

MM1018 FL - liquid Product #1866

Product description

MM1018 FL is a metal polymer for the 100% form- and force-locking gap compensation for tolerance inaccuracies and unevenness between metal elements, head plates, bridge bearings, crane and rail guides as well as steel components. For gaps of > 10 mm, it is recommended to insert steel shim plates in order to reduce the gap width to less than 10 mm.

Characteristics

- Very high compressive strength
- Corrosion and weathering resistant
- Injection for almost any gap situation, no casting
- General building authority approval
- Seawater resistant

Chemical resistance

- Oil
- Petrol
- Coolant

Package sizes

0.5 kg
1.0 kg
1.5 kg
4.5 kg
Special sizes on request

MM1018 FL is supplied in ready-to-use package sizes. The product consists of two components. Both components must be thoroughly mixed with each other. To avoid mixing errors, a portioning of the components into smaller quantities is expressly discouraged.

Storage/Shelf life

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

Technical specifications

Technical data	Test procedure	Formula symbol	Value
Application (gap size)	-	d	0 – 140 mm
	-	d	0-10 mm acc abZ
Friction	-	μ	>0.5
E-Modulus [N/mm ²]	DIN EN 13412:2006	E	10,000
Compressive strength [N/mm ²]	DIN EN 12190:1998	f _c	161
Shrinkage [mm/m]	DIN EN 12617-4:2002	ε	0.35
Viscosity [mPas]	DIN EN ISO 3219:1994	ν	16.900
Creep coefficient	DIN EN ISO 13584:2003-11	Φ	1.1
Thermal expansion coefficient [1/K]	-	α _T (-20°C - 60°C)	2E - 05
Density [g/cm ³]	-	-	2.66
Pot life [min]	DIN EN ISO 9514	T _{15,k}	89 ± 20%
Shore-D hardness	DIN ES ISO 868	-	89

Consumption calculation

The base area (A in cm²) and the mean gap dimension (d in cm) are required as a basis for calculation of the material consumption.

In this calculation, a material surplus of 20% is taken into account to compensate for tolerances as well as application-oriented additional consumption.

$$M \text{ (in g)} = A \text{ cm}^2 * d \text{ cm} * 1,2 * 2,6 \text{ g/cm}^3$$

Indication: 1m² contact surface with 1mm gap

$$M = 10.000\text{cm}^2 * 0,1\text{cm} * 1,2 * 2,6\text{g/cm}^3 = 3120\text{g} = 3,12\text{kg}$$

Important instructions

Please refer to the safety data sheet.

Technical data sheet

Processing Parameters

The processing time (pot life) of the material starts as soon as the two components A and B are combined. The pot life and hardening time are dependent on the material quantity (volume) and the temperature. The following table provides pot life values for a 1 kg pack relevant to practical applications:

Temperature [°C]	Pot life [Min]
10	110
20	55
30	30

Measured with 1 kg of product in the original container

For larger containers, the pot life may be reduced due to a higher reaction temperature. The compressive strength depends on the temperature, the curing time and the material dimension. The following table gives approximate values for a gap of 10 mm.

Temperature [°C]	Compressive strength [N/mm ²]	Time until compressive strength is attained
5	-	24 hours
5	138	7 days
21	156	24 hours
21	161	7 days
30	166	24 hours
30	182	7 days

Compressive strength relative to the ambient temperature

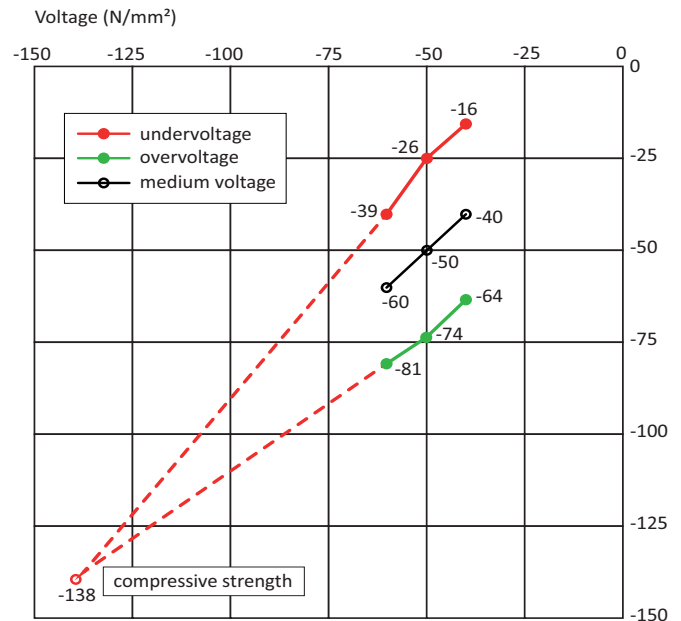
The material curing can be accelerated by heating. The maximum permissible temperature for accelerated curing is 65°C. The required curing temperature is 5°C. At lower temperatures it is recommended to preheat the material.

