SAW WIRES FOR MILD STEEL

Product name	Chemical composition (typical values) in %					AWS		EN/ISO	
	C	Mn	Si	P	S				
L-60	0.09	0.5	0.06	-	-	A5.17	EL12	ISO 14171-A	S1
LNS 135	0.1	1.0	0.10	-	-	A5.17	EM12	ISO 14171-A	S2
L-61	0.1	1.0	0.25	-	-	A5.17	EM12K	ISO 14171-A	S2Si
L-50M (LNS 133U)	0.1	1.6	0.25	-	-	A5.17	EH12K	ISO 14171-A	S3Si

SAW WIRES FOR LOW ALLOY STEEL

Product name	Chemical composition (typical values) in %										AWS		EN/ISO	
	C	Mn	Si	P	S	Cr	Ti	Ni	Mo	Cu				
L-70	0.10	0.9	0.10	-	-	-		-	0.5		A5.23/A5.23M	EA1	ISO 14171-A	S2 Mo
LNS 140A	0.10	1.0	0.10	-	-	-		-	0.5		A5.23/A5.23M	EA2	ISO 14171-A	S2 Mo
LNS 133TB	0.08	1.55	0.25				0.15				A5.23/A5.23M	EG	ISO 14171-A	SZ
LNS 140TB (LA 81)	0.06	1.1	0.20	-	-	-	0.13	-	0.5		A5.23/A5.23M	EA2TiB	ISO 14171-A	S2MoTiB
LNS 150 (LA 92)	0.13	0.8	0.15	<0.010	-	1.2		-	0.5		A5.23/A5.23M	EB2	ISO 21952-A	S Cr Mo1
LNS 151 (LA 93)	0.10	0.6	0.12	<0.010	-	2.5		-	1.0		A5.23/A5.23M	EB3	ISO 21952-A	S Cr Mo2
LNS 160	0.10	1.1	0.15	-	-	-		1.0	-		A5.23/A5.23M	ENi1	ISO 14171-A	S2 Ni1*
LNS 162	0.10	1.1	0.15	-	-	-		2.2	-		A5.23/A5.23M	ENi2	ISO 14171-A	S2 Ni2*
LNS 163	0.11	1.0	0.25	0.2	0.2	0.2		0.7	-	0.5	A5.23/A5.23M	EG	ISO 14171-A	S2 Ni1Cu
LNS 164 (LA 84)	0.10	1.75	0.10	-	-	-		0.9	0.5		A5.23/A5.23M	EF3	ISO 14171-A	S3 Ni1Mo
LNS 165 (LA 85)	0.08	1.4	0.20	-	-	-		1.0	0.2		A5.23/A5.23M	ENi5	ISO 14171-A	SZ
LNS 168	0.10	1.6	0.15	-	-	0.7		2.3	0.6			-	ISO 26304-A	S3 Ni2.5CrMo
LNS 175	0.08	1.0	0.10	-	-	-		3.5	-		A5.23/A5.23M	ENi3	ISO 14171-A	S2Ni3
LNS T55 **	0.06	1.5	0.60	<0.020	<0.010	-		-	-		A5.17/A5.17M	EC1 H4	ISO 14171-A	TZ

* for deviations consult corresponding data sheet
** flux cored wires

SAW WIRES FOR STAINLESS STEEL

Product name	Chemical composition (typical values) in %										AWS		EN/ISO	
	C	Mn	Si	Cr	Ni	Mo	Nb	N	Others	Mat.Nr.				
LNS 304L	0.015	1.8	0.4	20	10	0.1	-	-	-	1.4316	A5.9/A5.9M	ER308L	ISO 14343-A	S 19 9 L
LNS 304H	0.05	1.2	0.6	20.1	10.5	-	-	-	-	1.4948	A5.9/A5.9M	ER308H	ISO 14343-A	S 19 9 H
LNS 307	0.07	7.0	0.6	19.0	8.9	-	-	-	-	1.4370	A5.9/A5.9M	ER307	ISO 14343-A	S 18 8 Mn
LNS 309L	0.01	1.8	0.4	23.4	13.8	0.07	-	-	-	1.4332	A5.9/A5.9M	ER309L	ISO 14343-A	S 23 12 L
LNS 316L	0.015	1.75	0.4	18.5	12	2.75	-	-	-	1.4430	A5.9/A5.9M	ER316L	ISO 14343-A	S 19 12 3 L
LNS 318	0.04	1.7	0.4	19.5	11.3	2.6	0.5	-	-	1.4576	A5.9/A5.9M	ER318	ISO 14343-A	S19 12 3 Nb
LNS 347	0.03	1.6	0.4	19.5	9.7	0.1	0.6	-	-	1.4451	A5.9/A5.9M	ER347	ISO 14343-A	S 19 9 Nb
LNS 4455	0.01	7.0	0.4	20	16	2.7	-	0.16	-	1.4455		-	ISO 14343-A	S 20 16 3 Mn L
LNS 4462	0.015	1.6	0.5	23	8.6	3.1	-	0.16	-	1.4462	A5.9/A5.9M	ER2209	ISO 14343-A	S 22 9 3 N L
LNS 4500	0.01	1.8	0.3	20	25.2	4.6	-	-	Cu=1.5	1.4539	A5.9/A5.9M	ER385	ISO 14343-A	S 20 25 5 Cu L
LNS Zeron® 100X	0.02	0.7	0.3	25	9.3	3.7	-	0.23	Cu=0.6	1.4410	A5.9/A5.9M	ER2594	ISO 14343-A	S 25 9 4 N L
									W=0.6					

SAW WIRES FOR NICKEL ALLOYS

Product name	Chemical composition (typical values) in %									AWS		EN/ISO	
	C	Mn	Si	Cr	Ni	Mo	Nb	Others	W.Nr.				
LNS NiCro 60/20	0.05	0.02	0.1	22	65	8.7	3.7	Fe=0.1	2.4831	A5.14/A5.14M	ERNiCrMo-3	ISO 18274	S Ni 6625
LNS NiCro 70/19	0.03	3.1	0.08	20.5	72.5		2.6	Fe=0.8		A5.14/A5.14M	ERNiCr-3	ISO 18274	S Ni 6082
LNS NiCroMo 60/16	0.006	0.5	0.04	16.0	58	16		W=3.6	2.4886	A5.14/A5.14M	ERNiCrMo-4	ISO 18274	S Ni 6276

SUBMERGED ARC CONSUMABLES

L-60

CLASSIFICATION

AWS A5.17	EL12	**A-Nr**	1
ISO 14171-A	S1	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

A low carbon, low manganese, low silicon general purpose wire
Provides low hardness and is best suited for use with the 700 series of active fluxes

APPROVALS

	GL	TÜV	BV	ABS	LR	DNV	RINA
782		X					
860	X	X					
780		X	X	X	X	X	X
781		X					
761		X					

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si
0.09	0.5	0.06

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.0	2.4	3.2	4.0
15 kg stein basket	X				
25 kg stein basket B415+VCI	X	X	X	X	X
100 kg stein basket B785				X	X
300 kg wooden reel					X
350 kg Speed Feed® Drum		X	X	X	X
400 kg Speed Feed® Drum		X	X	X	X
600 kg Accutrak® Drum		X	X		
1000 kg Accutrak® Drum		X	X	X	X

L-60: rev. C-EN03-01/02/16

L-61

CLASSIFICATION

AWS A5.17	EM12K	**A-Nr**	1
ISO 14171-A	S2Si	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

Industry standard for submerged arc welding applications
A low carbon, medium manganese, low silicon general purpose submerged arc wire
A good choice for a wide range of applications with single or multiple pass subarc welding

APPROVALS

	ABS	TÜV	BV	DNV	GL	LRS	RINA	RMRS	CRS	PRS
761	X	X	X	X	X	X	X	X	X	X
780		X	X	X	X	X	X	X	X	X
8500					X					
888		X								
860	X	X	X	X	X	X	X	X	X	
P230	X	X				X	X			
781		X								

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si
0.1	1.0	0.25

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.0	2.4	3.2	4.0	4.8
25 kg stein basket B415+VCI	X	X	X	X	X	X
100 kg stein basket B785		X	X	X	X	X
200 kg Speed Feed® Drum		X				
300 kg wooden reel		X	X	X	X	
350 kg Speed Feed® Drum	X	X				
400 kg Speed Feed® Drum			X	X	X	
600 kg Speed Feed® Drum			X		X	
600 kg Accutrak® Drum	X	X	X			
1000 kg Accutrak® Drum		X	X	X	X	
1000 kg coil liftable		X			X	

LNS 135

CLASSIFICATION

AWS A5.17	EM12	**A-Nr**	1
ISO 14171-A	S2	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

A low carbon, medium manganese, low silicon general purpose wire
Provides low hardness and is best suited for use with the 700 and 800 series of active fluxes

APPROVALS

	GL	TÜV
782		X
860	X	X
761		X
780		X
P230		X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si
0.1	1.0	0.10

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	4.0	4.8
25 kg stein basket B415+VCI	X	X	X	
300 kg wooden reel	X	X		
400 kg Speed Feed® Drum			X	
1000 kg Accutrak® Drum			X	
1000 kg coil liftable		X	X	X

L-50M (LNS 133-U)

CLASSIFICATION

AWS A5.17	EH12K	**A-Nr**	1
ISO 14171-A	S3Si	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

A low carbon, high manganese, low silicon general purpose submerged arc wire
Suitable for both single and multiarc subarc applications
Provides extra mechanical properties compared to an EM12K wire grade

APPROVALS

	ABS	TÜV	BV	DNV	LRS	RINA	CRS
782	X		X	X		X	
8500	X		X	X	X		
P230		X	X	X	X		
P240	X	X	X	X	X		X
780		X					
781	X		X	X	X	X	

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si
0.1	1.6	0.25

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.0	2.4	3.2	4.0
15 kg stein basket B415	X	X			
25 kg stein basket B415+VCI	X	X	X	X	X
100 kg stein basket B785					X
300 kg wooden reel	X		X		X
350 kg Speed Feed® Drum		X			
400 kg Speed Feed® Drum		X	X	X	X
600 kg Accutrak® Drum			X		
1000 kg Accutrak® Drum	X				
1000 kg coil liftable			X		X

L-50M rev. C-EN03-01/02/16

L-70

CLASSIFICATION

AWS A5.17	EA1	**A-Nr**	2	**Mat-Nr**	1.5424
ISO 14171-A	S2 Mo	**F-Nr**	6		
		9606 FM	1/3		

GENERAL DESCRIPTION

A 0,5%Mo wire to be used on steel grades such as 16Mo3 or on non alloy steels to improve impact properties when welding in 2-run technique

