



elektrode jesenice d.o.o.

BASIC, LOW HYDROGEN ELECTRODES

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EVB 50

Classification:

EN 499:	E 42 4 B 32 H 5
DIN 1913:	E 51 55 B 10
AWS A-5.1:	E 7018- 1H4R
EN ISO 2560-A:	E 42 4 B 32 H5
EN ISO 2560-B:	E 49 18 A

Description and application:

Basic, CTOD tested electrode with excellent welding characteristics, recommended for welding structural steels and steel castings with tensile strength up to 610 N/mm² and finegrained steels with increased yield strength. Metal recovery is about 118 %. Deposits have very low hydrogen contents (HD < 4 ml/100 g).

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E335	St 33 - St 60.2	1.0035, 1.0060
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TStE 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
Pipe steel	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
	L210 - L360GA	St E 210.7	1.0307, 1.0499
	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
Shipbuilding plate	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
Cast iron	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552

Coating type:

Basic

Welding current:

DC +
AC (OCV>70 V)

Welding positions:



Redrying temperature:

400°C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.07	0.60	1.0

Mechanical properties:

As welded		stress relieved 600°C/ 2h
Yield strength $R_{eL} / R_{p 0.2}$: > 440 MPa (N/mm ²)		>440 MPa
Tensile strength R_m : 510 – 610 MPa (N/mm ²)		510 – 610 MPa
Elongation A_5 : > 24%		> 24%
Impact energy KV : > 67(typ.100) J (-40°C)		> 67(typ.200) J
/		> 47(typ.100) J (-50°C)

Hydrogen content: < 4 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
φ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2	300	50 – 70	3.4	17	12.5
2.5	300/350	65 – 90	3.4/4	17/20	19.8/23.4
3.25	350/450	110 – 140	4/5.4	20/27	36.4/49.5
4	450	140 – 180	5.4	27	67
5	450	180 – 230	5.4	27	106
6	450	240 – 290	5.4	27	150
8	450	350 – 450	5.4	27	275

* approximate data

Approvals:

CR: 4YHH
ABS: 4YHH
BV: 4YHH
GL: 4YH10
LR: 3/3YH
DNV: 4YH10
RS: 3YHH
SŽ
TÜV
DB
RINA: 4YHH
PRS: 4YH10



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EVB 55

Classification:

EN 499 : E 42 6B 42 H5
 DIN 8529 : EY 42 76 MnB
 AWS/ASME -5.1: E 7018-1
 EN ISO 2560-A: E 42 6B 42 H5
 EN ISO 2560-B: E 49 18-P1 A

Description and application:

Basic, CTOD-tested electrode, particularly suitable for welding high strength low-alloy steels. Electrode has excellent welding properties, it has good slag removal and minimum spatter. The weld metal is very resistant to hot cracking, has good low temperature impact strength and low hydrogen content.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E360	St 33 - St 70.2	1.0035, 1.0070
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TStE 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
Pipe steel	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
Shipbuilding plate	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552
Cast iron	Do 685 Mpa (N/mm ²)		

Coating type:

Basic

Welding current:

DC +
 AC (OCV > 70V)

Welding positions:



Redrying temperature:

300 - 350°C/ 2 h
 or
 400°C/1h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.06	0.40	1.60

Mechanical properties: as welded stress relieved
 580°C/15h

Yield strength $R_{eL} / R_{p 0.2} > 420 \text{ MPa (N/mm}^2) > 420 \text{ MPa (N/mm}^2)$

Tensile strength $R_m: 500 - 610 \text{ MPa (N/mm}^2) > 500 \text{ MPa (N/mm}^2)$

Elongation A5: > 25 % > 25 %

Impact energy KV : > 47 J(-60°C)
 typ. 100 J typ. 100 J (-60°C)

Hydrogen content: < 5 ml / 100 g weld metal

Welding and packing data:

Approvals:	Welding parameters			Packing		
	φ mm	Length mm	Current A	Weight/ packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
DB	2.0	300	50 - 70	3.4	17	
	2.5	300/350	65 - 95	4.7/4	23.5/25	19/
	3.25	350	90 - 140	4.4	22	35
	4.0	450	140 - 185	5.4	27.0	68
	5.0	450	180 - 240	5.4	27.2	109
	6.0	450	250 - 330	5.6	28.3	161

* approximate data



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Classification:

EN 499: E 42 6 B 12 H10
 DIN 8529: EY 42 53 MnB
 AWS A-5.1: E 7016
 EN ISO 2560-A: E 42 6 B 12 H10
 EN ISO 2560-B: E 4916-P1 A

EVB EXTRA

Description and application:

Double- coated basic electrode with excellent welding properties in difficult positions and in welding root-runs. It has stable welding arc at DC+ and AC current.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E360	St 33 - St 70.2	1.0035, 1.0070
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TStE 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
Pipe steel	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
Shipbuilding plate	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
Cast iron	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552
Rail steel	Do 685 Mpa (N/mm ²)		

