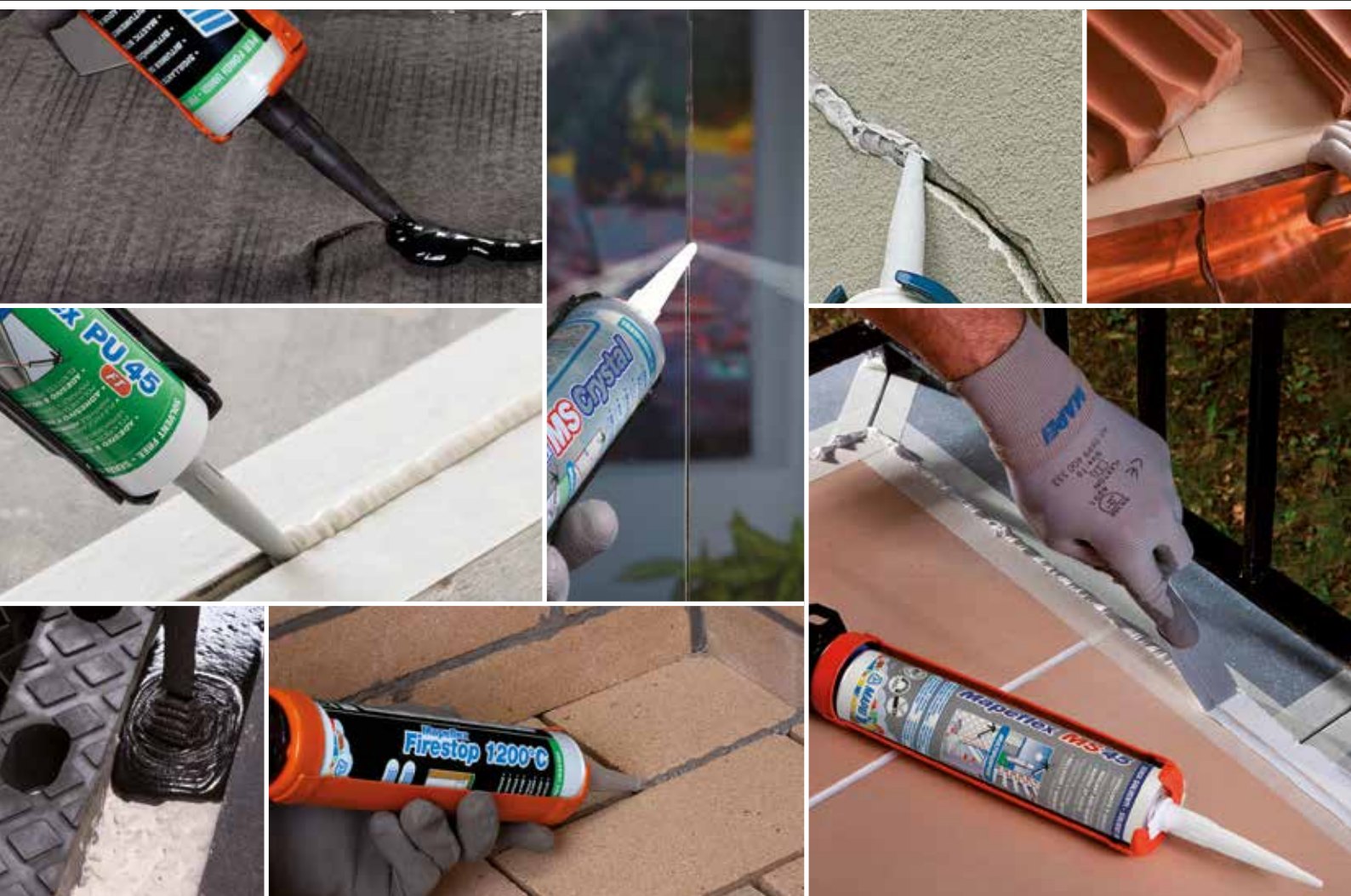


# SELECTION CHART FOR FLEXIBLE SEALANTS AND ADHESIVES



# WHAT SEALANTS ARE USED FOR

A multitude of building components are used to construct modern buildings. These components are often prefabricated and made from different types of material, which means they also have widely differing physical and mechanical characteristics and behaviour.