Fatigue strength

The pressure threshold strength of MM1018 FL is shown in the following Smith diagram:

Medium stress N/mm ²	Amplitude in N/mm ²	Achieved cycle number
40	24	10,000,000
50	24	10,000,000
60	21	10,000,000

Maximum achieved amplitude per medium stress



Smith chart for MM1018 FL

Work preparation

Contact surfaces, which are covered with MM1018 FL, must be cleaned of dirt and loose particles, if possible using deoiled compressed air. The Diamant Cleaner #1417 is recommended. The cleaner must be applied to a lint-free cloth with which the contact surface is then cleaned. Existing screws must be protected by PU screw protection to avoid later sticking of the threads with MM1018 L. If the contact surfaces have to be separated again at a later point in time, it will be necessary to pre-treat it with a separator. It is recommended to use Diamant separator #1354. The separator must be applied generously on the contact surface where adhesion is to be avoided.

For further information see the separator technical data sheet.

Mixing process

For the mixing of MM1018 FL, the entire package of component B is added to the container with component A. Mix thoroughly with a hand-held drill and the Diamant mixing propeller (# 0789) (max. 250 rpm for approx. 2 minutes). Scrape off material adhering to the wall of the container with a spatula and add to the mixture. Mix again thoroughly.

Technical data sheet

Application description

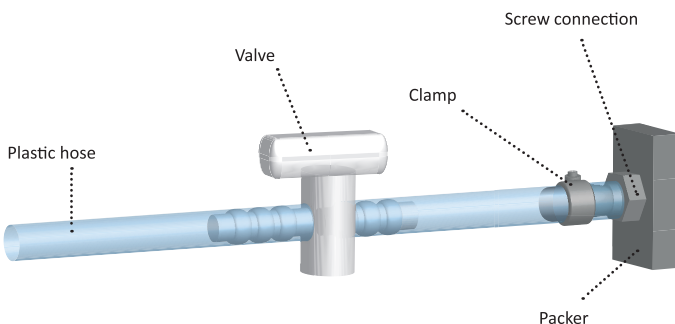
The application of MM1018 FL can be carried out by pouring or injecting. In both cases it is necessary that the gap is completely sealed to prevent MM1018 from flowing out of the gap. The use of MM1018 SEAL #2108 is recommended for the gap seal. Information on material and processing can be found in the technical data sheet MM1018 SEAL #2108.

Casting

The blended MM1018 FL can be used for gap compensation by pouring it into a gap. Before pouring, add the mixed MM1018 into a clean container. From this container, the material can be poured directly into the cavity. Ensure adequate venting as well as air bubble-free potting.

Inject

MM1018 FL can be injected into a sealed gap. Precondition for injection are appropriate injection and venting openings as a function of the gap dimension or hollow space. The injection is carried out via a flexible plastic hose (Prod # 1579) using shut-off valves (Prod # 1577) which are connected via R1/4" screw connections (# 1578) at the inlet and outlet points. An approx. 150 mm long plastic hose, a shut-off valve and a further piece of hose designed for the connection of the injection cartridge and / or for venting must be fitted via suitable hose clips (Prod # 1576).



1) Example of an injection port

MM1018 FL is mixed according to the processing regulations. The finished product is then transferred to a blanket cartridge (Prod # 1573 - 320ml) in a very thin stream, avoiding air bubbles. The cartridge will be closed after filling with a cartridge piston and slowly rotated to allow the liquid MM1018 to flow from the tip to the piston, causing the trapped air in the cartridge to rise to the cartridge tip. This procedure is especially necessary for a bubble-free injection! The cartridge can now be opened at the top with a knife and the tip can be screwed. It is recommended to shorten the tip of the cartridge slightly so that it has an inside diameter of approx. 8 mm. This reduces the resistance during injection and facilitates the injection. The cartridge tip is now placed manually onto the free tube end.

After opening the shut-off valve, the injection can begin. Pressing should be carried out with a constant pressure. It is absolutely necessary to ensure that no air bubbles are pressed through the hose into the gap! To change or refill the cartridges, the shut-off valve is closed to prevent a flow back of the material that is already injected. The free end of the tube is fixed for the cartridge change so that no material can leak. The injection is terminated as soon as the material emerges from the upper ventilation opening. The shut-off valve must be closed before removing the cartridge. Material that flows back from the injection hose can be caught, for example, with a cloth and disposed of appropriately in domestic waste.

