

NSSW SF-1E

AWS A5.20 E71T-1C / AWS A5.36 E71T1-C1A2-CS1
EN ISO 17632-A: T 42 2 Z P C 1 H5



General purpose flux cored wire for shipbuilding and structures with 100% CO₂ shielding gas.

General description:

NSSW (Nittetsu) SF-1E is a seamless, rutile flux cored wire for welding with 100% CO₂ shielding gas. Due to the seamless design the wire has an extremely low diffusible hydrogen content, typical 2.7ml/100g weld metal.

The flux cored wire has excellent weldability in all positions and is extremely efficient in the root pass against ceramic backing.

Good penetration in vertical down greatly reduces the risk of imperfections.

It also gives excellent performance against porosity on primed steel plates when using automated

welding such as a fillet welding tractor.

SF-1E has a stable welding arc with less spatter and perfect bead surface.

The flux cored wire has a clean, copper coated surface.

Together with exact diameter and roundness it provides a stable and even wire feeding.

This reduces wear and tear of liners and contact tips.

The wire is classified as a grade 3 (-20 °C).

Recovery(average):88%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Ni				
0,06	0,38	1,20	0,011	0,007	0,30				

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (2,7 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -20 °C	
530	590	27	100	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm	1,4 mm	
Ampere / Volt	180-300A / 22-32V	250-350A / 25-33V	

Packaging information:

1,2mm x 5,0kg spool D200
1,2mm x 12,5kg spool D300
1,4mm x 12,5kg spool D300

Approvals:

DNV-GL, LR, ABS, GL, CWB, CE, PRS

Reference / date:

NSSW SF-1E,
English, 19.05.2015.

NSSW SF-1A

AWS A5.20 E71T-1M / AWS A5.36 E71T1-M21A2-CS1
EN ISO 17632-A: T 42 2 Z P M 1 H5



General purpose flux cored wire for shipbuilding and structures with impact test req. at -20 °C.

General description:

NSSW (Nittetsu) SF-1A is a seamless rutile flux cored wire for welding with Argon/CO₂ mixed shielding gas. Being seamless it provides welds with very low diffusible hydrogen content, typical 2.8ml/100g weld metal.

The flux cored wire has excellent weldability in all positions and is extremely efficient in the root pass against ceramic backing.

Good penetration in vertical down greatly reduces the risk of imperfections.

It also gives excellent performance against porosity on primed steel plates when using automated welding

such as a fillet welding tractor.

SF-1A has a stable welding arc with less spatter and perfect bead surface.

The flux cored wire has a clean, copper coated surface.

Together with exact diameter and roundness it provides a stable and even wire feeding.

This reduces wear and tear of liners and contact tips.

The wire is classified as a grade 3 (-20 °C).

Recovery(average):89%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu				
0,05	0,41	1,36	0,010	0,008	0,26				

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (2,8 ml/100g typical).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -20 °C	
530	590	28	95	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm	1,4 mm	1,6 mm
Ampere / Volt	180-300A / 22-32V	250-350A / 25-33V	300-400A / 25-35V

Packaging information:

1,0mm x 5,0kg spool D200
1,2mm x 5,0kg spool D200
1,2mm x 12,5kg spool D300
1,2mm x 250kg drum Ø51cm
1,4mm x 12,5kg spool D300
1,4mm x 250kg drum Ø51cm
1,6mm x 12,5kg spool D300
1,6mm x 250kg drum Ø51cm

Approvals:

DNV-GL, LR, ABS, GL, CWB, BV,
PRS, RINA, CE

Reference / date:

NSSW SF-1A,
English, 10.07.2017.

Perfect Welding

www.nst.no

NSSW SF-3E

AWS A5.29 E81T1-GC / AWS A5.36 E81T9-C1A4-CS1
EN ISO 17632-A: T 46 4 Z P C 2 H5



Flux cored wire for low temperature steels with impact requirements down to -40 °C.

General description:

NSSW (Nittetsu) SF-3E is a seamless rutile flux cored wire for welding with 100% CO₂ shielding gas.

The deposited weld metal has excellent mechanical properties down to -40°C.

The wire has a stable arc, minimum spatter, good penetration with excellent visual results.

SF-3E can also be used for root runs against ceramic backing.

Due to its seamless design, the wire has an extremely low hydrogen content which does not pick up moisture from the environment ensuring a very low risk of hydrogen cracks (Typical 3.0ml/100g).

The SF-3E wire has a clean copper coated surface with exact diameter and roundness which ensures stable and even wire feeding.

Mechanical properties have been designed for Charpy impact values ≥ 47 joule at -40 °C.

The wire is CTOD tested.

Recovery(average): 92%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Ni	Mo			
0,05	0,40	1,32	0,015	0,003	0,64	0,01			

Diffusible hydrogen content (ml/100g):

≤ 5 ml/100g (3,0 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	
564	597	29	121	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180–300A / 22-32V		

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV, LR, ABS, CWB, CE

Reference / date:

NSSW SF-3E,
English, 25.03.2015.

NSSW SF-3M

AWS A5.20 E71T-9C-J / AWS A5.36 E71T9-C1A4-CS1
EN ISO 17632-A: T 46 4 Z P C 2 H5



Flux cored wire for carbon steel in e.g. shipbuilding and offshore structures with impact requirements down to -40 °C.

General description:

NSSW (Nittetsu) SF-3M is a seamless rutile flux cored wire designed for shipbuilding and offshore structure welding with 100% CO₂ shielding gas.

The wire is CTOD tested.

The deposited weld metal has excellent mechanical properties down to -40°C.

The wire has a stable arc, minimum spatter, good penetration with excellent visual results.

SF-3M can also be used for root runs against ceramic backing.

Due to its seamless design, the wire has an extremely low hydrogen content which does not pick up moisture

from the environment ensuring a very low risk of hydrogen cracks.

The SF-3M wire has a clean copper coated surface with exact diameter and roundness which ensures stable and even wire feeding.

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂

20-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Ni				
Max. 0,05	Max. 0,42	1,30	Max. 0,013	Max. 0,004	Max. 0,44				

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (3,0 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	
545	595	28	115	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180-300A / 22-32V		

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV, ABS, CE

Reference / date:

NSSW SF-3M,
English, 24.02.2016.

NSSW SF-3A

AWS A5.20 E71T-9M-J / AWS A5.36 E71T9-M21A4-CS1
EN ISO 17632-A: T 46 4 Z P M 1 H5



Flux cored wire for welding carbon steel with impact requirements down to -40 °C.

General description:

NSSW (Nittetsu) SF-3A is a seamless, rutile flux cored wire designed for welding of steel with impact requirements down to -40 °C such as grade E often used in shipbuilding.
The flux cored wire uses a Argon/CO₂ mixed shielding gas which gives good weldability and a stable arc, minimum spatter, good visual bead and even transition to parent material.
Due to the seamless design the wire has an extremely low hydrogen content, (typical of ≤2.8 ml/100g) which greatly reduces the possibility of cold cracks.

