MAPESIL AC ZERO

Pure, mould-resistant, acetic silicone sealant with BioBlock technology for movements up to 25%. Produced without use of fossil resources, packaged in recycled cartridge, and with fully offset residual CO_2 emissions

CE EN 15651-1 CE EN 15651-2 CE EN 15651-3 CE EN 15651-4 GEV-EMICODE EC 1 PLUS very low emission

CO_2 FULLY OFFSET IN THE ENTIRE LIFE CYCLE ZERO BioBlock

BENEFITS AND FEATURES

- Available in 40 colors
- Solvent-free and with very low emissions of volatile organic compounds
- Certified for various applications in the building industry
- High flexibility
- High durability, to resist over time
- High resistance to mould
- Impermeable to water and gases
- Resistant to high temperatures

CO_2 FULLY OFFSET PRODUCTS

Mapesil AC Zero is part of the CO_2 Fully Offset in the Entire Life Cycle line of products. CO_2 emissions measured throughout the life cycle of products from the Zero line in 2025 using Life Cycle Assessment (LCA) methodology, verified and certified with EPDs, have been offset through the acquisition of certified carbon credits in support of forestry protection projects. A commitment to the planet, to people and to biodiversity. For more details on how emissions are calculated and on climate mitigation projects financed through certified carbon credits, visit the webpage zero.mapei.com.

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WHERE TO USE

Mapesil AC Zero is a one-component, acetic cross-linking silicone sealant suitable for sealing glass, ceramics and inox metal, certain types of plastic and rubber. With the adhesion promoter **Mapei Primerseal M** or **Mapei Primerseal A** it can also be used on concrete, wood, mineral substrates, oxidisable metals.
Mapesil AC Zero is used for:

- sealing expansion, contraction and fillet joints subject to movement up to 25% of the initial size, according to standard EN 15651;
- forming a perfectly flexible and waterproof seal between construction elements in building, mechanical engineering, manufacturing, etc.

TECHNICAL CHARACTERISTICS

Mapesil AC Zero is a thixotropic paste that can be easily applied horizontally and vertically. It hardens following exposure to atmospheric humidity at ambient temperature, forming a flexible and waterproof product.
Mapesil AC Zero adheres without primer to glass, ceramics, inox metal, and many types of plastics (due to the wide variety of materials, it is advisable to always carry our preliminary tests).
It adheres even to mineral or absorbent building materials when combined with **Mapei Primerseal A** adhesion promoter. Increased adhesion even on non-absorbent materials when combined with **Mapei Primerseal M**.
In the case of sealings subject to severe service conditions (e.g., immersion, soaking, high movements, ...), the use of an appropriate adhesive primer is strongly recommended: please contact Mapei Technical Assistance.
After complete crosslinking, **Mapesil AC Zero** is suitable for interior or exterior use in dry, wet, humid or underwater environments, with operating temperatures between -40°C and +180°C.
Mapesil AC Zero is CE marked according to EN 15651-1, EN 15651-2, EN 15651-3, EN 15651-4.
Furthermore, **Mapesil AC Zero** has very low emissions of volatile organic compounds (VOC) and is classified as EMICODE EC1 Plus classification according to GEV protocol.

RECOMMENDATIONS

- If **Mapesil AC Zero** is used in exterior, light surface dirt may build up on the surfaces, though it will be easily washed off by rain. Please contact Mapei Technical Service to identify the most suitable solution.
- For sealing surfaces sensitive to acids such as limestone, use a specific neutral silicone sealant (e.g. **Mapesil LM** or **Mapesil Stone Matt**).
- The use of **Mapesil AC Zero** is not recommended on highly plasticised material or on bituminous surfaces because of the release of substances that reduce bonding and penetrate into the sealant, altering the colour and resistance.
- The resistance of **Mapesil AC Zero** to chemicals is excellent; however, due to the variety of products and working conditions under which it can be used, it is necessay to carry out preliminary tests.
- Do not use **Mapesil AC Zero** to seal aquariums.
- For sealing floor joints subject to heavy traffic, use a polyurethane (e.g. **Mapeflex PU 45 FT**) or epoxy-polyurethane (**Mapeflex E-PU 21 SL**) sealant.

APPLICATION PROCEDURE

Preparation and size of the joint

All the surfaces to receive the sealant must be dry, solid, and free from dust and loose particles, oils, grease, wax, old paint, and rust. In order for the sealant to carry out its function, provision must be made for it to elongate and compress freely.
Therefore, during application it is necessary that:

- it only bonds only to the side walls of the joint, and not to the bottom;
- the joint is sized correctly so that the product does not extend more than 25% of the initial width of the joint (calculated at +20°C);
- the correct sealing section, in order to take full advantage of the sealant's flexible performance, complies with the proportion criterion below:

width of joint (mm) **W**	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**
depth of sealant (mm) **D**	**5**	**10**	**10**	**10**	**12.5**	**15**	**17.5**	**20**	**20**	**20**
Mapefoam diameter (mm)	6	15	20	25	30	40	40	2x20	2x25	2x30

To control the depth of **Mapesil AC Zero** and prevent it from adhering to the bottom of the joint, use the appropriate pre-formed closed-cell polyethylene foam cord **Mapefoam**.