APPROVALS

	ABS	TÜV	BV	DNV	GL	LRS	RINA	RMRS	PRS
761	X	X	X	X	X	X	X	X	X
780		X				X			X
8500	X				X			X	
860		X	X	X	X	X			
P230	X		X		X	X	X	X	
P223		X							

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Mo
0.1	0.9	0.10	0.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0	4.8
25 kg stein basket B415+VCI	X	X	X	X	X
100 kg stein basket B785			X		X
350 kg Speed Feed® Drum	X		X	X	
400 kg Speed Feed® Drum			X	X	
600 kg Speed Feed® Drum				X	
1000 kg coil liftable			X		

L-70 rev. C-EN03-01/02/16

LNS 133TB

CLASSIFICATION

AWS A5.13	EG	**A-Nr**	-
ISO 14171-A	SZ	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

Titanium and boron micro alloy wire to achieve optimum impact properties with the 2-run technique, especially with pipe mill fluxes
Exclusively for as-welded applications

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ti	B
0.08	1.55	0.25	0.15	0.015

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	3.2	4.0
25 kg stein basket B415+VCI	X	X
350 kg metal reel		X
350 kg Speed Feed® Drum	X	X
400 kg Speed Feed® Drum	X	X
600 kg Speed Feed® Drum	X	X
1000 kg Accutrak® Drum	X	X
1000 kg coil liftable	X	X

LNS 140A

CLASSIFICATION

AWS A5.23	EA2	**A-Nr**	2	**Mat-Nr**	1.5424
ISO 14171-A	S2 Mo	**F-Nr**	6		
ISO 24598-A	S Mo	**9606 FM**	1/3		

GENERAL DESCRIPTION

A 0,5%Mo wire to be used on steel grades such as 16Mo3 or on non alloy steels to improve impact properties when welding in 2-run technique

APPROVALS

	ABS	TÜV	BV	DNV	GL	LRS	RINA	RMRS	PRS
761	X	X	X	X	X	X	X	X	X
780		X				X			X
8500	X				X			X	
860		X	X	X	X	X			
P230	X	X	X		X	X	X	X	

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Mo
0.1	1.0	0.10	0.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.0	2.4	3.2	4.0	4.8
15 kg stein basket B415		X	X			
25 kg stein basket B415+VCI		X	X	X	X	X
100 kg stein basket B785				X	X	
250 kg Speed Feed® Drum				X		
300 kg wooden reel		X	X	X		
350 kg metal reel					X	
350 kg Speed Feed® Drum		X		X	X	X
400 kg Speed Feed® Drum				X	X	
600 kg Speed Feed® Drum					X	
600 kg Accutrak® Drum		X				
1000 kg Accutrak® Drum				X	X	
1000 kg coil liftable	X		X	X	X	

LNS 140TB

CLASSIFICATION

AWS A5.23	EA2TiB	**A-Nr**	2
ISO 14171-A	S2MoTiB	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

Titanium and boron micro alloy wire to achieve optimum impact properties with the 2-run technique, especially with pipe mill fluxes
Exclusively for as-welded applications

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Mo	Ti	B
0.06	1.1	0.20	0.5	0.13	0.02

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	3.5	4.0	4.8
25 kg stein basket B415+VCI	X	X		X	X
100 kg stein basket B785				X	
300 kg wooden reel		X			
300 kg Speed Feed® Drum					X
350 kg metal reel				X	X
350 kg Speed Feed® Drum		X		X	
400 kg Speed Feed® Drum				X	
600 kg Speed Feed® Drum		X		X	
1000 kg Accutrak® Drum	X		X	X	
1000 kg coil liftable			X	X	

LNS 150

CLASSIFICATION

AWS A5.23	EB2	**A-Nr**	3	**Mat-Nr**	1.7339
ISO 24598-A	S Cr Mo1	**F-Nr**	6		
		9606 FM	3		

GENERAL DESCRIPTION

A 1,25%Cr/0,5%Mo wire for creep resistant steels such as 13CrMo4-5
Maximal operating temperature is 550°C
To be used with basic fluxes such as 8500, P240, 888 or MIL800-H

APPROVALS

	TÜV
780	X
860	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Mo	Cr	P
0.13	0.8	0.15	0.5	1.2	<0.010

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X
100 kg stein basket B785	X	X		
350 kg Speed Feed® Drum	X			
1000 kg Accutrak® Drum			X	

LNS 151

CLASSIFICATION

AWS A5.23	EB3	**A-Nr**	4	**Mat-Nr**	1.7339
ISO 24598-A	S Cr Mo2	**F-Nr**	6		
		9606 FM	3		

GENERAL DESCRIPTION

A 2,5%Cr/1%Mo wire for creep resistant steels such as 10CrMo 9-10
Maximal operating temperature is 600°C
To be used with basic fluxes such as 8500, P240, 888 or MIL800-H
Also usable with active fluxes such as 780, 781, 782 for heat exchanger fillet weld application

APPROVALS

	TÜV
780	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Mo	P	Cr
0.10	0.6	0.12	1.0	<0.010	2.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X
400 kg Speed Feed® Drum				X
1000 kg Accutrak® Drum			X	

LNS 151 rev. C-EN03-01/02/16

LNS 160

CLASSIFICATION

AWS A5.23	ENi1	**A-Nr**	10
ISO 14171-A	S2 Ni1	**F-Nr**	6
		9606 FM	1/2

GENERAL DESCRIPTION

A 1%Ni wire for application requiring good impact toughness down to -60°C
Optimum results obtained with the multipass technique

APPROVALS

	TÜV
P230	X
P240	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni
0.10	1.1	0.15	1.0

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X
100 kg stein basket B785			X

LNS 160 rev. C-EN03-01/02/16

LNS 162

CLASSIFICATION

AWS A5.23	ENi2	**A-Nr**	10
ISO 14171-A	S2 Ni2*	**F-Nr**	6
* Nearest classification		**9606 FM**	1/2

GENERAL DESCRIPTION

A 2%Ni wire for application requiring excellent impact toughness down to -60°C
Optimum results obtained with the multipass technique

APPROVALS

	TÜV
P230	X
P240	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni
0.10	1.1	0.15	2.2

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI		X	X	X
300 kg wooden reel	X			

LNS 163

CLASSIFICATION

AWS A5.23	EG	**A-Nr**	10
ISO 14171-A	S2 Ni1Cu	**F-Nr**	6
		9606 FM	2

GENERAL DESCRIPTION

Submerged arc wire with Cu and Ni addition dedicated to weathering steel assembly like Cor-Ten grades
Matching corrosion resistance as well as colour
To be used with 960, 860 or P230 flux in most of the applications
Can be used in butt welds single run or multi runs as well as in fillet welds

APPROVALS

	TÜV
860	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cu	Cr	S	P
0.11	1.0	0.25	0.7	0.5	0.2 max	0.2 max	0.2 max

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X
350 kg Speed Feed® Drum		X		
400 kg Speed Feed® Drum	X	X	X	X

LNS 163 rev. C-EN03-01/02/16

LNS 164

CLASSIFICATION

AWS A5.23	EF3	**A-Nr**	10
ISO 14171-A	S3 Ni1Mo	**F-Nr**	6
		9606 FM	2

GENERAL DESCRIPTION

Nickel and Molybdenium alloy wire to reach both high yield/ tensile properties and good impact toughness at low temperatures
Optimum results obtained with the multipass technique
Meets NACE requirement

APPROVALS

	TÜV
P230	X
P240	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Mo
0.10	1.75	0.10	0.9	0.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X
300 kg wooden reel			X
350 kg Speed Feed® Drum	X		X
400 kg Speed Feed® Drum		X	X

LNS 164 rev. C-EN03-01/02/16

LNS 165

CLASSIFICATION

AWS A5.23	ENi5	**A-Nr**	10
ISO 14171-A	SZ	**F-Nr**	6
		9606 FM	2

GENERAL DESCRIPTION

Nickel and Molybdenium alloyed wire to reach both high yield/ tensile properties and good impact toughness at low temperatures
Optimum results obtained with the multipass technique

APPROVALS

	TÜV	ABS	DNV	LRS
P240	X	X	X	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Mo
0.08	1.4	0.20	1.0	0.2

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0	4.8
25 kg stein basket B415+VCI	X	X	X	X	X
100 kg stein basket B785				X	
400 kg Speed Feed® Drum			X		
1000 kg Accutrak® Drum				X	

LNS 168

CLASSIFICATION

		A-Nr	12
ISO 26304-A	S 3Ni2.5CrMo	**F-Nr**	6
		9606 FM	2

GENERAL DESCRIPTION

Low alloy solid wire dedicated to high strength steel grades (Re>690MPa)
Good impact properties guaranteed down to -40°C when combined with a basic flux

APPROVALS

	LRS
P240	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	**Mn**	**Si**	**Ni**	**Mo**	**Cr**
0.10	1.6	0.15	2.3	0.6	0.7

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	**2.5**	**3.2**	**4.0**	**5.0**
25 kg stein basket B415+VCI	X	X	X	X
1000 kg coil		X	X	

LNS 175

CLASSIFICATION

AWS A5.23	ENi3	**A-Nr**	10
ISO 14171-A	S2Ni3	**F-Nr**	6
		9606 FM	1

GENERAL DESCRIPTION

A 3,5Ni wire used on cryogenic steels such as SA203Gr or 12Ni14

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni
0.08	1.0	0.1	3.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	3.2	4.0
25 kg stein basket B415+VCI	X	X

LNS 175: rev. C-EN02-01/02/16

LNS T55

CLASSIFICATION

AWS A5.17	EC1 H4	**A-Nr**	1
ISO 14171-A	TZ	**F-Nr**	6
		9606 FM	1/2

GENERAL DESCRIPTION

Unalloy basic flux cored wire for subarc applications.
Higher deposition compared to equivalent solid wire size
Good impact properties at low temperatures when combined with P230 flux.

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	P	S
0.06	1.5	0.6	<0.020	0.015

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.8
25 kg stein basket B415+VCI	X
250 kg metal coil	X

LNS T55: rev. C-EN02-01/02/16

LNS 304L

CLASSIFICATION

AWS A5.9	ER308L	**A-Nr**	8	**Mat-Nr**	1.4316
ISO 14343-A	S 19 9 L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Low carbon austenitic stainless steel wire suitable for 304L base material grade or 321 grade in some applications Recommended with P2007 and P2000 fluxes.

