OK Autrod 12.32

Copper-coated, unalloyed solid wire for Submerged Arc Welding of structural steels, ship building steels, pressure vessel steels, fine grained steels, off-shore constructions etc. It provides excellent toughness values in combination with OK Flux 10.62.

Classifications Wire Electrode:	SFA/AWS A5.17:EH12K, EN ISO 14171-A:S3Si
Approvals:	CE EN 13479, DB 52.039.12, NAKS/HAKC 2.0, 3.0, 4.0, 5.0 mm, VdTÜV 12103

Approvals are based on factory location. Please contact ESAB for more information.

Alloy Type:	C-Mn

Typical Wire Composition %		
C	**Mn**	**Si**
0.13	1.77	0.30

OK Autrod 12.40L

OK Autrod 12.40L is a copper coated, high manganese alloyed semi-killed solid wire for submerged arc welding of medium and high tensile steels. It can be used in combination with OK Flux 10.62 or OK Flux 10.71L, depending on the application requirements.

Classifications Wire Electrode:	SFA/AWS A5.17:EH14

Alloy Type:	C-Mn

Typical Wire Composition %		
C	**Mn**	**Si**
0.12	1.85	0.05

OK Flux 10.71L

OK Flux 10.71L is an agglomerated, basic flux for submerged arc welding. It is used for single and multi-run welding of all plate thicknesses. It can be combined with a wide range of wires and thus it is suitable for all kinds of steels. OK Flux 10.71L combines good toughness values with excellent weldability. It is used for single & multi-wire procedures such as tandem, twin-arc, tandem-twin welding and many more, for butt, overlap and fillet welds. It works equally well on DC and AC current. The good slag detachability and limited alloying of Si and Mn makes it well suited for multi-pass thick section welding.

In general construction, OK Flux 10.71L is one of the most used SAW fluxes. Not just for structural steels and fine-grained steels, but also for weather resistant steels e.g. for bridges. Pressure vessels are welded with this flux, because it can be used for a wide range of steels including low temperature steels. This reduces the number of different fluxes a customer needs to have in stock. Wind tower production with plate thicknesses of greater than 50 mm require not only excellent slag detachability particularly in the first run, high deposition rates in all following runs and also excellent toughness values. Since OK Flux 10.71L offers all this it is well established in this market segment. Other applications are in shipbuilding or in the production of pipes with steels up to X70 strength level.

Classifications:	EN ISO 14174:S A AB 1 67 AC H5

Diffusible Hydrogen:	max 5 ml/100g weld metal (Redried flux)
Slag Type:	Aluminate-basic
Alloy Transfer:	Slightly Silicon and moderately Manganese alloying
Basicity Index:	nom: 1.5
Grain Size (met):	0.2-1.6 mm (10x65 mesh)

Classifications	Wire	Weld Metal	
Wire	**AWS/EN ISO**	**AWS - As Welded**	**AWS - PWHT**
OK Autrod 12.08L	A5.17: EL8/EL12 / 14171-A: S1	A5.17: F6A2-EL8/EL12	-
OK Autrod 12.22L	A5.17: EM12K / 14171-B: SU21	A5.17: F7A4-EM12K	A5.17: F6P5-EM12K
ESAB SA10K	A5.17: EH10K	A5.17: F7A4-EH10K	A5.17: F7P6-EH10K
OK Autrod 12.40L	A5.17: EH14	A5.17: F7A4-EH14	A5.17: F7P5-EH14
OK Autrod 12.24L	A5.23: EA2	A5.23: F8A2-EA2-A4	A5.23: F7P0-EA2-A4
OK Autrod 12.33L	A5.23: EA3K	A5.23: F9A0-EA3K-G	A5.23: F8P0-EA3K-G

Approvals					
Wire	**ABS**	**IBR**	**IRS**	**LR**	**M N Dastur**
OK Autrod 12.08L	•	-	•	-	-
OK Autrod 12.22L	-	-	-	•	-
OK Autrod 12.40L	-	•	•	•	•

*Selected production units only. Please contact ESAB for more information. Visit esab.com to download specific flux/wire combination fact sheets for more details.

OK Flux 10.71L

Typical Mechanical Properties

Wire	Condition	Yield Strength	Tensile Strength	Elongation	Charpy V-Notch
OK Autrod 12.08L	As Welded AWS DC+	390 MPa	450 MPa	25 %	100 J @ -18°C 70 J @ -29°C
OK Autrod 12.22L	As Welded AWS DC+	450 MPa	540 MPa	29 %	45 J @ -29°C 30 J @ -40°C
	PWHT 620°C 1h AWS DC+	390 MPa	490 MPa	32 %	65 J @ -29°C 30 J @ -46°C
ESAB SA10K	As Welded AWS DC+	490 MPa	580 MPa	26 %	45 J @ -29°C 30 J @ -40°C
	PWHT 620°C 1h AWS DC+	430 MPa	530 MPa	32 %	100 J @ -29°C 40 J @ -51°C
OK Autrod 12.40L	As Welded AWS DC+	490 MPa	580 MPa	27 %	60 J @ -29°C 40 J @ -40°C
	PWHT 620°C 1h AWS DC+	440 MPa	530 MPa	29 %	80 J @ -29°C 45 J @ -46°C
OK Autrod 12.24L	As Welded AWS DC+	550 MPa	610 MPa	23 %	65 J @ -18°C 40 J @ -29°C
	PWHT 620°C 1h AWS DC+	480 MPa	560 MPa	26 %	80 J @ 0°C 50 J @ -18°C
OK Autrod 12.33L	As Welded AWS DC+	630 MPa	700 MPa	25 %	65 J @ 0°C 35 J @ -18°C
	PWHT 620°C 1h AWS DC+	550 MPa	650 MPa	30 %	70 J @ 0°C 40 J @ -18°C

Typical Weld Metal Analysis %

C	Mn	Si	Mo
OK Autrod 12.08L DC+ 550A, 29V			
0.06	0.90	0.20	-
OK Autrod 12.22L DC+ 550A, 29V			
0.08	1.35	0.40	-
ESAB SA10K DC+ 550A, 29V			
0.07	1.75	0.50	-
OK Autrod 12.40L DC+ 550A, 29V			
0.07	1.95	0.40	-
OK Autrod 12.24L DC+ 550A, 29V			
0.08	1.35	0.40	0.45
OK Autrod 12.33L DC+ 550A, 29V			
0.06	1.95	0.75	0.40