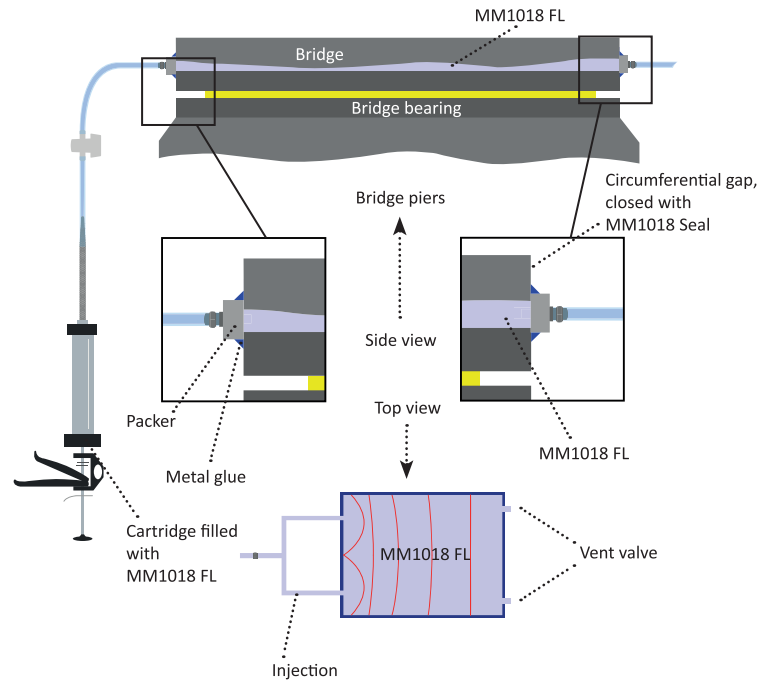
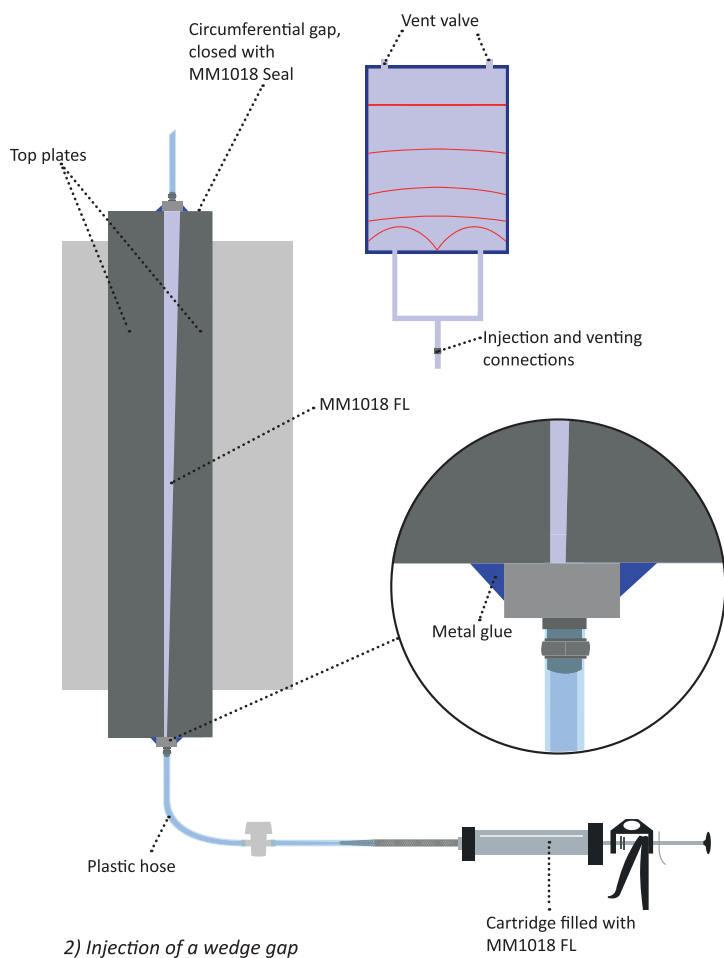
After 24 hours of curing, the injection and venting connections can be removed and disposed in domestic waste.

Technical data sheet

Instructions

- 1.) Clean with Diamant Cleaner
- 2.) Install screw protection
- 3.) Insert injection and venting connections and prepare
- 4.) Completely seal around the circumference with MM1018 SEAL
- 5.) Curing of MM1018 SEAL
- 6.) Injection with Diamant MM1018 FL
- 7.) Curing of MM1018 FL
- 8.) Remove and clean the injection and venting connections

Pictures 2 and 3 show typical applications for injection applications. For design and application notes, please contact our technicians.



Disposal

Unused residual material from the cans can be disposed of normally (EAKV 170203) when mixed in the correct mixture ratio and completely cured. Unmixed material must be disposed as chemical waste (EAKV 080111). When the Diamant service team is booked, we dispose of the waste.

Qualification and Service

It is recommended that the application be carried out by trained DIAMANT technicians.

In order to guarantee optimum quality and faultfree application, we offer the following services:

- Product Training
- Construction site supervising
- Complete execution of works by our experienced application technicians

Further information can be found in the service data sheet

MM1018 FL #1866

F047/2017

Date: 18/03/2019

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The technical data cited here has been obtained under laboratory conditions and verified on the day of product manufacture through quality assurance processes. This information is subject to change, even without prior notice. The customer is responsible for verifying the current status of the data and should inquire with DIAMANT in this regard prior to ordering the material. Application, use and processing of the product takes place outside of our control and therefore exclusively under the responsibility of the purchaser. However, if a question of liability should arise, it shall be limited - in relation to all damages - to the value of the goods supplied by us and used by you. We guarantee the faultless quality of our products according to the provisions of our general terms and conditions of sales and deliveries. All technical specifications vary depending on loads and application conditions. We are able to issue substantiated application data in individual cases on request.