

MM1018 P #1436

Product description

MM1018 - The Liquid-Shim® - is a highly filled metal polymer for full-surface and force-fit compensation and filling of inaccuracies and unevenness between metal elements such as end plates, bridge bearings, crane runways and rail guides as well as steel components. Due to its high dimensional stability, MM1018 is also suitable for use in preloaded connections. More than 2.000 structures worldwide already stand on the Liquid-Shim®, DIAMANT MM1018.

MM1018 P: Putty-like variant for application and insertion. Product cures at room conditions. Compressive strength of up to 110 N/mm².

MM1018 P (putty) is a product with general building approval (abZ) approval number: Z-3.82-2042 ([link to abZ](#)).



Characteristics

- Very high compressive strength
- Low creep properties
- Fast curing
- Corrosion and weather resistant
- Easy to apply for almost any gap situation
- General building approval (abZ)
- Seawater-resistant, rust-free

Typical applications

Gap compensation, force-fit connection to

- Head plate joints
- Bridge bearings
- Crane and guide rails
- Silos
- Steel hydraulic engineering structures
- Steel construction and structural steel engineering
- Tunnelling

for steel-steel and steel-concrete joints.

MM1018 – The Liquid-Shim®

- Always fits
- Saves time and costs

Available in the following versions

ARTICLE	PRODUCT	DESCRIPTION
#1436	MM1018 P	0,5 kg, 1 kg, 1,5 kg, 4,5 kg, special sizes on request

Product data condition of delivery

PROPERTIES	VALUE
Colour component A (resin) Colour component B (hardener)	Grey Grey
Storability	Store in the original, unopened container in a dry and frost-free place (5 °C to +20 °C). Shelf life 2 years. Protect from direct sunlight. Higher temperatures reduce the shelf life.
Density of component A (resin) Density of component B (hardener)	3,0 g/cm ³ 2,0 g/cm ³
Maximum grain size in mixture	125 µm
Mixing ratio component A (resin) Mixing ratio component B (hardener)	78 g 21 g
Pot life	20 min. ± 20 % (T15K, DIN EN ISO 9514)
Processing temperature material temperature Processing temperature component surface	+5 °C to +30 °C +5 °C to +40 °C
Consumption/yield	<p>The calculation basis for the material consumption (M in g) is the base area (A in cm²) and the average gap size (d in cm) are required.</p> <p>M (in g) = A cm² * d cm * 1.2 * 2.75 g/cm³</p> <p>Example: 1m² contact surface with 1 mm gap M = 10,000 cm² * 0.1 cm * 1.2 * 2.75 g/cm³ = 3,360 g = 3.36 kg</p> <p>This calculation includes an excess material of 20 % to compensate for tolerances and application-related additional consumption.</p>
Maximum layer thickness tested by the manufacturer	Up to 140 mm
Maximum layer thickness approved according to abZ	Up to 10 mm. It is authorised to reduce the gap size by inserting lining sheets and to apply MM1018 P in several layers up to a maximum of 10 mm, for example.

Product data fully cured product

PROPERTIES	VALUE
Density	2.75 g/cm ³
Compressive strength	110 N/mm ² DIN EN 13412:2006
Hardness (ShoreD)	89
E-modulus	10.000 N/mm ² DIN EN 12190:1998
Thermal expansion coefficient	0.000025 1/K at -20 °C to +60 °C
Temperature resistance	Up to 160 °C
Shrinkage	0.084 % DIN EN 12617-4:2002

PROPERTIES	VALUE
Colour	Dark grey
Creep coefficient	2,1 DIN EN ISO 13584:2003-11
Friction coefficient μ_{ect}	0,39 DIN EN 1090-2 Appendix G
Viscosity	600 Pas DIN EN ISO 3219:1994
Service temperature according to abZ	-20 °C to +50 °C
Loss of pre-tensioning force after 50 years	~ 13 % Relaxation test 2 mm gap, log. extrapolated, restrained

Storage / shelf life

Store in the original, unopened container in a dry, cool and frost-free place (5°C to 20°C). Shelf life 2 years. Protect from direct sunlight. Higher temperatures reduce the shelf life.