Coating type:

Basic

Welding current:

AC
 DC +

Welding positions:



Redrying temperature:

300°C / 2 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.08	0.5	1.50

Mechanical properties:

Yield strength	R _{eL} / R _{p 0.2} :	> 420	MPa (N/mm ²)
Tensile strength	R _m :	500-640	MPa (N/mm ²)
Elongation	A ₅ :	> 22	%
Impact energy	KV :	> 47	J (-60°C)

Hydrogen content: < 10 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
φ mm	Length mm	Current A	Weight/ Packet Kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2.5	300	65 – 90	3.4	17	19.8
3.25	350	110 – 140	4	20	36.4
4	450	140 – 180	5.4	27	66.7
5	450	180 – 230	5.4	27	101.9
6	450	240 – 290	5.4	27	150

* approximate data

Approvals:

TÜV
 DB



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EVB 45

Classification:

EN 499: E 42 2 B 32 H5
 DIN 1913: E 51 43 B(R)9
 AWS A-5.1: E 7016
 EN ISO 2560-A: E 42 2 B 32 H5
 EN ISO 2560-B: E 49 18-P1 A

Description and application:

Basic electrode for welding particularly in vertical down positions of root runs with or without backing plates.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel:	S185 - E335	St 33 - St 60.2	1.0035, 1.0060
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TStE 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
	Pipe steel	P235G1TH - P355T2	St 35 - St 52.4
L210 - L360GA		St E 210.7	1.0307, 1.0499
L240NB - L415NB		StE290.7 - StE415.7	1.0484, 1.8972
Shipbuilding plate	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
	Cast iron	GE200 - GE260	GS-38 do GS-52

Coating type:

Basic

Welding current:

DC +
AC (OCV>70V)

Welding positions:



Redrying temperature:

400°C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.07	0.60	0.90

Mechanical properties:

Yield strength	R _{eL} / R _{p 0.2} :	> 420	MPa (N/mm ²)
Tensile strength	R _m :	500 – 640	MPa (N/mm ²)
Elongation	A ₅ :	> 20	%
Impact energy	KV :	> 47	J (-20°C)

Hydrogen content: < 5 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
φ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2	300	50 – 70	3.4	17	
2.5	300	65 – 90	4	20	19.5
3.25	350	110 – 140	4.4	22	
4	450	140 – 170	5.8	29	
5	450	180 – 220	5.8	29	
6	450	230 – 280	6	30	

* approximate data

Approvals:

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EVB 47

Classification:

EN 499:	E 38 2 B 32 H5
DIN 1913:	E 43 55 B 10
AWS A-5.1:	E 6019
EN ISO 2560-A:	E 38 2 B 32 H5
EN ISO 2560-B:	E 43 18 A

Description and application:

Basic electrode with lower tensile strength and increased yield strength, therefore suitable for welding rigid constructions.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E335	St 33 - St 60.2	1.0035, 1.0060
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TSSt 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
Pipe steel	L210 - L360GA	St E 210.7	1.0307, 1.0499
	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
Shipbuilding steel	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552
Cast iron			

Coating type:

Basic

Welding current:

DC +
AC (OCV>70 V)

Welding positions:



Redrying temperature:

400°C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.04	0.30	0.85

Mechanical properties:

Yield strength	$R_{eL} / R_{p0.2}$:	> 420	MPa (N/mm ²)
Tensile strength	R_m :	470 – 530	MPa (N/mm ²)
Elongation	A5:	> 24	%
Impact energy	KV :	> 47	J (-20°C)

Hydrogen content: < 5 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
ϕ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2	300	50 – 70	4	20	19,5
2,5	300	65 – 90	3,4	17	
3,25	350	110 – 140	4	20	
4	450	140 – 180	5,4	27	
5	450	180 – 230	5,4	27	
6	450	240 – 290	5,4	27	
8	450	350 – 450	5,4	27	

* approximate data

Approvals:

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EVBS

Classification:

EN 499: E 42 4 B 12 H10
 DIN 1913: E 51 43 B(R)10
 AWS A-5.1: E 7016
 EN ISO 2560-A: E 42 4 B 12 H10
 EN ISO 2560-B: E 49 16 A

Description and application:

Doublecoated, basic CTOD-tested electrode with excellent welding properties in difficult positions. It has stable welding arc. Very suitable for welding root-runs with DC and AC current.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E335	St 33 - St 60.2	1.0035, 1.0060
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TSSt 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
Pipe steel	L210 - L360GA	St E 210.7	1.0307, 1.0499
	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
Shipbuilding plate	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552
Cast iron			

Coating type:

Rutile-basic

Welding current:

DC +
AC

Welding positions:



Redrying temperature:

380°C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.05	0.65	1.0

Mechanical properties:

Yield strength $R_{eL} / R_{p0.2}$: > 420 MPa (N/mm²)

