

Flux

Classification

Flux 761	EN 760 :	S A CS/MS 1 88 AC H5	
Flux/wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
761 / L-60	F7A2-EL12	S 38 2 CS/MS S1	
761 / L-61	F7A2-EM12K	S 42 2 CS/MS S2Si	S 4T 0 CS/MS S2Si
761 / LNS 140A	F9A0-EA2-G	S 50 0 CS/MS S2Mo	S 4T 2 CS/MS S2Mo
761 / L-70	F9A0-EA1-G	S 50 0 CS/MS S2Mo	S 4T 2 CS/MS S2Mo

General description

High current capacity

Active flux for limited pass welding

High restraint cracking resistant

Suitable for rusty/dirty plates (at high current)

Applicable for low quality steels

Coarse grain flux more suitable with the most rusty and dirty plates

Approvals

Wire grade	ABS	BV	CRS	DNV	PRS	GL	LRS	RINA	RMRS	TÜV
L-61	3YM/2YT	A3YM/A2YT	3YM/2YT	2YT	3YM/2YT	3YM/2YT	3YM/3YT	3YM/2YT	2YT	X
LNS 140A	2YTM	A3YM/A3YT		2Y40M/3Y40T	3YM/2YT	3YTM	2YM/2YT	3YM/3YT	2YM/3YT	X
L-60										X
LNS 135										X
L-70										X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.05	1.5	0.7	<0.03	<0.025	
L-61	0.08	1.7	0.9	<0.03	<0.025	
LNS 140A	0.06	1.7	0.8	<0.03	<0.025	0.4

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					0°C	-20°C
L-60	MR	380	500	28	80	50
L-61	MR	440	530	28	100	50
	TR	>420	>540		65	
LNS 140A	MR	480	600		80	40
	TR	>440	>540		100	55

MR: multi run

TR: two-run

761 / 761-CG: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Wire	Characteristics	Applications
L-60	To prevent defects from organic components	Flat fillet, large throat
L-61	Reliable properties	Butt joints in two passes, in medium and thick plates
LNS 140A	For good impact toughness in two-run as welded	Flux backing, modified series arc-welding Low quality steels

Materials to be welded

STEEL / STANDARD	TYPE	Limited runs		
		L60	L61	LNS140A
Ship plates				
	A to D, A (H) 32 to D(H) 36	x	x	x
General Structural steel				
EN 10025 part 6	500 A			x
EN 10025 part 3/part 4	S275 to S420, N,M	x	x	x
EN 10149	S315 to S420, MC	x	x	x
	S315 to S420, NC	x	x	x
	S460, MC & NC			x
EN 10025 part 2	S185 to S355, E295 to E360, JR(G1 & G2), J0, J2 (G3&G4)	x	x	x
Boiler & pressure vessel steel				
EN 10028	P235 to P420, GH N, NH, M, Q & QH	x	x	x
	P235 to P460, GH, N, NH, M, Q & QH	x	x	x
	P500, GH, N, NH, M, Q & QH			x
	P235 S, P265 S	x	x	x
	A37 to A52, CP, AP	x	x	x

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	0,8
Solidification speed	Low, slag viscous
Density (kg/dm ³)	1,2
Grain size	761 : 1-16 761-CG : 1-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Steel drum	250
Big Bag	1000

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780 / 780-CG / 780-FG

Flux

Classification

Flux 780	EN 760 :	S A AR/AB 1 78 AC H5	
Flux/Wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
780 / L-60	F7A0-EL12	S 42 0 AR/AB S1	S 4T 0 AR/AB S1
780 / L-61	F7A2-EM12K	S 42 0 AR/AB S2Si	S 4T 2 AR/AB S2Si
780 / LNS 140A	F8A2-EA2-G		S 4T 2 AR/AB S2Mo
780 / L-70	F8A2-EA1-G		S 4T 2 AR/AB S2Mo

General description

- Active flux for limited pass welding
- Good general purpose flux, including semi-automatic
- High speed on dirty plate
- Good resistance to porosity on rust and primer
- Good slag removal, good bead shape
- Product also available in a fine grains and coarse formula
- Fine grain formula preferably used on high speed fillet welds applications

Approvals

Wire grade	BV	ABS	LRS	DNV	GL	RINA	PRS	RMRS	CRS	TÜV
L-60	A3YT	2YT	2T/2YT	3YT	3YT	2YT				X
L-61	A3YT		3YM/3YT	3YTM	3YT	3YT	3YM/3YT	3YT	3YT	X
LNS 140A			3YT				3YT			X
LNS 150										X
L-70										X
LNS 135										X
LNS 151										X
LNS 133U										X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.07	1.4	0.6	<0.030	<0.025	
L-61	0.07	1.6	0.7	<0.030	<0.025	
LNS 140A	0.07	1.6	0.6	<0.030	<0.025	0.4

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					0 °C	-20°C
L-60	MR	> 420	510	28	50	
L-61	TR	> 420	> 540	28		50
LNS 140A	TR	> 420	> 550	25		60

MR: multi run

TR: two-run

780 / 780-CG / 780-FG: rev. EN 23

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780 / 780-CG / 780-FG

Suggestions for use

Wire	Characteristics	Applications
L-60	To prevent defects from organic components	Horizontal fillet
L-61	Reliable properties	High speed on dirty plates
LNS 140A	For good impact toughness in two-run as welded	Good on circumferential welds on small diameters with low voltage

Materials to be welded

STEEL / STANDARD	TYPE	Limited passes		
		L60	L61	LNS140A
Ship plates				
	A to D, A (H) 32 to D(H) 36	x	x	x
General Structural steel				
EN 10025 part 6	500 A			x
EN 10025 part 3/part 4	S275 to S420, N,M	x	x	x
EN 10149	S315 to S420, MC	x	x	x
	S315 to S420, NC	x	x	x
	S460, MC & NC			x
EN 10025 part 2	S185 to S355, E295 to E360,			
	JR(G1 & G2), JO, , J2 (G3&G4)	x	x	x
Boiler & pressure vessel steel				
EN 10028	P235 to P420, GH N, NH, M, Q & QH	x	x	x
	P235 to P460, GH, N, NH, M, Q & QH	x	x	x
	P500, GH, N, NH, M, Q & QH, P235 S, P265 S	x	x	x
	A37 to A52, CP, AP	x	x	x

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	0,7
Solidification speed	high
Density (kg/dm ³)	1,4
Grain size	780-FG : 1-16
	780 : 1-20
	780-CG : 2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Steel drum	250
Big Bag	1000

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Flux

Classification

Flux 781	EN 760 :	S A ZS 1 87 AC H5	
Flux/Wire	AWS A5.17 / A5.23		EN 756 : TR
781 / L-61	F7A0-EM12K		S 4T 2 ZS S2Si
781 / L50M (LNS 133U)			S 4T 2 ZS S3Si
781 / LNS 140A			S 4T 2 ZS S2Mo

General description

Active flux for limited pass welding
 Very high speed on sheet metal
 Good impact in two-run technique
 High speed fillet weld with very good bead profile
 Shiny and smooth appearance

Approvals

Wire grade	BV	ABS	LRS	DNV	RINA	TÜV
L50M (LNS 133U)	A4YT	4Y400T	3YT	3YT	3YT	
L-60						X
L-61						X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo
L-61	0.05	1.3	0.9	0.03	<0.02	
L50M (LNS 133U)	0.06	1.6	1	0.03	<0.02	
LNS 140A (L-70)	0.06	1.3	0.9	0.03	<0.02	0.4

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Impact ISO-V(J) -20°C
L-61	TR	> 420	> 540	50
L50M (LNS 133U)	TR	> 450	> 560	60
LNS 140A (L-70)	TR	> 490	> 580	65

TR: two-run

781: rev. EN 23

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Suggestions for use

Wire	Characteristics	Applications
L-61	High speeds on clean plate	Single pass or limited passes
L50M (LNS 133U)	Very high speeds	Best results with clean plates and high Si/Mn wires
LNS 140A	Good impact toughness	

