

MIG/MAG welding with solid wire electrode (process 135)

WPS number	Process	Weld type	Joint type	Material group	Filler material	Material thickness (mm)	Welding position	Weld details	Throat thickness (mm)
Filled welds									
WPS 135-FW-1	135	P/T	FW	1.1/1.2	EN ISO 14341-A G42 2 M/G3Si1 EN ISO 14341-A G42 3 M/G3Si1 EN ISO 14341-A G42 4 M/G3Si1	3...7	PA, PB, PC	sl	3...5
WPS 135-FW-2	135	P/T	FW	1.1/1.2		3...7	PD	sl	3...5
WPS 135-FW-3	135	P/T	FW	1.1/1.2		3...7	PF	sl	3...5
WPS 135-FW-4	135	P/T	FW	1.1/1.2		7...12	PA, PB, PC	sl	3...5
WPS 135-FW-5	135	P/T	FW	1.1/1.2		7...12	PD	sl	3...5
WPS 135-FW-6	135	P/T	FW	1.1/1.2		7...12	PF	sl	3...5
WPS 135-FW-7	135	P/T	FW	1.1/1.2		6...10	PA, PB, PC	ml	no restriction
WPS 135-FW-8	135	P/T	FW	1.1/1.2		6...10	PD	ml	no restriction
WPS 135-FW-9	135	P/T	FW	1.1/1.2		6...10	PF	ml	no restriction
WPS 135-FW-10	135	P/T	FW	1.1/1.2		10...24	PA, PB, PC	ml	no restriction
WPS 135-FW-11	135	P/T	FW	1.1/1.2		10...24	PD	ml	no restriction
WPS 135-FW-12	135	P/T	FW	1.1/1.2		10...24	PF	ml	no restriction
Butt welds									
WPS 135-BW-1	135	P/T	BW	1.1/1.2	EN ISO 14341-A G42 2 M/G3Si1 EN ISO 14341-A G42 3 M/G3Si1 EN ISO 14341-A G42 4 M/G3Si1	3...4	PA	sl	
WPS 135-BW-2	135	P/T	BW	1.1/1.2		3...4	PC	sl	
WPS 135-BW-3	135	P/T	BW	1.1/1.2		3...4	PE	sl	
WPS 135-BW-4	135	P/T	BW	1.1/1.2		3...4	PF	sl	
WPS 135-BW-5	135	P/T	BW	1.1/1.2		5...8	PA	ml	
WPS 135-BW-6	135	P/T	BW	1.1/1.2		5...8	PC	ml	
WPS 135-BW-7	135	P/T	BW	1.1/1.2		5...8	PE	ml	
WPS 135-BW-8	135	P/T	BW	1.1/1.2		5...8	PF	ml	
WPS 135-BW-9	135	P/T	BW	1.1/1.2		8...12	PA	ml	
WPS 135-BW-10	135	P/T	BW	1.1/1.2		8...12	PC	ml	
WPS 135-BW-11	135	P/T	BW	1.1/1.2		8...12	PE	ml	
WPS 135-BW-12	135	P/T	BW	1.1/1.2		8...12	PF	ml	
WPS 135-BW-13	135	P/T	BW	1.1/1.2		12...20	PA	ml	
WPS 135-BW-14	135	P/T	BW	1.1/1.2		12...20	PC	ml	
WPS 135-BW-15	135	P/T	BW	1.1/1.2		12...20	PE	ml	
WPS 135-BW-16	135	P/T	BW	1.1/1.2		12...20	PF	ml	

Filler materials that comply with the classifications above can be used, such as Esab OK Autrod 12.51, Elgamatic 100, Böhler EMK6. We have carried out impact toughness tests for a filler material that complies with EN ISO 14341-A G3 Si1.