This is why, when assembling such components, a certain amount of **space should be left around their perimeter** so that different levels of **thermal movement can take place unimpeded** to avoid uncontrolled deformation or damage. These spaces are known as **building joints**. To **waterproof joints against atmospheric agents** it is necessary to use suitable products that are both adhesive and deformable: **flexible sealants**.

## THE CHEMISTRY OF SEALANTS

Flexible sealants are chemical products that are intended to **guarantee the continuity of a waterproof seal** in internal and external surfaces in correspondence with the gaps or spaces that form the joints.

There are many **specific sealants** available to **meet all possible requirements** and they are formulated with different types of polymers according to the varying mechanical, thermal and chemical loads and actions the joints are exposed to, the different types of building materials employed, the various application situations and conditions and the aesthetic results required.

## USERS OF SEALANTS

Flexible sealants are used by all professionals in the building industry whose work involves having to hermetically seal joints, cracks and gaps. Sealants also differ according to the specialisation of each different end user and various types are available such as one-component and two-component sealants, thixotropic and hi-flow sealants, rapid and slow-curing sealants, and coloured or paintable sealants.



## CONSUMPTION CHART LITRES OF SEALANT PER LINEAR METRE OF JOINT

recommended section

		width in mm									
		5	10	15	20	25	30	35	40	45	50
depth in mm	5	0.03	0.05	0.08	0.10	0.13	0.15	0.18	0.20	0.23	0.25
	10	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45	0.50
	12.5	0.06	0.13	0.19	0.25	0.31	0.38	0.44	0.50	0.56	0.63
	15	0.08	0.15	0.23	0.30	0.38	0.45	0.53	0.60	0.68	0.75
	17.5	0.09	0.18	0.26	0.35	0.44	0.53	0.61	0.70	0.79	0.88
	20	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00
	22.5	0.11	0.23	0.34	0.45	0.56	0.68	0.79	0.90	1.01	1.13
	25	0.13	0.25	0.38	0.50	0.63	0.75	0.88	1.00	1.13	1.25

## CONSUMPTION CHART LINEAR METRES SEALED PER 300 ML CARTRIDGE

recommended section

		width in mm									
		5	10	15	20	25	30	35	40	45	50
depth in mm	5	12.0	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.3	1.2
	10	6.0	3.0	2.0	1.5	1.2	1.0	0.9	0.8	0.7	0.6
	12.5	4.8	2.4	1.6	1.2	1.0	0.8	0.7	0.6	0.5	0.5
	15	4.0	2.0	1.3	1.0	0.8	0.7	0.6	0.5	0.4	0.4
	17.5	3.4	1.7	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.3
	20	3.0	1.5	1.0	0.8	0.6	0.5	0.4	0.4	0.3	0.3
	22.5	2.7	1.3	0.9	0.7	0.5	0.4	0.4	0.3	0.3	0.3
	25	2.4	1.2	0.8	0.6	0.5	0.4	0.3	0.3	0.3	0.2

## CONSUMPTION CHART LINEAR METRES SEALED PER 600 ML SOFT CARTRIDGE

recommended section

		width in mm									
		5	10	15	20	25	30	35	40	45	50
depth in mm	5	24.0	12.0	8.0	6.0	4.8	4.0	3.4	3.0	2.7	2.4
	10	12.0	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.3	1.2
	12.5	9.6	4.8	3.2	2.4	1.9	1.6	1.4	1.2	1.1	1.0
	15	8.0	4.0	2.7	2.0	1.6	1.3	1.1	1.0	0.9	0.8
	17.5	6.9	3.4	2.3	1.7	1.4	1.1	1.0	0.9	0.8	0.7
	20	6.0	3.0	2.0	1.5	1.2	1.0	0.9	0.8	0.7	0.6
	22.5	5.3	2.7	1.8	1.3	1.1	0.9	0.8	0.7	0.6	0.5
	25	4.8	2.4	1.6	1.2	1.0	0.8	0.7	0.6	0.5	0.5

