimming pools and permanently wet areas.

SEALANTS Q & A

Q1. Can Sikasil Color be used on natural stone?

A1. No, don't use Sikasil Color on natural stone tiles. Sikasil Color releases acetic acid as it cures. Acetic-cure silicones can bleed into the stone and as such leaving it flawed. Sikasil Color can be used on stone that is NOT sensitive to moisture BUT make sure a test is done before commencing.

Q2. Is priming needed?

A2. Generally not required. Natural stone should be primed to seal surface and avoid bleeding.

Q3. Why do we need to use PEF rod in construction joints?

A3. To control depth and prevent three sided adhesion, which can lead to sealant rupture.



STANDARDS

EN 12004

Adhesives for tiles – Requirements, evaluation of conformity, classification and designation

- Applicable to ceramic tile adhesives
 - For internal and external tile installations
 - On walls, floors and ceilings.
- Gives the terminology concerning the products, working methods, application properties, etc, for ceramic tile adhesives.
- Specifies the values of performance requirements for ceramic tile adhesives (cementitious, dispersion and reactive resin adhesives).

Tile adhesives are classified into one of three types:

Classification	Type	Definition
C	Cementitious adhesive	Cement-based adhesives in powder form, mixed with water or some other appropriate liquid just before use
D	Dispersion adhesive	Ready-to-use paste based on organic polymers in water dispersion
R	Reaction resin adhesive	Reactive adhesives based on two or more components, which are mixed before use and which set by means of a chemical reaction

For each type it is possible to have different classes, related to different characteristics, designated with the following abbreviations:

Class	Type
1	Normal adhesive
2	Improved adhesive (meets additional requirements)
F	Fast setting adhesive
T	Thixotropic adhesive (with reduced slip)
E	Adhesive with extended open time
S1	Deformable product with ≥ 2.5 mm deformability (when measured to EN 12002)
S2	Deformable product with ≥ 5.0 mm deformability (when measured to EN 12002)

Cementitious Adhesives

- Fundamental Characteristics for Normal Setting Adhesives (Classification = C1)

Initial tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$
Tensile adhesion strength after water immersion	$\geq 0.5 \text{ N/mm}^2$
Tensile adhesion strength after heat ageing	$\geq 0.5 \text{ N/mm}^2$
Tensile adhesion strength after freeze-thaw cycles	$\geq 0.5 \text{ N/mm}^2$
Open time: tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not less than 20 min

- Fundamental Characteristics for Fast Setting Adhesives (Classification = C1F)

All the characteristics from above, plus:

Early tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not more than 6 h
Open time: tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not less than 10 min

- Additional Characteristics (Classification = C2)

High initial tensile adhesion strength	$\geq 1 \text{ N/mm}^2$
High tensile adhesion strength after water immersion	$\geq 1 \text{ N/mm}^2$
High tensile adhesion strength after heat ageing	$\geq 1 \text{ N/mm}^2$
High tensile adhesion strength after freeze-thaw cycles	$\geq 1 \text{ N/mm}^2$

- Special Characteristics

Slip (Classification = T)	$\leq 0.5 \text{ mm}$
Extended open time: tensile adhesion strength (Classification = E)	$\geq 0.5 \text{ N/mm}^2$ after not less than 30 min
Deformable adhesive: transverse deformation (Classification = S1)	$\geq 2.5 \text{ mm}$ and $< 5 \text{ mm}$
Highly deformable adhesive: transverse deformation (Classification = S2)	$\geq 5 \text{ mm}$

Reaction Resin Adhesives

- Fundamental Characteristics (Classification = R1)

Initial shear adhesion strength	$\geq 2 \text{ N/mm}^2$
Shear adhesion strength after water immersion	$\geq 2 \text{ N/mm}^2$
Open time: tensile adhesion strength	$\geq 0.5 \text{ N/mm}^2$ after not less than 20 min

- Additional Characteristics (Classification = R2)

Adhesion strength after water immersion	$\geq 0.5 \text{ N/mm}^2$
Adhesion at elevated temperature	$\geq 1 \text{ N/mm}^2$