APPROVALS

	TÜV	ABS	LRS
P2000	X		
P2007	X	X	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni	Mo
0.015	1.8	0.4	20	10	0.1

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X

LNS 304L: rev. C-EN03-01/02/16

LNS 304H

CLASSIFICATION

AWS A5.9	ER308H	**A-Nr**	8	**Mat-Nr**	1.4948
ISO 14343-A	S 19 9 H	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

High carbon austenitic stainless steel wire for high temperature applications (up to 730°C). Suitable for 304 base material grade
Recommended with P2007 and P2000 fluxes

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr
0.05	1.2	0.6	10.5	20.1

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2
25 kg stein basket B415+VCI	X	X

LNS 307

CLASSIFICATION

AWS A5.9	ER307*	**A-Nr**	8	**Mat-Nr**	1.4370
ISO 14343-A	S 18 8Mn	**F-Nr**	6		
* Nearest classification		**9606 FM**	5		

GENERAL DESCRIPTION

Stainless steel wire for high manganese content base materials, difficult-to-weld steels such as armour plates, and dissimilar joints
Weld deposit features strain hardenability
Recommended with P2007 and P2000 fluxes

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni
0.07	7.0	0.6	19	8.9

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X

LNS 307: rev. C-EN03-01/02/16

LNS 309L

CLASSIFICATION

AWS A5.9	ER309L	**A-Nr**	8	**Mat-Nr**	1.4332
ISO 14343-A	S 23 12 L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Low carbon austenitic stainless steel wire suitable for dissimilar welding applications
Recommended with P2007 and P2000 fluxes

APPROVALS

	TÜV	ABS	LRS
P2000S	X		X
P2007	X	X	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo
0.01	1.8	0.4	13.8	23.4	0.07

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X

LNS 309L: rev. C-EN03-11/05/16

LNS 316L

CLASSIFICATION

AWS A5.9	ER316L	**A-Nr**	8	**Mat-Nr**	1.4430
ISO 14343-A	S 19 12 3 L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Low carbon stainless steel wire suitable for 316L base material and similar grades
Recommended with P2007 and P2000 fluxes

APPROVALS

	TÜV	ABS	LRS
P2000	X		X
P2007	X	X	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni	Mo
0.015	1.75	0.4	18.5	12	2.75

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X

LNS 316L: rev. C-EN03-01/02/16

LNS 318

CLASSIFICATION

AWS A5.9	ER318	**A-Nr**	8	**Mat-Nr**	1.4576
ISO 14343-A	S 19 12 3 Nb	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Stabilized stainless steel wire suitable for 316Ti and similar grades
Recommended with P2007 and P2000 fluxes

APPROVALS

	TÜV
P2000	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo	Nb
0.04	1.7	0.4	11.3	19.5	2.6	0.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.0	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X	X

LNS 347

CLASSIFICATION

AWS A5.9	ER347	**A-Nr**	8	**Mat-Nr**	1.4551
ISO 14343-A	S 19 9 Nb	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Stabilized stainless steel wire suitable for 347, 321 and similar grades
Recommended with P2007 and P2000 fluxes

APPROVALS

	TÜV
P2000	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo	Nb
0.03	1.6	0.4	9.7	19.5	0.1	0.6

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2	4.0
25 kg stein basket B415+VCI	X	X	X
300 kg Speed Feed Drum	X		

LNS 347: rev. C-EN04-11/05/16

LNS 4455

CLASSIFICATION

		A-Nr	9	**Mat-Nr**	1.4455
ISO 14343-A	S 20 16 3 Mn L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Fully austenitic stainless steel wire
To be used for cryogenic application or with non magnetic stainless steels
Recommended with P2007, P2000 and P7000 fluxes

APPROVALS

	TÜV
P2000	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	**Mn**	**Si**	**Cr**	**Ni**	**Mo**	**N**
0.01	7.0	0.4	20	16	2.7	0.16

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	**2.4**	**3.2**
25 kg stein basket B415+VCI	X	X

LNS 4455: rev. C-EN02-01/02/16

LNS 4462

CLASSIFICATION

AWS A5.9	ER2209	**A-Nr**	9	**Mat-Nr**	1.4462
ISO 14343-A	S 22 9 3 N L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Duplex stainless steel wire suitable for 1.4462 base material and similar grades
Recommended with P2007 and P2000 fluxes

APPROVALS

	TÜV	ABS	LRS
P2000S	X		
P2007	X	X	X

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo	N
0.015	1.6	0.5	8.6	23	3.1	0.16

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4	3.2
25 kg stein basket B450	X	X

LNS 4462: rev. C-EN02-01/02/16

LNS 4500

CLASSIFICATION

AWS A5.9	ER385	**A-Nr**	9	**Mat-Nr**	1.4519
ISO 14343-A	G 20 25 5 Cu L	**F-Nr**	6		
		9606 FM	5		

GENERAL DESCRIPTION

Fully austenitic stainless steel wire
To be used for cryogenic application or with non magnetic stainless steels
Recommended with P2007, P2000 and P7000 fluxes

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni	Mo	Cu
0.01	1.8	0.3	20	25.2	4.6	1.5

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4
25 kg stein basket B450	X

LNS 4500: rev. C-EN02-01/02/16

LNS Zeron® 100X

CLASSIFICATION

AWS A5.9	ER2594	**A-Nr**	8
ISO 14343-A	S 25 9 4 N L	**F-Nr**	6
		9606 FM	5

GENERAL DESCRIPTION

Superduplex stainless steel wire suitable for Zeron® 100 base material and similar grades
Recommended with P2007, P2000 or P7000 flux

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo	N	Cu	W
0.02	0.7	0.3	9.3	25	3.7	0.23	0.6	0.6

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.4
25 kg stein basket B415+VCI	X	X

LNS Zeron® 100X: rev. C-EN02-01/02/16

LNS NiCro 60/20

CLASSIFICATION

AWS A5.14	ERNiCrMo-3	**A-Nr**	-	**Mat-Nr**	2.4831
ISO 18274	G 20 25 5 Cu L	**F-Nr**	43		
		9606 FM	6		

GENERAL DESCRIPTION

Ni-base solid wire for welding nickel alloys
Excellent resistance to various corrosion forms
Also used for 9%Ni applications
Recommended with P2007 flux

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni	Mo	Nb	Fe
0.05	0.02	0.1	22	65	8.7	3.7	0.1

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.0	2.4
25 kg stein basket B450	X	X	X

LNS NiCro 60/20: rev. C-EN02-01/02/16

LNS NiCro 70/19

CLASSIFICATION

AWS A5.14	ERNiCr-3	**A-Nr**	-	**Mat-Nr**	2.4806
ISO 18274	S Ni 6082 (NiCr20Mn3Nb)	**F-Nr**	43		
		9606 FM	6		

GENERAL DESCRIPTION

Ni-base solid wire for welding high Ni alloyed materials such as alloy 600 and alloy 601
High resistance to oxidation at high temperatures
Recommended with P2007 flux

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Cr	Ni	Nb	Fe
0.03	3.1	0.08	20.5	72.5	2.6	0.8

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	2.4
25 kg stein basket B450	X

LNS NiCroMo 60/16

CLASSIFICATION

AWS A5.14	ERNiCrMo-4	**A-Nr**	-	**Mat-Nr**	2.4886
ISO 18274	S Ni 6276 (NiCr15Mo16Fe6W4)	**F-Nr**	43		
		9606 FM	6		

GENERAL DESCRIPTION

Ni-base solid wire for welding CrMoW alloyed nickel alloys
Extreme resistance to corrosion environments containing sulphuric acid and chlorides
Also used for 9%Ni applications
Recommended with P2007 flux

CHEMICAL COMPOSITION (W%), TYPICAL, WIRE

C	Mn	Si	Ni	Cr	Mo	W	Fe
0.006	0.5	0.04	58	16	16	3.6	5.8

PACKAGING AND AVAILABLE SIZES

Diameter (mm)	1.6	2.4
25 kg stein basket B415+VCI	X	X

SAW

LNS NiCroMo 60/16: rev. C-EN02-01/02/16

761 / 761-CG

CLASSIFICATION

Flux			Flux/wire	
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A CS/MS 1 88 AC H5	**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-60										✔
LNS 135										✔
L-61	3YM/2YT	3YM/2YT	3YM/2YT	2YT	3YM/2YT	3YM/2YT	3YM/2YT	3YM/2YT	2YT	✔
LNS 140A (L-70)	3Y40M/3Y40T	3Y40M/3Y40T		3Y40M/3Y40T	3Y40M/2Y40T	3Y40M/3Y40T	3Y40M/3Y40T	3Y40M/3Y40T	3Y40M/3Y40T	✔

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 (L-70)	0.06	1.7	0.8	<0.03	<0.025	0.4

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) 0°C	Impact ISO-V(J) -20°C
L-60	MR	380	500	28	80	50
L-61	MR	440	530	28	100	50
	TR	>420	>540		65	
LNS 140A (L-70)	MR	480	600		80	40
	TR	>440	>540		100	55

* MR : Multirun - TR : Two-run

761 / 761-CG

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type/ Steel grades	Limited passes		
		L-60	L-61	LNS 140A (L-70)
Ship plates				
	A to D, A (H) 32 to D(H) 36	✔	✔	✔
General structural steels				
EN 10025 part 6	500 A			✔
EN 10025 part 3/part 4	S275 to S420, N,M	✔	✔	✔
EN 10149	S315 to S420, MC	✔	✔	✔
	S315 to S420, NC	✔	✔	✔
	S460, MC & NC			✔
EN 10025 part 2	S185 to S355, E295 to E360, JR(G1 & G2), J0, J2 (G3&G4)	✔	✔	✔
Boiler & pressure vessel steels				
EN 10028	P235 to P420, GH N, NH, M, Q & QH	✔	✔	✔
	P235 to P460, GH, N, NH, M, Q & QH	✔	✔	✔
	P500, GH, N, NH, M, Q & QH, P235 S, P265 S	✔	✔	✔
	A37 to A52, CP, AP	✔	✔	✔

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	0.8
Solidification speed	Low, viscous slag
Density (kg/dm^3)	1.2
Grain size (ISO 14174)	761 : 1 -16 / 761-CG : 1 - 20

SUGGESTIONS FOR USE

Wire	Characteristics
L-60	To prevent defects from organic components
L-61	Reliable properties
LNS 140A (L-70)	For good impact toughness in two-run as welded

Applications
Flat fillet, large throat
Butt joints in two passes, in medium and thick plates
Flux backing, modified series arc welding

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Metal drum	250
Big Bag	500 / 1000

780 / 780-CG / 780-FG

CLASSIFICATION

Flux		Flux/wire		
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AR/AB 1 78 AC H5	**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 grain and coarse formula
Fine grain formula preferably used on high speed fillet welds applications
Good on circumferential welds on small diameters with low voltage

APPROVALS

Wire grade	BV	ABS	LRS	DNV	GL	RINA	PRS	RMRS	CRS	TÜV
L-60	A2YT	2YT	2YT	2YT	3YT	2YT				✔
LNS 135										✔
L-61	A3YT		2YM/3YT	2YM/3YT	3YT	3YT	2YM/3YT	3YT	3YT	✔
L-50-M (LNS 133U)										✔
LNS 140A (L-70)			3YT				3YT			✔
LNS 150										✔
LNS 151										✔