Tensile strength R_m : 500 – 640 MPa (N/mm²)

Elongation A_5 : > 22 %

Impact energy KV : > 47 J (-40°C)

Hydrogen content: < 10 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
ϕ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2	300	55 – 65	3.4	17	10.5
2.5	350	60 – 90	4	2.5	19.6
3.25	350/450	90 – 140	4/5	20/25	32.8/43
4	450	140 – 190	5	25	66.7
5	450	190 – 250	5	25	100
6	450	250 – 320	5	25	

* approximate data

Approvals:

TÜV
DB
SŽ
DNV 3YH10



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GALEB 50

Classification:

EN 499: E 42 2 B 32
 DIN 1913: E 51 54 B(R)10
 AWS A-5.1 E 7016
 EN ISO 2560-A: E 42 2 B 32 H5
 EN ISO 2560-B: E 49 16 A

Description and application:

Basic electrode for welding structural steels also in thin plates; insensitive to impurities in base material.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E335	St 33 - St 60.2	1.0035, 1.0060
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	P255NH - P355NH	W St E 255 - W St E 355	1.0462, 1.0565
	S420ML	TStE 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
	Pipe steel	P235G1TH - P355T2	St 35 - St 52.4
L210 - L360GA		St E 210.7	1.0307, 1.0499
L240NB - L415NB		StE290.7 - StE415.7	1.0484, 1.8972
Shipbuilding plate	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
	Cast iron	GE200 - GE260	GS-38 do GS-52

Coating type:

Basic

Welding current:

DC +
 AC (OCV>70 V)

Welding positions:



Redrying temperature:

400°C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.10	0.50	1.0

Mechanical properties:

Yield strength	R _{eL} / R _{p 0.2} :	> 420	MPa (N/mm ²)
Tensile strength	R _m :	510 – 570	MPa (N/mm ²)
Elongation	A ₅ :	> 24	%
Impact energy	KV :	> 47	J (-20°C)
		> 47	J (-40°C)

Hydrogen content: < 5 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
φ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2	300	50 – 60	3.4	17	
2.5	300	60 – 80	4	20	
3.25	350	110 – 130	4.4	22	
4	450	130 – 160	5.4	27	
5	450	170 – 200	5.4	27	67,5
6	450	200 – 230	6	30	

* approximate data

Approvals:

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EV B K

Classification:

EN 499: E 42 2 B 12 H5
 DIN 1913: E 51 43 B(R) 10
 AWS A-5.1: E 7016
 EN ISO 2560-A: E 42 2 B 12 H5
 EN ISO 2560-B: ≈ E 49 16-P1 A

Description and application:

Basic electrode for exclusive use for one side welding of pipes and general structure. Low hydrogen type electrode, good arc stability. Performed one side welding with relatively low currents, good slag detachability and smooth weld beads.

Base materials:

	SIST EN	DIN	W.Nr.
Unalloyed steel	S185 - E360	St 33 - St 70.2	1.0035, 1.0070
Fine grained steel	S235N - S355N	St E 255 - St E 355	1.0461, 1.0545
	S420ML	TSSt 420 TM	1.8836
Boiler plate	P235GH, P265GH	H I, H II,	1.0345, 1.0425
	P295GH, P355GH	17Mn4, 19Mn5	1.0481, 1.0473
Pipe steel	P235G1TH - P355T2	St 35 - St 52.4	1.0308, 1.0581
	L240NB - L415NB	StE290.7 - StE415.7	1.0484, 1.8972
	(X 42 do X 60)		
Shipbuilding plate	S235JRS2-S235J4S	GL-A, do GL-E	1.0441, 1.0476
	S310G1S - S355G2S	GL-A32 do GL-D36	1.0513, 1.0585
Cast iron	GE200 - GE260	GS-38 do GS-52	1.0420, 1.0552

Coating type:

basic

Welding current:

DC +

DC - (for only root pass)

AC (OCV > 70V)

Welding positions:



Redrying temperature:

400 °C / 1 h

Typical all weld metal properties:

Chemical composition, wt %:

C	Si	Mn
0.06	0.60	1.3

Mechanical properties:

Yield strength $R_{eL} / R_{p 0.2}$: > 420 MPa (N/mm²)

Tensile strength R_m : 510 - 610 MPa (N/mm²)

Elongation A_5 : > 24 %

Impact energy KV : > 47 J (-20°C)
 > 47 J (-40°C)

Hydrogen content: < 5 ml / 100 g weld metal

Welding and packing data:

Welding parameters			Packing		
φ mm	Length mm	Current A	Weight/ Packet kg	Weight/ carton kg	Weight/ 1000 pcs kg *
2.5	350	60 - 90	4.4	22	22
3.25	350	95 - 150	4.4	22	32.5
4	450	125 - 190	5.4	29	65.0
5	450	190 - 250	5.4	29	96.5
6	450	240 - 350	6	30	167

* approximate data

Approvals:

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