Materials to be welded

STEEL / STANDARD	TYPE	Limited passes		
		L61	L50M (LNS133U)	LNS140A (L-70)
Ship plates				
	A to D, AH32 to DH40	x	x	x
	A to E, AH32 to EH40			x
General Structural steel				
EN 10025 part 6	500 & 550 A	x	x	x
	500 & 550 A & AL			x
EN 10025 part 3/part 4	S275 to S460 N/M	x	x	x
	S275 to S460 all qualities			x
EN 10149	S315 to S600 MC & NC	x	x	x
EN 10025 part 2	S185 to S360 all qualities	x	x	x
Boiler & pressure vessel steel				
EN 10028	P235 to P460, (GH, N NH, M, ML1)	x	x	x
	P235 to P460 all qualities			x
EN 10207	P235 to P275 S	x	x	x
A36-601 & NF A36-605	A37 to A52 (CP, AP)	x	x	x
	A37 to A52 (CP, AP, FP)			x

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	0,7
Solidification speed	fast, fluid slag
Density (kg/dm ³)	1,5
Grain size	1-16

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Steel drum	250

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Flux

Classification

Flux 782	EN 760 :	S A AR/AB 1 76 AC H5	
Flux/wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
782 / L-60		S 42 A AR/AB S1	S 4T A AR/AB S1
782 / LNS 135	F7AZ-EM12		S 4T 0 AR/AB S2
782 / L-61	F7AZ-EM12K	S 46 0 AR/AB S2Si	S 4T 0 AR/AB S2Si
782 / L50M (LNS 133U)		S 45 0 AR/AB S3Si	S 5T 2 AR/AB S3Si
782/ LNS 140A (L-70)		S 46 0 AR/AB S2Mo	S 5T 2 AR/AB S2Mo

General description

Active flux for limited pass welding

Good bead shape with optimum wetting

High speed on thin plates

Single & multi-electrode welding; butt and fillet welds

Optimal flux for tin-tube welding, especially with the fine grain formulation

Approvals

Wire grade	BV	ABS	DNV	RINA	TÜV
L50M (LNS 133U) 4YT		4Y400T	4YT	3YT	
LNS 135					X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.07	1	0.6	<0.030	<0.025	-
LNS 135	0.07	1.15	0.7	<0.030	<0.025	-
L-61	0.07	1.15	0.8	<0.030	<0.025	-
L50M (LNS 133U)	0.06	1.7	1	<0.030	<0.025	-
LNS 140A (L-70)	0.07	1.2	0.7	<0.030	<0.025	0.4

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Impact ISO-V(J)	
				0°C	-20°C
L-60	TR	>420	> 520	45	
LNS 135	TR	>420	> 520	55	
L-61	TR	>420	> 520	60	
L50M (LNS 133U)	TR	>460	> 550	65	50
LNS 140A (L-70)	TR		>600	70	50

TR: two-run

782 / 782-FG: rev. EN 23

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Suggestions for use

Wire	Characteristics	Applications
LNS 135	Limited hardness	Fillet weld, lap joint
L-61	Good properties	<ul style="list-style-type: none"> • truck wheels
L50M (LNS 133U)	Very high speeds	<ul style="list-style-type: none"> • gas bottles • Tube to fin fillet weld • Boiler tubes

Materials to be welded

STEEL / STANDARD	TYPE	Limited passes	
		LNS135	L61
Ship plates			
	A, AH32 to AH40		x
General Structural steel			
EN 10149	S315 to S460 MC	x	x
EN 10025 part 2	S185 to S355 quality, JR(G1&G2)	x	x
	S185 to S355 quality, JR(G1&G2), J10		x
	E2956 to E360	x	x
Boiler & pressure vessel steel			
EN 10028	P235 to 275 GH		x
	P355 to P460M		x
A36-601 & NF A36-605	A37 to A52 (CP)		x

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	0,4
Solidification speed	High
Density (kg/dm ³)	1,4
Grain size	782-FG : 1-16 782 : 1-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	500

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Flux

Classification

Flux 802	EN 760 :	S A CS 1 55 DC H5	
Flux/wire	Hardfacing flux cored wire		no AWS and EN classification
	Hardfacing solid wire		

General description

Neutral flux for hardfacing applications in combination with flux cored wire as Lincore 102W, Lincore 423L and Lincore 423Cr.

Weld metal with min. 0.2% Si and additional V, Nb, Ti and higher Cr-content when combined with previous mentioned Lincore wires.

Excellent slag removal and good bead appearance

Very suitable for hardfacing applications on plates and caster rolls

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	Cr	Ni	Mo	V	W
LINCORE 102W	0.28	1.5	0.4	6.5		1.0	0.15	1.0
LINCORE 423L	0.15	1.2	0.4	11.5	20	1.0	0.15	
LINCORE 423Cr	0.15	1.2	0.4	13.5	2.0	1.0	0.15	

Mechanical properties, typical, all weld metal

Wire grade	2 hours postweld tempering at					
	AW	426°C	482°C	538°C	593°C	649°C
LINCORE 102W	51	50	50	51	40	35
LINCORE 423L	43	42	46	38	33	32
LINCORE 423Cr	AW	46	45	46	38	32

Hardness: HRC in 6 layers hardfacing application

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

802: rev. EN 22

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Flux

Classification

Flux 8500	EN 760 :	S A FB 1 54 AC H5	
Flux/wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
8500 / L-61	F7A6/F6P8-EM12K	S 38 4 FB S2Si	S 4T 0 FB S2Si
8500 / L50M (LNS133U)	F7A6/F7P8-EH12K	S 42 6 FB S3Si	S 4T 2 FB S3Si
8500 / LNS 140A	F8A6-EA2-A2	S 46 4 FB S2Mo	
8500/ LNS 160	F7A8/P8-ENi1-Ni1	S 42 5 FB S2Ni1*	
8500/ LNS 162	F7A8/P8-ENi2-Ni2		
8500/ LNS 165 (LA 85)	F8A8/F7P8-ENi5-Ni5	S 50 6 FB Sz	
8500/LNS T55		S 50 5 FB Tz	

* Nearest classification

General description

Basic flux designed for carbon and low alloy steels**Excellent welding characteristics over a wide range of welding procedures****Superior mechanical properties****Impact properties are consistent throughout the weld joint, including the cap location****Excellent CTOD values**

Approvals

Wire grade	BV	ABS	LRS	DNV	GL	RMRS
L-61					3YM/3YT	
L50M (LNS 133U)	A4YTM	3YTM	3YM/3YT	4Y40M/13Y40T		
LNS 140A (L-70)		3YM			3Y40TM	3YM/3YT

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-61	0.08	1.0	0.2	<0.02	<0.015		
L50M (LNS 133U)	0.07	1.4	0.3	<0.02	<0.015		
LNS 140A (L-70)	0.08	0.9	0.2	0.03	<0.025	0.4	
LNS 160	0.07	1.0	0.1	0.02	0.015		1
LNS 162	0.08	1.0	0.1	0.02	0.015		2
LNS 165 (LA85)	0.07	1.3	0.2	0.02	0.015	0.2	0.9
LNS T55	0.08	1.7	0.7	<0.015	<0.015		

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-20°C	-40°C	-60°C
L-61	MR	430	510	28	150	100	50
L50M (LNS 133U)	MR	440	540	28		110	
	SR	> 420	> 500	30		150	
LNS 140A (L-70)	MR	440	540	28		55	
LNS 160	AW	430	510	30		150	50
	SR	400	510	30		150	50
LNS 162	AW	470	560			150	50
	SR	450	530			150	50
LNS 165 (LA85)	AW	530	600	25		120	50
	SR	480	580	30		120	50
LNS T55	AW	530	620		120	80	
	SR	500	570			70	

MR: multi run / TR: two-run / AW : As welded / SR: Stress relieved

8500: rev. EN 23

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Suggestions for use

Applications

Suitable for deep groove
 Low temperatures requirements
 Highly restrained constructions
 Single and multi-wire systems
 Off-shore and on-shore applications
 Nuclear components

Materials to be welded

STEEL / STANDARD	TYPE	Multirun														
		L61			L50M (LNS133U)		LNS140A (L-70)		LNS160		LNS 162		LNS165		LNST55	
		AW	AW	SR	AW	SR	AW	SR	AW	SR	AW	SR	AW	SR		
Ship plates																
	A to E	x	x	x										x	x	
	AH(32),DH(36), EH(36)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
General Structural steel																
EN 10025 part 2	S185, S235, S275	x	x	x										x	x	
	S355	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Cast steel																
EN 10213-2	GP240R	x	x	x										x	x	
Pipe material																
EN 10208-1	L210, L240, L290	x	x	x										x	x	
	L360	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	L415		x		x	x						x	x	x	x	
	L445, L480											x	x			
API 5LX	X42, X46	x	x	x												
	X52	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	X56, X60		x		x	x						x	x	x	x	
	X65, X70											x	x			
EN 10216-1/10217-1	P235, P275	x	x	x										x	x	
	P355	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Boiler & pressure vessel steel																
EN 10028-1	P235GH, P265GH, P295GH	x	x	x	x	x								x	x	
Fine grained steel																
EN 10025 part 3/part 4	S275	x	x	x										x	x	
	S355	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	S420		x		x	x				x	x	x	x	x	x	
	S460											x	x			

