



Benchmark P20_m

Material Specification

N°:001

Revision: 01

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BICO Benchmark P20m

Scope: Forged and Rolled

Grades and applicable specifications: BICO Benchmark P20m

Delivered Condition: Quenched and tempered +QT

Chemical Composition: Cast analysis according to table below:

C	Mn	Si	P	S	Cr	Mo	H[ppm]
0.35	1.30	0.20	Max	Max	1.80	0.15	Max
0.45	1.60	0.40	0.020	0.010	2.10	0.25	1.8

Microcleanliness : according ASTM E 45 Method A (worst field) :

ASTM E 45	A _t	A _h	B _t	B _h	C _t	C _h	D _t	D _h
max	1.5	1.0	1.5	1.0	1.0	0.5	1.0	0.5

Grain size according to ASTM E112 : 5 to 8

Mechanical Properties:

Thickness max (mm)	Hardness (HB) Quenched and tempered	Minimum hardness at core (HB)	Hardness (HRC) Quenched and tempered	Minimum hardness at core (HRC)
500	280-325	255	29-33	25

QT: quenched polymer 870±10°C and tempered at 590±10°C

*: Mechanical properties in QT condition, only if requested in order by customer

Tolerance: to EN 10029

US testing : according to SEP 1921 E/E Thickness ≤400 mm
SEP 1921 D/d Thickness >401 mm

Additional Requirements :

Minimum reduction ratio guaranteed:

- Minimum 3:1 for forged and plates

Certification : according to EN 10204, type 3.1

At delivery, material certificate referred to this specification are issued by the manufacturer to assess the correctness of the material and it shall include as a minimum:

- Grade: BICO Benchmark P20m
- Heat No.
- Melting and refining process
- Chemical analysis
- Supplementary Requirements :
 - *mechanical properties on treated test specimen(only if requested)*
 - *Brinell hardness HB*
 - *attestation that the material is free from residual Radioactivity*
 - *ultrasonic testing*
 - *delivered condition*
- Conformity to the applicable specifications