SF-3A emits little welding fume and has great weldability in all positions.
The wire has a clean copper coated surface which together with exact diameter and roundness, ensures stable and even wire feeding.
Wire stick out should be between 15-25mm dependent upon the welding parameters.
Voltage should be approx. 10% of the Ampere, which is 1-3 Volts lower than that of which conventional folded flux cored wires require.

Recovery(average): 90%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,05	0,50	1,50	0,010	0,006	0,30	0,35			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (2,8 ml/100g typical).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -20 °C	Charpy V (J) -40 °C
547	612	25	110	70

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180–300A / 22-32V		

Packaging information:

1,2mm x 5,0kg spool D200
1,2mm x 12,5kg spool D300
1,2mm x 250kg drum Ø51cm

Approvals:

DNV, LR, ABS, GL, CWB, DB, TÜV, CE

Reference / date:

NSSW SF-3A,
English, 25.03.2015.

Perfect Welding

www.nst.no

NSSW SF-3AM

AWS A5.29 E81T1-GM
 AWS A5.36 E81T9-M21A8-Ni1-H4
 EN ISO 17632-A: T 46 4 Z P M 2 H5
 EN ISO 17632-A: T 46 6 Z P M 2 H5



Flux cored wire for low-alloyed steel, offshore applications, piping etc.

General description:

NSSW (Nittetsu) SF-3AM is a seamless rutile flux cored wire for welding using Argon/CO₂ mixed shielding gas.
 This ensures a stable welding arc with less spatter, excellent visual bead shape and smooth transition to the base material.
 SF-3AM has acceptable charpy impact values down to -60 °C.
 The flux cored wire is CTOD-tested with good results. Due to the seamless design the wire has an extremely low diffusible hydrogen content (typical 3 ml/100g) which greatly eliminates the risk of hydrogen cracks.

SF-3AM has low visible welding fume and has excellent weldability in all welding positions. The wire has a clean copper coated surface which together with exact diameter and roundness ensures stable and even wire feeding.
 Wire stick out should be between 15-25 mm depending upon welding parameters.
 Voltage should be about 10% of the Ampere, which is about 1-3 Volts lower than that of which conventional folded flux cored wires require.

Recovery(average):94%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,06	0,30	1,27	0,011	0,005	0,26	0,95			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (3,0 ml/100g typical).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	Charpy V (J) -60 °C
550	590	29	128	92

Guidance - Ampere (DC+):

Wire diameter	1,2 mm	1,4 mm	1,6 mm
Ampere / Volt	180-300A / 22-32V	250-350A / 25-35V	280-380A / 25-35V

Packaging information:

1,0mm x 5,0kg D200
 1,2mm x 5,0kg D200
 1,2mm x 12,5kg D300
 1,2mm x 250kg DrumØ51cm
 1,4mm x 12,5kg D300
 1,4mm x 250 kg DrumØ51cm
 1,6mm x 12,5kg D300

Approvals:

DNV, LR, DB, ABS, CWB, PRS, CE

Reference / date:

NSSW SF-3AM,
 English, 02.06.2017.

NSSW SF-3AMSR

AWS A5.29 E71T1-GM

AWS A5.36 E71T9-M21A6-K6-H4 / AWS A5.36 E71T9-M21P6-K6-H4

EN ISO 17632-A: T 42 4 Z P M 2 H5



Flux cored wire for piping and constructions with PWHT requirements.

General description:

NSSW (Nittetsu) SF-3AMSR is a seamless rutile flux cored wire for welding using Argon/CO₂ mixed shielding gas. This ensures a stable welding arc with less spatter, excellent visual bead shape and smooth transition to the base material. SF-3AM has excellent charpy impact values down to -46 °C. Due to seamless design the wire has an extremely low diffusible hydrogen content (typical 3 ml/100g), which greatly eliminates the risk of hydrogen cracks.

SF-3AMSR has low welding fume and excellent operations in all welding positions. Like all other Nittetsu seamless wires the wire has a clean copper coated surface. This combined with exact diameter and roundness ensures a stable and even wire feeding. Stick out should be between 15-25 mm depending upon welding parameters. Voltage should be about 10% of the ampere, which is about 1-3 Volts lower than what conventional folded flux cored wires requires.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,05	0,28	1,25	0,009	0,005	0,27	0,80			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (3,0 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C (AW)	Charpy V (J) -40 °C (PWHT)
AW 528 / PWHT 512	563/ PWHT 565	AW 30 / PWHT 32	125	118

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180–300A / 22-32V		

Packaging information:

1,2mm x 5,0kg D200 / (upon request)
1,2mm x 12,5kg D300

Approvals:

DNV(PWHT), CE

Reference / date:

NSSW SF-3AMSR,
English, 25.03.2015.

Perfect Welding

www.nst.no

NSSW SF-50A

AWS A5.29 E91T1-GM / AWS A5.36 E91T9-M21A4-K2-H4
EN ISO 17632-A: T 50 4 Z P M 2 H5



Flux cored wire for welding high tensile steels such as Weldox 500.

General description:

NSSW (Nittetsu) SF-50A is a seamless rutile flux cored wire developed for welding high tensile steel such as i.e. Weldox 500.

The wire uses an Argon/CO₂ mixed shielding gas, ensuring a user friendly and stable arc with minimum spatter and good transition to the parent material.

SF-50A is CTOD tested with good results.

Due to its seamless characteristic, the wire has an extremely low content of hydrogen (typical 3ml/100g weld metal), something which ensures low risk of cold cracks.

The wire is copper coated and has a clean surface which together with exact diameter and perfect roundness ensures a stable and even wire feeding.

The stick out should be between 15-25mm depending upon welding parameters.

Volts should be 10% of the Amperage, this is about 1-3 volts lower than that of which conventional folded flux cored wires require.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,05	0,48	1,22	0,012	0,005	0,31	1,55			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (2,8 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	
606	657	27	75	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	200–300A / 22-32V		

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV, LR, CE

Reference / date:

NSSW SF-50A,
English, 26.03.2015.

NSSW SF-36E

AWS A5.29 E81T1-GC / AWS A5.36 E81T9-C1A8-K2-H4
EN ISO 17632-A: T 46 6 Z P C 2 H5



Flux cored wire for low temperature steels and offshore constructions etc.

General description:

NSSW (Nittetsu) SF-36E is a seamless rutile flux cored wire for welding using 100% CO₂ shielding gas. The deposited weld metal has excellent mechanical properties down to -60 °C.

The wire has a stable arc, minimum spatter, good penetration with excellent visual result.

SF-36E is also perfect for root runs against ceramic backing.

Due to its seamless design, the wire has a very low hydrogen content which ensures very low risk of cold cracks.

SF-36E has been CTOD tested at -40 °C.

The flux cored wire is copper coated, has a clean surface which together with exact diameter and roundness ensures stable and even wire feeding.

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,04	0,37	1,32	0,016	0,006	0,24	1,53			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (3,0 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	Charpy V (J) -60 °C
570	610	29	112	76

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180–300A / 22-32V		

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV, ABS, LR, BV, CE

Reference / date:

NSSW SF-36E,
English, 25.03.2015.