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	2,8
Solidification speed	Medium
Density (kg/dm ³)	1,3
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

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Flux

Classification

Flux 860	EN 760 :	S A AB 1 56 AC H5	
Flux/wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
860 / L-60	F6A2-EL12	S 35 2 AB S1	
860 / LNS 135	F6A2-EM12	S 35 2 AB S2	S 3T 0 AB S2
860 / L50M (LNS133U)	F7A2/F7P2-EH12K	S 42 2 AB S3Si	
860 / L-61	F7A2-EM12K	S 38 2 AB S2Si	S 3T 0 AB S2Si
860 / L-70	F7A2-EA1-A2	S 42 2 AB S2Mo	S 4T 2 AB S2Mo
860 / LNS 140A	F7A2-EA2-A2	S 42 2 AB S2Mo	S 4T 2 AB S2Mo
860 / LNS T55	F7A2/F7P4-EC1	S 50 3 AB Sz	
860 / LNS 163	F7A4-EG	S 42 4 AB S2Ni1Cu	

General description

Multi purpose neutral agglomerated flux

Good impact values in both multi-run (with L60/L61/L50M) and two-run (with LNS 140A) techniques

High restraint cracking resistant

Approvals

Wire grade	BV	ABS	LRS	DNV	GL	RMRS	RINA	CRS	TÜV
L-61	A3YTM/A3TM	3YM/2YT	3YM/3T/3YT	3M/2T	3YM/2YT	3YM/2YT	3M3YM/3T3YT	3YM/2YT	x
LNS 135					3YTM				x
LNS 140A	A3YTM		3M/3YM/3YT	3Y40TM	3YM/2YT				x
L-70	A3YTM		3M/3YM/3YT	3Y40TM	3YM/2YT				x
L-60									x
LNS 150									x
LNS 163									x

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.05	1.0	0.25	<0.025	<0.020	
LNS 135	0.06	1.3	0.3	<0.025	<0.020	
L-61	0.1	1.2	0.3	<0.025	<0.020	
L50M (LNS 133U)	0.07	1.7	0.5	<0.025	<0.020	
LNS 140A	0.05	1.3	0.3	<0.025	<0.020	0.4
LNS T55	0.06	1.8	0.7	<0.020	<0.015	

Mechanical properties, typical, all weld metal

Wire grade	condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					0°C	-20°C
L-60	AW	360	480	30	80	50
LNS 135	AW	390	490	33	100	50
L-61	AW	430	510	32	100	60
	SR	400	505	32		115
L50M (LNS 133U)	AW	460	530	28	120	80
	SR	420	520			115
LNS 140A	AW	520	570	26		70
	SR	510	580	30		50
LNS T55	AW	520	610			70
	SR	470	560			70
LNS 163	AW	460	540	27		55

AW : As welded - SR: Stress relieved

860: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Wire	Characteristics
L-60 & LNS 135	Low yield stress steels
L-61	Yield stress < 430MPa
L50M (LNS 133U)	Yield stress steels < 460MPa and good impact toughness at -20°C
L-70	Good impact toughness in two-run applications

Materials to be welded

STEEL / STANDARD	TYPE	Multirun									
		L61	L60	LNS135	L50M (LNS133U)		LNS 140A		LNS T55		
		AW	AW	AW	AW	SR	AW	SR	AW	SR	
Ship plates											
	A to D	x	x	x	x		x				
	AH(32),DH(36), DH(40)	x			x	x	x	x	x	x	
General Structural steel											
EN 10025 part 2	S185, S235, S275	x	x	x	x	x					
	S355	x	x	x	x	x	x	x	x	x	
Cast steel											
EN 10213-2	GP240R	x	x	x	x	x					
Pipe material											
EN 10208-2	L210, L240, L290	x	x	x	x	x					
	L360	x	x	x	x	x	x	x	x	x	
	L415				x		x	x	x	x	
	L445, L480						x	x			
API 5LX	X42, X46	x	x	x	x	x					
	X52	x	x	x	x	x	x	x	x	x	
	X56, X60				x		x	x	x	x	
	X65, X70						x	x			
EN 10216-1/10217-1	P235, P275	x	x	x	x	x					
	P355	x	x	x	x	x	x	x	x	x	
Boiler & pressure vessel steel											
EN 10028-1	P235GH, P265GH, P295GH	x	x	x	x	x	x	x	x	x	
	P355GH	x	x	x							
Fine grained steel											
EN 10025 part 3/part 4	S275	x	x	x	x	x					
	S355	x	x	x	x	x	x	x	x	x	
	S420				x		x	x	x	x	
	S460						x				
High yield strength steel											
EN 10025 part 6	S460, S500						x				

Flux characteristics

Current type	DC / AC
Basicity (Boniszewski)	1,1
Solidification speed	High
Density (kg/dm ³)	1,4
Grain size	1-16

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	1000

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux

Classification

Flux 888	EN 760 :	S A FB 1 66 AC H5
Flux/Wire	AWS A5.17 / A5.23	EN 756 : MR
888/L-61 (LNS 129)	F7A8-EM12K	S 38 6 FB S2Si
888/L50M (LNS 133U)	F7A6/F7P8-EH12K	S 42 6 FB S3Si
888/ LNS 140A	F8A4-EA2-A2	S 46 4 FB S2Mo
888/ L-70	F8A4-EA1-A2	S 46 4 FB S2Mo
888/LNS 160	F7A8/P8-ENi1-Ni1	
888/LNS 162	F8A8/F7P8-ENi2-Ni2	
888/LNS 164 (LA84)	F10A4/F9P6-EF3-F3	S 50 4 FB S3Ni1Mo
888/LNS 165 (LA85)	F8A6/F7P8-ENi5-Ni5	S 50 4 FB Sz
888/LNS 150 (LA92)	F7P6-EB2-B2	S 50 2 FB CrMo1
888/LNS 151 (LA93)	F8P6-EBR3-B3R H4	
888/LA100	F10A4-EM2-M2	S 50 4 FB S3Ni1,5Mo

General description

Basic flux designed for carbon and low alloy steels
 Easy slag removal in deep groove
 Robust mechanical properties including CTOD values
 Bruscato factor typically below 10 ppm with LNS150 & LNS151 wires
 Excellent in multi arc configurations
 Only available in Sahara ReadyBag™

Approvals

Wire grade	TUV
L-61	x

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Ni	Mo	Cr	Bruscato factor
L-61	0.08	1.05	0.37	<0.02	<0.015				
L50M (LNS 133U)	0.07	1.45	0.55	<0.02	<0.015				
LNS 140A (L-70)	0.07	1.0	0.35	<0.02	<0.015		0.4		
LNS 160	0.07	1.2	0.4	<0.02	<0.015	0.95			
LNS 162	0.07	1.1	0.4	<0.02	<0.015	2.1			
LNS 164	0.08	1.7	0.5	<0.02	<0.01	0.9	0.5		
LNS 165	0.06	1.50	0.5	<0.02	<0.015	0.97	0.2		
LNS 150	0.069	0.90	0.5	<0.02	<0.015		0.56	1.34	<10 ppm
LNS 151	0.062	0.85	0.3	<0.02	<0.015		0.93	2.15	<10 ppm
LA100	0.06	1.60	0.7	<0.02	<0.015	1.8	0.42	0.08	

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)			
					-30°C	-40°C	-50°C	-60°C
L-61	AW	415	515	31		135		125
L50M (LNS 133U)	AW	480	580	29				70
	SR	430	550	31		105		65
LNS 160	AW	470	550	26		115		
	SR	410	510	27		160		120
LNS 162	AW	500	580	25		100		55
	SR	440	550	25		160		120
LNS 164 (LA84)	AW	650	750	21		65		30
	SR	610	700	23		65		30
LNS 165 (LA85)	AW	530	620	26		70		40
	SR	495	595	27				70
LNS 150 (LA92)	SR	420	580	26		150	115	110
LNS 151 (LA93)	SR	530	645	23		125	70	50
LA100	AW	680	760	25		50		