For more product information, videos and news, please visit our website at www.kemppi.com

MIG/MAG welding with flux cored wire (process 136)

WPS number	Process	Weld type	Joint type	Material group	Filler material	Material thickness (mm)	Welding position	Weld details	Throat thickness (mm)
Filled welds									
WPS 136-FW-1	136	P/T	FW	1.1/1.2	EN ISO 17632-A T42 2 P M 1 H5 EN ISO 17632-A T46 2 P M 1 H5 EN ISO 17632-A T46 4 P M 2 H10	3...7	PA, PB, PC	sl	3...5
WPS 136-FW-2	136	P/T	FW	1.1/1.2		3...7	PD	sl	3...5
WPS 136-FW-3	136	P/T	FW	1.1/1.2		3...7	PF	sl	3...5
WPS 136-FW-4	136	P/T	FW	1.1/1.2		7...12	PA, PB, PC	sl	3...5
WPS 136-FW-5	136	P/T	FW	1.1/1.2		7...12	PD	sl	3...5
WPS 136-FW-6	136	P/T	FW	1.1/1.2		7...12	PF	sl	3...5
WPS 136-FW-7	136	P/T	FW	1.1/1.2		6...10	PA, PB, PC	ml	no restriction
WPS 136-FW-8	136	P/T	FW	1.1/1.2		6...10	PD	ml	no restriction
WPS 136-FW-9	136	P/T	FW	1.1/1.2		6...10	PF	ml	no restriction
WPS 136-FW-10	136	P/T	FW	1.1/1.2		10...24	PA, PB, PC	ml	no restriction
WPS 136-FW-11	136	P/T	FW	1.1/1.2		10...24	PD	ml	no restriction
WPS 136-FW-12	136	P/T	FW	1.1/1.2		10...24	PF	ml	no restriction
Butt welds									
WPS 136-BW-1	136	P/T	BW	1.1/1.2	EN ISO 17632-A T42 2 P M 1 H5 EN ISO 17632-A T46 2 P M 1 H5 EN ISO 17632-A T46 4 P M 2 H10	5...6	PA	ml	ss mb *Note
WPS 136-BW-2	136	P/T	BW	1.1/1.2		5...6	PC	ml	ss mb
WPS 136-BW-3	136	P/T	BW	1.1/1.2		5...6	PE	ml	ss mb
WPS 136-BW-4	136	P/T	BW	1.1/1.2		5...6	PF	ml	ss mb
WPS 136-BW-5	136	P/T	BW	1.1/1.2		6...8	PA	ml	ss mb
WPS 136-BW-6	136	P/T	BW	1.1/1.2		6...8	PC	ml	ss mb
WPS 136-BW-7	136	P/T	BW	1.1/1.2		6...8	PE	ml	ss mb
WPS 136-BW-8	136	P/T	BW	1.1/1.2		6...8	PF	ml	ss mb
WPS 136-BW-9	136	P/T	BW	1.1/1.2		8...12	PA	ml	ss mb
WPS 136-BW-10	136	P/T	BW	1.1/1.2		8...12	PC	ml	ss mb
WPS 136-BW-11	136	P/T	BW	1.1/1.2		8...12	PE	ml	ss mb
WPS 136-BW-12	136	P/T	BW	1.1/1.2		8...12	PF	ml	ss mb
WPS 136-BW-13	136	P/T	BW	1.1/1.2		12...20	PA	ml	ss mb
WPS 136-BW-14	136	P/T	BW	1.1/1.2		12...20	PC	ml	ss mb
WPS 136-BW-15	136	P/T	BW	1.1/1.2		12...20	PE	ml	ss mb
WPS 136-BW-16	136	P/T	BW	1.1/1.2		12...20	PF	ml	ss mb

* ss mb stands for single-sided welding and welding with material backing

Filler materials that comply with the classifications above can be used, for example:

Esab OK Tubrod 15.14, Böhler Ti 52-FD and Elgacore DWA 50. We have carried out impact toughness tests for those filler material brands.