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.07	1.4	0.6	<0.03	<0.025	
L-61	0.07	1.6	0.7	<0.03	<0.025	
LNS 140A (L-70)	0.07	1.6	0.6	<0.03	<0.025	0.4

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) 0°C	Impact ISO-V(J) -20°C
L-60	MR	>420	510	28	50	
L-61	TR	>420	>540	28		50
LNS 140A (L-70)	TR	>420	>550	25		60

* MR : Multirun - TR : Two-run

780 / 780-CG / 780-FG

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type/ Steel grades	Limited passes		
		L-60	L-61	LNS 140A (L-70)
Ship plates				
	A to D, A (H) 32 to D(H) 36	✔	✔	✔
General structural steels				
EN 10025 part 6	500 A			✔
EN 10025 part 3/part 4	S275 to S420, N,M	✔	✔	✔
EN 10149	S315 to S420, MC	✔	✔	✔
	S315 to S420, NC	✔	✔	✔
	S460, MC & NC			✔
EN 10025 part 2	S185 to S355, E295 to E360, JR(G1 & G2), J0, J2 (G3&G4)	✔	✔	✔
Boiler & pressure vessel steels				
EN 10028	P235 to P420, GH N, NH, M, Q & QH	✔	✔	✔
	P235 to P460, GH, N, NH, M, Q & QH	✔	✔	✔
	P500, GH, N, NH, M, Q & QH, P235 S, P265 S	✔	✔	✔
	A37 to A52, CP, AP	✔	✔	✔

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	0.7
Solidification speed	High
Density (kg/dm³)	1.4
Grain size (ISO 14174)	780 : 1 - 20 / 780-CG : 2 - 20 / 780-FG : 1 - 16

SUGGESTIONS FOR USE

Wire	Characteristics
L-60	To prevent defects from organic components
L-61	Reliable properties
LNS 140A (L-70)	For good impact toughness in two-run as welded

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Metal drum	250
Big Bag	500 / 1000

781

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : TR**
S A ZS 1 87 AC H5	**781 / L-60**	F7A0-EL12	
	781 / L-61	F7A0-EM12K	S 4T 0 ZS S2Si
	781 / L-50M (LNS 133U)		S 4T 2 ZS S3Si
	761 / 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
L-50M (LNS 133U)	A3Y40T	3Y400T	3Y40T	3Y40T	3Y40T	✔
L-60						✔
L-61						✔

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	
L-50M (LNS 133U)	0.06	1.6	1.0	<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/mm²)	Tensile strength (N/mm²)	Impact ISO-V(J) -20°C
L-61	TR	>420	>540	50
L-50M(LNS 133U)	TR	>450	>560	60
LNS 140A (L-70)	TR	>490	>580	65

* MR : Multirun - TR : Two-run

781

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type/ Steel grades	Limited passes		
		L-60	L-61	LNS 140A
Ship plates				
	A to D, AH32 to DH40	✔	✔	✔
	A to E, AH32 to EH40			✔
General structural steels				
EN 10025 part 6	S00 & S00 A	✔	✔	✔
	S00 & S50 A & AL			✔
EN 10025 part 3/part 4	S275 to S460 N/M	✔	✔	✔
	S275 to S460 all qualities			✔
EN 10149	S315 to S600 MC & NC	✔	✔	✔
EN 10025 part 2	S185 to S360 all qualities	✔	✔	✔
Boiler & pressure vessel steels				
EN 10028	P235 to P460, (GH, N NH, M, ML1)	✔	✔	✔
	P235 to P460 all qualities			✔
EN 10207	P235 to P275 S	✔	✔	✔
A36-601 & NF A36-605	A37 to A52 (CP, AP)	✔	✔	✔
	A37 to A52 (CP, AP, FP)			✔

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	0.7
Solidification speed	Fast, fluid slag
Density (kg/dm³)	1.5
Grain size (ISO 14174)	1 -16

SUGGESTIONS FOR USE

Wire	Characteristics
L-60	High speeds on clean plate
L-61	Very high speeds

PACKAGING AND AVAILABLE SIZES

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

782 / 782-FG

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AR/AB 1 76 AC H5	**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 / L-50M (LNS133U)		S 46 0 AR/AB S3Si	S 5T 2 AR/AB S3Si
	761 / 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-wire 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
L-50M (LNS 133U)	3Y40T	3Y400T	4Y40T	3Y40T	
LNS 135					✔

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo
L-60	0.07	1.0	0.6	<0.03	<0.025	
LNS 135	0.07	1.15	0.7	<0.03	<0.025	
L-61	0.07	1.15	0.8	<0.03	<0.025	
L-50M (LNS 133U)	0.06	1.7	1.0	<0.03	<0.025	
LNS 140A (L-70)	0.07	1.2	0.7	<0.03	<0.025	0.4

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Impact ISO-V(J) 0°C	Impact ISO-V(J) -20°C
L-60	TR	>420	>520	45	
LNS 135	TR	>420	>520	55	
L-61	TR	>420	>520	60	
L-50M (LNS 133U)	TR	>460	>550	65	50
LNS 140A (L-70)	TR	>460	>600	70	50

* MR : Multirun - TR : Two-run

782 / 782-FG

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Limited passes	
		LNS 135	L-61
Ship plates			
	A, AH32 to AH40		✔
General structural steels			
EN 10149	S315 to S460 MC	✔	✔
EN 10025 part 2	S185 to S355 quality, JR(G1&G2	✔	✔
	S185 to S355 quality, JR(G1&G2), J10		✔
	E2956 to E360	✔	✔
Boiler & pressure vessel steels			
EN 10028	P235 to 275 GH		✔
	P355 to P460M		✔
A36-601 & NF A36-605	A37 to A52 (CP)		✔

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	0.4
Solidification speed	High
Density (kg/dm³)	1.4
Grain size (ISO 14174)	782 : 1 - 20 / 782-FG : 1 - 16

SUGGESTIONS FOR USE

Wire	Characteristics
LNS 135	Limited hardness
L-61	Good properties
L-50M (LNS 133U)	Very high speeds

Applications

Fillet weld, lap joint
- truck wheels
- gas bottles
- Tube to fin fillet weld
- Boiler tubes

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Metal drum	250
Big Bag	500 / 1000

708GB

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.23**	**ISO 14171-A**
S A AR 1 99 AC H10	**708GB / L-60**	F7A0 - EL12	S 42 0 AR S1
	708GB / L-61	F7A0 - EM12K	S 42 0 AR S2Si

GENERAL DESCRIPTION

Agglomerated flux for submerged arc welding, with Mn and Si additions
Excellent weldability, slag removal, resistance to porosity and cracks, and very good appearance of weld bead.
It is a good choice for square edge welding joints, fillet welds and lap welds.
Recommended for limited amount of passes.

CHEMICAL COMPOSITION (W%), ALL WELD METAL

Wire grade	C	Mn	Si	P	S
L-60	0.08	1.4	0.75	0.023	0.02
L-61	0.09	1.6	0.90	0.023	0.02

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition	Yield strength (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Impact ISO-V(J) -18°C
L-60	MR	470	570	33	30
L-61	MR	570	645	30	50

APPLICATION

It is typically used for welding gas bottles,truck wheels,structural shapes, joining plates,pieces of small diameter.

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25

802

CLASSIFICATION

Flux	Flux/wire	
ISO 14174 S A CS 1 55 DC H5	Hardfacing flux cored wire Hardfacing solid wire	no AWS and EN classification no AWS and EN classification

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 mentionned 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	2.0	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

		2 hours postweld tempering at				
Wire grade	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	46	45	46	38	34	32

Hardness: HRc in 6 layers hardfacing application

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Metal drum	200

802: rev. C-EN23-01/02/16

839

CLASSIFICATION

Flux 839	ISO 14174:	S A FB 1 66 AC H5

Flux/Wire	AWS A5.17/A5.23
839/L60	F6A2-EL12
839/LNS135	F6A4-EM12
839/L-61	F7A5-EM12K / F6P6-EM12K
839/L-50M	F7A6-EH12K / F7P8-EH12K
839/LNS140A	F7A4-EA2-A2
839/LNS164	F9A0-EF3-F3 / F9P4EF3-F3

GENERAL DESCRIPTION

Basic flux with excellent slag detachability
To be used in combination of mild steel or low alloy grades for multirun application
Suitable for single arc and tandem arc
Good resistance on primer coating
Also suitable with stainless 308L, 309L, 316L and 307

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-60	0.04	0.85	0.2	<0.01	<0.01		
LNS 135	0.05	1.2	0.2	<0.015	<0.01		
L-61	0.07	1.2	0.3	<0.015	<0.01		
L-50M	0.07	1.7	0.3	<0.015	<0.01		
LNS 140A	0.06	1.2	0.2	<0.015	<0.01	0.45	
LNS 164	0.07	1.7	0.3	<0.015	<0.01	0.45	0.80

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

					Impact ISO-V(J)			
Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	-20°C	-40°C	-50°C	-60°C
L-60	AW	390	470	30	100			
LNS 135	AW	410	490		100	50		
L-61	AW	440	530	29	130	80		
	SR	400	510	31		115	65	
L-50M	AW	470	570	258		100		
	SR	415	520	29		140		110
LNS 140A	AW	460	560	26		80		
LNS 164	AW	650	710	20	50			
	SR	590	670	24	100	65		

AW : As welded - SR : Stress relieved

839: rev. C-EN03-18/06/15

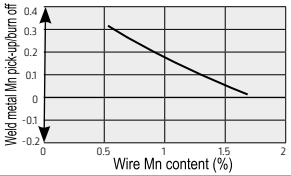
839

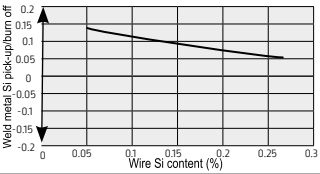
EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun								
		L-60	LNS 135	L-61	L-50M (LNS 133U)		LNS 140A (L-70)		LNS 164 (L-84)	
		AW	AW	AW	AW	SR	AW	SR	AW	SR
Ship plates										
	A to D	✔	✔	✔	✔		✔			
	AH(32),DH(36), DH(40)	✔			✔	✔	✔	✔		
General structural steels										
EN 10025 part 2	S185, S235, S275	✔	✔	✔	✔	✔				
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cast steels										
EN 10213-2	GP240R	✔	✔	✔	✔	✔				
Pipe materials										
EN 10208-2	L210, L240, L290	✔	✔	✔	✔	✔				
	L360	✔	✔	✔	✔	✔	✔	✔		
	L415				✔		✔	✔		
	L445, L480						✔	✔		
API 5LX	X42, X46	✔	✔	✔	✔	✔				
	X52	✔	✔	✔	✔	✔	✔	✔		
	X56, X60				✔		✔	✔	✔	✔
	X65, X70						✔	✔	✔	✔
EN 10216-1/10217-1	P235, P275	✔	✔	✔	✔	✔				
	P355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Boiler & pressure vessel steels										
EN 10028-1	P235GH, P265GH, P295GH	✔	✔	✔	✔	✔	✔	✔		
	P355GH	✔	✔	✔	✔	✔	✔		✔	✔
Fine grained steels										
EN 10025 part 3/part 4	S275	✔	✔	✔	✔	✔				
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
	S420				✔		✔	✔	✔	✔
	S460						✔		✔	✔
High yield strength steels										
EN 10025 part 6	S460, S500						✔		✔	