Perfect Welding

www.nst.no

NSSW SF-47E

AWS A5.29 E81T1-Ni1C-J / AWS A5.36 E81T9-C1A8-Ni1-H4
EN ISO 17632-A: T 46 6 Z P C 2 H5



Rutile low alloyed Flux cored wire for welding in all positions with impact requirements down to -60°C using 100% CO₂ shielding gas.

General description:

NSSW SF-47E is a seamless rutile flux cored wire for welding using 100% CO₂ shielding gas. SF-47E has excellent weldability, visual bead shape and smooth transition to the base material. Due to the seamless design the wire has an extremely low diffusible hydrogen content (typical 3 ml/100g) which greatly eliminates the risk of hydrogen cracks. The wire has a clean copper coated surface which together with exact diameter and roundness ensures stable and even wire feeding.

Wire stick out should be kept app'x 20 mm. SF-47E has very good mechanical properties including charpy impact values down to -60 °C.

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂

18 - 25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,05	0,46	1,31	0,012	0,004	0.29	0,96			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (3,0 ml/100g typical).

Typical Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -60 °C	
545	600	28	70	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	180-300 / 22-32		

Packaging information:

1,2mm x 5,0kg D200
1,2mm x 12,5kg D300

Approvals:

DNV, ABS, CWB, LR.

Reference / date:

NSSW SF-47E,
English, 27.10.2016.

Perfect Welding

www.nst.no

NSSW SF-50E

AWS A5.36. E91T9-C1A8-Ni2-H4
EN ISO 17632-A: T 50 6 Z P C 2 H5



Flux cored wire for welding high tensile steels min. YP 500 Mpa.

General description:

NSSW SF-50E is a seamless rutile flux cored wire developed for welding high tensile steel such as i.e. Weldom 500. The wire is developed for 100% Co₂ (C1) as shielding gas. SF-50E is CTOD tested. Due to its seamless characteristic, the wire has an extremely low hydrogen content (typical 3ml/100g weld metal), something which ensures low risk of cold cracks.

The wire is copper coated and has a clean surface which together with exact diameter and perfect roundness ensures a stable and even wire feeding. The wire stick out should be between 15-25mm

Welding positions:



Welding current:

DC+

Type of gas / flow:

100% CO₂
20-25 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
Max.0,12	Max.0,80	Max.1,50	Max.0,030	Max.0,030	Max.0,40	1,75-2,75			

Diffusible hydrogen content (ml/100g):

≤4 ml/100g

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -60 °C	
Min.537	621-720	Min.18	Min.47	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt			

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV-GL, ABS, BV, CE

Reference / date:

NSSW SF-50E,
English, 30.05.2017.

Perfect Welding

www.nst.no

NSSW SF-80A

AWS A5.36 E111T9-M21A4-G-H4
EN ISO 18276-A: T69 4 Z P M 2 H5



Flux cored wire for welding extra high tensile steels min. YP 690

General description:

NSSW (Nittetsu) SF-80A is a seamless, rutile flux cored wire designed for welding extra high tensile steels with min.690 mpa.
The flux cored wire uses a Argon/CO₂ mixed shielding gas which gives good weldability and a stable arc, minimum spatter, good visual bead and even transition to parent material.
Due to the seamless design the wire has an extremely low hydrogen content (<4 ml/100g) which is very important when welding extra high tensile steels.

The wire has a clean copper coated surface which together with exact diameter and roundness, ensures stable and even wire feeding.
Wire stick out should be between 15-20mm dependent upon the welding parameters.
Mechanical properties are designed for >47 joule at -40°C.

Welding positions:



Welding current:

DC+

Type of gas / flow:

M21 (Ar+CO₂)

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,06	0,46	1,82	0,012	0,005	0,22	2,19			

Diffusible hydrogen content (ml/100g):

≤4 ml/100g

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	
Min. 690	770 - 900	Min. 17	Min. 47	

Guidance - Ampere (DC+):

Wire diameter			
Ampere / Volt			

Packaging information:

1,2mm x 12,5kg D300

Approvals:

DNV-GL ,ABS, LR, CCS, CE

Reference / date:

NSSW SF-80A,
English, 29.05.2017.

Perfect Welding

www.nst.no

Rutile-basic wires for non- and low alloyed steels



NSSW SF-36EA

NSSW SF-36EA

AWS A5.29 E81T1-GM

AWS A5.36 E81T9-M21A6-K6-H4 / AWS A5.36 E81T9-M21P6-K6-H4

EN ISO 17632-A: T 46 4 Z R M 2 H5



Rutile basic flux cored wire for non- and low alloyed steels with tough requirements in restraint joints.

General description:

NSSW (Nittetsu) SF-36EA is a seamless rutile basic flux cored wire for welding of Argon/CO₂ mixed shielding gas. The wire has good weldability with a stable arc, minimum spatter, good penetration and bead appearance. SF-36EA is your choice if you want a safe alternative against cracks and has very good mechanical properties down to -60 °C. Due to its seamless characteristic, the wire has an extremely low content of hydrogen. One of the benefits with this wire is that it has far

better results against cracks in restraint joints than normal rutile wires. The wire can also be used as the root run against ceramic backing. SF-36EA has documented results in PWHT. The wire has approvals in all positions although it is most suitable in PA/PB and PC. The wire has a copper coated smooth surface which together with exact diameter and perfect roundness ensures even and safe wire feeding even with extended conduit cables.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+18-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,06	0,35	1,27	0,007	0,005	0,27	0,85			

Diffusible hydrogen content (ml/100g):

≤5 ml/100g (2,0 ml/100g typical)

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	Charpy V (J) -40 °C (PWHT)
560	620	30	106	75

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt	200-300A/22-30V		

Packaging information:

1,2mm x 12,5kg spool D300
1,2mm x 5kg spool D200

Approvals:

DNV, LR, CE

Reference / date:

NSSW SF-36EA,
English, 26.03.2015.

Metal cored wires for non- and low alloyed steels



NSSW SM-3A

NSSW SM-47A

NSSW SM-80A

NSSW SM-3A

AWS A5.18 E70C-GM / AWS A5.36 E71T15-M21A4-CS1
EN ISO 17632-A: T 42 4 Z M M 1 H5



Metal cored wire without slag for non-alloyed steels and Argon/mix shielding gas.

General description:

NSSW (Nittetsu) SM-3A, is a metal cored seamless wire developed for use with Argon/CO₂ mixed (M21) shielding gas. The wire is designed to be used both for automated and manual welding of horizontal butt welds plus fillet welds in the spray arc range. It can also be used successfully in all positional welding in the short arc range (dip transfer mode). SM-3A consists mainly of metal flux which ensures high productivity. The seamless wire has a stable welding arc with low spatter and excellent visual bead shape. With only minor surface silica isles this greatly reduces re-ignition problems and ensures the welding

of multiple layers without the need for inter run de-slagging.

The metal cored wire has a clean, copper coated surface together with exact diameter and roundness which produces stable and even wire feeding.