- Special Characteristics

Slip (Classification = T)	$\leq 0.5 \text{ mm}$
Extended open time: tensile adhesion strength (Classification = E)	$\geq 0.5 \text{ N/mm}^2$ after not less than 30 min

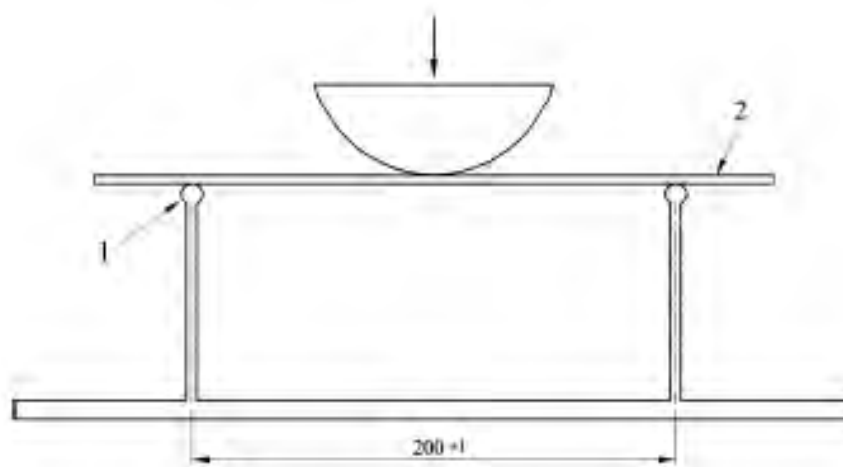
Examples of classification and designation

Symbol		Description
Type	Class	
C	1	Normal setting cementitious adhesive
C	1 E	Normal setting cementitious adhesive with extended open time
C	1 F	Fast setting cementitious adhesive
C	1 F T	Fast setting cementitious adhesive with reduced slip
C	2	Improved cementitious adhesive
C	2 E	Improved cementitious adhesive with extended open time
C	2 F	Improved fast setting cementitious adhesive
C	2 S1	Improved deformable cementitious adhesive
C	2 S2	Improved highly deformable cementitious adhesive
C	2 F T	Improved fast setting cementitious adhesive with reduced slip
C	2 F T S1	Improved deformable fast setting cementitious adhesive with reduced slip
D	1	Normal dispersion adhesive
D	1 E	Normal dispersion adhesive with extended open time
D	1 T	Normal dispersion adhesive with reduced slip
D	2	Improved dispersion adhesive
D	2 T	Improved dispersion adhesive with reduced slip
D	2 T E	Improved dispersion adhesive with reduced slip and extended open time
R	1	Normal reaction resin adhesive
R	1 T	Normal reaction resin adhesive with reduced slip
R	2	Improved reaction resin adhesive
R	2 T	Improved reaction resin adhesive with reduced slip

EN 12002

Adhesives for tiles – Determination of transverse deformation for cementitious adhesives and grouts

- Specifies the test method to be used to determine the transverse deformation of cementitious ceramic tile adhesives and grouts.
- Applicable to all cementitious ceramic tile adhesives and grouts
 - For internal and external tile installations
 - On floors and walls.
- It is not applicable to non-cementitious adhesives and grouts.



Key

- 1 Cylindrical support, diameter $(10 \pm 0,1)$ mm, length 60 mm minimum
- 2 Adhesive $(3 \pm 0,1)$ mm thick

Classifications

- S1: Deformable adhesive: transverse deformation ≥ 2.5 mm and < 5 mm
- S2: Highly deformable adhesive: transverse deformation ≥ 5 mm

- Additional characteristics (Classification = CG2)

High abrasion resistance (Classification = A)	$\leq 1,000 \text{ mm}^3$
Reduced water absorption after 30 min (Classification = W)	$\leq 2 \text{ g}$
Reduced water absorption after 240 min (Classification = W)	$\leq 5 \text{ g}$