# ACCESSORY ITEMS

### EXTRUSION GUNS FOR SEALANTS

- Hand-held pro-grade guns
- Battery pro-grade guns
- Pneumatic pro-grade guns
- Battery peristaltic pump



### PRE-FILLING FOR JOINTS

Foam polyethylene cords, available in various diametres, for pre-filling joints.



### ADHESION PROMOTERS

Primers to increase the bond strength of sealants on different building materials.



# MAPEI RANGE

Thanks to a deep knowledge of the needs of its end users, Mapei created a wide and specialised range of products, divided in different polymer families with performances, packagings, colours and prices that can meet all the needs of the most specialised and demanding users.

		ACETIC SILICONE SEALANTS				NEUTRAL SILICONE SEALANTS					ACRYLIC				
		Mapesil 300°C	Mapesil AC Mapesil AC Eco	Mapesil U	Mapesil Z Plus	Mapesil BM	Mapesil FR	Mapesil GP	Mapesil LM	Mapesil Stone Matt	Mapesil Tile Matt	Adesilex PVC	Adesilex PVC HP	Mapeflex AC-P	
SEALING	interior	shutter boxes and fittings				☑		☑	☑	☑	☑			☑	
		fittings and wall openings				☑		☑	☑	☑	☑			☑	
		glass and fittings		☑	☑	☑			☑	☑	☑				
		sanitary joints for bathrooms		☑	☑	☑			☑	☑	☑				
		ceramics, tiles, skirtings		☑	☑	☑			☑	☑	☑				
		stone coverings							☑	☑	☑				
		kitchen tops, sinks		☑	☑	☑			☑	☑	☑				
		joints for pedestrian floors		☑					☑	☑	☑				
		joints for vehicular floors		☑					☑	☑	☑				
		cracks, slits							☑	☑	☑	☑			☑
		structural joints					☑		☑	☑	☑	☑			
		sterile environments							☑	☑	☑	☑			
		food processing environments							☑	☑	☑	☑			
	drinking water							☑	☑	☑	☑				
	production areas							☑	☑	☑	☑				
	paintable sealants													☑	
	exterior	fittings and wall openings					☑		☑	☑	☑				
		glass and fittings		☑	☑	☑			☑	☑	☑				
		fire-break joints						☑							
		high-temperature joints	☑												
		furnaces, chimneys, barbecues													
		joints on façades							☑	☑	☑	☑			☑
		rainscreens					☑		☑	☑	☑	☑			
		natural stone façades							☑	☑	☑	☑			
		metal-work					☑		☑	☑	☑	☑			
roofs and coverings						☑		☑	☑	☑	☑				
seals between different materials			☑	☑	☑	☑	☑	☑	☑	☑	☑			☑	
cracks and slits			☑			☑		☑	☑	☑	☑			☑	
swimming pools		☑					☑	☑	☑	☑					
external courtyards															
tiled surfaces		☑	☑	☑			☑			☑					
terraces and flat roofs		☑	☑	☑			☑			☑					
car parks															
road joints															
airports															
canals and basins															
safety tanks															
paintable sealants													☑		
water treatment plants															
BONDING	skirtings, board coverings, wire casing, decorative elements														
	tiles														
	bathroom elements, worktops														
	plaques and signs														
	window sills, parapets, doorsteps														
	isolating sheets														
	wooden panels and coverings														
	PVC pipes with no internal pressure											☑	☑		
	PVC pipes with internal pressure												☑		
	high-resistance bondings														
ultra-fast bondings															
roof tiles															