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	2.4
Solidification speed	Medium
Density (kg/dm³)	1.2
Grain size (ISO 14174)	2-20





PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25

Lincolnweld® 842-H™

CLASSIFICATION

Flux	Flux/wire	
ISO 14174		**AWS A5.17 / A5.23**
S A FB 1 55 AC H4	**Lincolnweld® 842-H™ / L-61**	F7A6/F6P8-EM12K-H4
	Lincolnweld® 842-H™ / L-50M (LNS 133U)	F7A8/F7P8-EH12K-H4
	Lincolnweld® 842-H™ / LNS 164 (LA 84)	F9A8/ F9P8-EF3-F3-H4
	Lincolnweld® 842-H™ / LNS 165 (LA 85)	F8A8/ F8P8-ENi5-Ni5-H4
	Lincolnweld® 842-H™ / LNS 140A	F8A4/ F7P4-EA2-A2-H4

GENERAL DESCRIPTION

Designed to meet the specific welding requirements of the offshore construction industry where consistency in operability, impact toughness, and diffusible hydrogen is critical.
Ultra-Low Diffusible Hydrogen – Less than 3 mL/100g of deposited weld metal in DC and AC polarities.
Consistent impact toughness capable of exceeding CVN values of 160 J at -60° C in the body and cap pass for consistent CTOD toughness.
Excellent AC and DC operation – High current capacity for single or multiple arc configurations.
High Operator Appeal – Excellent slag detachment and wash-out.

APPROVALS

Wire grade	ABS	DNV	LR	GL	TÜV	DB
L-50M (LNS 133U)	5YQM420 H5 (AC)	V YM42 H5 (AC)	5Y42M H5 (AC)	6Y42M H5 (AC)	✔	✔
LNS 164 (LA 84)	5YQM550 H5 (AC)	V YM55 H5 (AC)	5Y55M H5 (AC)	6Y55M H5 (AC)	✔	
LNS 165 (LA 85)	5YQM500 H5 (AC	V YM50 H5 (AC)	5Y50M H5 (AC)	6Y50M H5 (AC)	✔	

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-61	0.09	1.0	0.20	<0.02	<0.015		
L-50M (LNS 133U)	0.10	1.5	0.30	<0.02	<0.015		
LNS 164 (LA 84)	0.10	1.6	0.25	<0.02	<0.015	0.5	0.8
LNS 165 (LA 85)	0.06	1.35	0.2	<0.02	<0.015	0.2	0.9
LNS 140A (L70)	0.06	0.9	0.2	<0.02	<0.015	0.4	

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -40°C	-51°C	-60°C
L-61	AW	430	520	33		300	
	SR	360	480	38			350
L-50M (LNS 133U)	AW	480	580	31			190
	SR	420	550	32			160
LNS 164 (LA 84)	AW	640	710	25			140
	SR	610	690	27			120
LNS 165 (LA 85)	AW	530	610	29			185
	SR	530	620	30			150
LNS 140A (L70)	AW	470	550	27	90		
	SR	440	530	30	80		

AW : As welded - SR : Stress relieved

Lincolnweld® 842-H™: rev. C-EN02-01/02/16

Lincolnweld® 842-H™

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun								
		L-61	L-50M (LNS 133U)		LNS 164 (LA 84)		LNS 165 (LA 85)		LNS 140A (L 70)	
		AW	AW	SR	AW	SR	AW	SR	AW	SR
Ship plates										
	A to E	✔	✔	✔						
	AH(32),DH(36), EH(36)	✔	✔	✔	✔	✔	✔	✔	✔	✔
General structural steels										
EN 10025 part 2	S185, S235, S275	✔	✔	✔						
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cast steels										
EN 10213-2	GP240R	✔	✔	✔						
Pipe materials										
EN 10208-2	L210, L240, L290	✔	✔	✔						
	L360	✔	✔	✔	✔	✔	✔	✔	✔	✔
	L415		✔				✔	✔	✔	✔
	L445, L480						✔	✔		
API 5LX	X42, X46	✔	✔	✔						
	X52	✔	✔	✔	✔	✔	✔	✔	✔	✔
	X56, X60		✔		✔	✔	✔	✔	✔	✔
	X65, X70				✔	✔	✔	✔		
EN 10216-1/10217-1	P235, P275	✔	✔	✔						
	P355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Fine grained steels										
EN 10025 part 3/part 4	S275	✔	✔	✔						
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
	S420		✔		✔	✔	✔	✔	✔	✔
	S460				✔	✔	✔	✔	✔	
	S500				✔	✔	✔			

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	2.3
Solidification speed	Medium
Density (kg/dm³)	1.3
Grain size (ISO 14174)	2 - 20

SUGGESTIONS FOR USE

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

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Plastic pail	22.7

8500

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A FB 1 54 AC H5	**8500 / L-61**	F7A6/F6P8-EM12K	S 38 4 FB S2Si	S 4T 0 FB S2Si
	8500 / L-50M (LNS 133U)	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	S 42 6 FB S2Ni2*	
	8500 / LNS 165 (LA85)	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/2YT	
L-50M (LNS 133U)	A3YT/A5YM	3YT/5YM	5Y40M/3Y40T	5Y40M/3Y40T		
LNS 140A (L-70)		3YM			3Y40M/4Y40T	3YM/4YT

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		
L-50M (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		1.0
LNS 162	0.08	1.0	0.1	0.02	0.015		2.0
LNS 165 (LA 85)	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/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	-40°C	-60°C
L-61	MR	430	510	28	150	100	50
L-50M (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 (LA 85)	AW	530	600	25		120	50
	SR	480	580	30		120	50
LNS T55	AW	530	620		120	80	
	SR	500	570			70	

* MR : Multirun - TR : Two-run - AW : As welded - SR : Stress relieved

8500: rev. C-EN24-01/02/16

8500

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun												
		L-61	L-50M (LNS 133U)		LNS 140A (L-70)		LNS 160		LNS 162		LNS 165		LNS T55	
		AW	AW	SR	AW	SR	AW	SR	AW	SR	AW	SR	AW	SR
Ship plates														
	A to E	✔	✔	✔									✔	✔
	AH(32),DH(36), EH(36)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
General structural steels														
EN 10025 part 2	S185, S235, S275	✔	✔	✔									✔	✔
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cast steels														
EN 10213-2	GP240R	✔	✔	✔									✔	✔
Pipe materials														
EN 10208-2	L210, L240, L290	✔	✔	✔									✔	✔
	L360	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	L415		✔		✔	✔					✔	✔	✔	✔
	L445, L480										✔	✔		
API 5LX	X42, X46	✔	✔	✔										
	X52	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	X56, X60		✔		✔	✔					✔	✔	✔	✔
	X65, X70										✔	✔		
EN 10216-1/10217-1	P235, P275	✔	✔	✔									✔	✔
	P355	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Boiler & pressure vessel steels														
EN 10028-1	P235GH, P265GH, P295GH	✔	✔	✔	✔	✔								
Fine grained steels														
EN 10025 part 3/4	S275	✔	✔	✔									✔	✔
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	S420		✔		✔	✔					✔	✔	✔	✔
	S460										✔	✔		

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	2.8
Solidification speed	Medium
Density (kg/dm^3)	1.3
Grain size (ISO 14174)	2 - 20

SUGGESTIONS FOR USE

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

PACKAGING AND AVAILABLE SIZES

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

860

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AB 1 56 AC H5	**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 / L-61	F7A2-EM12K	S 38 2 AB S2Si	S 3T 0 AB S2Si
	860 / L-50M (LNS 133U)	F7A2/F7P2-EH12K	S 42 2 AB S3Si	
	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 163	F7A4-EG-G	S 42 4 AB S2Ni1Cu	
	860 / LNS T55	F7A2/F7P4-EC1	S 50 3 AB SZ	

GENERAL DESCRIPTION

Multi purpose neutral agglomerated flux
Good impact values in both multi-run (with L-60/L-61/L-50M) and two-run (with LNS 140A) techniques
High restraint cracking resistant

APPROVALS

Wire grade	BV	ABS	LRS	DNV	GL	RMRS	RINA	CRS	TÜV
L-60									✔
LNS 135					3M/3T				✔
L-61	A3YM/A2YT	YM/2YT	3YM/2YT	3YM/2YT	3YM/2YT	3YM/2YT	3M/3YM/2YT	3YM/2YT	✔
LNS 140A (L-70)	A3YTM		3Y40M/3YT	3Y40TM	3YM/2YT				✔
LNS 150									✔
LNS 163									✔

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	0.10	1.2	0.3	<0.025	<0.020	
L-50M (LNS 133U)	0.07	1.7	0.5	<0.025	<0.020	
LNS 140A (L-70)	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/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) 0°C	Impact ISO-V(J) -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
L-50M (LNS 133U)	AW	460	530	28	120	80
	SR	420	520			115
LNS 140A (L-70)	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. C-EN24-01/02/16

860

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun								
		L-60	LNS 135	L-61	L-50M (LNS 133U)		LNS 140A (L-70)		LNS T55	
		AW	AW	AW	AW	SR	AW	SR	AW	SR
Ship plates										
	A to D	✔	✔	✔	✔		✔			
	AH(32),DH(36), DH(40)	✔			✔	✔	✔	✔	✔	✔
General structural steels										
EN 10025 part 2	S185, S235, S275	✔	✔	✔	✔	✔				
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cast steels										
EN 10213-2	GP240R	✔	✔	✔	✔	✔				
Pipe materials										
EN 10208-2	L210, L240, L290	✔	✔	✔	✔	✔				
	L360	✔	✔	✔	✔	✔	✔	✔	✔	✔
	L415				✔		✔	✔	✔	✔
	L445, L480						✔	✔		
API 5LX	X42, X46	✔	✔	✔	✔	✔				
	X52	✔	✔	✔	✔	✔	✔	✔	✔	✔
	X56, X60				✔		✔	✔	✔	✔
	X65, X70						✔	✔		
EN 10216-1/10217-1	P235, P275	✔	✔	✔	✔	✔				
	P355	✔	✔	✔	✔	✔	✔	✔	✔	✔
Boiler & pressure vessel steels										
EN 10028-1	P235GH, P265GH, P295GH	✔	✔	✔	✔	✔	✔	✔	✔	✔
	P355GH	✔	✔	✔	✔					
Fine grained steels										
EN 10025 part 3/4	S275	✔	✔	✔	✔	✔				
	S355	✔	✔	✔	✔	✔	✔	✔	✔	✔
	S420				✔		✔	✔	✔	✔
	S460						✔			
High yield strength steels										
EN 10025 part 6	S460, S500						✔			