AW : As welded - SR: Stress relieved

888: rev. EN 23

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Suggestions for use

Boiler and pressure vessels
Off-shore applications
Wind towers
Structural fabrications

Materials to be welded

STEEL / STANDARD	TYPE	Multirun																		
		L61			L50M (LNS133U)			LNS164		LNS165		LNS150		LNS151		LNS160		LNS 162		LA100
		AW-60°	AW-60°	SR-60°	AW-40°	AW-40°	SR-60°	SR-50°	SR-50°	AW	SR	AW	SR	AW	SR	AW-40°				
Ship plates																				
	A to E	x	x	x																
	AH(32),DH(36), EH(36)	x	x	x	x	x	x				x	x	x	x						
General Structural steel																				
EN 10025 part 2	S185, S235, S275	x	x	x																
	S355	x	x	x	x	x	x				x	x	x	x						
Cast steel																				
EN 10213-2	GP240R	x	x	x																
Pipe material																				
EN 10208-2	L210, L240, L290	x	x	x																
	L360	x	x	x	x	x	x				x	x	x	x						
	L415		x		x	x	x													
	L445, L480				x	x	x													
EN 10216-1/10217-1	P235, P275	x	x	x																
	P355	x	x	x	x	x	x				x	x	x	x						
Boiler & pressure vessel steel																				
EN 10028-1	P235GH, P265GH, P295GH	x	x	x																
EN 10028-2	16 Mo 3					x	x								x					
(Elevated temperature steel)	13CrMo 4-5								x	x										
	10CrMo 9-10								x	x										
EN 10028-4/10222-3	11MnNi5-3, 13MnNi6-3						x	x			x	x	x	x	x					
Fine grained steel																				
EN 10025 part 3/part 4	S275	x	x	x																
	S355	x	x	x	x	x	x				x	x	x	x						
	S420		x		x	x	x						x	x						
	S460				x	x	x													
High yield strength steel																				
EN 10025 part 6	S460, S500				x	x	x				x	x	x	x						

Flux characteristics

Current type	AC/DC (+/-)
Basicity (Boniszewski)	2,6
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Sahara ReadyBag™ (SRB)	25

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Flux

Classification

Flux 960	EN 760 :	S A AB 1 66 AC H5	
Flux/Wire	AWS A5.17	EN 756 : MR	EN 756 : TR
960 / L-61	F7A2-EM12K	S 38 2 AB S2Si	S 3T 2 AB S2Si
960 / L50M (LNS 133U)	F7A2-EH12K	S 38 2 AB S3Si	S 3T 2 AB S3Si
960 / LNS 163	F7A4-EG	S 42 4 AB S2Ni1Cu	

General description

General purpose neutral flux

Attractive as the “one-flux” in the shop

Very good results in semi-automatic submerged arc welding

Very good operating characteristics (deslagging - wash in - aspect)

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S
L-61	0.07	1.3	0.4	<0.030	<0.025
L50M (LNS 133U)	0.07	1.6	0.6	<0.030	<0.025

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					-20°C	-40°C
L-61	AW	420	510	28	50	
L50M (LNS 133U)	AW	430	530	28	70	
LNS 163	AW	460	540	27		55

AW : As welded

960: rev. EN 23

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Suggestions for use

Wire	Characteristics	Applications
L50M (LNS133U)	For dirty plates	Fillet welds
L-61	General purpose	Butt welds (single pass and multi-run)

Materials to be welded

STEEL / STANDARD	TYPE	Multirun		Two-run	
		L61	L50M (LNS133U)	L61	L50M (LNS133U)
Ship plates					
	A to E	x	x	x	x
	AH(32),DH(36), EH(36)	x	x	x	x
General Structural steel					
EN 10025 part 2	S185, S235, S275	x	x	x	x
	S355	x	x	x	x
Cast steel					
EN 10213-2	GP240R	x	x	x	x
Pipe material					
EN 10208-2	L210, L240, L290	x	x	x	x
	L360	x	x	x	x
	L415		x		
API 5LX	X42, X46	x	x	x	x
	X52	x	x	x	x
	X56, X60		x		
EN 10216-1/10217-1	P235, P275	x	x	x	x
	P355	x	x	x	x
Boiler & pressure vessel steel					
EN 10028-1	P235GH, P265GH, P295GH	x	x	x	x
	P355GH	x	x	x	x
Fine grained steel					
EN 10025 part 3/part 4	S275	x	x	x	x
	S355	x	x	x	x
	S420		x		

Flux characteristics

Current type	DC (+/-); AC
Basicity (Boniszewski)	1
Solidification speed	high
Density (kg/dm ³)	1,4
Grain size	1-16

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

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Flux

Classification

Flux 980	EN 760 :	S A AR/AB 1 57 AC H5	
Flux/Wire	AWS A5.17	EN 756 : MR	EN 756 : TR
980/L-61	F7A2-EM12K	S 38 2 AR / AB S2Si	S 3T 2 AR/AB S2Si
980/L50M (LNS133U)	F7A2-EH12K	S 38 2 AR / AB S3Si	S 4T 2 AR/AB S3Si

General description

Outstanding slag removal, also in narrow grooves
 Multi purpose flux
 Suitable for semi-automatic submerged arc welding
 Attractive as the “one-flux” in the shop

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S
L-61	0.06	1.5	0.3	<0.020	<0.020
L50M (LNS 133U)	0.06	1.9	0.4	<0.020	<0.020

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -20°C
L-61	AW	420	520	29	50
L50M (LNS 133U)	AW	460	550	29	60

AW : As welded

980: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Wire	Applications
L-61	Lower cost combination
L50M (LNS133U)	For the best operating characteristics For the best impact values in multi-pass (AW or SR)

Materials to be welded

STEEL / STANDARD	TYPE	Multirun	
		L61	L50M (LNS133U)
Ship plates			
	A to E	x	x
	AH(32),DH(36), EH(36)	x	x
General Structural steel			
EN 10025 part 2	S185, S235, S275	x	x
	S355	x	x
Cast steel			
EN 10213-2	GP240R	x	x
Pipe material			
EN 10208-2	L210, L240, L290	x	x
	L360	x	x
	L415		x
API 5LX	X42, X46	x	x
	X52	x	x
	X56, X60		x
EN 10216-1/10217-1	P235, P275	x	x
	P355	x	x
Boiler & pressure vessel steel			
EN 10028-1	P235GH, P265GH, P295GH	x	x
	P355GH	x	x
Fine grained steel			
EN 10025 part 3/part 4	S275	x	x
	S355	x	x
	S420		x

Flux characteristics

Current type	DC (+/-) ; AC
Basicity (Boniszewski)	0,6
Solidification speed	High
Density (kg/dm ³)	1,4
Grain size	1-16

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux (Pipemill)

Classification

Flux 995N	EN 760 :	S A AB 1 67 AC H5
Flux/Wire	AWS A5.23	EN 756 : TR
995N / LNS 140A		S 4T 2 AB S2Mo
995N / LNS140 TB (LA 81)	F9A2-EG-G	S 5T 5 AB Sz

General description

Flux designed for longitudinal multi-arc welding pipemill station

High end pipemill applications up to X80

Outstanding welding characteristics and bead profile

Better results on pipe thickness over 12mm

Nitrogen controlled weld metal providing good impact toughness on arctic grade pipes

Very low diffusible hydrogen level in the weld deposit

Chemical composition (w%)

Base material	Wire grade	C	Mn	Si	P	S	Mo	Ti	B	N
X65	LNS 140A	0.07	1.45	0.3	<0.025	<0.025	0.2	-	-	0.005
X80	LNS 140TB (LA81)	0.06	1.6	0.35	<0.025	<0.025	0.2	0.015	0.002	0.004

Remark: the chemical composition from butt welds in pipe depends on the chemical composition of base material.

Proced : tandem AC/AC application on X65 plate 12,7 mm thick.

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)				Hardness HV30	
					-20°C	-40°C	-50°C	-60°C		
Proced. 1										
LNS 140A (L-70)	AW	580	680	30						230
LNS 140TB (LA81)	AW	630	700	27	115	75	50			235
Proced. 2										
LNS 140TB(LA81)	AW	600	720	25	100	65		45		220-235

AW : As welded

Remark: the mechanical properties from butt welds in pipe depends on the chemical composition of base material.