☑ ideal application

☐ possible application



# TYPICAL APPLICATIONS

## *Mapeflex PU 35 CR* AGGRESSIVE LIQUIDS

FLEXIBLE POLYURETHANE SEALANT WITH HIGH CHEMICAL RESISTANCE



### Main uses

- Water treatment plants
- Safety tanks
- Chemical industries

### Benefits

- Good hardness and flexibility
- High chemical resistance to a wide spectrum of substances
- Thixotropic, also for vertical application
- **Certified chemical resistance**
- Very low certified environmental emissions
- Paintable

## *Mapeflex PU 35 CR* FOOD ENVIRONMENTS. CLEANROOMS. DRINKING WATER

ELASTIC POLYURETHANE SEALANT WITH HIGH CHEMICAL RESISTANCE



### Main uses

- Food industry environments
- Cleanrooms, hospitals, laboratories
- Electronic industries
- Drinking water storage tanks

### Benefits

- Good hardness and flexibility
- Certified chemical resistance
- **Very low certified environmental emissions**
- Paintable
- Certified for contact with drinking water

## *Mapeflex MS 45* FLEXIBLE SEALS AND BONDS

HYBRID MOULD-RESISTANT SEALANT AND ADHESIVE WITH A HIGH MODULUS OF ELASTICITY



### Main uses

- Sealing of door and window fittings perimeters
- Sealing cracks and slits
- Flexible bonds

### Benefits

- Compatible with various materials, including when damp or wet
- Odourless, very low certified environmental emissions
- Paintable with elastomeric paints
- Low dirt pick-up

## *Mapeflex PU 45 FT* INDUSTRIAL FLOORS

POLYURETHANE SEALANT AND ADHESIVE WITH HIGH MODULUS OF ELASTICITY



### Main uses

- Industrial floors
- Warehouses and deposits
- Sidewalks

### Benefits

- Fast hardening, no swelling
- High resistance to traffic
- Easy to apply
- High bond strength
- Paintable

## *Mapesil AC Eco* DAMP ENVIRONMENTS AND SWIMMING POOLS

MOULD- RESISTANT PURE ACETIC SILICONE SEALANT WITH LOW MODULUS OF ELASTICITY PRODUCED WITHOUT THE USE OF FOSSIL RESOURCES



### Main uses

- Swimming pools
- Bathrooms and kitchens
- Sanitary fittings and showers

### Benefits

- **Pure silicone for higher resistance and extended durability**
- **Extended resistance to moulds**
- **11 colours + transparent coordinated with Mapei grouts range**
- Low modulus of elasticity
- High thermal and chemical resistance
- Very low certified environmental emissions

## *Mapeflex PU 70 SL* AIRPORTS. SERVICE AREAS. CAR PARKS

HI-FLOW HYDROCARBON-RESISTANT POLYURETHANE SEALANT WITH A LOW MODULUS OF ELASTICITY



### Main uses

- Airports
- Service areas and car parks
- Safety tanks

### Benefits

- **Certified for use in airports**
- **Resistant to contact with hydrocarbons**
- High yield if applied with **Mapeflex SPP** pump
- Low modulus of elasticity

## *Mapesil LM* STONE FLOORS AND COVERINGS

NEUTRAL MOULD-RESISTANT PURE SILICONE SEALANT WITH A LOW MODULUS OF ELASTICITY



### Main uses

- Stone façades
- Stone floors and coverings
- Bathrooms, kitchens, swimming pools

### Benefits

- **Certified for use on natural stone**
- High durability
- Low modulus of elasticity
- Resistant to moulds
- 10 colours coordinated with Mapei grouts range
- Very low certified environmental emissions

## *Mapesil FR / Mapeflex FR* FIRE-RESISTANT JOINTS

ACRYLIC FIRE-RESISTANT SILICONE SEALANTS



### Main uses

- Environments subject to the risk of fire
- Warehouses for flammable materials
- Public buildings

### Benefits

- **Certified as EI fire resistant up to +240°C**
- Easy to apply
- Paintable (**Mapeflex FR**)

# PRODUCT FAMILIES

The different polymers employed in the production of flexible sealants for building determine the typical performance characteristics of each product with its strengths and weaknesses. Here below some of them.