FLUX CHARACTERISTICS

Current type	DC/AC
Basicity (Boniszewski)	1.1
Solidification speed	High
Density (kg/dm^3)	1.4
Grain size (ISO 14174)	1 - 16

PACKAGING AND AVAILABLE SIZES

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

888

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**
S A FB 1 66 AC H5	**888 / L-61**	F7A6-EM12K	S 38 5 FB S2Si
	888 / L-50M (LNS 133U)	F7A8/F6P8-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	S 42 5 FB S2Ni1*
	888 / LNS 162	F7A8/F7P8-ENi2-Ni2	S 42 6 FB S2Ni2*
	888 / LNS 164	F9A6/F9P4-EF3-F3	S 50 4 FB S3Ni1Mo
	888 / LNS 165	F8A6/F7P8-ENi5-Ni5	S 50 4 FB Sz
	888 / LNS 150	F7P6-EB2-B2	S 50 2 FB CrMo1
	888 / LNS 151	F8P6-EB3-B3	
	888 / LA-100	**F10A4-EM2-M2**	**S 50 4 FB SZ**

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 12 ppm with LNS150 & LNS151 wires
Excellent in multi arc configurations
Only available in Sahara ReadyBag™

APPROVALS

Wire grade	TÜV
L-61	✔

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				
L-50M (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
LA-100	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/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	-40°C	-50°C	-60°C
L-61	AW	415	515	31		135	100	
L-50M (LNS 133U)	AW	480	580	29			90	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	AW	650	750	21		65		30
	SR	610	700	23		65		30
LNS 165	AW	530	620	26		70		40
	SR	495	595	27				70
LNS 150	SR	420	580	26	100			
LNS 151	SR	530	645	23				
LA-100	AW	680	760	25		50		

* AW : As welded - SR : Stress relieved

All information in this data sheet is accurate to the best of our knowledge at the time of printing. Please refer to www.lincolnelectric.eu for any updated information.
Fumes: Safety Data Sheets (SDS) are available on our website.

888

EXAMPLES OF MATERIALS TO BE WELDED

Steel grades/Code	Type	Multirun													
		L-61	L-50M (LNS 133U)		L-70	LNS 164	LNS 165		LNS 150	LNS 151	LNS 160		LNS 162		LA 100
		AW -50°C	AW -60°C	SR-60°C	AW	AW-40°C	AW-40°C	SR-60°C	SR-50°C	SR-50°C	AW	SR	AW	SR	AW-40°C
Ship plates															
	A to E	✔	✔	✔											
	AH(32),DH(36), EH(36)	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	
General structural steels															
EN 10025 part 2	S185, S235, S275	✔	✔	✔											
	S355	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	
Cast steels															
EN 10213-2	GP240R	✔	✔	✔											
Pipe materials															
EN 10208-2	L210, L240, L290	✔	✔	✔											
	L360	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	
	L415		✔			✔	✔	✔							
	L445, L480					✔	✔	✔							
EN 10216-1/10217-1	P235, P275	✔	✔	✔											
	P355	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	
Boiler & pressure vessel steels															
EN 10028-1	P235GH, P265GH, 295GH	✔	✔	✔											
EN 10028-2 (High temperature steel)	16 Mo 3				✔										
	13CrMo 4-5								✔	✔					
	10CrMo 9-10								✔	✔					
EN 10028-4/10222-3 (Low temperature steel)	11MnNi5-3, 13MnNi6-3						✔	✔			✔	✔	✔	✔	✔
Fine grained steels															
EN 10025 part 3/4	S275	✔	✔	✔											
	S355	✔	✔	✔		✔	✔	✔			✔	✔	✔	✔	
	S420		✔			✔	✔	✔					✔	✔	
	S460					✔	✔	✔							
High yield strength steels															
EN 10025 part 6	S460, S500					✔	✔	✔			✔	✔	✔	✔	

FLUX CHARACTERISTICS

Current type	AC / DC
Basicity (Boniszewski)	2.3
Solidification speed	High
Grain size (ISO 14174)	2 - 20

SUGGESTIONS FOR USE

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

PACKAGING AND AVAILABLE SIZES

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

960

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AB 1 66 AC H5	**960 / L-61**	F7A2-EM12K	S 38 2 AB S2Si	S 3T 2 AB S2Si
	960 / L-50M (LNS133 U)	F7A2-EH12K	S 38 2 AB S3Si	S 3T 2 AB S3Si
	960 / LNS 163	F7A4-EG-G	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	<0.03	<0.025
L-50M(LNS 133U)	0.07	1.6	0.6	<0.03	<0.025

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	Impact ISO-V(J) -40°C
L-61	AW	420	510	28	50	
L-50M(LNS 133U)	AW	430	530	28	70	
LNS 163	AW	460	540	27		55

* AW : As welded

960: rev. C-EN24-01/02/16

960

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun		Two-run	
		L-61	L-50M (LNS 133U)	L-61	L-50M (LNS 133U)
Ship plates					
	A to E	✔	✔	✔	✔
	AH(32),DH(36), EH(36)	✔	✔	✔	✔
General structural steels					
EN 10025 part 2	S185, S235, S275	✔	✔	✔	✔
	S355	✔	✔	✔	✔
Cast steels					
EN 10213-2	GP240R	✔	✔	✔	✔
Pipe materials					
EN 10208-2	L210, L240, L290	✔	✔	✔	✔
	L360	✔	✔	✔	✔
	L415		✔		
API 5LX	X42, X46	✔	✔	✔	✔
	X52	✔	✔	✔	✔
	X56, X60		✔		
EN 10216-1/10217-1	P235, P275	✔	✔	✔	✔
	P355	✔	✔	✔	✔
Boiler & pressure vessel steels					
EN 10028-1	P235GH, P265GH, P295GH	✔	✔	✔	✔
	P355GH	✔	✔	✔	✔
Fine grained steels					
EN 10025 part 3/4	S275	✔	✔	✔	✔
	S355	✔	✔	✔	✔
	S420		✔		

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	1.0
Solidification speed	high
Density (kg/dm³)	1.4
Grain size (ISO 14174)	1 -16

SUGGESTIONS FOR USE

Wire	Characteristics
L-61	General purpose
L-50M(LNS 133U)	For dirty plates

Applications
Butt welds (single pass and multi-run)
Fillet welds

PACKAGING AND AVAILABLE SIZES

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

980

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AR/AB 1 57 AC H5	**980 / L-61**	F7A2-EM12K	S 38 2 AR/AB S2Si	S 3T 2 AR/AB S2Si
	980 / L-50M (LNS 133U)	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	<0.02	<0.02
L-50M(LNS 133U)	0.07	1.7	0.4	<0.02	<0.02

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C
L-61	MR	420	520	29	50
L-50M(LNS 133U)	MR	460	550	29	60

* MR : Multirun

980: rev. C-EN25-01/02/16

980

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multirun	
		L-61	L-50M (LNS 133U)
Ship plates			
	A to E	✔	✔
	AH(32),DH(36), EH(36)	✔	✔
General structural steels			
EN 10025 part 2	S185, S235, S275	✔	✔
	S355	✔	✔
Cast steels			
EN 10213-2	GP240R	✔	✔
Pipe materials			
EN 10208-2	L210, L240, L290	✔	✔
	L360	✔	✔
	L415		✔
API 5LX	X42, X46	✔	✔
	X52	✔	✔
	X56, X60		✔
EN 10216-1/10217-1	P235, P275	✔	✔
	P355	✔	✔
Boiler & pressure vessel steels			
EN 10028-1	P235GH, P265GH, P295GH	✔	✔
	P355GH	✔	✔
Fine grained steels			
EN 10025 part 3/part 4	S275	✔	✔
	S355	✔	✔
	S420		✔

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	0.6
Solidification speed	high
Density (kg/dm^3)	1.4
Grain size (ISO 14174)	1 -16

SUGGESTIONS FOR USE

Wire	**Applications**
L-61	Lower cost combination
L-50M(LNS 133U)	For the best operating characteristics For the best impact values in multi-pass

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25

995N

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.23**	**ISO 14171-A : TR**
S A AB 1 67 AC H5	**995N / LNS 140A**		S 4T 2 AB S2Mo
	995N / LNS 140TB (LA-81)	F9TA6-G-EA2TiB	S 5T 5 AB S2MoTiB
	995N / LNS 133TB	F9TA6-G-EG	

GENERAL DESCRIPTION

Neutral agglomerated flux designed for longitudinal multi-arc welding pipe mill station
High end pipe mill 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%), TYPICAL, ALL WELD METAL

Base material	Wire grade	C	Mn	Si	P	S	Mo	Ti	B	N
X65	LNS 140A (L-70)	0.07	1.45	0.3	<0.025	<0.025	0.2	-	-	0.005
X80	LNS 140TB (LA-81)	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/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	-40°C	-50°C	-60°C	Hardness
Procedure 1									
LNS 140A (L-70)	TR	580	680	30	95	65			230
LNS 140TB (LA-81)	TR	630	700	27	115	75	50		235
Procedure 2									
LNS 140TB (LA-81)	TR	600	720	25	100	65		45	220-235
Procedure 3									
LNS 133TB	TR	600	700	27		120		90	

Remark: the mechanical properties from butt welds in pipe depends on the chemical composition of base material.
Procedure 1: tandem in 12,5mm X65; Procedure 2: multiwire weld (4/5 wires) in 19-25mm X65 ; Procedure 3 : AWS test plate

* TR : Two-run

995N: rev. C-EN25-15/07/15

995N

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Two-run		
		LNS 140TB (LA-81)	LNS 140A (L-70)	LNS 133TB
Ship plates				
	A to E	✔	✔	✔
	A 32 to FH40	✔	✔	✔
General structural steels				
EN 10137	500 to 550 A & AL	✔	✔	✔
EN 10025 part 3/4	S275 to S460 all qualities	✔	✔	✔
EN 10149	S315 to S650 all qualities	✔	✔	✔
EN 10025 part 2	S185 to S355 all qualities	✔	✔	✔
	E295 to E360	✔	✔	✔
Boiler & pressure vessel steels				
EN 10028	P235 to P460G all qualities	✔	✔	✔
	P235 to P275		✔	✔
	A37 to A52 all qualities	✔	✔	✔
	PF24 to PF36 all qualities	✔	✔	✔
	P265 to P460 all qualities	✔	✔	✔
	A37 to A52, CP	✔	✔	✔
	X42 to X70	✔	✔	✔
	X42 to X80	✔		✔

