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TEST 100% ACRYLIC SURFACE BETACRYL
REPORT ENG



I Test conditions

All trials were conducted at an ambient temperature of 20 ° C and a relative humidity of 36%.

The oven used is Global brand, Industrial Ecotherm model with two contact plates that add a total power of 18 kW, with a margin of temperature variation of ± 1 ° C. On material processes have dragged on for 12 minutes each application.

That is, a total of 1 minute per mm thickness with double contact with the upper and lower hot plates.

II Test result

- II-1 Minimum radius (mm)

Fixed parameters: material of 12 mm and a constant temperature of 160 ° C.

Radius	100	90	80	70	60	50	40	30	20	10	5
state	ok	ok	ok	ok	ok	ok	ok	ok	ok	ok	no ok

- II-2 Elasticity test (%)

2D elasticity, R10 is the minimum radius of 12 mm thickness:

The result of this test reveals elasticity 40% maximum and 25% of maximum compression.

Doing the same tests (parts delivered with the test report) with another solid surface material similar maximum results in stretch we found are 32% and 18% compression.

- II-3 Comparative test

Radius test R10 y 12 mm	ACRILIC X	ACRILICOBETACRI'L
Initial mesure 2cm	Mesure with: 2,3 cm	Mesure with R10: 2,8 cm
Elasticity 2D	26%	32%

- *II-4 Optimum temperatura test*

The test is to observe what the best result of the minimum radius R10 is having a material thickness of 12 mm.

Temperature	150 °C	155 °C	160 °C	165 °C	170 °C	175 °C
Result	No ok	ok	ok	Optimum	ok	ok

At 150 ° C, the workpiece has not reached the radius and is broken at the end of the application of 155 ° C to 165 ° C is an improvement of the radius. The optimum temperature of application is 165 ° C, where we can observe that the piece is coupled to 92% and the mold surface does not suffer any deterioration in their surface (micro-cracks). The micro cracks in the spokes reappear at 170 ° C and 175 ° C, are expanded slightly. Compared to the material X, to its optimum temperature, the material is attached to the mold X 83%, has micro-cracks and is at the limit of rupture.

- *II-5 Minimum temperatura test*

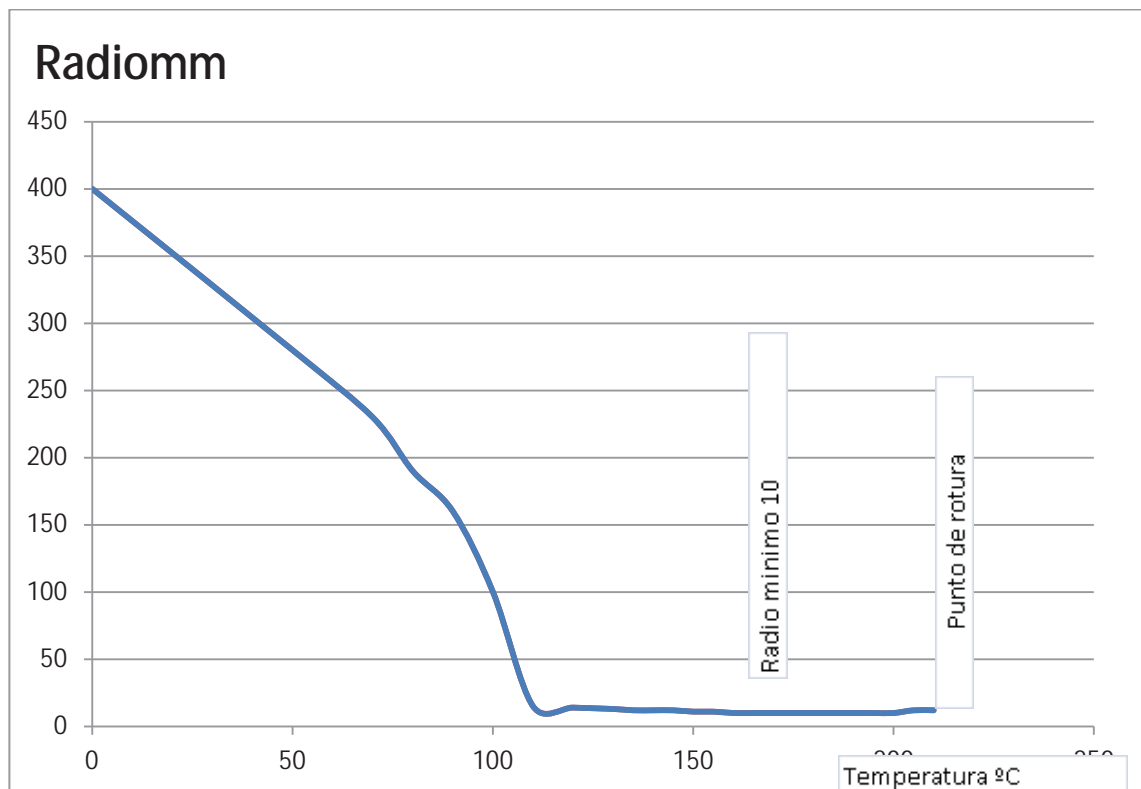
The test consists of observing what is the minimum temperature at which the material 12 mm thick can properly take a radius R15.