## ONE-COMPONENT POLYURETHANE SEALANTS

- Compatible with various substrates
- Flexible behaviour
- Paintable
- High tear resistance
- High bond strength
- Flexible formulations: ranging from high modulus adhesives to low modulus sealants



- Difficult extrusion at low temperatures
- Superficial ageing if exposed to UV rays

## ACETIC SILICONE SEALANTS

- Easy extrusion and workability
- Chemical resistance
- Thermal resistance 150-180°C
- Flexible behaviour
- Also available in transparent
- Also available at low price



- Acid reaction, not compatible with mineral substrates without primers
- Corrosive, not compatible with oxidisable metals if applied without primers
- Odour, release of acetic acid
- Quality can be poor
- Not paintable

## TWO-COMPONENT EPOXY-POLYURETHANE SEALANTS

- Compatible with various substrates
- High chemical and mechanical resistance
- High adhesion if used with primers
- Do not stain surfaces
- Can be sanded and smoothed



- Two-component
- Limited flexibility

## NEUTRAL SILICONE SEALANTS

- Easy extrusion and workability
- Compatible with various building substrates
- Flexible behaviour
- Chemical resistance
- Thermal resistance 150-180°C
- Also available in transparent



- Poor resistance to tear and cut
- If not specific for use, they can stain stone surfaces
- Not paintable

## ACRYLIC SEALANTS

- Easy extrusion and workability
- Compatible with damp substrates
- Paintable
- Low price



- Limited mechanical performance
- Plastic-elastic behaviour
- Volumetric shrinkage
- Must be protected from rain before complete hardening

## HYBRID SEALANTS

- Compatible with various substrates
- Compatible with wet substrates during application
- Flexible behaviour
- Paintable
- Also available in crystal clear
- Limited dirt pick-up
- Flexible formulations: ranging from high modulus adhesives to low modulus sealants