Processing parameters

The processing time (pot life) of the material begins as soon as the two components A and B are added together. Pot life and hardening time depend on the amount of material and the temperature. With larger containers, the pot life may be reduced due to a higher reaction heat. The following table gives practical pot life values for a 1 kg pack:

TEMPERATURE (°C)	POT LIFE (minutes)
10	60
20	25
30	10

Pot life at different temperatures measured on a 1 kg batch.

Material curing can be accelerated by heating. The maximum permissible temperature for accelerated curing is 50 °C. The required minimum curing temperature is +5 °C. We recommend at temperatures < 10 °C, we recommend preheating the components and the material.

TEMPERATURE (°C)	COMPRESSIVE STRENGTH (N/mm ²)	TIME TO REACH THE COMPRESSIVE STRENGTH
5	-	24 hours
5	106	7 days
21	88	24 hours
21	110	7 days
30	90	24 hours
30	122	7 days

Compressive strength as a function of curing temperature and curing time, compressive swelling load.

Work preparation

If possible, contact surfaces that are wetted with MM1018 must be cleaned of dirt and loose particles using de-oiled compressed air (e.g. DIAMANT cleaner #1417). Screws must be protected if necessary (e.g. with DIAMANT screw protection #8880) to prevent the threads from sticking to MM1018 at a later date. If the contact surfaces need to be separated again at a later date, it is necessary to apply a release agent (e.g. DIAMANT Separator #1354) in advance.

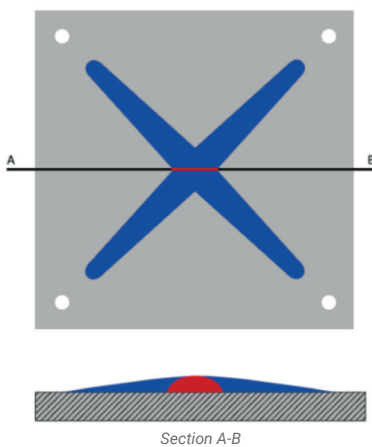
Mixing process

To mix MM1018, component B is added completely to the container with component A. Mix intensively using a hand drill and the DIAMANT mixing propeller (#0789) (max. 250 rpm for approx. 2 minutes). Remove any material adhering to the walls of the container with a spatula and add to the mixture. Mix thoroughly again.

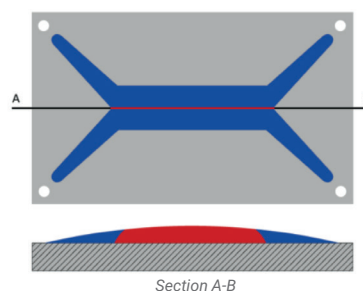
Application

MM1018 P (putty) is applied to the contact surface in an x-shape. In the following illustrations, a square and a rectangular contact surface are shown as examples. It is important to note that the highest material elevation is applied in the centre of the contact surface (see red line in the illustration). This ensures that MM1018 P (putty) is distributed over the entire surface without air bubbles when the contact surfaces are joined together. When the components are joined together, excess MM1018 P (putty) is pressed out of the gap. We recommend removing this material before curing. Surrounding components should be protected from material flowing out. In the case of screwed or prestressed connections, we recommend retightening the screws after 7 days.

Application MM1018 P on a square area



Application MM1018 P on a rectangular area



You can find a detailed explanation in this video:

[100% gap compensation in steel and bridge construction | MM1018 P - The Liquid Shim® \(youtube.com\)](https://www.youtube.com/watch?v=...)



WATCH VIDEO

Disposal

Unused material can be disposed of normally if it has been mixed in the correct ratio and is fully cured (EWC 170203). Unmixed material must be disposed of as chemical waste (EAKV 080111) **When booking our DIAMANT application service, we will take care of the professional and correct disposal of the waste.**

Qualification & Service

To ensure the best possible quality and error-free application, we offer the following services:

- Product training
- Site supervision and monitoring (supervising)
- Complete realisation of the work by our experienced application technicians and fitters

Contact us, we will be happy to advise you and will be on site immediately.

Safety Data Sheet

Please read the relevant safety data sheet before processing the product. Safety data sheets are available on a daily basis on request via info@diamant-polymer.de or by telephone on +49-2166-98360.

DIAMANT guarantees the product properties as long as they are stored and used in accordance with the specifications listed here. DIAMANT accepts no responsibility for the processing of the material. Our technicians will be happy to answer any further questions you may have.

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