This is of great value when long conduit cables are used and when using any automated welding processes.

Mechanical properties have been designed for Charpy impact values ≥ 47 joule at -40 °C.

Recovery(average):95%.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar+8-25% CO₂

18-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu				
0,05	0,56	1,56	0,010	0,013	0,25				

Diffusible hydrogen content (ml/100g):

≤ 5 ml/100g (2 ml/100g typical).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C
520	580	29	70

Guidance - Ampere (DC+):

Wire diameter	1,2 mm	1,4 mm
Ampere / Volt	70-330A / 14-32V	80-420A / 23-35V

Packaging information:

1,2mm x 5,0kg spool D200
1,2mm x 12,5kg spool D300
1,2mm x 250kg drum Ø51cm
1,4mm x 12,5kg spool D300
1,4mm x 250 kg drum Ø51cm

Approvals:

DNV, LR, ABS, BV, GL, DB, CWB, CE

Reference / date:

NSSW SM-3A,
English, 02.06.2017.

Perfect Welding

www.nst.no

NSSW SM-47A

AWS A5.36 E80T15-M21A8-Ni1-H4
EN ISO 17632-A: T 46 6 1Ni M M 1 H5



Metal cored wire for low temperature pipe and steel applications down to -60°C.

General description:

NSSW (Nittetsu) SM-47A, is a 1% Ni alloyed metal cored seamless wire developed for use with Argon/CO₂ mixed (M21) shielding gas. The wire is designed to be used both in the short-arc range (dip transfer mode) for single side root runs and for automated and manual welding of horizontal butt welds plus fillet welds in the spray-arc range.

SM-47A consists mainly of metal flux which ensures high productivity. The seamless wire has a stable welding arc with low spatter and excellent visual bead shape.

The metal cored wire has a clean, copper coated surface together with exact diameter and roundness which produces stable and even wire feeding.

This is of great value when long conduit cables are used and when using any automated welding processes.

Mechanical properties have been designed for Charpy impact values ≥ 47 joule at -60 °C.

Welding positions:



Welding current:

DC+

Type of gas / flow:

Ar + 15-25% CO₂

15-25 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni			
0,07	0,62	1,38	0,013	0,009	0,19	0,92			

Diffusible hydrogen content (ml/100g):

≤ 5 ml/100g (2 ml/100g typical).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	Charpy Impact Test
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	Charpy V (J) -60 °C
539	627	26	112	75

Guidance - Ampere (DC+):

Wire diameter			
Ampere / Volt			

Packaging information:

1,2mm x 5,0kg spool D200
1,2mm x 12,5kg spool D300
1,2mm x 250kg drum Ø51cm
1,4mm x 12,5kg spool D300
1,4mm x 250kg drum Ø51cm

Approvals:

DNV, ABS, PRS, DB, CE

Reference / date:

NSSW SM-47A,
English, 13.07.2017.

Perfect Welding

www.nst.no

NSSW SM-80A

AWS A5.36 E110T15-M21A4-G-H4
EN ISO 18276-A T69 4 Z M M 2 H5



Metal cored wire for welding extra high tensile steels min. 690mpa.

General description:

NSSW SM-80A, is a Ni-Cr-Mo alloyed metal cored seamless wire developed for use with Argon/CO₂ mixed (M21) shielding gas. The wire is designed to be used both in the short-arc range (dip transfer mode) for single side root runs and for automated and manual welding of butt welds and fillet welds in the spray-arc range.

SM-80A consists mainly of metal flux which ensures high productivity. The seamless wire has a stable welding arc with low spatter and excellent visual bead shape.

A clean, copper coated surface together with exact diameter and roundness which secure stable and even wire feeding. This is of great value when long conduit cables are used and when using any automated welding processes.

Mechanical properties have been designed for Charpy impact values ≥ 47 joule at -40 °C.

Welding positions:



Welding current:

DC+

Type of gas / flow:

M21 Ar+CO₂

20-25 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.03 - 0.08	0.20 - 0.60	1.20 - 1.80	Max. 0.020	Max. 0.010	Max. 0.40	2.20 - 2.80	0.30 - 0.70	0.30 - 0.70

Diffusible hydrogen content (ml/100g):

≤ 4 ml/100g.

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -40 °C	
Min. 690	770 - 900	Min. 17	Min. 47	

Guidance - Ampere (DC+):

Wire diameter	1,2 mm		
Ampere / Volt			

Packaging information:

1,2mm x 12,5kg spool D300

Approvals:

DNV-GL, ABS, CE

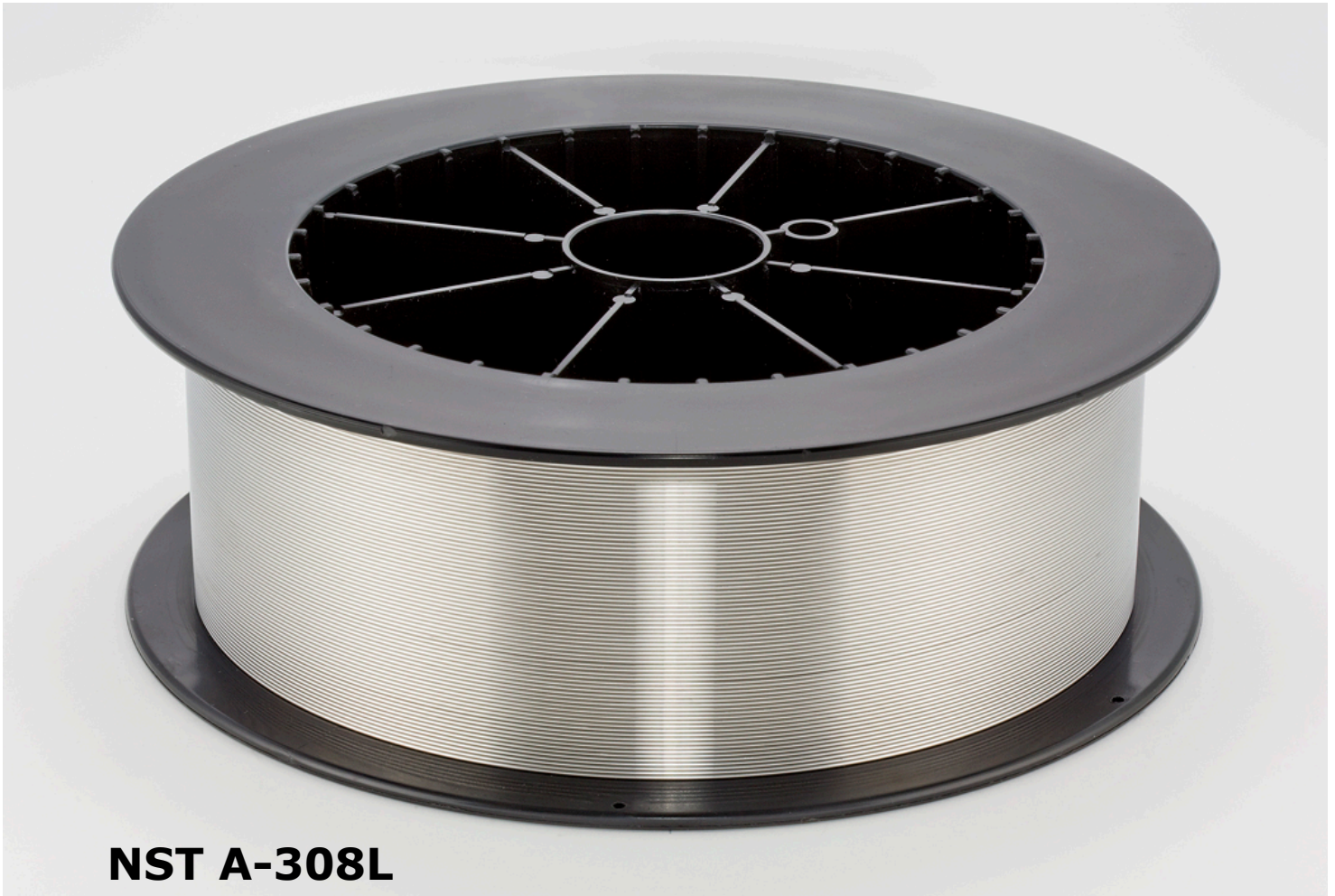
Reference / date:

