EN

Product Information

PLASTICRETE
P-CAST A02/P-FILLER ART
50:100 by weight

ELANTAS Italia S.r.l.
Strada Antolini n°1 loc. Lemignano
43044 Collecchio (PR)
Italy
Tel +39 0521 304777
Fax +39 0521 804410
EEMEurope.ELANTAS@altana.com
info.elantas.italia@altana.com
www.elantas.com

	Resin	Hardener	Mixing ratio by weight
PLASTICRETE	**P-CAST A 02**	**P-FILLER ART**	**50:100**

Application: Small or large size architectural elements, flame resistant, low or high density, sculptures reproduction. It is possible to obtain materials that look like natural stones or metals through the addition of the correct fillers.

Processing: Mass casting or as an alternative, for stratification of glass fabrics or if additivated with glass chopped strands, for brushing up to the desired thickness. Room temperature curing.

Description: PLASTICRETE P-CAST A02 is a water based acrylic resin that reacts with the special filler forming a solid mass. The system hardens at room temperature and in a short time the material reaches mechanical properties much higher than the normal gypsum based products. 50% of the final mechanical performances are obtained after 15 hours at 20°C only. The cured product has a limited porosity and low water absorption. The Plasticrete can be additivated with iron oxide based pigments, with aluminium powders (our Ecka AS31) or inert fillers to obtain the preferred finishing effect. The addition of fillers reduces proportionally the mechanical properties of the material.

Instructions: Apply on the model or mould surface 2 layers of release agents Z14, or Z15LC (wax release agent with solvent) waiting 5/10 minutes after each application. Weigh the liquid (resin), after rehomogenization, in a clean vessel in the mixing ratio of 50 parts. Add the filler in the correct ratio and mix slowly with a mixing whisk to facilitate the powder dispersion. Wait 1 minute before starting the mixing, manually or mechanically at medium speed (1000-2000 rpm) with whisk or elicolidal spindle for 2 minutes until a complete homogenized material is obtained. We suggest to filter the material on a large hole size filter (1 - 2mm) to separate eventual residual lumps above all if the casting is directly on the figure. The mixture can be:
1) cast directly on the shape;
2) applied in several layers by brushing if it is additivated with the following % : P-CAST A02 50 parts + P-FILLER ART 100 parts + A20 (glass chopped strand) 6 parts to obtain fibrous pastes with different consistency;
3) used to impregnate large filling glass fabric (our D5 glass cloth) until the desired thickness is obtained.
Increasing the amount of resin to 55 parts for 100 parts of filler it is possible to lower the viscosity, extend the working time but also increase the time necessary for complete drying. Where as, the lowering of the amount of resin to 45 parts for 100 parts of filler increases the viscosity, reduces the working time, speeds up the complete drying of the product and gives a less porous material, particularly suitable for external applications. If the product is applied by stratification it is advisable to apply as a surface layer using as a thickening agent Plasticrete P-Tix (for instructions refer to the datasheet).

Curing / Post-curing: Post curing is not always necessary. The data reported in the table is obtained on specimens 4x4 cm after complete drying. The treatment at 30-40°C in a ventilated warm area after demoulding speeds up the hardening of the product. For high temperature applications with dry moulds (ex. pre-pregs moulds) after first curing at room temperature for at least 6 hours it is advisable to dry the part in the oven at 60°C for 12 -24 hours.

Storage: **The acrylic-water based dispersions can be damaged at temperatures lower than 0°C: it is therefore advisable to store the product in an area at temperatures higher than 0°C.** The resin must be rehomogenized before use. The filler reacts with humidity and water so it is necessary to keep it in a closed vessel and in a dry place. Before using the products it is necessary to conditionate them at 15°C minimum for at least 24 hours because at low temperatures the setting and stabilization times of the material becomes much longer.

Handling precautions: The acrylic-water based dispersions and relative filler are not dangerous products according to EC regulations. Refer to the safety data sheet and comply with regulations relating to industrial health and waste disposal.

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	Resin	Filler	Mixing ratio by weight
PLASTICRETE	**P-CAST A02**	**P-FILLER ART**	**50 : 100**

SYSTEM SPECIFICATIONS

Vicat (min) at 25°C	IO-10-73 (*)	min	30 34

TYPICAL SYSTEM CHARACTERISTICS

Processing data

Resin colour			Grey / White / Earthenware
Viscosity resin at 25°C	IO-10-50	mPas	30 50
Density resin at 25°C	IO-10-51 (ASTM D 1475)	g/ml	1,01 1,08
Filler colour			Natural white
Density apparent filler		g/ml	1,30 1,40
Mixing ratio by weight	EACH 100 g OF FILLER	g	45 55
Initial mixing viscosity at 25°C	IO-10-50	mPas	1.000 1.400
Pot life (at 4.000 mPas, 25°C)	IO-10-50	min	22 30
Setting time		min	50 60
Demoulding time (depends on: room temperature, thickness, shape, etc.)		h	4 15
Post-curing	40°C (**)	h	(15)
Maximum recommended thickness		Mm	Each thickness

TYPICAL CURED SYSTEM PROPERTIES

Properties determined on standard specimens cured 7 days at RT

Colour			Grey / White / Earthenware
Density	IO-10-54 (ASTM D792)	g/ml	1,50 1,55
Machinability			Good
Shore hardness	IO-10-58 (ASTM D 2240)	D/15	82 86
Flammability	IO-10-68 (UL 94 V-0)	mm	1,6
Setting expansion		%	< 0,1
Linear shrinkage after 1 month	IO-10-74 a	%	0,15 0,20
Flexural strength — 7 days at RT	ASTM C 293	MN/m^2	7 9
Flexural strength — 1 month at RT	ASTM C 293	MN/m^2	9 11
Flexural strength — after 30 days in water	ASTM C 293	MN/m^2	9 11
Strain at break	ASTM C 293	%	1,5 1,8
Weight loss after 1 month at RT or 24 h at 60°C	(specimen size 40x40x160 mm)	%	3,5 5,5
Frost resistance n.10 cycle passed	(specimen size test 40x40x160 mm)	°C	-18 +30
Indicative water absorption, derived from residual porosity, after 1 month of immersion		%	3,5 5,5

(*) for larger quantities pot life is shorter and the exothermic peak increases
(**) the brackets mean optionality
IO-00-00 = Camattini's test method. The correspondent international method is indicated whenever possible.
nd = not determined na = not applicable RT = laboratory room temperature (23±2°C)
Conversion units: 1 mPas = 1 cPs $1MN/m^2 = 10\ kg/cm^2 = 1\ MPa$

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