- Low resistance to tear

# PRODUCT CHARACTERISTICS

		COMPONENTS	MOVEMENT IN SERVICE	SET TO FOOT TRAFFIC	SET TO VEHICULAR TRAFFIC	CHEMICAL RESISTANCE	THERMAL RESISTANCE	PAINTABLE	SANDABLE	DIRT PICK-UP	RESISTANCE TO MOULDS	HI-FLOW	APPLICATION ON WET SUBSTRATES	PRIMER NEEDED	JOINTS > 40 MM
ACRYLIC SEALANTS AND OTHER POLYMERS	Mapeflex AC3	1	7.5%	no	no	low	-10/ +80°C	yes	no	low		no	no	same product diluted with water	no
	Mapeflex AC4	1	12.5%	no	no	low	-30/ +80°C	yes	no	low		no	no		no
	Mapeflex FR	1	12.5%	no	no	low	-20/ +80°C	yes	no	low		no	no		no
	Mapeflex AC-P	1	12.5%	no	no	low	-30/ +80°C	yes	no	low		no	no		no
	Ultrabond Super Grip	1	n.a.	n.a.	n.a.	low	-20/ +80°C	yes	n.a.	n.a.		no	no		n.a.
	Mapeflex Xpress 80/400	2	5%	yes	yes	medium	-40/ +60°C	yes	yes	low		yes	no		yes
	Mapeflex Blackfill	1	n.a.	no	no	low	-20/ +70°C	no	no	high		no	yes		yes
	Mapeflex Firestop 1200°C	1	n.a.	no	no	low	-20/ +1200°C	no	no	low		no	no		no
HYBRID SEALANTS	Mapeflex MS 40	1	25%	yes	no	medium	-40/ +70°C	yes	no	low		no	yes	Primer FD	yes*
	Mapeflex MS 45	1	20%	yes	yes	medium	-40/ +90°C	yes	no	low	yes	no	yes		yes*
	Mapeflex MS 55	1	20%	yes	yes	medium	-40/ +90°C	yes	yes	low	yes	no	yes		yes*
	Mapeflex MS Crystal	1	20%	no	no	medium	-20/ +80°C	no	no	low	yes	no	yes		no
	Ultrabond MS Rapid	1	n.a.	n.a.	n.a.	medium	-40/ +90°C	yes	n.a.	n.a.		no	yes		n.a.
POLYURETHANE AND EPOXY-POLYURETHANE SEALANTS	Mapeflex PU 35 CR	1	20%	yes	yes	high	-30/ +80°C	yes	no	medium	yes	no	no	Primer A Primer M	yes*
	Mapeflex PU 40	1	25%	yes	no	medium	-40/ +70°C	yes	no	medium		no	no		yes*
	Mapeflex PU 45 FT	1	20%	yes	yes	medium	-40/ +70°C	yes	no	medium		no	no		yes*
	Mapeflex PU 50 SL	1	25%	yes	yes	medium	-40/ +70°C	yes	no	medium		yes	no	yes*	
	Mapeflex PU 65	2	5%	yes	yes	medium	-40/ +70°C	no	yes	medium		yes	no	Primer PU60 Primer SN	yes
	Mapeflex PU 70 NS	2	25%	yes	yes	high	-30/ +70°C	no	no	medium		no	no		yes
	Mapeflex PU 70 SL	2	25%	yes	yes	high	-30/ +70°C	no	no	medium		no	no	yes	
	Ultrabond PU Strong	1	n.a.	n.a.	n.a.	medium	-30/ +80°C	yes	yes	n.a.		no	no	Primer M - Primer PU60 Primer MF	n.a.
	Mapeflex E-PU 21 SL	2	10%	yes	yes	high	-30/ +80°C	yes	yes	medium		yes	no		yes
	Mapeflex E-PU 30 NS	2	10%	yes	yes	high	-30/ +80°C	yes	yes	medium		no	no		yes
ACETIC SILICONE SEALANTS	Mapesil 300°C	1	20%	no	no	high	-30/ +300°C	no	no	high		no	no	Primer FD	no
	Mapesil AC	1	25%	yes	no	high	-40/ +180°C	no	no	high	yes •	no	no		no
	Mapesil AC Eco	1	25%	yes	no	high	-40/ +180°C	no	no	high	yes •	no	no		no
	Mapesil U	1	20%	no	no	medium	-40/ +100°C	no	no	high	yes	no	no		no
	Mapesil Z Plus	1	20%	no	no	medium	-30/ +120°C	no	no	high	yes	no	no		no
NEUTRAL SILICONE SEALANTS	Mapesil BM	1	25%	no	no	medium	-40/ +150°C	no	no	high		no	no	Primer FD	no
	Mapesil FR	1	20%	yes	yes	high	-40/ +180°C	no	no	high		no	no		yes*
	Mapesil GP	1	20%	yes	no	medium	-40/ +120°C	no	no	high	yes	no	no		no
	Mapesil LM	1	25%	yes	no	high	-40/ +150°C	no	no	high	yes •	no	no		no
	Mapesil Stone Matt	1	25%	yes	no	high	-40/ +200°C	no	no	high	yes	no	no		no
	Mapesil Tile Matt	1	25%	yes	no	high	-40/ +200°C	no	no	high	yes	no	no		no

n.a. = non applicable.  
 yes\* = sealant depth must not be greater than 20 mm.  
 yes • = enhanced with BioBlock technology.



# COLOUR CHART

100	103	110	111	112	113	114	119	120	123	125	127	130	131	132	133	134	135	136	137	138	141	142	143	144	145	
WHITE	MOON WHITE	MANHATTAN 2000	SILVER GREY	MEDIUM GREY	CEMENT GREY	ANTHRACITE	LONDON GREY	BLACK	ANCIENT WHITE	CASTLE GREY	ARCTIC GREY	JASMINE	VANILLA	BEIGE 2000	SAND	SILK	GOLDEN DUST	MUD	CARRIBEAN	ALMOND	CARAMEL	BROWN	TERRACOTTA	CHOCOLATE	TERRA DI SIENA	
			●																							
			●		●																					
			●	●	●																					
			●	●	●	●																				
			●	●	●	●	●																			
●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	○	○	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

The chart contains colours from the standard range coordinated with Mapei Coloured Grouts, as well as some special colours. Displayed colours are indicative and can vary due to the printing processes involved.