NSSW SM-80A,
English, 29.05.2017.

Perfect Welding

www.nst.no

Flux cored wires for high alloyed steels



NST A-308L

NST A-309L

NST A-316L

NST A-309MoL

NST 329J3L Duplex

NST 329J3L XLT Duplex

NST FCW A625E

NST 309LT

NST 316LT

NST 309MoLT

NST A-308L

AWS: A5.22-95: E308LT 1-4
 NS EN ISO 17633-A: T 19 9 L P M 1



Flux cored wire for positional welding of corrosion resistant materials such as AISI 304, EN 1.4301 etc.

General description:

NST A-308L is a rutile flux cored wire for positional welding of corrosion resistant materials such as AISI 304 etc.
 The flux cored wire uses an Argon/CO₂ mixed shielding gas.
 This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials.
 The newly developed slag system gives the welder better control of the weld pool and this wire can now be welded without weaving in all positions

It is also suitable for use with ceramic backing for single sided welding.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.024	0.60	1.38	0.020	0.003	0.05	9.79	20.44	0.02

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths		
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %
415	603	38

Guidance - Ampere (DC+):

Electrode diameter		
Ampere / Volt		

Packaging information:

1,2mm x 5,0kg D200
 1,2mm x 12,5kg D300

Approvals:

CE

Reference / date:

NST A-308L,
 English, 04.02.2016.

Perfect Welding

www.nst.no

NST A-309L

AWS: A5.22 -95: E309LT 1-4
 NS-EN ISO 17633-A: T 23 12 L P M1



Flux cored wire for positional welding of corrosion resistant materials against carbon steel, and for cladding of carbon steels.

General description:

NST A-309L is a rutile flux cored wire for positional welding of corrosion resistant materials such as AISI 304 etc. against carbon steel. The flux cored wire uses an Argon/CO₂ mixed shielding gas. This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials. The newly developed slag system gives the welder better control of the weld pool and this wire can now be welded without weaving in all positions

It is also suitable for use with ceramic backing for single sided welding. NST A-309L's chemical composition ensures a weld metal equivalent of AISI 304 in the first layer of a cladding process.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.018	0.58	1.82	0.019	0.002	0.03	12.92	24.17	0.01

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths		
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %
430	562	41

Guidance - Ampere (DC+):

Electrode diameter		
Ampere / Volt		

Packaging information:

1,2mm x 5,0kg D200
 1,2mm x 12,5kg D300

Approvals:

DNV, CE

Reference / date:

NST A-309L,
 English, 04.02.2016.

Perfect Welding

www.nst.no

NST A-316L

AWS: A5.22-95: E316LT 1-4

NS-EN ISO 17633-A: T 19 12 3 L P M1



Flux cored wire for positional welding of corrosion resistant and stainless materials such as AISI 316, EN 1.4404 etc.

General description:

NST A-316L is a rutile flux cored wire for positional welding of corrosion resistant and stainless steel materials such as AISI 316 etc.

The wire can be used with an Argon/CO₂ mixed shielding gas.

This ensures a user friendly and stable welding arc, with less spatter, good visual bead appearance and smooth transition to the parent material.

The newly developed slag system gives the welder better control of the weld pool and this wire can now be welded without weaving in all positions.

It is also suitable for use with ceramic backing for single sided welding.

The flux cored wire can be used on Ti- and Nb-stabilized materials as long as the operating temperature does not exceed 400 °C.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	
0.024	0.51	1.37	0.022	0.005	0.10	11.40	19.25	2.61	

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
436	580	42		

Guidance - Ampere (DC+):

Electrode diameter			
Ampere / Volt			

Packaging information:

0,9mm x 5,0kg D200
1,2mm x 5,0kg D200
1,2mm x 12,5kg D300

Approvals:

DNV, CE

Reference / date:

NST A-316L,
English, 25.10.2016.

Perfect Welding

www.nst.no

NST A-309MoL

AWS: A5.22-95: E309LMoT 1-4

NS-EN ISO 17633-A: T 23 12 2 L P M1



Flux cored wire for positional welding of dissimilar steels, i.e. carbon steel against stainless materials such as AISI 316 etc.

General description:

NST A-309MoL is a rutile flux cored wire for positional welding of stainless materials such as AISI 316 and similar against carbon steel.

The flux cored wire uses an Argon/CO₂ mixed shielding gas.

This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials.

The newly developed slag system gives the welder better control of the weld pool and this wire can now be welded without weaving in all positions.

It is also suitable for use with ceramic backing for single sided welding.

NST A-309MoL is the right choice for cladding carbon steel with a stainless (Mo alloyed) material.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.027	0.57	1.39	0.021	0.006	0.26	12.8	23.28	2.48

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths		
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %
503	653	30

Guidance - Ampere (DC+):

Electrode diameter		
Ampere / Volt		

Packaging information:

0,9mm x 5,0kg D200
1,2mm x 5,0kg D200
1,2mm x 12,5kg D300

Approvals:

DNV, CE

Reference / date:

NST A-309MoL,
English, 25.10.2016.

Perfect Welding

www.nst.no

NST 329J3L Duplex

AWS: A5.22-95: E2209T1-4

NS-EN ISO 17633-A: T 22 9 3 N L P M 1



Flux cored wire for all-round welding of Duplex materials such as SAF 2205 and EN 1.4462.

General description:

NST 329J3L is a rutile flux cored wire for welding of Duplex materials such as SAF 2205, EN 1.4462 and UNS 31803.

The wire can be used in all welding positions.

Shielding gas is Argon/CO₂ mixed gas.

This enables a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent material.

The newly developed slag system gives the welder better control of the weld pool and this wire can now be welded without weaving in all positions.

NST 329J3L is also suitable for use with ceramic backing for single sided welding.

