



Steel Castings

In this case **plasticmetal steel** is used to repair blowholes (surface defects) which are typically showing in castings after the machining process.

Preparation

Roughen the adhesion surface (enlargement of adhesion area, good anchoring points) and clean chemically (optimum: **DIAMANT cleaner**). The surface has to be clean and dry and within the optimum working temperature range between +5°C / +45°C.

Mixing

Mix powder and hardener liquid at least at a ratio of 1:1 by volume (liquid, castable viscosity). Through addition of powder you can adjust the viscosity from liquid to putty which can be applied by spatula. The maximum mixing ratio is 3:1 (powder : liquid).

Applying

First apply a thin adhesion layer, then add the remainder up to the desired layer thickness.

Curing

The cure time depends on the used hardener liquid and varies from 5 to 60 minutes.

Properties

- ◆ matching of mechanical and visual properties
- ◆ high adhesion to metal and metal alloys
- ◆ high chemical resistance
- ◆ temperature resistance up to 250 °C continuously (short term: up to + 500 °C)
- ◆ short cure time down to 5 minutes
- ◆ free mixing ratio enables putty to liquid viscosities
- ◆ machinable like metal
- ◆ cured material can be varnished

Typical Applications

DIAMANT plasticmetal is used to repair and correct

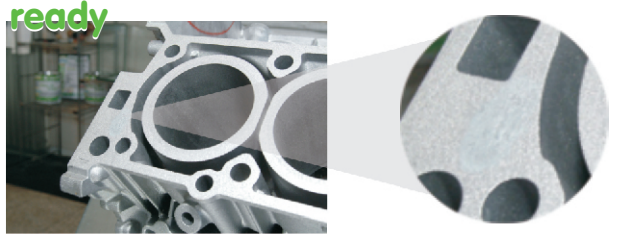
- ▾ blowholes
- ▾ porosities
- ▾ voids
- ▾ pin holes
- ▾ abrasion
- ▾ surface defects

on any kind of casting, steel and alloy.

Product Description

DIAMANT plasticmetal is the perfect material for small and medium surface repairs on any kind of metal. Because of its high amount of fillers **plasticmetal** has a very good metal finish and is machinable like metal. With its fast curing time and flexible mixing ratio it is a very useful product especially for foundries and any kind of metal.

DIAMANT plasticmetal consists of two components - the hardener liquid and the base powder. The base powders (cp. table page 2) can be combined with any of the 8 hardener liquids (cp. table page 1) to obtain special properties. It is possible to mix different powders together with one hardener liquid for colour matching.



Shelf Life 12 month

Pack Sizes

- twin pack:
- 500g
- 1.000g
- 1.500g
- bulk packs on request



Hardener Liquids for **DIAMANT plasticmetal**

Range	Product Number	Pot Life (min)	Curing (min)	Properties
Hardener Liquid	#0112	15 - 20	20 - 30	standard hardener (for European countries)
Hardener Liquid fast	#0116	2 - 3	5 - 7	very short pot life and cure time - for emergency repairs
Hardener Liquid slow	#0114	35 - 40	45 - 50	long pot life and cure time - for series production
Hardener Liquid WF	#0204	15 - 20	40 - 45	heat resistant up to + 250°C - for high thermal loads
Hardener Liquid WF slow	#0768			
Hardener Liquid WFT	#0171	15 - 20	40 - 45	standard hardener (for tropical countries) like Hardener Liquid WF - especially for tropical countries
Hardener Liquid T	#0113	15 - 20	40 - 45	like standard hardener - especially for tropical countries
Hardener Liquid T slow	#0048			
Hardener Liquid SF	#0013	15 - 20	55 - 60	hard elastic after curing - for blast prove applications
Hardener Liquid Thixo	#0065	15 - 20	25 - 30	thixotropic hardener - for drip proof applications



Base Powders for DIAMANT plasticmetal

Range	Product Name	Product Number	Metal Content in %	Application	Properties	Can be combined with other hardeners
Cast Iron	A	#0061	92	cast iron	for unfinished castings which will be painted	yes
	A Tropical	#0062	92	cast iron	as #0061 but for use in tropical countries	only T and WFT
	Superior	#0067	96	cast iron	for best metal finish	yes
	Superior Tropical	#0071	96	cast iron	as #0061 but for use in tropical countries	only T and WFT
Steel	A	#0196	92	steel castings	for unfinished castings which will be painted	yes
	A Tropical	#0197	92	steel castings	as #0196 but for use in tropical countries	only T and WFT
	Superior	#0199	96	steel castings	for best metal finish	yes
	Superior Tropical	#0139	96	steel castings	as #0199 but for use in tropical countries	only T and WFT
	Steel Sup Car Body	#1155	96	steel	especially designed for car body repairs	no
Aluminium	A	#0005	92	alu castings	for unfinished castings which will be painted	yes
	A Tropical	#0218	92	alu castings	as #0005 but for use in tropical countries	only T and WFT
	Superior	#0008	96	alu castings	for best metal finish	yes
	Superior Tropen	#0219	96	alu castings	as #0008 but for use in tropical countries	only T and WFT
	Alu Sup Car Body	#0985	96	aluminium	especially designed for car body repairs	no
Bronze	A	#0014	92	bronze	for best metal finish	yes
	Tropical	#0015	92	bronze	as #0014 but for use in tropical countries	only T and WFT
Brass	A	#0136	92	brass	for best metal finish	yes
	Tropical	#0137	92	brass	as #0136 but for use in tropical countries	only T and WFT
Copper	A	#0127	92	copper	for best metal finish	yes
	Tropical	#0128	92	copper	as #0127 but for use in tropical countries	only T and WFT
Red Brass	A	#0190	92	red brass	for best metal finish	yes
	Tropical	#0400	92	red brass	as #0190 but for use in tropical countries	only T and WFT
Iron Oxide	A	#0054	96	cast iron	oxidised after machining like the basic material	yes
	Tropical	#1183	96	cast iron	as #0054 but for use in tropical countries	only T and WFT
Alloy	A	#0263	96	stainless steel	for finest metal structures, especially for stainless steels	yes
	Tropical	#0147	96	stainless steel	as #0263 but for use in tropical countries	only T and WFT
Ceram	A	#0811	-	applicable on all metals	wear resistant repairs	yes
	Tropical	#0360	-	applicable on all metals	as #0811 but for use in tropical countries	only T and WFT



surface repair at parts of fittings



repair of blow holes on a pump housing

Technical Data

Specific Weight	DIN53454	2 - 2,5 g/cm ³
Compressive Strength	DIN53454	160 N/mm ²
Hardness [Shore D]	DIN53505	87 - 89
Tensile Strength	DIN53455	86 N/mm ²
Tensile Shear Strength	DIN53283	35 N/mm ²
Bending Strength	DIN53452	95 N/mm ²
Impact Strength	DIN53453	4.8 N/mm ²
E-Modulus	DIN53457	14500 N/mm ²
Thermal Conductivity	DIN53612	0,7 - 0,9 W/mK
Linear Expansion Coefficient (+20°C to +30°C)		25 - 40 x 10 E-6
Temperature Resistance (permanent)	HF	- 40 to +160°C
	HF WF(T)	up to +250°C
Temperature Resistance (temporary)	HF	max. +220°C
	HF WF(T)	max. +500°C

All material values are average values and vary due to mixing ratio, material quantity and environmental conditions. The mentioned material values are based on normal conditions (STP) of 20°C (273K / 31,73°F) and 1013mbar (1013hPa).