Technical Datasheet

Special Free-Cutting Steels
Standard Free-Cutting Steels
SwissCut®

28.06.23 Rev. N°1

Production range

SwissCut®

Steeltec designation	DIN/EN designation	Material No.	Process	Size range mm	Tolerance
SwissCut® SC30	-11SMn30	-1.0715	+C	10 – 36	h9
SwissCut® SC37	-11SMn37	-1.0736	+C	10 – 36	h9
SwissCut® SC30Pb	-11SMnPb30	-1.0718	+C	10 – 36	h9
SwissCut® SC37Pb	-11SMnPb37	-1.0737	+C	10 – 36	h9
SwissCut® SC37Pb+	-11SMnPb37+Bi+Te/Se	-1.0737	+C	4,5 – 40	h9
			+SL	4,5 – 20	≥ IT6
			+C	SW 10 – 36	h11
SwissCut® SC620Pb+	-60SPb20+Bi	-1.0758	+C	5 – 22	h9
			+SL	5 – 20	≥ IT6

Supply range of Steeltec

Free-cutting steels

Steeltec designation	DIN/EN designation	Material No.	Process	Size range mm	Tolerance
11SMn30	11SMn30	1.0715	+C	4 – 80	h9
			+SL	4 – 80	IT6
			+C	SW 10 – 65	h11
11SmnPb30	11SMnPb30	1.0718	+C	4 – 80	h9
			+SL	4 – 80	≥ IT6
			+C	SW 10 – 65	h11
11SMnPb37	11SMnPb37	1.0737	+C	4 – 80	h9
			+SL	4 – 80	≥ IT6
			+C	SW 10 – 65	h11

Additional standard free-cutting steels in the product range:C15Pb, C35Pb, C45Pb, 35S20, 46S20, 46S20Pb

Chemical composition (Melt analysis in percentage by mass EN 10087)

Steeltec designation.	C	Si	Mn	P	S	Pb	Sonstige
SwissCut® SC30	≤ 0,14	0,1 – 0,4*	0,90 – 1,30	≤ 0,11	0,27 – 0,33		
SwissCut® SC37	≤ 0,14	0,1 – 0,4*	1,00 – 1,50	≤ 0,11	0,34 – 0,40		
SwissCut® SC30Pb	≤ 0,14	0,1 – 0,4**	0,90 – 1,30	≤ 0,11	0,27 – 0,33	0,20 – 0,35	
SwissCut® SC37Pb	≤ 0,14	0,1 – 0,4**	1,00 – 1,50	≤ 0,11	0,34 – 0,40	0,20 – 0,35	
SwissCut® SC37Pb+	≤ 0,14	≤ 0,05	1,00 – 1,50	≤ 0,11	0,34 – 0,40	0,20 – 0,35	Bi+Te/Se***
SwissCut® SC620Pb+	0,62 – 0,70	≤ 0,10 – 0,30	1,20 – 1,40	≤ 0,06	0,15 – 0,30	0,15 – 0,30	Bi
11SMn30	≤ 0,14	≤ 0,05	0,90 – 1,30	≤ 0,11	0,27 – 0,33		

11SMnPb30	≤ 0,14	≤ 0,05	0,90 – 1,30	≤ 0,11	0,27 – 0,33	0,20 – 0,35	
11SMnPb37	≤ 0,14	≤ 0,05	1,00 – 1,50	≤ 0,11	0,34 – 0,40	0,20 – 0,35	

* Special version in compliance with the standard. "If, by metallurgical techniques, the formation of special oxides is guaranteed, then an Si content of between 0.10 and 0.40 % can be agreed on." (Quote from EN 10087:1998, Page 5, Footnote 2)
** No provision has so far been made in standard EN 10087 for the use of metallurgical techniques to form optimum oxides in the case of lead-alloy steels. This does not give rise to any drawbacks in respect of the mechanical properties and in the event of any downstream heat treatment.
*** Special version in compliance with the standard. "Elements such as Te or Bi may only be added for improving the machinability, if this has been agreed at the time of enquiry and order." (Quote from EN 10087: 1998, Page 5, Footnote 1)

Customized chemical analyses are possible after consultation.

Mechanical properties (Supplied condition: cold drawn (EN 10277-3))

Steeltec designation	Size range [mm]	$R_{p0,2}$ [N/mm²]	R_m [N/mm²]	A_5 [%]
SwissCut® SC30	> 10 ≤ 16	≥ 410	490 – 760	7
SwissCut® SC37	> 16 ≤ 40	≥ 375	460 – 710	8
SwissCut® SC30Pb				
SwissCut® SC37Pb				
SwissCut® SC37Pb+	≥ 5 ≤ 10	≥ 440	510 – 810	6
	> 10 ≤ 16	≥ 410	490 – 760	7
	> 16 ≤ 40	≥ 375	460 – 710	8
SwissCut® SC620Pb+	≥ 5 ≤ 10	≥ 645	830 – 1080	5
	> 10 ≤ 16	≥ 540	780 – 1030	6
	> 16 ≤ 40	≥ 430	740 – 930	7
11SMn30	≥ 5 ≤ 10	≥ 440	510 – 810	6
11SMnPb30	> 10 ≤ 16	≥ 410	490 – 760	7
11SMnPb37	> 16 ≤ 40	≥ 375	460 – 710	8
	> 40 ≤ 63	≥ 305	400 – 650	9
	> 63 ≤ 80	≥ 245	360 – 630	9

For further info on our product range of tool steel, stainless steel and Engineering steel please visit www.swisssteelgroup.com

Discover our Green Steel portfolio on www.swissgreensteel.com

28.06.23 Rev. N°1

Swiss Steel Group
Steeltec AG / Steeltec GmbH:
Emmenbrücke / Düsseldorf / Gebze
info.engineering@swisssteelgroup.com