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	1.3
Solidification speed	Medium
Density (kg/dm³)	1.0
Grain size (ISO 14174)	2 -20

SUGGESTIONS FOR USE

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

PACKAGING AND AVAILABLE SIZES

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

998N / 998N-P

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.23**	**ISO 14171-A : TR**
S A AB 1 67 AC H5	**998N / LNS 140A**		S 4T 2 AB S2Mo
	998N / LNS140TB (LA-81)	F9TA6-G-EA2TiB	S 5T 5 AB S2MoTiB
	998N / LNS133TB	F9TA6-G-EG	

GENERAL DESCRIPTION

Flux designed for longitudinal multi-arc welding pipe mill station also suitable for spiral welds
High end pipe mill 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
998N-P is a coarser size distribution of 998N for flux consumption reduction

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

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

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/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	-40°C	-50°C	-60°C	Hardness
Procedure 1									
LNS 140A (L-70)	AW	570	680	27					230
LNS 140TB (LA-81)	AW	610	700	27	115	75	50		235
Procedure 2									
LNS 140TB (LA-81)	AW	640	730	24	160	120	90	70	220-235
Procedure 3									
LNS 133TB	TR	610	730	26			120	80	

Remark: the mechanical properties from butt welds in pipe depends on the chemical composition of base material.
Procedure 1: tandem in 12,5mm X65; Procedure 2: multiwire weld (4/5 wires) in 19-25mm X65 ; Procedure 3 : AWS test plate

* AW : As welded

998N: rev. C-EN24-01/02/16

998N / 998N-P

EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Two-run		
		LNS 140TB (LA-81)	LNS 140A (L-70)	LNS 133TB
Ship plates				
	A to E	✔	✔	✔
	A 32 to FH40	✔	✔	✔
General structural steels				
EN 10137	500 to 550 A & AL	✔	✔	✔
EN 10025 part 3/4	S275 to S460 all qualities	✔	✔	✔
EN 10149	S315 to S650 all qualities	✔	✔	✔
EN 10025 part 2	S185 to S355 all qualities	✔	✔	✔
	E295 to E360	✔	✔	✔
Boiler & pressure vessel steels				
EN 10028	P235 to P460G all qualities	✔	✔	✔
	P235 to P275	✔	✔	✔
	A37 to A52 all qualities	✔	✔	✔
	PF24 to PF36 all qualities	✔	✔	✔
	P265 to P460 all qualities	✔	✔	✔
	A37 to A52, CP	✔	✔	✔
	X42 to X70	✔	✔	✔
	X42 to X80	✔		

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	1.3
Solidification speed	fast
Density (kg/dm^3)	1.3
Grain size (ISO 14174)	2 -20

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Metal drum	200
Big Bag	500 / 600 / 1000

P223

CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : TR**
S A AB 1 67 AC H5	**P223 / L-61**	F7A4-EM12K	S 4T 2 AB S2Si
	P223 / L-50M (LNS 133U)	F7A5-EH12K	S 4T 2 AB S3Si
	P223 / LNS 140A	F8A4-EA2-A2	S 4T 4 AB S2Mo
	P223 / LNS 133TB	F8TA4-G-EG	

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
Fine grain version available for the thinest wall and fastest welding speed

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo	Ni
L-61	0.08	1.4	0.2	<0.02	<0.015		
L-50M (LNS 133U)	0.07	1.7	0.3	<0.02	<0.015		
LNS 140A (L-70)	0.08	1.4	0.2	0.03	<0.025	0.4	
LNS 160	0.07	1.3	0.25	0.02	0.015		1.0
LNS 162	0.08	1.3	0.25	0.02	0.015		2.0
LNS 165 (LA-85)	0.07	1.5	0.3	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/mm²)	Tensile strength (N/mm²)	Impact ISO-V(J) -20°C	Impact ISO-V(J) -40°C
L-61	TR	450	550	60	
L-50M (LNS 133U)	TR	470	570	80	
LNS 140A (L-70)	TR	500	600		50
LNS 133TB	TR	510	610		60

* TR : Two-run

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EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Two-run	
		LNS 140A (L-70)	LNS 133TB
General structural steels			
EN 10025 part 6	500A	✔	✔
EN 10025 part 3/part 4	S275 to 460 N, NL	✔	✔
EN 10149	S315 to S500MC & NC	✔	✔
EN 10025 part 2	S185, S235, S275, S355	✔	✔
Pipe material			
API 5LX	X 42 to X70	✔	✔
Boiler & pressure vessel steels			
EN 10028-1	P235 to P460 all qualities	✔	✔
EN 10207	P235 to P275 S & SL	✔	✔
A36-601 & NF A36-605	A37 to A52 CP, AP & F	✔	✔
EN 10222	P285 & P420 all qualities	✔	✔
Offshore plates			
A36-212	PF 24 to PF 36 all qualities	✔	✔

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	1.6
Solidification speed	High
Density (kg/dm^3)	1.2
Grain size (ISO 14174)	2 -20

SUGGESTIONS FOR USE

Single/ multi wire welding
Longitudinal and spiral pipe welding.

PACKAGING AND AVAILABLE SIZES

Unit	Net weight (kg)
Bag	25
Sahara ReadyBag™ (SRB)	25
Big Bag	500
Big Bag	600
Big Bag	100

P230

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**	**ISO 14171-A : TR**
S A AB 1 67 AC H5	**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 / L-50M (LNS 133U)	F7A5/F7P5-EH12K	S 46 5 AB S3Si	
	P230 / LNS 140A	F8A4-EA2-G	S 46 4 AB S2Mo	S 4T 4 AB S2Mo
	P230 / L-70	F8A4-EA1-G	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	

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		4YTM	4YTM				4YTM	X
L-50M (LNS 133U)	A4YM/A3YT		4Y40M/3Y40T	4YM				X
LNS 140A (L-70)	A4YTM	4YTM/2YT	4YM		4Y40TM	3YTM	4YTM	X
LNS 135								X
LNS 160								X
LNS 162								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	<0.03	<0.02		
LNS 135	0.07	1.4	0.25	<0.03	<0.02		
L-50M (LNS 133U)	0.08	1.8	0.5	<0.03	<0.02		
LNS 140A (L-70)	0.07	1.4	0.3	<0.03	<0.02	0.5	
LNS 160	0.07	1.4	0.3	<0.03	<0.02		1.1
LNS 162	0.08	1.2	0.3	<0.03	<0.02		2.1
LNS T55	0.07	1.8	0.8	0.02	0.015		

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	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	
L-50M (LNS 133U)	AW	480	580	30		80	
	SR	460	540	28		70	
LNS 140A (L-70)	MR	540	620	28	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 : Multirun - TR : Two-run - AW : As welded - SR : Stress relieved

P230-1: rev. C-EN25-11/05/16

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EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multi-run			
		LNS 135	L-61	L-50M (LNS 133U)	LNS 140A (L-70)
Ship plates					
	A to D	✔	✔	✔	✔
	AH(32),DH(40)	✔	✔	✔	✔
General structural steels					
EN 10025 part 6	500A				✔
EN 10025 part 3/part 4	S275 to 460 N, NL	✔	✔	✔	✔
	S275 to 420 N, NL, M & ML		✔	✔	✔
	S275 to 460 N, NL, M & ML			✔	✔
EN 10149	S315 & S355 MC & NC	✔	✔	✔	✔
	S315 to S420MC & NC		✔	✔	✔
	S315 to S460MC & NC			✔	✔
	S315 to S500MC & NC				✔
Boiler & pressure vessel steels					
EN 10028-2	P295GH, P355GH, 16Mo3	✔	✔		
EN 10022-2	17Mo3, 14Mo6	✔	✔		

FLUX CHARACTERISTICS

Current type	DC (+/-)/AC
Basicity (Boniszewski)	1.6
Solidification speed	High
Density (kg/dm³)	1.2
Grain size (ISO 14174)	2 -20

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.

PACKAGING AND AVAILABLE SIZES

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

P230

CLASSIFICATION

Flux	Flux/wire			
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A / ISO 26304**	**ISO 21952-A**
S A AB 1 67 AC H5	**P230 / LNS 150**	F8P2-EB2-B2R		S CrMo1
	P230 / LNS 151	F9PZ-EB3-B3R		S CrMo2
	P230 / LNS 163		S 38 4 AB S2 NiCu	
	P230 / LNS 164	F9A6-EF1*-F3	S 50 4 AB S3NiMo1	
	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	✔

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo	Ni	Cr	Cu
LNS 150	0.08	1.1	0.3	<0.02	<0.01	0.5		0.9	
LNS 151	0.12	0.8	0.3	<0.02	<0.01	1.0		2.6	
LNS 163	0.07	1.1	0.6	<0.02	0.02		0.7		0.7
LNS 164	0.07	1.5	0.3	<0.02	<0.01	0.5	1.0		
LNS 168	0.09	1.7	0.4	<0.02	<0.02	0.4	2.4	0.25	

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) 0°C	-20°C	-40°C
LNS 150	SR	535	620	25	70	90**	60**
LNS 151	SR	560	640	24		30	
LNS 163	AW	450	600	20	60	70	
LNS 164	AW	630	710	22	90	80	50
	SR	630	710	24	70	60	35
LNS 168	AW	710	840	20		65	min. 47

* SR : Stress relieved - AW : As welded - **SR = 2h/720°C

P230-2: rev. C-EN25-11/05/16

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EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	LNS 150	LNS 151	LNS 164	LNS 168
Pipe materials					
EN 10208-2	L415			✔	
	L445, L480			✔	
API 5LX	X56, X60			✔	
	X65, X70			✔	
Gaz de France	X63			✔	
Boiler & pressure vessel steels					
EN 10028-2	13CrMo 4-5	✔	✔		
High temperature steel	10CrMo 9-10	✔	✔		
EN 10028-4/10222-3	13MnNi6-3				
Low temperature steel	11MnNi5-3				
Fine grained steels					
EN 10025 part 3/part 4	S420			✔	
EN 10025 part 6	S460			✔	
High yield strength steels					
EN 10025 part 6	S460, S690				✔

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	1.6
Solidification speed	High
Density (kg/dm³)	1.2
Grain size (ISO 14174)	2 -20

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.