Welding positions:



Welding current:

DC+

Gas flow:

15-20 l/min

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
0.02	0.41	1.35	0.023	0.009	0.05	8.66	23.19	3.02	0.14

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %	Charpy V (J) -46 °C
640	806	26	37

Guidance - Ampere (DC+):

Electrode diameter			
Ampere / Volt			

Packaging information:

1.2mm x 12.5kg D300
1.2mm x 5kg D200

Approvals:

CE

Reference / date:

NST 329J3L Duplex,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST 329J3L XLT Duplex

AWS: A5.22-2012: E2209T1-4

NS-EN ISO 17633-A: T 22 9 3 N L P M 1



Flux cored wire for all-round welding of Duplex materials such as SAF 2205 and EN 1.4462.

General description:

The NST 329J3L XLT Duplex is a rutile flux cored wire for welding of Duplex materials such as SAF 2205, EN 1.4462 and UNS 31803.

The wire can be used in all welding positions and gives very good properties at very low temperatures down to -60 °C.

Shielding gas is Argon/CO₂ mixed gas.

This enables a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent material.

The newly developed slag system gives the welder better control of the weld pool in all positions. NST 329J3L XLT is also suitable for use with ceramic backing for single sided welding.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
0.021	0.49	1.25	0.021	0.002	0.06	9.0	22.5	2.8	0.13

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %	Charpy V (J) -46 °C	Charpy V (J) -60 °C
640	806	26	48	43

Guidance - Ampere (DC+):

Electrode diameter			
Ampere / Volt			

Packaging information:

1.2mm x 12.5kg D300
1.2mm x 5 kg D200

Approvals:

CE

Reference / date:

NST 329J3L XLT Duplex,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST FCW A625

AWS A5.34 / A5.34M: 2007 ENiCrMo3 T1-4



Flux cored wire for pipe and plate welding of Inconel 625 and 6Mo material.

General description:

NST FCW A625 is a flux cored wire for the joining of 6Mo alloys (254 SMO and Inconel 625). This wire can also be used for Cladding applications. The slag system allows you to weld in all positions with good control of the weld bead. The wire is to be used with M21 mix gas. "Purity" is the keyword when welding high alloyed materials. Impurities in the weld, will cause porosity. Welding of pipes requires the use of purge gas in order to ensure a perfect root.

Interpass temperature should not exceed 150 °C, and heat input should not exceed 1,5 kJ/mm. Hot cracking is a well-known challenge in this type of welding. For more details contact NST.

Welding positions:



Welding current:

DC+

Gas flow:

16-20 l/min.

Chemical composition of all-weld-metal:

C	P	S	Ni	Cr	Mo	Cu	Fe	Nb+Ta	
Max 0.10	Max 0.02	Max 0.015	Min 58.0	20-23	8-10	Max 0.50	Max.5.0	3.15-4.15	

Shielding gas:

Ar/CO₂: Typ. 18%CO₂+82%Ar (Class M21).

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %	Charpy V (J) +0 °C	Charpy V (J) -196 °C
470	770(>690)	≥34	53	48

Guidance - Ampere (DC+):

Electrode diameter	1,2 mm PF	1,2 mm PA/PB	
Ampere / Volt	135-160 A / 24-26 V	190-210 A / 30-31 V	

Packaging information:

1.2mm x 12.5kg D300

Approvals:

Reference / date:

NST FCW A625,
English, 19.11.2013

Perfect Welding

www.nst.no

NST 309LT

AWS: A5.22-95: E309LT 0-4

NS-EN ISO 17633-A: T 23 12 L R M3



Flux cored wire mainly for flat position and fillet welding of corrosion resistant materials against carbon steels and for cladding carbon steels.

General description:

NST 309LT is a rutile flux cored wire for flat position (PA) and fillet welding (PB and PC) of corrosion resistant materials such as AISI 304 etc. against carbon steel.
The flux cored wire uses an Argon/CO₂ mixed shielding gas.
This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials.
NST 309LT has a slag freezing system which is slightly slower than wires designed for positional welding.

This makes this wire suitable for flat position and fillet welds.
It is also suitable for use with ceramic backing for single sided welding.
The wire's composition ensures weld metal equivalent AISI 304 in the first layer of the cladding process.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
0.028	0.77	1.25	0.023	0.002	0.13	12.77	24.81	0.13

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths		
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %
425	550	36

Guidance - Ampere (DC+):

Electrode diameter		
Ampere / Volt		

Packaging information:

1,2mm x 12,5kg

Approvals:

CE

Reference / date:

NST 309LT,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST 316LT

AWS: A5.22-95: E316LT 0-4

NS-EN ISO 17633-A: T 19 12 3 L R M3



Flux cored wire for flat position and fillet welding of corrosion resistant and stainless steel materials of AISI 316, EN 1.4404 etc.

General description:

NST 316LT is a rutile flux cored wire for flat position (PA) and fillet welding (PB and PC) of corrosion resistant and stainless steel materials such as AISI 316 etc.
The flux cored wire uses an Argon/CO₂ mixed shielding gas.
This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials.
NST 316LT has a slag freezing system which is slightly slower than wires designed for positional welding.

This makes this wire suitable for flat position and fillet welds.
It is also suitable for use with ceramic backing for single sided welding.
NST 316LT is also suitable for Ti- and Nb-stabilized materials when the operating temperature does not exceed 400 °C.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	
0.022	0.66	1.12	0.025	0.004	0.15	11.69	18.44	2.56	

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
404	552	44		

Guidance - Ampere (DC+):

Electrode diameter			
Ampere / Volt			

Packaging information:

0,9mm x 12,5kg D300
1,2mm x 12,5kg D300

Approvals:

CE

Reference / date:

NST 316LT,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST 309MoLT

AWS: A5.22-95 E309LMoT 0-4

NS-EN ISO 17633-A: T 23 12 2 L R M3



Flux cored wire for flat position and fillet welding of carbon steels against stainless steel materials such as AISI 316 etc.

General description:

NST 309MoLT is a flux cored wire for flat position (PA) and fillet welding (PB and PC) of stainless steel materials such as AISI 316 and similar against carbon steel.

The wire is also suitable for cladding of carbon steel where a Mo stainless cladding is needed.

The flux cored wire uses an Argon/CO₂ mixed shielding gas.

This ensures a user friendly and stable welding arc, less spatter, good visual bead appearance and smooth transition to the parent materials.

NST 309MoLT has a slag freezing system which is slightly slower than wires designed for positional welding.

This makes this wire suitable for flat position and fillet welds.

It is also suitable for use with ceramic backing for single sided welding.

Welding positions:



Welding current:

DC+

Gas flow:

15-23 l/min.