The minimum temperature with a result of 100% is 125 ° C. The elasticity at 125 ° C is 26%.

III Result Analysis

In order to present an analysis of these test, avoiding dense presentation of data tables, we made a graph that represent cross-elasticity data, temperature and radius of the material tested.

- III-1 Funtion Radio / Temperature



Fixed parameters: Ecotherm Global Industrial Oven and 12 mm material.

Variable parameters: Radio and temperature.

Analysis: This figure represents the limite of the application; therefore, those located above the curve are perfectly feasible, while being positioned below faulty results obtained in the form of breakage.

interpretation:

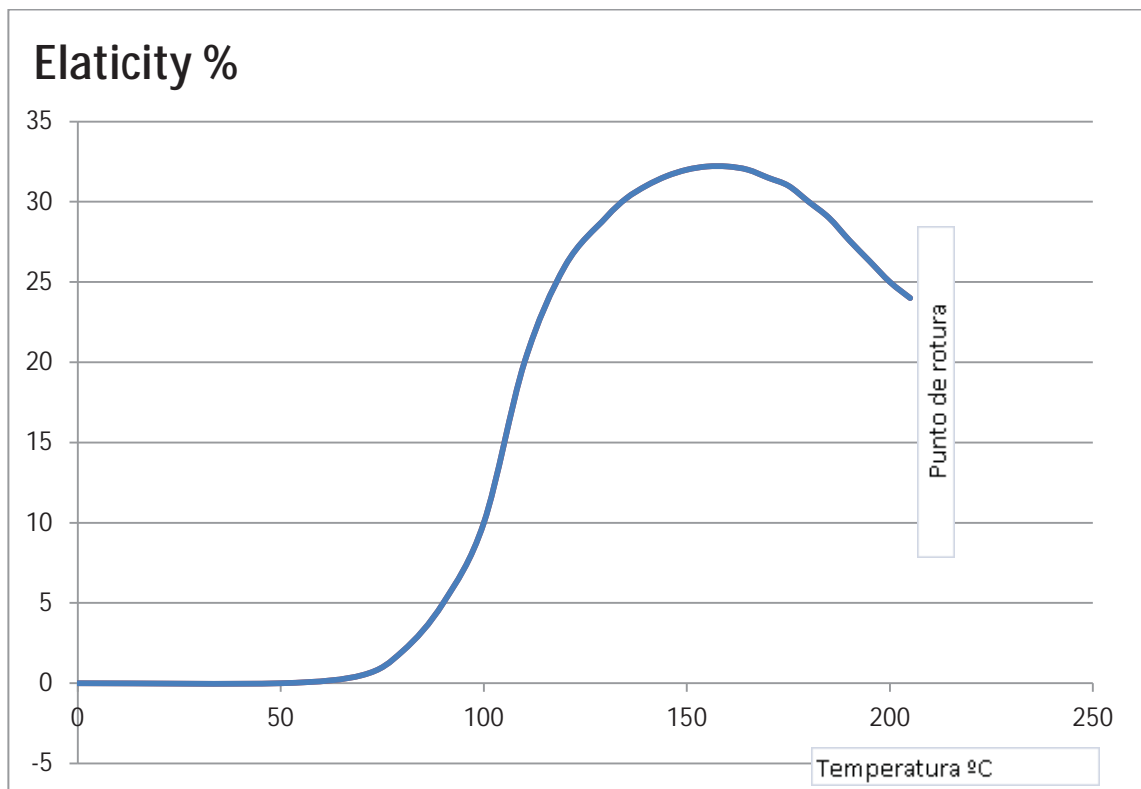
Temperature between 0-120 ° C: the material can be pressed up to a maximum radius of R400 in cold progressively lower this ratio, in an almost linear, reaching radii R15 to 120 ° C.

