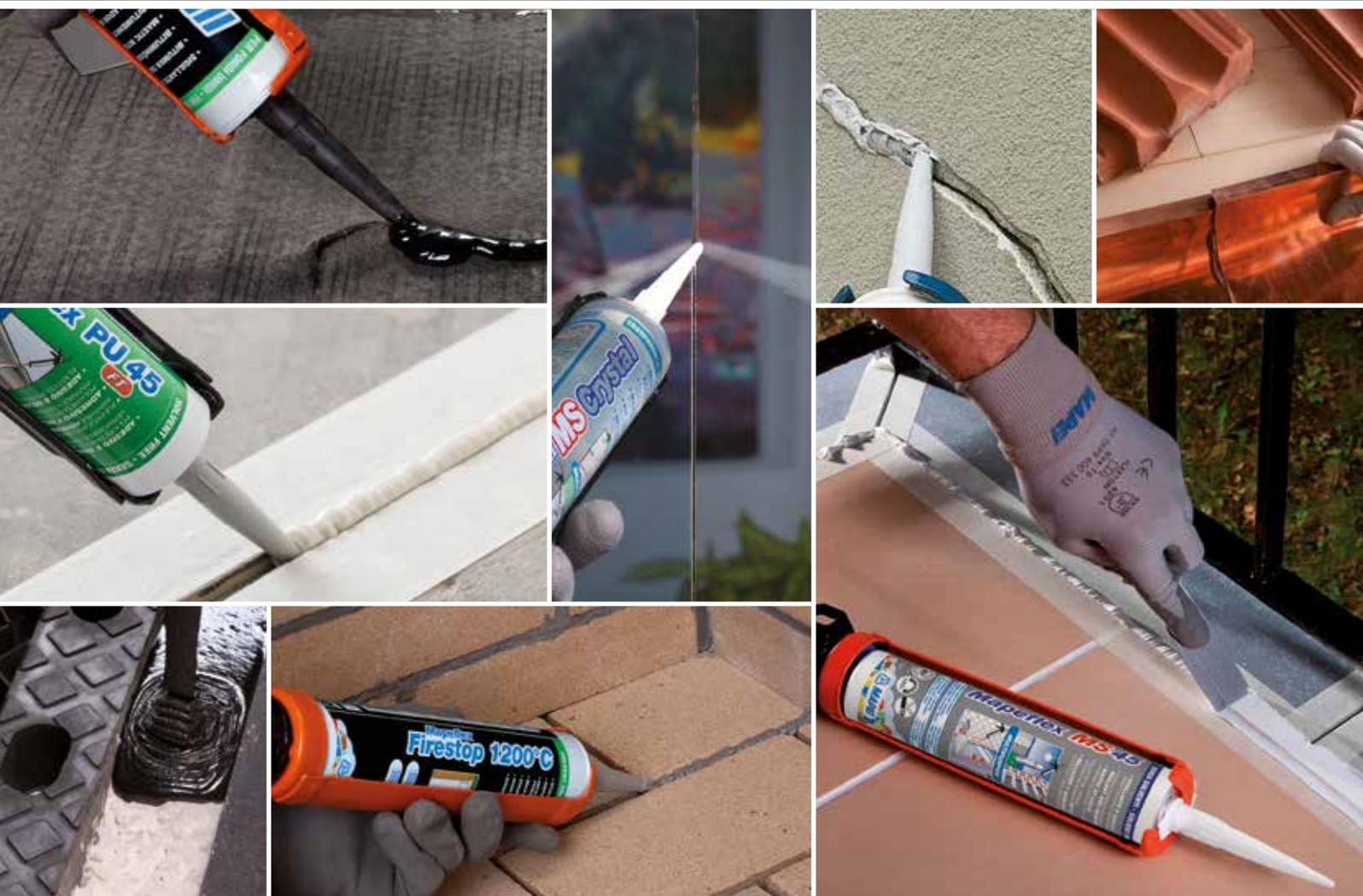


# SELECTION CHART FOR ELASTIC SEALANTS AND ADHESIVES



# 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 differing 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 employ suitable products that are both adhesive and deformable: **elastic sealants**.