Typical chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	
Max 0.027	0.57	1.39	0.021	0.006	Max 0.26	12.80	23.28	Max 0.26	

Shielding gas:

Argon+18-25% CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
Min 350	653	Min 27		

Guidance - Ampere (DC+):

Electrode diameter			
Ampere / Volt			

Packaging information:

0,9mm x 12,5kg D300
1,2mm x 5,0kg D200
1,2mm x 12,5kg D300

Approvals:

CE

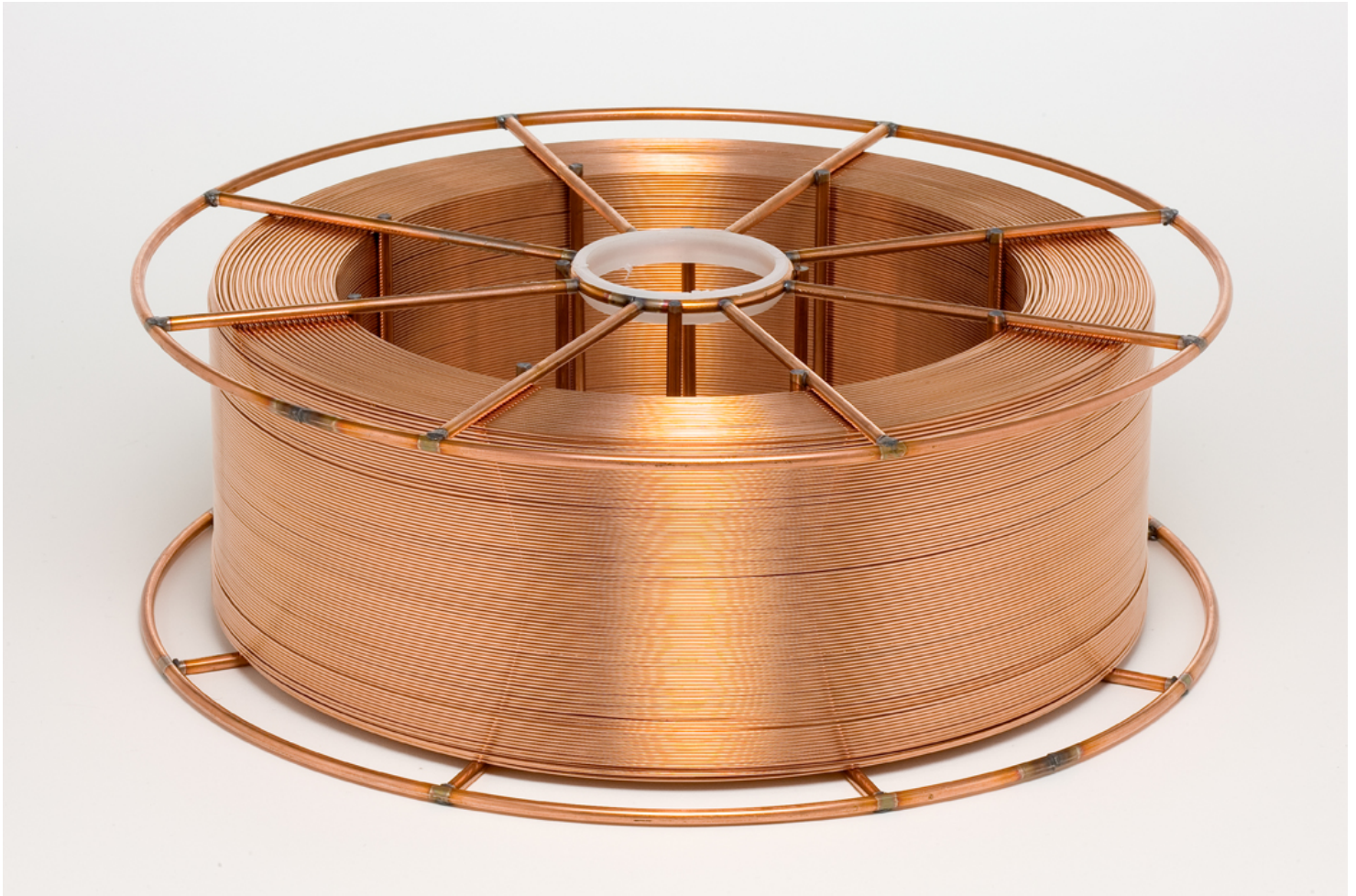
Reference / date:

NST 309MoLT,
English, 04.02.2016.

Perfect Welding

www.nst.no

MIG/MAG wires for non- alloyed steels



NST Carbomig 2
NST Carbomig 2N
NST Carbomig 3N
NST MIG ER80S Ni1

NST Carbomig 2

AWS: A5-18: ER70S-6

EN ISO 14341-A: G46 2 M21 3Si1

EN ISO 14341-A: G42 2 C1 3Si1



Solid wire for welding of mild and high strength steels.

General description:

NST Carbomig 2 is a Copper coated solid wire for semi-automatic welding with CO₂ or Argon/CO₂ mixed shielding gas.

The wire is suitable for welding in a wide range of welding currents with excellent appearance.

Also suitable for welding thin walled steels or sheet metal.

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Typical chemical composition of welding wire:

C	Si	Mn	P	S				
0,08	0,86	1,49	0,010	0,016				

Type of gas:

Ar/CO₂ or CO₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -30 °C (M21)	Charpy V (J) -30 °C (Co ²)
475	570	28	92	60

Guidance - Ampere (DC+):

Wire diameter	0,8mm	1,0mm	1,2mm
Ampere / Volt	40-200A/15-26V	80-250A/16-30V	110-350A/17-32V

Packaging information:

0,6mm x 0,9kg+5Kg/D200
 0,8mm x 5,0Kg/D200,15Kg/K300,200Kg/drum Ø51cm
 0,9mm x 250Kg/drum Ø51cm
 1,0mm x 5,0Kg/D200,15Kg/K300,250Kg/drum Ø51cm
 1,2mm x 5,0Kg/D200,15Kg/K300,250Kg/drum Ø51cm

Approvals:

DNV, TÜV, CE

Reference / date:

NST Carbomig 2,
 English, 10.02.2016.

Perfect Welding

www.nst.no

NST Carbomig 2N

AWS: A5-18/SFA5.18: ER70S-6
 EN ISO 14341-A: G 46 2 M21 3Si1
 EN ISO 14341-A: G 42 2 C1 3Si1



Solid wire for welding of mild and high strength steels.

General description:

NST Carbomig 2N is a copper coated solid (SG2) wire for MIG/MAG welding of unalloyed steels with CO₂ or Argon/CO₂ mix shielding gas. The wire is suitable for welding in a wide range of welding currents with excellent appearance. Also suitable for welding thin walled steels or sheet metal.

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Typical chemical composition of welding wire:

C	Si	Mn						
0,08	0,90	1,50						

Type of gas:

Ar/CO₂ or CO₂.

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -30 °C	
≥420	500-640	≥22	≥47	

Guidance - Ampere (DC+):

Wire diameter			
Ampere / Volt			

Packaging information:

0,8mm x 15Kg + drum Ø51cm
 1,0mm x 15Kg + drum Ø51cm
 1,2mm x 15Kg + drum Ø51cm

Approvals:

TÜV, CE,

Reference / date:

NST Carbomig2N,
 English, 29.04.2016.