Proced1: tandem in 12,5mm X65; Proced2: multiwire weld (4/5 wires) in 19-25mm X65

995N: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

One run on each side in one or multi wire systems for high welding speed and excellent mechanical properties.

Materials to be welded

STEEL / STANDARD	TYPE	Two-run	
		LNS 140TB	LNS140A (L-70)
Ship plates			
A, B, D, E	A to E	x	x
	A 32 to FH40	x	x
General Structural steel			
EN 10137	500 to 550 A & AL	x	x
EN 10025 part 3/part 4	S275 to S460 all qualities	x	x
EN 10149	S315 to S650 all qualities	x	x
EN 10025 part 2	S185 to S355 all qualities	x	x
	E295 to E360	x	x
Boiler & pressure vessel steel			
EN 10028	P235 to P460G all qualities	x	x
	P235 to P275		x
	A37 to A52 all qualities	x	x
	PF24 to PF36 all qualities	x	x
	P265 to P460 all qualities	x	x
	A37 to A52, CP	x	x
	X42 to X70	x	x
	X42 to X80	x	

Flux characteristics

Current type	DC(+/-), AC
Basicity (Boniszewski)	1,3
Solidification speed	medium
Density (kg/dm ³)	1
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	500
Big Bag	600

Flux (Pipemill)

Classification

Flux 998N	EN 760 :	S A AB 1 67 AC H5
Flux/Wire	AWS A5.23	EN 756 : TR
998N / LNS 140A		S 4T 2 AB S2Mo
998N / LNS 140TB (LA 81)	F9A2-EG-G	S 5T 5 AB Sz

General description

Flux designed for longitudinal multi-arc welding pipemill station

High end pipemill applications up to X80

Superior resistance to undercuts on thin metal sheet work at high speed

Designed to operate on all the range of pipe thickness (6 to 50 mm)

Nitrogen controlled weld metal providing good impact toughness on arctic grade pipes

Superior resistance to surface defects

Very low diffusible hydrogen level in the weld deposit

Chemical composition (w%)

Base material	Wire grade	C	Mn	Si	P	S	Mo	Ti	B	N
X65	LNS 140TB (LA 81)	0.067/0.076	1.41/1.51	0.28/0.34	0.017/0.020	0.003/0.004	0.22/0.27	0.024/0.034	0.0028/0.0036	0.005/0.01
X80	LNS 140TB (LA 81)	0.045/0.06	1.6/1.64	0.35/0.4	0.016/0.017	0.004/0.005	0.3/0.35	0.031/0.034	0.0029/0.0032	0.005/0.006

AW : As welded

Remark: the chemical composition from butt welds in pipe depends on the chemical composition of base material.

Proced1: triple arc application on X65 plate 15,9 mm thick; Proced2: tandem applications on X80 plate 12,7mm thick

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)				Hardness HV30
					-20°C	-40°C	-50°C	-60°C	
Proced. 1									
LNS 140A (L-70)	AW	570	680	27					230
LNS 140TB (LA81)	AW	610	700	27	115	75	50		235
Proced. 2									
LNS 140TB (LA81)	AW	640	730	24	160	120	90	70	220-235

AW : As welded

Remark: the mechanical properties from butt welds in pipe depends on the chemical composition of base material.

Proced1: tandem in 12,5mm X65; Proced2: multiwire weld (4/5 wires) in 19-25mm X65

998N: rev. EN 22

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Materials to be welded

STEEL / STANDARD	TYPE	Two-run	
		LNS 140TB	LNS140A (L-70)
Ship plates			
A, B, D, E	A to E	x	x
	A 32 to FH40	x	x
General Structural steel			
EN 10025 part 6	500 to 550 A & AL	x	x
EN 10025 part 3/part 4	S275 to S460 all qualities	x	x
EN 10149	S315 to S650 all qualities	x	x
EN 10025 part 2	S185 to S355 all qualities	x	x
	E295 to E360	x	x
Boiler & pressure vessel steel			
EN 10028	P235 to P460G all qualities	x	x
	P235 to P275		x
	A37 to A52 all qualities	x	x
	PF24 to PF36 all qualities	x	x
	P265 to P460 all qualities	x	x
	A37 to A52, CP	x	x
	X42 to X70	x	x
	X42 to X80	x	

Flux characteristics

Current type	DC (+,-) / AC
Basicity (Boniszewski)	1,3
Solidification speed	fast
Density (kg/dm ³)	1,3
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	500
Big Bag	600

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux (Pipemill)

Classification

Flux P223	EN 760 :	S A AB 1 67 AC H5
Flux/Wire	AWS A5.17 / A5.23	EN 756 : TR
P223 / L-61	F7A4-EM12K	S 4T 2 AB S2Si
P223 / L50M (LNS133U)	F7A5-EH12K	S 4T 2 AB S3Si
P223 / LNS 140A	F8A4-EA2-A2	S 4T 4 AB S2Mo

General description

Aluminate basic agglomerated flux
Good impact values in two-run and multi-run technique
Low hydrogen content
Very suitable for longitudinal and spiral pipe welding
Usable up to 3 wire systems

Chemical composition (w%)

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-61	0.08	1.0	0.2	<0.02	<0.015		
L50M (LNS 133U)	0.07	1.4	0.3	<0.02	<0.015		
LNS 140A (L-70)	0.08	0.9	0.2	0.03	<0.025	0.4	
LNS 160	0.07	1.0	0.1	0.02	0.015		1
LNS 162	0.08	1.0	0.1	0.02	0.015		2
LNS 165 (LA85)	0.07	1.3	0.2	0.02	0.015	0.2	0.9
LNS T55	0.08	1.7	0.7	<0.015	<0.015		

Remark: the chemical composition from butt welds in pipe depends on the chemical composition of base material.

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Impact ISO-V(J)	
				-20°C	-40°C
L-61	TR	450	550	60	
L50M (LNS 133U)	TR	470	570	80	
LNS 140A (L-70)	TR	500	600		60

TR: two-run

P223: rev. EN 21

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Single/ multi wire welding
Longitudinal and spiral pipe welding

Materials to be welded

STEEL / STANDARD	TYPE	Two-run
		LNS140A (L-70) AW
General Structural steel		
EN 10025 part 6	500A	x
EN 10025 part 3/part 4	S275 to 460 N, NL, M & ML	x
EN10149	S315 to S500MC & NC	x
EN 10025 part 2	S185, S235, S275, S355	x
Pipe material		
API 5LX	X 42 to X70	x
Boiler & pressure vessel steel		
EN 10028-1	P235 to P460 all qualities	x
EN 10207	P235 to P275 S & SL	x
A36-601 & NF A36-605	A37 to A52 CP, AP & FP	x
EN 10222	P285 & P420 all qualities	x
Offshore plates		
A36-212	PF 24 to PF 36 all qualities	x

Flux characteristics

Current type	DC (+, -) / AC
Basicity (Boniszewski)	1,6
Solidification speed	High
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	500
Big Bag	600
Big Bag	1000

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux

Classification

Flux P230	EN 760 :	S A AB 1 67 AC H5	
Flux/Wire	AWS A5.17 / A5.23	EN 756 : MR	EN 756 : TR
P230 / LNS 135	F7A4/F7P6-EM12	S 38 4 AB S2	S 4T 2 AB S2
P230 / L-61	F7A4/F6P5-EM12K	S 38 4 AB S2Si	
P230 / L50M (LNS133U)	F7A5/F7P5-EH12K	S 42 5 AB S3Si	
P230 / LNS 140A	F8A4-EA2-A2	S 46 4 AB S2Mo	S 4T 4 AB S2Mo
P230 / L-70	F8A4-EA1-A2	S 46 4 AB S2Mo	S 4T 4 AB S2Mo
P230 / LNS 160	F7A8/F7P8-ENi1-Ni1	S 46 4 AB S2Ni1*	
P230 / LNS 162	F7A8/F7P8-ENi2-Ni2	S 46 6 AB S2Ni2*	
P230 / LNS T55	F7A4/F7P5-EC1	S50 4 AB Tz	