Application of the primer

Where the use of **Mapei Primerseal A** or **Mapei Primerseal M** is necessary, they must be applied with a brush on the relevant areas of the joints and left to dry, and then apply **Mapesil AC Zero**.

Application of Mapesil AC Zero

Mapesil AC Zero is packed in 310 ml recycled plastic cartridges; to use, cut the cartridge above the end of the thread and screw on the nozzle, cutting it at 45° to produce a hole corresponding to the size of the joint. Insert the cartridge into the gun and extrude the sealant.
The surface of **Mapesil AC Zero** must be finished off with a tool (e.g. **Mapei Perfect Seal**) moistened with **UltraCare Smooth Silicone** by MAPEI, before the surface film forms.
Alternatively, dry smoothing is possible after protecting the joint edges with adhesive paper masking tapes, which must be removed immediately after surface finishing.

Crosslinking

When **Mapesil AC Zero** is exposed to the air, the surrounding humidity sets off the cure reaction and the sealant becomes flexible.
The speed at which **Mapesil AC Zero** crosslinks depends only slightly on temperature, but is fundamentally linked to humidity in the atmosphere.

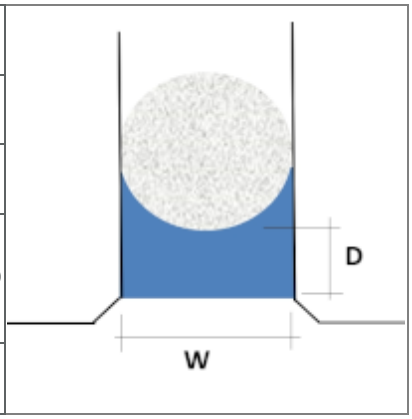
CLEANING

Traces of unpolymerised **Mapesil AC Zero** may be removed with common solvents (ethyl acetate, petrol, toluene); after complete crosslinking, the silicone rubber may only be removed mechanically. Avoid contact between **Mapesil AC Zero** not yet polymerised and any type of solvent, to avoid delays or inhibition of the final crosslnking process.

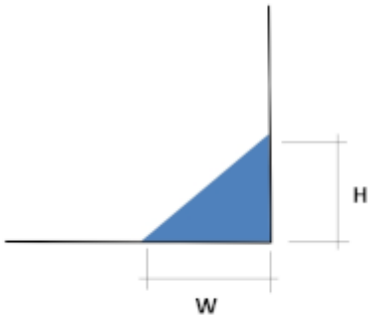
CONSUMPTION

Mapesil AC Zero:
consumption varies depending on the joint size. Some examples of consumption for expansion, contraction and fillet joints are shown in the table below.
Mapei Primerseal A/Mapei Primerseal M:
between 100 and 300 g/m².
For the treatment of absorbent substrates, a volume of primer not exceeding 5 percent of the volume of the intended sealant is required.

expansion or contraction joint										
width of joint (mm) **W**	5	10	15	20	25	30	35	40	45	50
depth of sealant (mm) **D**	5	10	10	10	12.5	15	17.5	20	20	20
sealant consumption per linear metre (ml)	**25**	**100**	**150**	**200**	**313**	**450**	**613**	**800**	**900**	**1000**
yield for 310 ml cartridge (m)	**12.4**	**3.1**	**2.1**	**1.6**	**1.0**	**0.7**	**0.5**	**0.4**	**0.3**	**0.3**



fillet joint							
width of joint (mm) **W**	5	10	15	20	25	30	35
height of sealant (mm) **H**	5	10	15	20	25	30	35
sealant consumption per linear metre (ml)	**12.5**	**50**	**113**	**200**	**313**	**450**	**613**
yield for 310 ml cartridge (m)	**24.8**	**6.2**	**2.8**	**1.6**	**1.0**	**0.7**	**0.5**



PACKAGING

Mapesil AC Zero:
310 ml recycled plastic cartridges, in 12 pcs boxes.
Mapei Primerseal A/Mapei Primerseal M:
0.25 l and 1 l bottles, in 8 pcs boxes.

COLOURS

Mapesil AC Zero is available in various colours from the "MAPEI COLOURED GROUTS" range, plus transparent.

