

# ALUMINIUM, THE FUTURE OF MOLDS!



Polylanema offers a range of **Technical Aluminium Alloys** indicated for the manufacture of **Molds and Tools**.

| MATERIAL                 | FIBRAL ®   | CERTAL SPC ® | CERTAL ®                   | ALUMOLD-500 ® | HOKOTOL ®                  |
|--------------------------|------------|--------------|----------------------------|---------------|----------------------------|
| THICKNESSES (mm)         | 30 to 500  | 150 to 300   | 8 to 140                   | 230 to 300    | 30 to 200                  |
| STANDARD DIMENSIONS (mm) | On Request | 1520 x 3020  | 1520 x 3020<br>1020 x 3020 | 1450 x 3050   | 1520 x 3050<br>1210 x 4165 |
| HARDNESS (HB)            | 70         | 160          | 170                        | 175           | 180                        |

## Why manufacture aluminium molds?



Excellent Polish



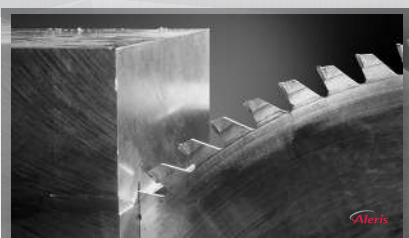
High Thermal Conductivity



Easy to Machine



Lowest Cost



# Number of Parts to Inject by Aluminium Quality

| MATERIAL               | MATERIAL TEMP. (°C) | MOLD TEMP. (°C) | INJECTION PRESSURE (in bar) | MAINTAINED PRESSURE (in bar) | FIBRAL® | CERTAL®/SPC® | ALUMOLD-500® | HOKOTOL® |
|------------------------|---------------------|-----------------|-----------------------------|------------------------------|---------|--------------|--------------|----------|
| POLYETHYLENE BD (PEBD) | 160 - 260           | 20 - 70         | 500 - 1000                  |                              | ●●      | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYETHYLENE HD (PEHD) | 260 - 310           | 50 - 70         | 600 - Max                   | 30 - 100%                    | ●●      | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYPROPYLENE (PP)     | 250 - 270           | 40 - 100        | 600 - Max                   | 50 - 100%                    | ●●      | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYSTYRENE (PS)       | 180 - 230           | 20 - 60         | 1000 - Max                  |                              | ●●      | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYSTYRENE CHOC (PSC) | < 250               | 45 - 60         |                             |                              | ●●      | ●●●●●        | ●●●●●        |          |
| SAN                    | 220 - 260           | 50 - 70         | 1000 - Max                  |                              | ●       | ●●●●●        | ●●●●●        |          |
| ASB                    | 220 - 280           | 60 - 80         | 800 - 1400                  |                              | ●       | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYAMIDE 6/6 (PA 6/6) | 250 - 290           | 80 - 90         | 700 - 1200                  | 30 - 100%                    | ●       | ●●●●●        | ●●●●●        | ●●●●●    |
| POLYAMIDE 6 (PA 6)     | 240 - 290           | 80 - 90         | 800 - 1300                  | 20 - 60%                     | ●       | ●●●●         | ●●●●         | ●●●●     |
| POLYAMIDE 11 (PA 11)   | 230 - 300           | 30 - 90         | 400 - 700                   |                              | ●       | ●●●●         | ●●●●         | ●●●●     |
| POM                    | 180 - 220           | 50 - 120        | 800 - 2000                  | PI                           | ●       | ●●●●         | ●●●●         | ●●●●     |
| PC                     | 270 - 320           | 80 - 120        | 800 - 2000                  | 70%                          | ●       | ●●●●         | ●●●●         | ●●●●●    |
| PETP                   | 260 - 270           | 140             | 1200 - 1700                 |                              | ●       | ●●●●         | ●●●●         | ●●●●●    |
| PETP amorphous         | 270 - 290           | 70 - 80         | 1000 - 2000                 |                              | ●●      | ●●●●●        | ●●●●●        | ●●●●●    |
| PBTP                   | 260 - 270           | 40 - 50         | 1200 - 1700                 | 60 - 100%                    | ●●      | ●●●●●        | ●●●●●        |          |
| PPO                    | 260 - 300           | 80 - 110        | 1000 - 2000                 | 60 - 80%                     | ●●      | ●●●●●        | ●●●●●        | ●●●●     |
| PVC                    | 170 - 190           | 50 - 60         | 1200 - 1400                 | 50 - 80%                     | ●●      | ●●●●●        | ●●●●●        |          |
| PMMA                   | 200 - 250           | 40 - 90         | 500 - 2000                  |                              | ●●      | ●●●●●        | ●●●●●        | ●●●●     |
| PA 6/6 + glass fibers  | 260 - 290           | 90 - 120        | 900 - 1500                  | 40 - 100%                    | ●       | ●●           | ●●           | ●●●●     |
| PA 6 + glass fibers    | 240 - 290           | 90 - 120        | 1000 - 1500                 | 20 - 60%                     | ●       | ●●           | ●●           | ●●●●     |
| PC + glass fibers      | 300 - 325           | 90 - 110        | 1000 - 2000                 | 70%                          | ●       | ●●           | ●●           | ●●●●     |

●●●●● 1.000.000 to 2.000.000 (large parts)

●●●● 100.000 to 500.000 (median parts)

●●● 10.000 to 50.000 (small parts)

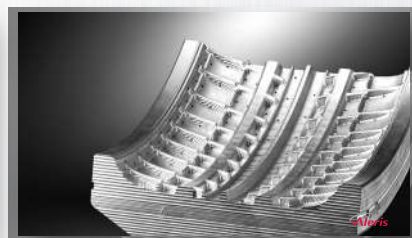
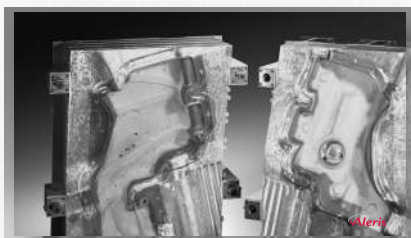
● to 5.000 parts

## Mechanical Properties

| MATERIAL     | MACHINABILITY | DIMENSIONAL STABILITY | WELDABILITY | POLISHING | CORROSION RESISTANCE |
|--------------|---------------|-----------------------|-------------|-----------|----------------------|
| FIBRAL®      | ●●            | ●●●●●                 | ●●●●●       | ●●        | ●●●●●                |
| CERTAL®/SPC® | ●●●●●         | ●●●●                  | ●●          | ●●●●●     | ●                    |
| ALUMOLD-500® | ●●●●●         | ●●●●                  | ●●          | ●●●●●     | ●                    |
| HOKOTOL®     | ●●●●●         | ●●●●                  | ●           | ●●●●●     | ●                    |

●●●●● Very suitable

● Less suitable



The data presented are comparative character and support the choice of material. Polyanema is not responsible for its misuse.

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