* Nearest classification

General description

Aluminate basic agglomerated flux

Low hydrogen content

One flux to combine with a wide range of wire electrodes

Good impact values in two-run and multi-run technique

Selection of wires provides application possibilities from -40 to +400°C

Approvals

Wire grade	BV	ABS	LRS	DNV	GL	RMRS	RINA	TÜV
L-61		3M3YM	3YM/3YT				3YM/3YT	X
L50M (LNS 133U)	A3M,A3YM		4Y40M/4Y40T	4YM				X
LNS 140A	A4YTM	3YM/2YT			3Y40TM	3YM/2YT	4YM/3YT	X
L-70	A4YTM	3YM/2YT			3Y40TM	3YM/2YT	4YM/3YT	X
LNS 135								X
LNS 162								X
LNS 160								X
LNS T55								X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-61	0.06	1.4	0.4	<0.030	<0.020		
LNS 135	0.07	1.4	0.25	<0.030	<0.020		
L50M (LNS 133U)	0.08	1.8	0.5	<0.030	<0.020		
LNS 140A (L-70)	0.07	1.4	0.4	<0.030	<0.020	0.5	
LNS 160	0.07	1.4	0.25	<0.030	<0.020		1.1
LNS 162	0.08	1.2	0.3	<0.030	<0.020		2.1
LNS T55	0.07	1.8	0.8	0.020	0.015		

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-20°C	-40°C	-60°C
LNS 135	AW	400	500	30	50		
L-61	AW	450	520	30	100		
	SR	400	490	30	140	80	
L50M (LNS 133U)	AW	480	580	30		80	
	SR	460	540	28		70	
LNS 140A (L-70)	MR	540	620	28	70		
LNS 140A (L-70)	TR		620			60	
LNS 160	AW	490	570	28		120	45
	SR	430	550	28		140	75
LNS 162	AW	500	590	28		120	50
	SR	460	570	28		150	80
LNS T55	AW	540	630	28	90	60	
	SR	520	610	28	80	50	

MR: multi run - TR: two-run

P230-1: rev. EN 23

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Suggestions for use

Excellent multi application flux on the shop floor
 Excellent welding behaviour in single arc and tandem application
 Very good mechanical properties at low temperature in either two-run or multi run technique

Materials to be welded

STEEL / STANDARD	TYPE	Multirun			
		LNS135	L61	L50M/ LNS133U	LNS140A /L-70
Ship plates					
	A to D	x	x	x	x
	AH(32),DH(40)	x	x	x	x
General Structural steel					
EN 10025 part 6	500A				x
EN 10025 part 3/part 4	S275 to 355 N & M	x	x	x	x
	S275 to 420 N, NL, M & ML		x	x	x
	S275 to 460 N, NL, M & ML			x	x
EN 10149	S315 & S355 MC & NC	x	x	x	x
	S315 to S420MC & NC		x	x	x
	S315 to S460MC & NC			x	x
	S315 to S500MC & NC				x

Flux characteristics

Current type	DC (+, -) / AC
Basicity (Boniszewski)	1,6
Solidification speed	High
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux

Classification

Flux P230	EN 760 :	S A AB 1 67 AC H5	
Flux/Wire	AWS A5.17 / A5.23	EN756/EN14295: MR	EN 12070
P230 / LNS 150 (LA92)	F8P2-EB2-B2R		S CrMo1
P230 / LNS 151 (LA93)	F9PZ-EB3-B3R		S CrMo2
P230 / LNS 163		S 38 0 AB SZ	
P230 / LNS 164	F9A6-EF1*-F3	S 50 4 AB S3NiMo1	
P230 / LNS 167	F8A6/F7P6-EF1*-F1	S 50 4 AB S2NiMo1	
P230 / LNS 168		S 69 4 AB S3Ni2.5CrMo	

General description

Aluminate basic agglomerated flux

Low hydrogen content

One flux to combine with a wide range of wire electrodes

Good impact values in two-run and multi-run technique

Selection of wires provides application possibilities from -40 to +400°C

Approvals

Wire grade	TÜV
LNS 164	X
LNS 167	X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	P	S	Mo	Ni	Cr	Cu
LNS 150 (LA92)	0.08	1.1	0.3	<0.020	<0.010	0.5		0.9	
LNS 151 (LA93)	0.12	0.8	0.3	<0.020	<0.010	1.0		2.6	
LNS 163	0.07	1.1	0.6	0.020	0.020		0.7		0.7
LNS 164	0.07	1.5	0.3	<0.020	<0.010	0.5	1.0		
LNS 167	0.09	1.1	0.3	<0.020	<0.015	0.5	1.0		
LNS 168	0.08	1.7	0.4	<0.020	<0.020	0.4	2.4	0.25	

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					0°C	-20°C	-40°C
LNS 150 (LA92)	SR	535	620	25	70	90**	60**
LNS 151 (LA93)	SR	560	640	24		30	
LNS 163	AW	450	600	20	60	50	
LNS 164	AW	630	710	22	90	80	50
	SR	630	710	24	70	60	35
LNS 167	AW	550	635	22		100	70
	SR	565	650	22		80	65
LNS 168	AW	710	840	20		65	min. 47

MR: multi run

TR: two-run

**SR=2h/720°C

P230-2: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Excellent multi application flux on the shop floor
 Excellent welding behaviour in single arc and tandem application
 Very good mechanical properties at low temperature in either two-run or multi run technique

Materials to be welded

STEEL / STANDARD	TYPE	Multirun				
		LNS150 (LA92)	LNS151 (LA93)	LNS164	LNS167	LNS168
Pipe material						
EN 10208-2	L415			X	X	
	L445, L480			X	X	
API 5LX	X56, X60			X	X	
	X65, X70			X	X	
Gaz de France	X63			X	X	
Fine grained steel						
EN 10025 part 3/part 4	S420			X	X	
EN 10025 part 6	S460			X	X	
Boiler & pressure vessel steel						
EN 10028-2	13CrMo 4-5	X	X			
Elevated temperature steel	10CrMo 9-10	X	X			
Low temperature steels	11MnNi5-3					X
EN 10028-4/10222-3	13MnNi6-3					X
High strength steel						
EN 10025 part 6	S460, S500				X	X

Flux characteristics

Current type	DC (+,-) / AC
Basicity (Boniszewski)	1,6
Solidification speed	High
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

Flux

Classification

Flux P240	EN 760 :	S A FB 1 55 AC H5
Flux/Wire	AWS A5.17 / A5.23	EN 756 : MR
P240 / L61 (LNS129)	F7A4-EM12K	S 42 4 FB S2Si
P240 / L50M (LNS133U)	F7A/P8-EH12K	S 42 6 FB S3Si
P240 / LNS 160	F7A/P10-ENi1-Ni1	S 46 6 FB S2Ni1*
P240 / LNS 162	F7A/P10-ENi2-Ni2	S 46 6 FB S2Ni2*
P240 / LNS 165 (LA85)	F8A/P8-ENi5-Ni5	S 50 6 FB Sz
P240 / LNS 150 (LA92)	F8P2-EB2-B2R	
P240 / LNS 151 (LA93)	F9P0-EB3-B3R	
P240 / LNS 168	F6A5-EM2-M2	S 69 4 FB S0

* Nearest classification

General description

Highly basic fluoride agglomerated flux
Good impact values suitable for offshore constructions
Consistently good CTOD values with CMn and Ni-alloyed wires
Low hydrogen content
Suitable for single/multi wire welding

Approvals

Wire grade	LRS	BV	ABS	DNV	GL	Controlas	CRS	TÜV
L50M (LNS 133U)	3YM	A3M,A3YM	YM>47J<	4Y40M	6YM	x	3YM	X
LNS 162								X
LNS 160								X
LNS 164								X

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	S	P	Ni	Mo	Cr
L61 (LNS129)	0.08	1.0	0.35	< 0.010	< 0.010			
L50M (LNS 133U)	0.08	1.6	0.35	< 0.015	< 0.020			
LNS 160	0.08	1	0.25	< 0.015	< 0.020	1		
LNS 162	0.08	1	0.25	< 0.015	< 0.020	2.2		
LNS 165	0.08	1.3	0.35	< 0.015	< 0.020	0.9	0.15	
LNS 150 (LA92)	0.08	1.2	0.3	< 0.010	< 0.015		0.15	1.1
LNS 151 (LA93)	0.10	0.7	0.3	< 0.010	< 0.015		1.0	2.5
LNS 168	0.08	1.5	0.4	< 0.015	< 0.015	2.4	0.4	0.3