PACKAGING AND AVAILABLE SIZES

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

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CLASSIFICATION

Flux	Flux/wire		
ISO 14174		**AWS A5.17 / A5.23**	**ISO 14171-A : MR**
S A FB 1 55 AC H5	**P240 / L-61 (LNS129)**	F7A6-EM12K	S 42 4 FB S2Si
	P240 / L-50M (LNS133U)	F7A8/P8-EH12K	S 42 6 FB S3Si
	P240 / LNS 160	F7A10/P10-ENi1-Ni1	S 46 6 FB S2Ni1*
	P240 / LNS 162	F7A10/P10-ENi2-Ni2	S 46 6 FB S2Ni2*
	P240 / LNS 165 (LA-85)	F8A8/P8-ENi5-Ni5	S 50 6 FB Sz
	P240 / LNS 150 (LA-92)	F8P2-EB2-B2R	
	P240 / LNS 151 (LA-93)	F9P0-EB3-B3R	
	P240 / LNS 168	F10A5-EM2-M2	S 69 4 FB S3NiCr2.5Mo

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	BV	ABS	LRS	DNV	CRS	TÜV
L-50M (LNS 133U)	A5YM	5YM	5YM	5YM	5YM	✔
LNS 162						✔
LNS 160						✔
LNS 164						✔
LNS 165		5Y46M	5Y46M	5Y46M		
LNS 168			4Y69			

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	P	S	Mo	Ni	Cr
L-61	0.08	1.0	0.35	< 0.010	< 0.010			
L-50M (LNS 133U)	0.08	1.6	0.35	< 0.020	< 0.015			
LNS 160	0.08	1.0	0.25	< 0.020	< 0.015		1.0	
LNS 162	0.08	1.01.3	0.25	< 0.020	< 0.015		2.2	
LNS 165	0.08	1.2	0.35	< 0.020	< 0.015	0.15	0.9	
LNS 150	0.08	0.7	0.3	< 0.015	< 0.010	0.15		1.1
LNS 151	0.10	1.5	0.3	< 0.015	< 0.010	1.0		2.5
LNS 168	0.08		0.4	< 0.015	< 0.015	0.4	2.4	0.3

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J) -20°C	-40°C	-50°C	-60°C
L-61	AW	440	530	30	115	75		
L-50M (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	SR	520	610	24				100
LNS 151	SR	550	640	24				50
LNS 168	AW	720	800	20			55	

AW : As welded - SR : Stress relieved

P240: rev. C-ENZ76-11/05/16

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EXAMPLES OF MATERIALS TO BE WELDED

Code	Type / Steel grades	Multi-run					
		L-50M (LNS 133U)	LNS 160	LNS 162	LNS 165	LNS 150	LNS 151
Ship plates							
	A to E	✔	✔	✔	✔		
	AH32 to EH40	✔	✔	✔	✔		
General structural steels							
EN 10025 part 6 (A 36-204)	500 A & AL				✔		
EN 10025 part 3/part 4	S275 to S460 all qualities	✔	✔	✔	✔		
EN 10149 (A36-231)	S315 & S355 MC & NC	✔	✔	✔	✔		
	S315 to S500 MC & NC				✔		
EN 10025 part 2	S185 to E360 all qualities	✔	✔	✔	✔		
Boiler & pressure vessel steels							
EN 10028 (A 36-205)	P235 to P460 all qualities	✔	✔	✔	✔		
EN 10207 (A36-220)	P235 to P275 all qualities	✔	✔	✔	✔		
A36-601 & NF A36-605	A37 to A52 all qualities	✔	✔	✔	✔		
EN 10028-2	13CrMo 4-5					✔	✔
(Elevated temperature steel)	10CrMo 9-10					✔	✔
Steel for dangerous material transportation							
A 36-215	P265 to P460 all qualities	✔	✔	✔	✔		
Low temperature steels							
A 36-215	P285 to P420 all qualities	✔	✔	✔	✔		

FLUX CHARACTERISTICS

Current type	DC / AC
Basicity (Boniszewski)	3.0
Density (kg/dm³)	1.1
Grain size (ISO 14174)	2 -20

SUGGESTIONS FOR USE

Boiler and pressure vessels
Off-shore applications
Nuclear components
Low temperature applications
Highly restraint constructions

PACKAGING AND AVAILABLE SIZES

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

P2000

CLASSIFICATION

Flux	Wire					
ISO 14174		**ISO 14343-A**	**AWS A5.9/A5.9M**		**ISO 18274**	**AWS A5.14/ A5.14M**
S A AF 2 64 DC H5	**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 NiCro 70/19**	S Ni 6082	ERNiCr-3
	LNS 4462	S 22 9 3 N L	ER2209			
	LNS 318	S 19 12 3 Nb	ER318			
	LNS 347	S 19 9 Nb	ER347			
	LNS Zeron® 100X	S 25 9 4 N L	ER2594			
	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 307	S 18 8 Mn	ER307*			

GENERAL DESCRIPTION

Stainless steel welding flux
Excellent slag release
Low flux consumption
Favorite choice with duplex and stabilized grades

APPROVALS

Wire grade	TÜV
LNS 304L	✔
LNS 316L	✔
LNS 318L	✔
LNS 347	✔
LNS 4455	✔

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	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 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		

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	Elongation (%)	Impact ISO-V(J)			
					+20°C	-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 347	AW	470	620	30	90			35
LNS 4455	AW	360	640	30				
LNS 310	AW	440	600	28				

AW : As welded

P2000: rev. C-EN25-10/01/16

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EXAMPLES OF MATERIALS TO BE WELDED

AISI	Mat.nr.	EN 10088-1/2	ASTM/ACI	UNS	Wire
304L	1.4306	X2CrNi19-11	(TP) 304L	S30403	LNS 304L
304LN	1.4311	X2CrNiN18-10	(TP) 304LN	S30453	LNS 304L
316LN	1.4406	X2CrNiMoN17-11-2	(TP) 316LN	S31653	LNS 316L
316L	1.4404	X2CrNiMo17-12-2	(TP) 316L	S31603	LNS 316L
316L	1.4435	X2CrNiMo18-14-3	(TP) 316L	S31603	LNS 316L
316LN	1.4429	X2CrNiMoN17-13-3			LNS 316L
304	1.4301	X4CrNi18-10	(TP) 304	S30409	LNS 304L
321	1.4541	X6CrNiTi18-10	(TP) 321	S32100	LNS 304L/347
316	1.4401	X4CrNiMo17-12-2	(TP) 316	S31600	LNS 316L
316	1.4436	X4CrNiMo17-13-3			LNS 316L
347	1.4550	X6CrNiNb18-10	(TP) 347	S34700	LNS 304L/347
318	1.4580	X6CrNiMoNb17-12-2	316Cb	S31640	LNS 316L/318
318	1.4583	X10CrNiMoNb18-12(DIN)			LNS 316L/318
317LN	1.4439	X2CrNiMoN17-13-5	316LN	S31726	4439Mn
	1.4539	X1NCriMoCu25-20-5			4500
	1.3952	X2CrNiMoN18-14-3(DIN)			4455
	1.4462	X2CrNiMoN22-5-3			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/dm³)	1.2
Grain size (ISO 14174)	2 -20

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

PACKAGING AND AVAILABLE SIZES

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

P2007

CLASSIFICATION

Flux	Wire					
ISO 14174		**ISO 14343-A**	**AWS A5.9/ A5.9M**		**ISO 18274**	**AWS A5.14/ A5.14M**
S A AF 2 64 AC H5	**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 NiCro 70/19**	S Ni 6082	ERNiCr-3
	LNS 4462	S 22 9 3 N L	ER2209			
	LNS 318	S 19 12 3 Nb	ER318			
	LNS 347	S 19 9 Nb	ER347			
	LNS Zeron® 100X	S 25 9 4 N L	ER2594			
	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 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	TÜV
LNS 304L	✔	✔	
LNS 309L	✔	✔	
LNS 316L	✔	✔	
LNS 4462	5YQ550	S31803	✔

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	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 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		

AW : As welded

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MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Condition*	Yield strength (N/mm²)	Tensile strength (N/mm²)	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 Zeron® 100X	AW	670	880	21	70	45		
LNS NiCro 60/20	AW	520	780	40				100
LNS 4439Mn		375	630	33				

EXAMPLES OF MATERIALS TO BE WELDED

AISI	Mat.nr.	EN 10088-1/2	ASTM/ACI	UNS	Wire
304L	1.4306	X2CrNi19-11	(TP) 304L	S30403	LNS 304L
304LN	1.4311	X2CrNiN18-10	(TP) 304LN	S30453	LNS 304L
316LN	1.4406	X2CrNiMoN17-11-2	(TP) 316LN	S31653	LNS 316L
316L	1.4404	X2CrNiMo17-12-2	(TP) 316L	S31603	LNS 316L
316L	1.4435	X2CrNiMo18-14-3	(TP) 316L	S31603	LNS 316L
316LN	1.4429	X2CrNiMoN17-13-3			LNS 316L
304	1.4301	X4CrNi18-10	(TP) 304	S30409	LNS 304L
321	1.4541	X6CrNiTi18-10	(TP) 321	S32100	LNS 304L/347
316	1.4401	X4CrNiMo17-12-2	(TP) 316	S31600	LNS 316L
316	1.4436	X4CrNiMo17-13-3			LNS 316L
347	1.4550	X6CrNiNb18-10	(TP) 347	S34700	LNS 304L/347
318	1.4580	X6CrNiMoNb17-12-2	316Cb	S31640	LNS 316L/318
318	1.4583	X10CrNiMoNb18-12(DIN)			LNS 316L/318
317LN	1.4439	X2CrNiMoN17-13-5	316LN	S31726	4439Mn
	1.4539	X1NCriMoCu25-20-5			4500
	1.3952	X2CrNiMoN18-14-3(DIN)			4455
	1.4462	X2CrNiMoN22-5-3			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/dm³)	1.2
Grain size (ISO 14174)	2 -20

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

PACKAGING AND AVAILABLE SIZES

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

P2000S

CLASSIFICATION

Flux	Wire	
ISO 14174		**ISO 14343-A**
S A AF 2 64Cr DC H5	**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

APPROVALS

Wire grade	TÜV
LNS 309L	✔
LNS 4462	✔

CHEMICAL COMPOSITION (W%), TYPICAL, ALL WELD METAL

Wire grade	C	Mn	Si	Cr	Ni	Mo	N	Cu	W	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	0.1			40-60
LNS Zeron® 100X	0.02	0.5	0.4	26	9	3.7	0.2	0.7	0.6	30-60

MECHANICAL PROPERTIES, TYPICAL, ALL WELD METAL

Wire grade	Yield strength (N/mm²)	Tensile strength (N/mm²)	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

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EXAMPLES OF MATERIALS TO BE WELDED

Dissimilar
Duplex

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

FLUX CHARACTERISTICS

Current type	DC (+/-)
Basicity (Boniszewski)	1.6
Solidification speed	High
Density (kg/dm³)	1.2
Grain size (ISO 14174)	1-16

PACKAGING AND AVAILABLE SIZES

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