# THE CHEMISTRY OF SEALANTS

Elastic 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

Elastic sealants are used by all professionals working 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

### DISPENSERS 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 diameters, 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 final 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 SILICON SEALANTS				NEUTRAL SILICON SEALANTS			ACRYLIC AND OTHER POLYMERS SEALANTS					
		Mapesil U	Mapesil Z Plus	Mapesil AC	Mapesil 300°C	Mapesil BM	Mapesil LM	Mapesil Cp	Mapeiflex AC4	Mapeiflex ACS	Mapeiflex AC P	Mapeiflex AC-FR 2	Mapeiflex Firestop 1200°C	
SEALING	internal	shutter boxes and fittings												
		glass and fittings												
		sanitary fittings, bathrooms, kitchens												
		tiles and skirting												
		stone coverings												
		joints for pedestrian floors												
		joints for vehicular floors												
		cracks and slits												
		structural, contraction and fillet joints												
		sterile environments, food, drinking water												
		production areas												
		paintable sealants												
	external	fittings and wall openings												
		glass and fittings												
		fire-break, refractory, high temperature joints												
		joints on façades												
		metalwork, roofs, coverings												
		seals between different materials												
		cracks and slits												
		swimming pools and damp environments												
		balconies, terraces, flat roofs												
		car parks, airports, squares												
		road joints												
		canals, basins, hydraulic works												
storage tanks, sewage plants														
paintable sealants														
BONDING	skirtings, board coverings, wire casing, decorative elements													
	bathroom elements, worktops													
	plaques and signs													
	window sills, parapets													
	isolating sheets													
	wooden panels and coverings													
	high-resistance bondings													
	ultra-fast bondings													
roof tiles														

ideal application

possible application

POLYURETHANE AND EPOXY-POLYURETHANE SEALANTS

HYBRID SEALANTS

Mapeflex Blackfill	Ultrabond Super Grip	Mapeflex PU 35 CR	Mapeflex PU 40	Mapeflex PU 45 FT	Mapeflex PU 50 SL	Mapeflex PU 70 SL	Mapeflex PU 70 NS	Mapeflex PU 65	Mapeflex E-PU 21 SL	Mapeflex E-PU 30 NS	Ultrabond PU Strong	Mapeflex MS 45	Mapeflex MS Crystal	Ultrabond MS Rapid	Mapeflex MS 40

# TYPICAL APPLICATIONS

## Mapeflex PU35 CR AGGRESSIVE LIQUIDS

ELASTIC POLYURETHANE SEALANT WITH HIGH CHEMICAL RESISTANCE



### Main uses

- Depuration plants
- Safety tanks
- Chemical industries

### Benefits

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

## Mapeflex PU35 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 elasticity
- High chemical resistance to a wide spectrum of substances
- Thixotropic, also for vertical application
- Certified chemical resistance
- **Very low certified environmental emissions**
- Paintable

## Mapeflex MS 45 ELASTIC SEALS AND BONDS

HYBRID SEALANT AND ADHESIVE WITH A HIGH MODULUS OF ELASTICITY



### Main uses

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

### Benefits

- Compatible with various materials, including when damp or wet
- Good bonding and flexible performances
- 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 DAMP ENVIRONMENTS AND SWIMMING POOLS

MOULD- RESISTANT PURE ACETIC SILICON SEALANT WITH LOW MODULUS OF ELASTICITY



### Main uses

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

### Benefits

- **Pure silicon for higher resistance and durability**
- **Extended resistance to moulds**
- **35 colours 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 HYDROCARBONS 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 SILICON 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

## Mapeflex AC-FR 2 FIRE-BREAK JOINTS

ACRYLIC FIRE-RESISTANT SEALANT



### 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**
- **Certified for reaction to fire C-S2-d0**
- Easy to apply
- Paintable
- Very low certified environmental emissions

# PRODUCT FAMILIES

The different polymers employed in the production of elastic sealants for building determine the typical performance characteristics of each product, having 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 elastic modulus adhesives to low elastic modulus sealants



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

## ACETIC SILICON 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 on mineral substrates without primers
- Corrosive, not compatible on 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 elasticity

