



SWP-BLITZ

Free cutting mild steel (steel black forest)

Distinctive feature and main attributes

A non alloyed free cutting mild steel, added with sulphur, lead and bismuth, marked by an even higher machinability. Due to its higher content of phosphorus than the other steel grades, a better surface quality and brittleness of the chips are achieved, longer cutter life and easy processing of work parts.

Use and application range

This material is designated for the automobile industry, precision turned parts, appliance construction and apparatus engineering.

Norms

Material No.	1.0737+Bi
DIN Abbreviation	~9SMnPb36+Bi
AFNOR	S300Pb+Bi
AISI / SAE / ASTM	AISI 12L13+Bi
ISO	12SMnPb35+Bi
Euro Standard EN	~11SMnPb37+Bi

Chemical composition [% wt]

C	Si	Mn	P	S	PB	Bi	Fe
max. 0.14	max. 0.05	1.00 – 1.50	max. 0.11	0.34 – 0.40	0.20 – 0.35	0.05 – 0.09	balance

Execution, delivery conditions, standard sizes and availability

- Execution in 3 m (2 m) round or square and hexagonal bars as well as in coils for Escomatic
- Standard size in stock: see [product range](#)

Other sizes on request

Tolerances

- $\varnothing < 12.00$ mm, cold drawn h8, on request also tighter tolerances available
- $\varnothing > 12.10$ mm, cold drawn h9
- Out of roundness standard: $\frac{1}{2}$ of diameter tolerance

Mechanical properties

At delivery status:

- Tensile strength (Rm): 570 – 820 MPa, size depending

Heat treatment

This quality is not made for hardening purposes, unless the carbon content is at the upper limit it is possible to do an edge hardening or nitridization process.

Cutting rates

$V_c \sim 120 - 150$ m/min, value depending on the lubrication oil, cutting tools and shape of parts.