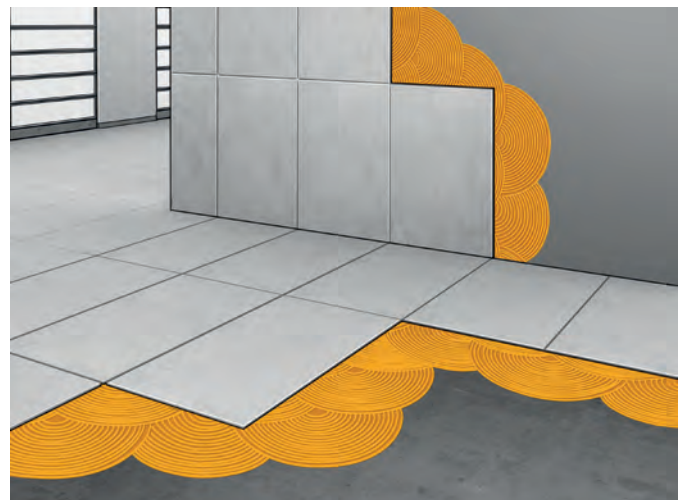
Reaction Resin Grouts

- Fundamental Characteristics (Classification = CG1)

Abrasion resistance	$\leq 250 \text{ mm}^3$
Flexural strength after dry storage	$\geq 30 \text{ N/mm}^2$
Compressive strength after dry storage	$\geq 45 \text{ N/mm}^2$
Shrinkage	$\leq 1.5 \text{ mm/m}$
Water absorption after 240 min	$\leq 0.1 \text{ g}$

Examples of classification and designation

SYMBOL		DESCRIPTION
Type	Class	
CG	1	Normal cementitious grout
CG	2 W	Improved cementitious grout with additional characteristic of reduced water absorption
CG	2 A	Improved cementitious grout with additional characteristic of high abrasion resistance
CG	2 W A	Improved cementitious grout with additional characteristics of reduced water absorption and high abrasion resistance
RG		Reaction resin grout



Grout for tiles — Requirements, evaluation of conformity, classification and designation

- Applicable to ceramic tile grouts
 - For internal and external tile installations
 - On walls and floors
- Gives the terminology concerning the products, working methods, application properties, etc., for ceramic tile grouts.
- Specifies the performance requirements for cementitious and reaction resin grouts for ceramic tiles.

Grouts for tiles are classified as follows:

Classification	Type	Definition
CG	Cementitious grout	Cement-based grouts in powder form, mixed with water or some other appropriate liquid just before use
RG	Reaction resin grout	Reactive grouts based on two or more components, which are mixed before use and which set by means of a chemical reaction