## 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 elastic modulus adhesives to low elastic 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	HI-FLOW	APPLICATION ON WET SUBSTRATES	PRIMER NEEDED	JOINTS >40 MM
ACRYLIC SEALANTS	Mapeflex AC3	1	7.5%	no	no	low	-10/ +80° C	yes	no	low	no	no	same product diluted in water	no
	Mapeflex AC4	1	12.5%	no	no	low	-30/ +80° C	yes	no	low	no	no		no
	Mapeflex AC-FR 2	1	10%	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	no	n.a.	no	no		no
HYBRID SEALANTS	Mapeflex MS 40	1	25%	yes	no	medium	-40/ +70° C	yes	no	low	no	yes	FD	yes*
	Mapeflex MS 45	1	20%	yes	yes	medium	-40/ +90° C	yes	no	low	no	yes		yes*
	Mapeflex MS Crystal	1	20%	no	no	medium	-20/ +80° C	no	no	medium	no	yes		no
	Ultrabond MS Rapid	1	n.a.	n.a.	n.a.	medium	-40/ +90° C	yes	yes	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	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	yes	yes	medium	yes	no		yes
	Mapeflex PU 70 NS	2	25%	yes	yes	high	-30/ +70° C	yes	no	medium	no	no	Primer M Primer PU60 Primer SN	yes
	Mapeflex PU 70 SL	2	25%	yes	yes	high	-30/ +70° C	yes	no	medium	yes	no		yes
	Ultrabond PU Strong	1	n.a.	n.a.	n.a.	medium	-30/ +80° C	yes	yes	n.a.	no	no		n.a.
	Mapeflex E-PU 21 SL	2	10%	yes	yes	high	-30/ +80° C	yes	yes	medium	yes	no	Primer EP Primer MF	yes
	Mapeflex E-PU 30 NS	2	10%	yes	yes	high	-30/ +80° C	yes	yes	medium	no	no		yes
ACETIC SILICON 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	no	no		no
	Mapesil U	1	20%	no	no	medium	-40/ +100° C	no	no	high	no	no		no
	Mapesil Z Plus	1	20%	no	no	medium	-30/ +120° C	no	no	high	no	no		no
NEUTRAL SILICON SEALANTS	Mapesil BM	1	25%	no	no	medium	-40/ +150° C	no	no	high	no	no	Primer FD	no
	Mapesil GP	1	20%	yes	no	medium	-40/ +120° C	no	no	high	no	no		no
	Mapesil LM	1	25%	yes	no	high	-40/ +150° C	no	no	high	no	no		no
OTHER POLYMERS	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

n.a. = non applicable.  
yes\* = sealant depth must not be greater than 20 mm.

# COLOUR CHART

100	103	110	111	112	113	114	115	116	119	120	130	131	132	133	134	135	137	138	139	142	141	145	
WHITE	MOON WHITE	MANHATTAN 2000	SILVER GREY	MEDIUM GREY	CEMENT GREY	ANTHRACITE	RIVER GREY	MUSK GREY	LONDON GREY	BLACK	JASMINE	VANILLA	BEIGE 2000	SAND	SILK	GOLDEN DUST	CARRIBEAN	ALMOND	PINK POWDER	BROWN	CARAMEL	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	Resistance to mould	Resistance to mould with BIOBLOCK technology	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-INT class 7.5 P						EC1 plus	EN 13501-1 EN 13501-2 Mapeflex AC-FR 2
F-EXT-INT class 12.5 P						EC1 Plus	Mapeflex AC P
						EC1 Plus	Ultrabond Super Grip
F-EXT-INT-CC class 25 LM						EC1 Plus	Mapeflex MS 40
F-EXT-INT-CC class 20 HM			PW-EXT-INT-CC class 20 HM			EC1 Plus	Mapeflex MS 45
F-EXT-INT class 20 LM		XSI		●		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				Mapeflex PU 50 SL
							FAST TRACK Mapeflex PU 65
							Mapeflex PU 70 NS
							Fed Spec SS-S-200 E BS 5212 Mapeflex PU 70 SL
							FAST TRACK EN 204-D4 Watt 91 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 25 LM	XSI		●	●	EC1 Plus	Mapesil AC
F-EXT-INT class 12.5 E		SI		●			Mapesil U
F-EXT-INT-CC class 12.5 E		XSI		●		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 12.5 E		XSI		●		EC1 Plus	Mapesil GP
F-EXT-INT-CC class 25 LM	G-CC class 25 LM	XSI	PW-EXT-INT-CC class 25 LM	●	●	EC1 Plus	ASTM C920 ASTM C1248 Mapesil LM
							Mapeflex Blackfill
							Mapeflex Firestop 1200° C

# EVERYTHING'S OK, WITH MAPEI

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