



LIBERTY

Narrow Strip Free Cutting Steel

Narrow Strip were pioneers in the development of free cutting steels, formerly GEMCUT, and over the years have refined the process route to produce a cost effective product with consistent machining properties.

Narrow strip produce two free cutting steels, either with or without lead. The two analysis are shown overleaf.

MEMBER OF



Free-cutting steel grades

Steel Grade	C	Si	Mn	P	S	Pb
11SMnPb	0.07 0.09	Max. 0.03	0.90 1.15	0.04 0.07	0.27 0.30	0.20 0.25
11SMn30	0.06 0.09	Max. 0.04	0.90 1.15	0.04 0.07	0.27 0.33	

Related steel grades

Leaded Free Cutting Steels:

11SMnPb30
EN1APb
220M07Pb
SAE/AISI 12L14
9SMnPb28
SIS 14 19 14
S250Pb

Non-Leaded

Free Cutting Steels:

11SMn30
EN1A
220M07

Size range

Mill Edge		Sheared Edge	
Width (mm)	Thickness (mm)	Width (mm)	Thickness (mm)
200 - 350	1.50 - 12.00	26 - 340	1.5 - 3.5
351 - 430	2.00 - 10.00	26 - 390	1.6 - 3.5
431 - 450	2.50 - 10.00	26 - 420	2.5 - 3.5
451 - 495	3.00 - 10.00	26 - 440	3.0 - 3.5
		50 - 465	3.5 - 9.0

Conditions of supply:

- Black or pickled & oiled
- Mill or sheared edge
- Cut lengths: from 1000mm to 6000mm
- Coil dimensions:
 - Inside diameter 508mm
 - Outside diameter 1350mm max
- Coil weight: up to 9.5kg/mm of strip width
- Tolerances: width and thickness to EN10048: 1997

Technical support

Our highly qualified technical team will provide advice on the most appropriate grade and product to your specific requirement. Customer Technical Support provide specialist advice and help with day-to-day problem solving.

Works based metallurgists and the full resources of our Steel Research and Development Laboratories are available to assist with longer-term developments.

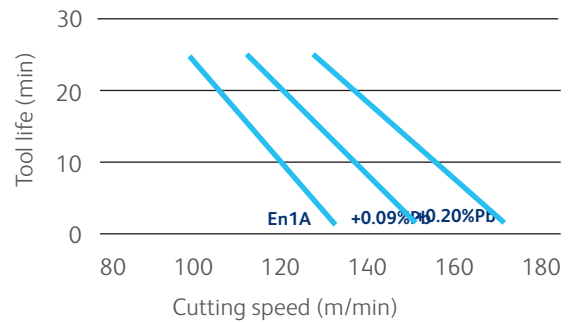
For further information, enquiries or any technical guidance on our range of Narrow Strip products please contact the Commercial Department at the address below.

Machinability

Machinability is improved by sulphur and lead additions giving:

- Extended tool life
- Improved chip form and ease of swarf removal
- Improved productivity
- Lower energy consumption

The chart shown below illustrates the beneficial effects on machinability of both sulphur and lead.



Reference: Wannell, P. H., Blank, J. R. and Naylor, D. J. In Proc. International Symposium on the influence of Metallurgy on the Machinability of Steel, September, ISIJ/ASM, Tokyo (1977).

The environment

Environmental control is paramount in modern day industry.

Specialist equipment and techniques are used to add lead during the steel making operation.

This ensures that the process is safe and that the resulting steel has good consistency.

Steel containing a deliberate addition of lead for machining purposes contains less than 0.35% lead by weight as described in Annex II of the End of Life Vehicle Directive 2000/53/C.

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