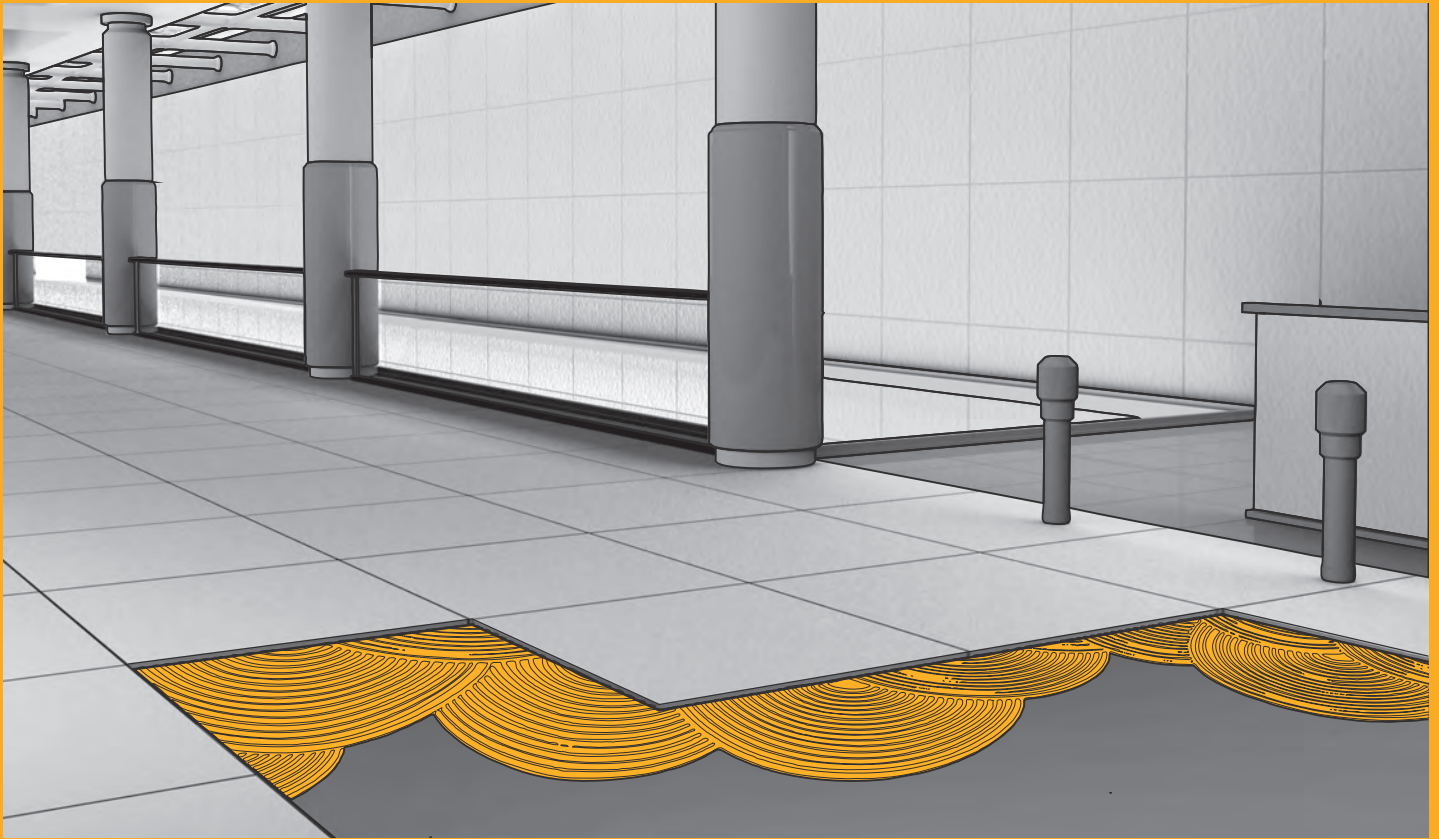
For cementitious grouts it is possible to have different classes, related to different characteristics, designated with the following abbreviations:

Class	Type
1	Normal grout
2	Improved grout (meets additional requirements, indicated as: W reduced water absorption or A high abrasion resistance)

Cementitious Grouts

- Fundamental Characteristics (Classification = CG1)

Abrasion resistance	$\leq 2,000 \text{ mm}^3$
Flexural strength after dry storage	$\geq 2.5 \text{ N/mm}^2$
Flexural strength after freeze-thaw cycles	$\geq 2.5 \text{ N/mm}^2$
Compressive strength after dry storage	$\geq 15 \text{ N/mm}^2$
Compressive strength after freeze-thaw cycles	$\geq 15 \text{ N/mm}^2$
Shrinkage	$\leq 3 \text{ mm/m}$
Water absorption after 30 min	$\leq 5 \text{ g}$
Water absorption after 240 min	$\leq 10 \text{ g}$



WHO WE ARE

Sika AG, Switzerland, is a globally active specialty chemicals company. Sika supplies the building and construction industry as well as manufacturing industries (automotive, bus, truck, rail, solar and wind power plants, façades). Sika is a leader in processing materials used in sealing, bonding, damping, reinforcing and protecting loadbearing structures. Sika's product lines feature high quality concrete admixtures, specialty mortars, sealants and adhesives, damping and reinforcing materials, structural strengthening systems, industrial flooring as well as roofing and waterproofing systems.

SIKA (NZ) LTD
PO BOX 19192
Avondale, Auckland
1746, New Zealand

Contact
Phone 0800 745 269
www.sika.co.nz

BUILDING TRUST

