

Adjustment Coatings for machine constructions

Product Description

DWH is the precision alignment system for joint faces in machines and machine tools which redundantises costly machining by using the moulding technique. These technique allows an in place moulding to a precision down to the micron with an exact replica of the tool surface.

The material can be either caused to stick to the moulding surfaces or released by the inclusion of a micro thin layer of release agent (DIAMANT separator liquid).

Typical Applications

- all type of gantry machines
- joints, spindle shafts, keyslots
- guide rails, bearing chairs and flanges, machine beds
- bearing and index bushes

Properties

- ◆ high accuracy
- ◆ high load carrying capacity 170 N/mm² (static)
- ◆ excellent shock attenuation
- ◆ full contact of mating surfaces and therefore good load transmittal
- ◆ high load carrying capacity
- ◆ high damping properties
- ◆ good adhesion with nearly zero ageing or weathering
- ◆ precision down to the micron without expensive machining or finishing work



Gantry Machines

"Moulding in place" is the secret behind time and cost saving in the modern way of machine building. DWH is used to attach the columns to the ground and the traverse to the columns. Just leave a gap between the contact area, adjust and inject.

Preparation

Roughen adhesion areas down to a roughness of 0,3 - 0,5 mm and then clean chemically (optimum: DIAMANT cleaner). Make sure that the working temperature is in the acceptable range of 20°C ± 10°C.

Mixing

Pour the hardener liquid fully into the resin container. Mix manually by spatula or by machine (100 rpm for 2 min.) until the hardener liquid is mixed well with the resin. Ensure that material adhering to the side walls and the bottom is well incorporated.

Degas

- Paste: by spreading it crosswise and thinly onto a clean surface to remove air bubbles.
- Fluid: by pouring the mix in a long, thin, uninterrupted stream into a cartridge or the confined gap.

Application

DWH may be

- poured into a prepared and sealed gap under gravity feed.
- spread in its paste form into a prepared cavity into which a replication tool or component is lowered and located in position.
- injected into a prepared gap using a hand pump cartridge.

Paste

Apply a thin adhesion layer and push it into the surface using a spatula. Add the remainder taking care not to trap air.

Fluid

Pour DWH in the prepared cavity slowly in a long, thin stream. Aim at the lowest point to fill from the bottom and thus avoid the entrapment of air, or pump the liquid in from the bottom of the prepared gap using a pump cartridge into a prepared inlet port. To achieve coverage on larger components a number of inlet ports may have to be established. Ensure that the application is made safely within the pot lifetime.



Range

DWH 310	Steel filled system
FL	#0795 liquid (pour, inject)
P	#0442 paste-like
DWH 311	Aluminium filled system
FL	#0166 liquid (pour, inject)
P	#0019 paste-like
DWH 314	Mineral filled system (non-magnetic)
FL	#1984 liquid (pour, inject)
P	#0409 paste-like
Thickener	viscosity adjustment for all types available

Accessories & Services

DIAMANT separator #1354, liquid
DIAMANT safety cleaner #1417

injection equipment:

- screw-in nipple R1/4, #1578
- hose clamp, #1578
- flexible P hose, #1579
- shut-off valve, #1577
- cartridges 300ml, #1573

We also offer a comprehensive and experienced product / process design service to optimise its use in special applications. Our technicians like to advise you in all questions around moulding methods.

	310 FL #0795	310 P #0442	311 FL #0166	311 P #0019	314 FL #1984	314 P #0409
	pour/inject	paste-like	pour/inject	paste-like	paste-like	paste-like
Pot Life (+20 °C) [min]	50	50	50	50	50	50
Cure Time (+20°C) [h]	24	24	24	24	24	24
Cure Time to Dismantle (+20°C) [h]	18	18	18	18	18	18
Specific Weight [g/cm ³]	1,8	2,2	1,55	1,6	1,6	1,7
E-Modulus DIN 53457 [N/mm ²]	8700	8900	8500	8600	8200	8300
Compressive Strength [N/mm ²]	165	170	158	160	148	156
Hardness [Shore D]	86	88	84	84	82	83
Tensile Strength [N/mm ²]	72,5	72,5	72,5	72,5	72,5	72,5
[Psi]	1051	1051	1051	1051	1051	1051
Bending Strength [N/mm ²]	120	120	120	120	120	120
[Psi]	1740	1740	1740	1740	1740	1740
Specific Resistance [Wcm]	4,8 x 10 ⁸	-	-	-	7,5 x 10 ¹⁴	-
Permittivity at 1 kHz	45,4	-	-	-	5,8	-
Temperature Resistance [°C]	permanent temporary	- 40 bis +80 +130	- 40 bis +80 +130	- 40 bis +80 +130	- 40 bis +80 +130	- 40 bis +80 +130
Shrinkage at Cure	hardly measurable at 1 mm layer thickness					

All material values are average values and vary due to mixing ratio, material quantity and environmental conditions. The mentioned material values are based on



work piece support



work piece support



work piece support



work piece support



work piece support



adjustment of linear slideways