Mapesil AC Zero		
100	WHITE	
103	MOON WHITE	
111	SILVER GREY	
123	ANCIENT WHITE	
112	MEDIUM GREY	
113	CEMENT GREY	
114	ANTHRACITE	
127	ARCTIC GREY	
110	MANHATTAN 2000	
187	LINEN	
176	GREEN-GREY	
174	TORNADO	
125	CASTLE GREY	
119	LONDON GREY	

163	LIGHT LILAC	
168	CERULEAN	
167	AVIO	
169	STEEL BLUE	
172	SPACE BLUE	
177	SAGE	
130	JASMINE	
131	VANILLA	
137	CARIBBEAN	
132	BEIGE 2000	
138	ALMOND	
141	CARAMEL	
142	BROWN	
189	SPELT	
133	SAND	
134	SILK	
188	BISCUIT	
135	GOLDEN DUST	
152	LIQUORICE	
144	CHOCOLATE	
149	VOLCANO SAND	
145	TERRA DI SIENA	
143	TERRACOTTA	
136	MUD	
120	BLACK	
150	YELLOW	
999	TRANSPARENT	

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Note: Due to the printing process involved, the colours shown are merely indicative

STORAGE

Mapesil AC Zero may be stored up to 24 months in its original cartridges, in a dry and clean place.
Mapei Primerseal A or **Mapei Primerseal M**, stored in a cool (not above +25°C) and dry place in the original closed bottles, have a shelf life of 15 months.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

Instructions for the safe use of our products can be found on the latest version of the SDS available from our website www.mapei.com.
PRODUCT FOR PROFESSIONAL USE.

TECHNICAL DATA (typical values)

MAPESIL AC ZERO COMPLIES WITH THE STANDARDS:
EN 15651-1
EN 15651-2
EN 15651-3
EN 15651-4

PRODUCT IDENTITY	
Consistency:	thixotropic paste
Colour:	transparent + 40 colours
Density:	1.03 g/cm³ (transparent)
Dry solids content:	100%
EMICODE:	EC1 Plus - very low emissions

APPLICATION DATA (at +23°C - 50% R.H.)	
Recommended application temperature:	from +5°C to +50°C
Extrusion speed from a 3.5 mm nozzle at a pressure of 0.5 N/mm²:	120 g/minute
Time to form surface skin:	10 minutes
Shrinkage during vulcanisation:	3.5%
Speed of vulcanisation:	4 mm in 1 day - 10 mm in 7 days

FINAL PERFORMANCE	
EN 15651-1: sealant for façade joints in interior and exterior, even with cold temperature:	F-EX-INT-CC
Class:	25 LM
EN 15651-2: sealant for glazing, even with cold temperature:	G-CC
Class:	G 25 LM
EN 15651-3: sealant for sanitary fittings:	S
Class:	XS 1
EN 15651-4: sealant for pedestrian floorings:	PW-EX-INT
Class:	12.5 E
Tensile strength - according to ISO 37:	1.6 N/mm²
Elongation at break - according to ISO 37-3:	800%
Tear strength (ISO 34-1, die C):	4 N/mm
Shore A hardness (ISO 868):	20

Density at +25°C (ISO 1183- 1 A):	1.02 g/cm³
Modulus of elongation measured according to ISO 8339 METHOD A: **- at 25% elongation:** **- at 50% elongation:** **- at 100% elongation:**	 0.20 N/mm² 0.27 N/mm² 0.35 N/mm²
Maximum movement allowed according to EN 15651-1 and EN 15651-2:	25%
Maximum movement allowed on floors according to EN 15651-4:	12.5%
Resistance to water:	excellent
Resistance to ageing:	excellent
Resistance to atmospheric agents:	excellent
Resistance to chemicals, acids and diluted alkalis:	good
Resistance to soap and detergents:	excellent
Resistance to solvents:	limited
Resistance to temperature:	from -40°C to +180°C

WARNING

Although the technical details and recommendations contained in this product data sheet correspond to the best of our knowledge and experience, all the above information must, in every case, be taken as merely indicative and subject to confirmation after long-term practical application; for this reason, anyone who intends to use the product must ensure beforehand that it is suitable for the envisaged application.
Please refer to the current version of the Technical Data Sheet, available from our website www.mapei.com

LEGAL NOTICE

The contents of this Technical Data Sheet ("TDS") may be copied into another project-related document, but the resulting document shall not supplement or replace requirements per the TDS in force at the time of the MAPEI product installation.
The most up-to-date TDS can be downloaded from our website www.mapei.com. www.mapei.com.
ANY ALTERATION TO THE WORDING OR REQUIREMENTS CONTAINED OR DERIVED FROM THIS TDS EXCLUDES THE RESPONSIBILITY OF MAPEI.

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