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)			
					-20°C	-40°C	-50°C	-60°C
L61 (LNS129)	AW	440	530	30	115	75		
L50M (LNS 133U)	AW	460	560	28				40
	SR	420	540	28				40
LNS 160	AW	470	550	28				80
	SR	430	490	32				100
LNS 162	AW	480	560	26				100
	SR	460	530	30				140
LNS 165	AW	520	600	25				60
	SR	510	580	24				60
LNS 150 (LA92)	SR	520	610	24				100
LNS 151 (LA93)	SR	550	640	24				50
LNS 168	AW	790	840	20			55	

AW : As welded
SR: Stress relieved

P240: rev. EN 24

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

Characteristics :	Applications
Boiler and pressure vessels	Low temperature applications
Off-shore applications	Highly restraint constructions
Nuclear components	Single and multi-wire systems

Materials to be welded

STEEL / STANDARD	TYPE	Multirun					
		L50M (LNS133U)	LNS160	LNS162	LNS165	LNS150 (LA92)	LNS151 (LA93)
Ship plates							
	A to E,	x	x	x	x		
	AH32 to EH40	x	x	x	x		
General structural steel							
EN 10025 part 6 (A 36-204)	500 A & AL				x		
EN 10025 part 3/part 4	S275 to S460 all qualities	x	x	x	x		
EN 10149 (A36-231)	S315 to S460 MC & NC	x	x	x	x		
	S315 to S500 MC & NC				x		
EN 10025 part 2	S185 to E360 all qualities	x	x	x	x		
Boiler & pressure vessel steel							
EN 10028 (A 36-205)	P235 to P460 all qualities	x	x	x	x		
EN 10207 (A36-220)	P235 to P275 all qualities	x	x	x	x		
A36-601 & NF A36-605	A37 to A52 all qualities	x	x	x	x		
EN 10028-2 (Elevated temperature steel)	13CrMo 4-5					x	x
	10CrMo 9-10					x	x
Steel for dangerous material transportation							
A 36-215	P265 to P460 all qualities	x	x	x	x		
Low temperature steels							
	P285 to P420 all qualities	x	x	x	x		

Flux characteristics

Current type	DC (+,-) / AC
Basicity (Boniszewski)	3
Density (kg/dm ³)	1,1
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Sahara ReadyBag™ (SRB)	25

Flux

Classification

Flux P2000	EN 760 :	S A AF 2 64 DC H5
Wire	ISO 14343-A	
LNS 304L	S 19 9 L	
LNS 309L	S 24 12 L	
LNS 316L	S 19 12 3 L	
LNS 4462	S 22 9 3 N L	
LNS 318	S 19 12 3 Nb	
LNS 347	S 19 9 Nb	
LNS Zeron 100X	S 25 9 4 N L	
LNS NiCro 60/20	ISO 18274 : S Ni 6625	R-NiCr 21 Mo 9Nb
LNS 4439Mn	S 18 16 5 N L	
LNS 4455	S 20 16 3 Mn L	
LNS 4500	S 20 25 5 Cu L	
LNS 310	S 25 20	

General description

Stainless steel welding flux
Excellent slag release
Low flux consumption

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	Cr	Ni	Mo	N	Nb	Cu	W	FN
LNS 304L	0.015	1.5	0.5	19	10						08-10
LNS 309L	0.015	1.5	0.5	23	13						10-20
LNS 316L	0.015	1.5	0.5	18	12	2.5					08-10
LNS 4462	0.015	1.5	0.5	22	8	3	0.1				40-60
LNS 318	0.04	1.5	0.5	19	11	2.5		0.5			08-10
LNS 347	0.03	1.4	0.5	19	10			0.6			08-10
LNS Zeron 100X	0.03	0.6	0.5	25	9.5	3.6		0.2	0.7	0.6	30-60
LNS NiCro 60/20	0.006	0.1	0.4	21.5	64.5	8.7	3.8			0.8	
LNS 4439Mn	0.025	3.6	0.5	18	17	3.6	0.15				
LNS 4455	0.025	6	0.5	18.5	15	2.6	0.15				
LNS 4500	0.03	1.5	0.6	19	25	4.1			1.2		
LNS 310	0.5	1.7	0.5	25	21						

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)		
					-20°C	-40°C	-196 °C
LNS 304L	AW	380	550	35	80		
LNS 309L	AW	425	580	33		80	
LNS 316L	AW	425	560	33			50
LNS 4462	AW	550	800	27		50	
LNS Zeron 100X	AW	670	880	21	70	45	
LNS NiCro 60/20	AW	520	780	40			100
LNS 4439Mn	AW	375	630	33			
LNS 4455	AW	360	640	30			
LNS 310	AW	440	600	28			

P2000: rev. EN 23

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Suggestions for use

General stainless steel welding flux
 Applicable in the boiler and pressure vessel industry as well as pipe fabrication
 Due to low Si-content very good impact toughness at low temperature

Materials to be welded

AISI	Mat.nr.	EN 10088-1/2	ASTM/ACI	UNS	Wire
304L	1.4306	X2 CrNi 19-11	(TP) 304L	S30403	LNS 304L
304LN	1.4311	X2 CrNiN 18-10	(TP) 304LN	S30453	LNS 304L
316LN	1.4406	X2 CrNiMoN 17-11-2	(TP) 316LN	S31653	LNS 316L
316L	1.4404	X2 CrNiMo 17-12-2	(TP) 316L	S31603	LNS 316L
316L	1.4435	X2 CrNiMo 18-14-3	(TP) 316L	S31603	LNS 316L
316LN	1.4429	X2 CrNiMoN 17-13-3			LNS 316L
304	1.4301	X4 CrNi 18-10	(TP) 304	S30409	LNS 304L
321	1.4541	X6 CrNiTi 18-10	(TP) 321	S32100	LNS 304L/347
316	1.4401	X4 CrNiMo 17-12-2	(TP) 316	S31600	LNS 316L
316	1.4436	X4 CrNiMo 17-13-3			LNS 316L
347	1.4550	X6 CrNiNb 18-10	(TP) 347	S34700	LNS 304L/347
318	1.4580	X6 CrNiMoNb 17-12-2	316Cb	S31640	LNS 316L/318
318	1.4583	X10 CrNiMoNb 18-12(DIN)			LNS 316L/318
317LN	1.4439	X2 CrNiMoN 17-13-5	316LN	S31726	4439Mn
	1.4539	X1 NCrNiMoCu 25-20-5			4500
	1.3952	X2 CrNiMoN 18-14-3(DIN)			4455
	1.4462	X2 CrNiMoN 22-5-3			4462
			Zeron 100	S32760	LNS Zeron 100 X
	2.4856	NiCr22Mo9Nb(DIN)		N06625	LNS NiCro 60/20
	1.5637	12Ni14 (DIN)			LNS NiCro 60/20
	1.5680	12Ni19 (DIN)			LNS NiCro 60/20
	1.5662	X8Ni9 (DIN)			LNS NiCro 60/20

Flux characteristics

Current type	DC (+,-)
Basicity (Boniszewski)	1,6
Solidification speed	High
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Sahara ReadyBag™ (SRB)	25

Liability: All information in this data sheet is based on the best available knowledge, is subject to change without notice and can only be considered as suitable for general guidance **Fumes:** Consult information on Welding Safety Sheet, available upon request

Flux

Classification

Flux P2007	EN 760 :	S A AF 2 64 AC H5			
Wire	ISO 14343-A	AWS A5.9/A5.9M	Wire	ISO 18274	AWS A5.14/A5.14M
LNS 304L	S 19 9 L	ER308L	LNS NiCro 60/20	S Ni 6625	ERNiCrMo-3
LNS 309L	S 24 12 L	ER309L	LNS NiCroMo 60/16	S Ni 6276	ERNiCrMo-4
LNS 316L	S 19 12 3 L	ER316L	LNS NiCroMo 59/23	S Ni 6059	ERNiCrMo-13
LNS 4462	S 22 9 3 N L	ER2209	LNS NiCro 70/19	S Ni 6082	ERNiCr-3
LNS 318	S 19 12 3 Nb	ER318			
LNS 347	S 19 9 Nb	ER347			
LNS Zeron 100X	S 25 9 4 N L	ER2553*			
LNS 4439Mn	S 18 16 5 N L	-			
LNS 4455	S 20 16 3 Mn L	ER316LMn			
LNS 4500	S 20 25 5 Cu L	ER385			
LNS 304H	S 19 9 H	ER308H			
LNS 310	S 25 20	ER310			
LNS 307	S 18 8 Mn	ER307*			

