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Technical Literature I-06

# Machining of AURUM®

AURUM® injection-molded materials (flat plates) and extruded materials (rods) can be cut with cutting tools for mild steel that are in general use.
Representative examples of the machining of AURUM® are given below.

(1) Cutting on a lathe (turning lathing)

| Cutting conditions | AURUM® Natural | AURUM® JGN3030 (containing GF) |
|---|---|---|
| Cutting speed (peripheral velocity) [ft/min] | 1000 | 400 – 500 |
| Feed amount per turn [ins/rev] | 0.016 | 0.008 |
| Relief angle [deg.] | 5 | 5 |
| Top rake angle [deg.] | 6 – 12 | 6 – 12 |
| Cutting depth [ins] | 0.25 | 0.30 |

Note: During cutting, cooling is not required.

(2) Machining on a milling machine

A general cutting tool is adequate for machining the Natural grade, but a carbide cutter is recommended for machining the glass-fiber-containing grade. The cutter speed (peripheral velocity) shall be 500 to 750 ft/min for the Natural grade, and 250 to 350 ft/min for the glass-fiber-containing grade.
It should be noted that the area to be cut should be cooled with water during cutting.

(3) Machining with a drill

| Cutting conditions | AURUM® Natural | AURUM® JGN3030 (containing GF) |
|---|---|---|
| Cutting speed (peripheral velocity) [ft/min] | 400 | 250 - 400 |
| Feed amount per blade [ins/blade] | 0.020 – 0.008 | 0.02 – 0.008 |
| Lip angle [deg.] | 118 | 118 |
| Clearance angle [deg.] | 12 | 12 |

Note: Be sure to cool the area to be cut with water during drilling.

(4) Machining with a reamer (machining for widening a hole)

The rotational speed shall be 50 to 100 rpm for both Natural and glass-fiber-containing grades. It is recommended that the area to be machined should be cooled with water. If the cutting blade is worn markedly during the machining of AURUM® - particularly the machining of the glass-fiber-containing grade, the use of a carbide cutting tool is recommended. Care should also be taken to pay attention to the wear of the cutting blade at all times to prevent the breakage (or chipping) of the article to be machined.