Temperature between 120-205 ° C: the material behaves stable, from the moment it reaches its transition point spring (120 ° C) until its degradation point (205 ° C), one can

obtain a radius R15 with a result of 100%. The maximum radius R10 can be obtained between 150 and 175 ° C.

Temperatures above 205 ° C: temperature of material degradation.

- *III-2 Function Elasticity / Temperature*



Fixed parameters: Ecotherm Global Industrial Oven and 12 mm material.

Variable parameters: Elasticity and temperature.

Analysis: This graph is represented function of elasticity Betacri'l.

Interpretation:

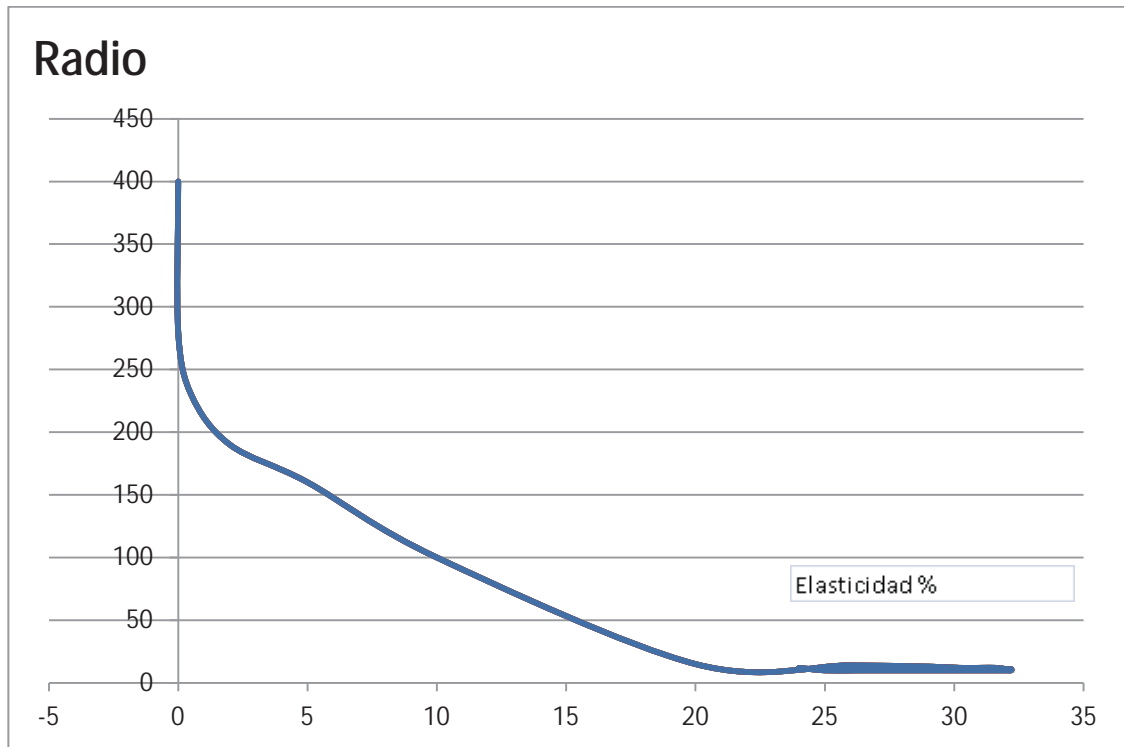
Temperature between 0-50 ° C: zero elasticity.

Temperature between 50-165 ° C: gradual increase reaching a maximum temperature of 165 ° C: 32% elasticity.

Temperature between 165-205 ° C: small stabilization of the elasticity and gradually lowered to 26% to 205 ° C.

Conclusion: Betacryl elasticity is 20% higher than that obtained for others X Acrylics reach, at its optimum temperature a maximum of 26% for a X acrylics while the acrylic Betacryl reaches 32% elasticity.

- *III-3 Function Radio / Elasticity*



Radio function / Elasticity has a linear transition from the radius R160 with a 3% stretch, until 22% of R15 elasticity. From 22% elasticity, we have similar results for radio and stable until the R10.

In conclusion, if the material is heated via a simple platen zone oven , it is preferable to leave at 160 ° C for 28-30 minutes if heated by a double plate, 160 ° C for 20 minutes, it is always preferable to heat a little less warm but more time.