

Review of popular steel applications

Application	EN-DIN steel grades	Remarks	Welding consumable
Steel structures Shipbuilding Bridges, etc.	S235-355 / St 37-52 C 22 S355 / St 52.3	Low carbon, good weldability	Depending on steel type, requirements and application, from Supra up to Kryo 2
Bridges, offshore, etc.	S420 - 450 S500 - 690	Good weldability	From Kryo 1 up to Conarc 85
Axles Axles Rails	St 50 / C 35* St 60 / C 45* St 70 / C 60, etc.*	Cheap, can be brittle, moderate weldability	Baso, Conarc, Kryo, Nichroma + Jungo 307, Limarosta 312
Axles, gear wheels Abrasion resistant crushers Wear plates	30Mn4 -36Mn5* 60Mn3 -85Mn3* 42MnV7 -51MnV7* 65Mn4* -X120Mn12	All are difficult to weld	Conarc 60G, 70G, etc. Jungo 307, Nichroma, Limarosta 312, Jungo 307
Axles, etc.	42Cr4* 42CrMo4* (VCMO 140)	Equivalent to C45, better quality	Conarc 49C, SL 19G, Nichroma, Limarosta 312, Jungo 307
Spring steel, hot deformed	38Si2 - 60Si7*	38Si2 plough blades, ductile and Q & T	Jungo 307 Limarosta 312
Suspension (spring), cold rolled Spring steel, cold rolled	46Mn7 - 50Mn7* C67(Pb) - C 75(Pb)	(Pb) Free machining	Limarosta 312, Jungo 307, Arosta 329 NOT WELDABLE
Knives, spring steel, Hydraulic pistons	X30Cr13 up to X46Cr13*		Limarosta 312, NiCro70/19 NiCro 60/20
File Lawn mowers (autom.) Scythe blade Chissel Rotating spike-tooth Spindles / axles / ma. parts Heavy load couplings Wear resistant machine parts Chains	70Cr2 75Cr1 S235 / St 37 59CrV4 90Mn4 17CrNi66 13NiCr6 - 31NiCr14 20MnCr53 - 28MnCr43 27MnSi5 - 21Mn4Al	(Hammer + wetstone) Cementation steel Q & T - possible Heat treatment not allowed Welded chains	NOT WELDABLE NOT WELDABLE NOT WELDABLE NOT WELDABLE NOT WELDABLE Any application NOT to be welded
Grey cast iron Temper cast iron Mealable cast iron Cast steel	GG 10 - GG 35 GTS-35-10 GTW-S-38-12 GGG 40 / 50 / 60 GS 38 / 45 / 52		RepTec Cast 1 / 31 RepTec Cast 1 / 31 RepTec Cast 1 / 31 RepTec Cast 31 / 1 Baso, Conarc 49C

Remarks: * preheating necessary - Depending on the application, buttering recommended