# PRODUCT CERTIFICATIONS

EN 15651-1 Sealants for façades	EN 15651-2 Sealants for glass surfaces	EN 15651-3 Sealants for sanitary joints	EN 15651-4 Sealants for pedestrian floors	GEV	OTHER CERTIFICATIONS	
F-EXT-INT class 7.5 P				EC1 Plus		Mapeflex AC3
F-EXT-INT class 12.5 P				EC1 Plus		Mapeflex AC4
F-EXT-INT class 12.5 P				EC1 Plus	EN 13501-1 EN 13501-2	Mapeflex FR
F-EXT-INT class 12.5 P				EC1 Plus		Mapeflex AC P
				EC1 Plus		Ultrabond Super Grip
						Mapeflex Xpress 80/400
						Mapeflex Blackfill
						Mapeflex Firestop 1200°C
F-EXT-INT-CC class 25 LM				EC1 Plus		Mapeflex MS 40
F-EXT-INT-CC class 20 HM		XS1	PW-EXT-INT-CC class 20 HM	EC1 Plus		Mapeflex MS 45
F-EXT-INT-CC class 20 HM		XS2	PW-EXT-INT-CC class 20 HM	EC1 Plus	ASTM C1248 contact with drinking water complies with HACCP	Mapeflex MS 55
F-EXT-INT class 20 LM		XS1		EC1 Plus		Mapeflex MS Crystal
				EC1 Plus	FAST TRACK	Ultrabond MS Rapid
				EC1 Plus	EN 14187-4 - EN 14187-6 CSM (Cleanroom Suitable Material) contact with drinking water complies with HACCP	Mapeflex PU 35 CR
F-EXT-INT-CC class 25 LM			PW-EXT-INT-CC class 25 LM			Mapeflex PU 40
F-EXT-INT-CC class 20 HM			PW-EXT-INT-CC class 20 HM		FAST TRACK	Mapeflex PU 45 FT
			PW-EXT-INT-CC class 25 LM		BS 5212	Mapeflex PU 50 SL
					FAST TRACK	Mapeflex PU 65
					Fed Spec SS-S-200 E BS 5212	Mapeflex PU 70 NS
					FAST TRACK EN 204-D4 Watt 91	Mapeflex PU 70 SL
						Ultrabond PU Strong
						Mapeflex E-PU 21 SL
						Mapeflex E-PU 30 NS
				EC1		Mapesil 300°C
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XS1	PW-EXT-INT class 12.5 E	EC1 Plus		Mapesil AC
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XS1	PW-EXT-INT class 12.5 E	EC1 Plus		Mapesil AC Eco
F-EXT-INT class 12.5 E		SI				Mapesil U
F-EXT-INT class 12.5 E		XS1		EC1 Plus		Mapesil Z Plus
F-EXT-INT-CC class 25 LM	G-CC class 25 LM		PW-EXT-INT-CC class 25 LM	EC1 Plus		Mapesil BM
F-EXT-INT-CC class 20 HM	G-CC class 20 HM		PW-INT class 12.5 E		EN 13501-1 EN 13501-2	Mapesil FR
F-EXT-INT class 12.5 E		XS1		EC1 Plus		Mapesil GP
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XS1	PW-EXT-INT-CC class 25 LM	EC1 Plus	ASTM C1248	Mapesil LM
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XS1	PW-EXT-INT-CC class 25 LM	EC1 Plus		Mapesil Stone Matt
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XS1	PW-INT-CC class 25 LM	EC1 Plus		Mapesil Tile Matt

# EVERYTHING'S OK WITH MAPEI

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