General description

Stainless steel welding flux

Excellent slag release

Homogeneous stainless steel colour bead appearance

Straight edges on butt welds applications

Excellent behaviour on 9% Nickel steel

Suitable in AC current

Approvals

Wire grade	ABS	LRS	DNV	TUV
LNS 304L	x	x	x	
LNS 309L	x	x	x	
LNS 316L	x	x	x	
LNS 4462				x

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	Cr	Ni	Mo	N	Nb	Cu	W	FN
LNS 304L	0.015	1.5	0.5	19	10						08-10
LNS 309L	0.015	1.5	0.5	23	13						10-20
LNS 316L	0.015	1.5	0.5	18	12	2.5					08-10
LNS 4462	0.015	1.5	0.5	22	8	3	0.1				40-60
LNS 318	0.04	1.5	0.5	19	11	2.5		0.5			08-10
LNS 347	0.03	1.4	0.5	19	10			0.6			08-10
LNS Zeron 100X	0.03	0.6	0.5	25	9.5	3.6		0.2	0.7	0.6	30-60
LNS NiCro 60/20	0.006	0.1	0.4	21.5	64.5	8.7	3.8			0.8	
LNS 4439Mn	0.025	3.6	0.5	18	17	3.6	0.15				
LNS 4455	0.025	6	0.5	18.5	15	2.6	0.15				
LNS 4500	0.03	1.5	0.6	19	25	4.1			1.2		

P2007: rev. EN 03

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Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)			
					-20°C	-40°C	-50°C	-196 °C
LNS 304L	AW	390	550	35	80	75		40
LNS 309L	AW	400	580	33		70		
LNS 316L	AW	400	560	33	75	70		45
LNS 347	AW	400	650	34			65	
LNS 4462	AW	585	765	27		75		
LNS NiCro 60/20	AW	520	780	40				100
LNS Zeron 100X	AW	670	880	21	70	45		
LNS 4439Mn	AW	375	630	33				

Suggestions for use

General stainless steel welding flux

Applicable in the boiler and pressure vessel industry as well as pipe fabrication

Due to low Si-content very good impact toughness at low temperature

Materials to be welded

AISI	Mat.nr.	EN 10088-1/2	ASTM/ACI	UNS	Wire
304L	1.4306	X2 CrNi 19-11	(TP) 304L	S30403	LNS 304L
304LN	1.4311	X2 CrNiN 18-10	(TP) 304LN	S30453	LNS 304L
316LN	1.4406	X2 CrNiMoN 17-11-2	(TP) 316LN	S31653	LNS 316L
316L	1.4404	X2 CrNiMo 17-12-2	(TP) 316L	S31603	LNS 316L
316L	1.4435	X2 CrNiMo 18-14-3	(TP) 316L	S31603	LNS 316L
316LN	1.4429	X2 CrNiMoN 17-13-3			LNS 316L
304	1.4301	X4 CrNi 18-10	(TP) 304	S30409	LNS 304L
321	1.4541	X6 CrNiTi 18-10	(TP) 321	S32100	LNS 304L/347
316	1.4401	X4 CrNiMo 17-12-2	(TP) 316	S31600	LNS 316L
316	1.4436	X4 CrNiMo 17-13-3			LNS 316L
347	1.4550	X6 CrNiNb 18-10	(TP) 347	S34700	LNS 304L/347
318	1.4580	X6 CrNiMoNb 17-12-2	316Cb	S31640	LNS 316L/318
318	1.4583	X10 CrNiMoNb 18-12(DIN)			LNS 316L/318
317LN	1.4439	X2 CrNiMoN 17-13-5	316LN	S31726	4439Mn
	1.4539	X1 NCriMoCu 25-20-5			4500
	1.3952	X2 CrNiMoN 18-14-3(DIN)			4455
	1.4462	X2 CrNiMoN 22-5-3			4462
			Zeron 100	S32760	LNS Zeron 100 X
	2.4856	NiCr22Mo9Nb(DIN)		N06625	LNS NiCro 60/20
	1.5637	12Ni14 (DIN)			LNS NiCro 60/20
	1.5680	12Ni19 (DIN)			LNS NiCro 60/20
	1.5662	X8Ni9 (DIN)			LNS NiCro 60/20

Flux characteristics

Current type	DC (+,-) / AC
Basicity (Boniszewski)	1,6
Solidification speed	High
Density (kg/dm ³)	1,2
Grain size	2-20

Packaging and available sizes

Unit	Net weight (kg)
Sahara ReadyBag™ (SRB)	25
Drum	40

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Flux

Classification

Flux P2000S :	EN 760 :	S A AF 2 64Cr DC H5
Wire	ISO 14343-A	
LNS 309L	S 24 12 L	
LNS 4462	S 22 9 3 N L	
LNS Zeron 100X	S 25 9 4 N L	

General description

Compensates Cr-burn off and increases the Cr-content in the weldmetal
 Welding stainless steel to carbon steel
 To be used to weld first layers in carbon steel with over-alloyed wires
 Applicable where a higher weldmetal ferrite is needed

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	Cr	Ni	Mo	N	other	FN
LNS 309L	0.015	1.5	0.5	25	13				15-20
LNS 4462	0.015	1.5	0.5	24	8	3	0.1		40-60
LNS Zeron 100X	0.02	0.5	0.4	26	9	3.7	0.2	W=0.6 Cu = 0.7	30-60

Mechanical properties, typical, all weld metal

Wire grade	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J) -40°C
LNS 309L	450	600	33	80
LNS 4462	700	850	27	50
LNS Zeron 100X	670	880	25	45

P2000S: rev. EN 22

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Suggestions for use

Especially developed for welding stainless steel to carbon steel. Also to be used in welding root runs in clad steel as well as root runs in Nitrogen alloyed fully austenitic steels to avoid hot cracking

Materials to be welded

Dissimilar
Duplex

Flux characteristics

Current type	DC (+,-)
Basicity (Boniszewski)	1,6
Solidification speed	high
Density (kg/dm ³)	1,2
Grain size	1-16

Packaging and available sizes

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25

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Flux

Classification

Flux P7000	EN 760 :	S A AB/AR 2 69 AC H5
Wire	AWS 5.9 / 5.14	ISO 14343-A / ISO 18974
P7000 / LNS 4439 Mn		S-18 16 5 L
P7000 / LNS 4455		S-20 16 3 Mn L
P7000 / LNS 4465		S-25 22 2 L
P7000 / LNS 4500	ER 385 L	S-20 25 5 Cu L
P7000 / LNS NiCro 31/27		
P7000 / LNS NiCro 70/19	NiCr-3	R-NiCr 20 Nb
P7000 / LNS NiCro 60/20	NiCrMo-3	R-NiCr 21 Mo 9 Nb

General description

Agglomerated aluminate basic welding flux which increases the Mn content of the weld metal
For full austenitic stainless steel grades,
Suitable for Ni-based alloys in multi run butt welding (Alloy 625)
For welding low Ni-alloyed structural steels (12Ni14, 12Ni19, X8Ni9)
Good resistance to hot cracking

Chemical composition (w%), typical, all weld metal

Wire grade	C	Mn	Si	Cr	Ni	Mo	N ₂	Nb	Fe
LNS 4455	0.02	7.5	0.6	19	16	2.7	0.13		bal.
LNS 4465	0.02	6	0.6	25	23	2	0.12		bal.
LNS 4500	0.02	3	0.6	20	25	4.5			bal.
LNS NiCro 31/27	0.02	2.7	0.4	27	31	3.5			bal.
LNS NiCro 70/19	0.025	4.8	0.45	19	bal.			2.5	1.2
LNS NiCro 60/20	0.01	2	0.3	21	bal.	8.5		4	6

Mechanical properties, typical, all weld metal

Wire grade	Condition	Yield strength (N/mm ²)	Tensile strength (N/mm ²)	Elongation (%)	Impact ISO-V(J)	
					-100 °C	-196 °C
LNS 4455	AW	420	620	30		40
	SR	420	610	30		40
LNS NiCro 60/20	AW	450	740	40	90	90

AW : As welded
 SR: Stress relieved

P7000: rev. EN 22

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