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MIG/MAG welding with metal cored electrode (process 138)

WPS number	Process	Weld type	Joint type	Material group	Filler material	Material thickness (mm)	Welding position	Weld details	Throat thickness (mm)
Filled welds									
WPS 138-FW-1	138	P/T	FW	1.1/1.2	EN ISO 17632-A T42 2 M M 1 H5 EN ISO 17632-A T46 4 M M 2 H5	3...7	PA, PB, PC	sl	3...5
WPS 138- FW-2	138	P/T	FW	1.1/1.2		3...7	PD	sl	3...5
WPS 138- FW-3	138	P/T	FW	1.1/1.2		3...7	PF	sl	3...5
WPS 138- FW-4	138	P/T	FW	1.1/1.2		7...12	PA, PB, PC	sl	3...5
WPS 138- FW-5	138	P/T	FW	1.1/1.2		7...12	PD	sl	3...5
WPS 138- FW-6	138	P/T	FW	1.1/1.2		7...12	PF	sl	3...5
WPS 138- FW-7	138	P/T	FW	1.1/1.2		6...10	PA, PB, PC	ml	no restriction
WPS 138- FW-8	138	P/T	FW	1.1/1.2		6...10	PD	ml	no restriction
WPS 138- FW-9	138	P/T	FW	1.1/1.2		6...10	PF	ml	no restriction
WPS 138- FW-10	138	P/T	FW	1.1/1.2		10...24	PA, PB, PC	ml	no restriction
WPS 138- FW-11	138	P/T	FW	1.1/1.2		10...24	PD	ml	no restriction
WPS 138- FW-12	138	P/T	FW	1.1/1.2		10...24	PF	ml	no restriction
Butt welds									
WPS 138- BW-1	138	P/T	BW	1.1/1.2	EN ISO 17632-A T42 2 M M 1 H5 EN ISO 17632-A T46 4 M M 2 H5	3...4	PA	sl	
WPS 138- BW-2	138	P/T	BW	1.1/1.2		3...4	PC	sl	
WPS 138- BW-3	138	P/T	BW	1.1/1.2		3...4	PE	sl	
WPS 138- BW-4	138	P/T	BW	1.1/1.2		3...4	PF	sl	
WPS 138- BW-5	138	P/T	BW	1.1/1.2		5...8	PA	ml	
WPS 138- BW-6	138	P/T	BW	1.1/1.2		5...8	PC	ml	
WPS 138- BW-7	138	P/T	BW	1.1/1.2		5...8	PE	ml	
WPS 138- BW-8	138	P/T	BW	1.1/1.2		5...8	PF	ml	
WPS 138- BW-9	138	P/T	BW	1.1/1.2		8...12	PA	ml	
WPS 138- BW-10	138	P/T	BW	1.1/1.2		8...12	PC	ml	
WPS 138- BW-11	138	P/T	BW	1.1/1.2		8...12	PE	ml	
WPS 138- BW-12	138	P/T	BW	1.1/1.2		8...12	PF	ml	
WPS 138- BW-13	138	P/T	BW	1.1/1.2		12...20	PA	ml	
WPS 138- BW-14	138	P/T	BW	1.1/1.2		12...20	PC	ml	
WPS 138- BW-15	138	P/T	BW	1.1/1.2		12...20	PE	ml	
WPS 138- BW-16	138	P/T	BW	1.1/1.2		12...20	PF	ml	

Filler materials that comply with the classifications above can be used, for example: Esab OK Tubrod 14.12, Elgacore MX100T and Böhler HL 51-FD. We have carried out impact toughness tests for those filler material brands.

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135: Filler materials that comply with the classifications above can be used, such as Esab OK Autrod 12.51, Elgamatic 100, Böhler EMK6. We have carried out impact toughness tests for a filler material that complies with EN ISO 14341-A G3 Si1.

136: Filler materials that comply with the classifications above can be used for example: Esab OK Tubrod 15.14, Böhler Ti 52-FD and Elgacore DWA 50. We have carried out impact toughness tests for those filler material brands.

135 WiseRoot+ and 136: 135 WiseRoot+: Filler materials that comply with the classifications above can be used, such as Esab OK Autrod 12.51, Elgamatic 100, Böhler EMK6. We have carried out impact toughness tests for a filler material that complies with EN ISO 14341-A G3 Si1. 136: Filler materials that comply with the classifications above can be used for example: Esab OK Tubrod 15.14, Böhler Ti 52-FD and Elgacore DWA 50.