Perfect Welding

www.nst.no

NST Carbomig 3N

AWS: A5-18/SFA5.18: ER70S-6

EN ISO 14341-A: G 42 2 C1 G4Si1

EN ISO 14341-A: G 46 3 M21 G4Si1



Solid wire for welding of mild and high strength steels.

General description:

NST Carbomig3N is a copper coated solid (SG3) wire for MIG/MAG welding of unalloyed steels with CO₂ or Argon/CO₂ mixed shielding gas. The wire is suitable for welding in a wide range of welding currents with excellent appearance. Low spatter CO₂ performance, and excellent wire feeding capability.

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Typical chemical composition of welding wire:

C	Si	Mn						
0,08	1,00	1,75						

Type of gas:

Ar/CO₂ or CO₂.

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test	
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -30 °C (M21)	Charpy V (J) -20 °C (Co ²)
C1≥420/M21≥460	500-640/530-680	≥22	≥47	≥47

Guidance - Ampere (DC+):

Wire diameter			
Ampere / Volt			

Packaging information:

0,8mm x 15Kg + drum Ø51cm
 1,0mm x 15Kg + drum Ø51cm
 1,2mm x 15Kg + drum Ø51cm

Approvals:

TÜV, CE

Reference / date:

NST Carbomig3N,
 English, 29.04.2016.

Perfect Welding

www.nst.no

NST MIG ER80S Ni1

AWS A5.28: ER80S-Ni1

EN ISO 14341-A: G 46 6 M21 3Ni1



Solid wire for welding of mild and low alloyed steels.

General description:

NST MIG ER 80S Ni1 is a copper coated solid wire for MIG/MAG welding of fine grain structural steels with Argon/CO₂ (M21) mixed shielding gas.

Suitable for both manual welding and for robotic / -mechanised welding in all positions, including vertical downwards.

Typical usage is within offshore and Oil & Gas steelworks and pipe welding.

Can be used for applications where service temperature is down to -60 °C.

The wire is suitable for welding with a wide range of welding currents with excellent appearance. It has low spatter performance, and excellent wire feeding capabilities.

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Typical chemical composition of welding wire:

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	V
0,10	0,65	1,1	0,008	0,009	0,13	0,03	0,86	0,09	0,002

Type of gas:

Ar/CO₂ mix (M21).

Mechanical properties of all-weld-metal:

Yield and Tensile Strengths			Charpy Impact Test
Yield Mpa	Tensile Mpa	Elongation %	Charpy V (J) -60 °C
>470	550-680	≥24	≥ 47

Packaging information:

0.8mm x 15Kg / 250Kg
1.0mm x 15Kg / 250Kg
1.2mm x 15Kg / 250Kg
1.6mm x 15Kg / 250Kg

Approvals:

VdTÜV, CE

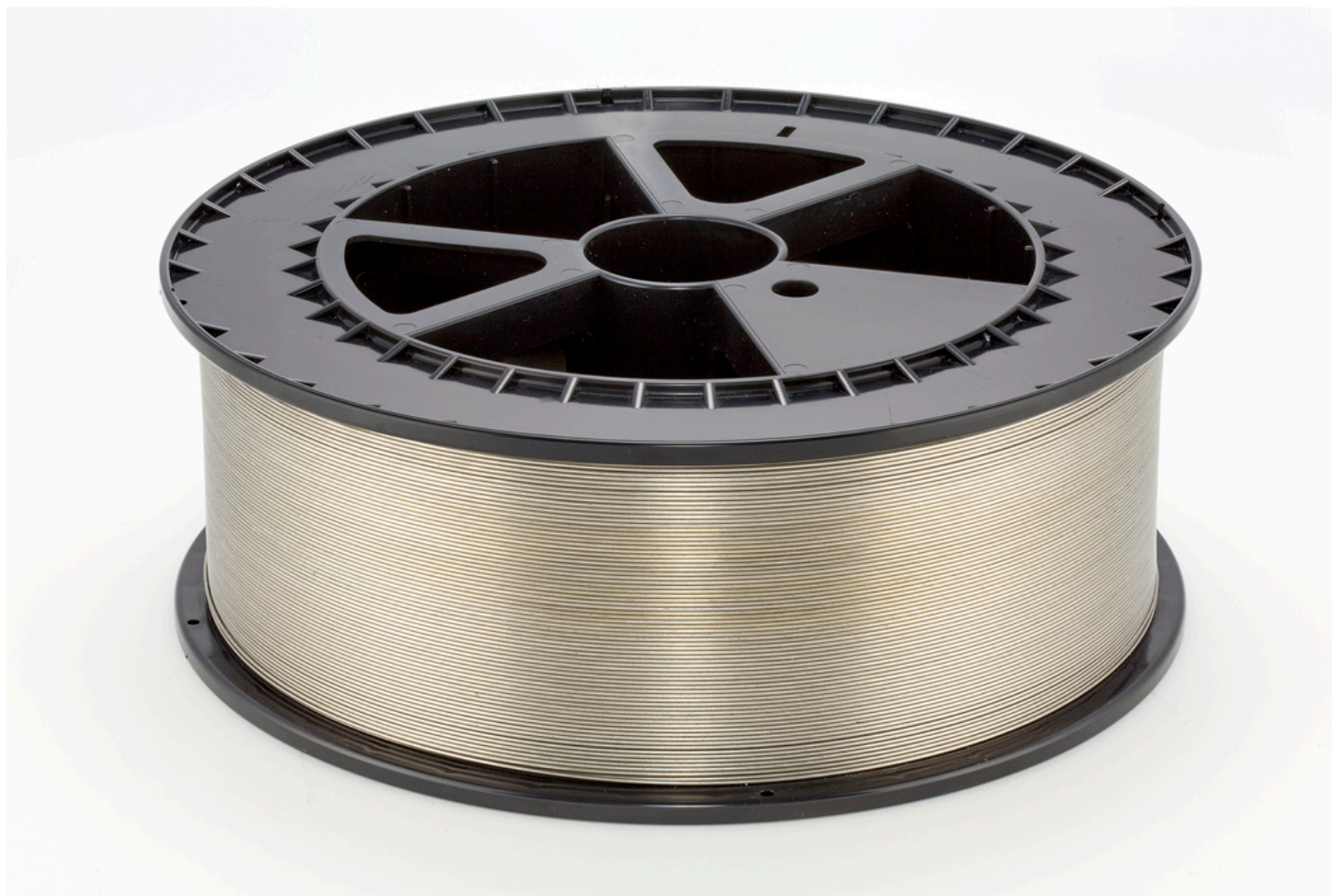
Reference / date:

NST MIG ER80S Ni1,
English, 26.04.2017.

Perfect Welding

www.nst.no

MIG/MAG wires for high alloyed steels



NST MIG 308LSi

NST MIG 309LSi

NST MIG 316LSi

NST MIG Duplex 2209

NST MIG ERNiCrMo-3(625)

NST MIG 308LSi

AWS: A5.9 ER308LSi

EN ISO 14343: 2009 19 9 LSi



Solid wire for welding of corrosion resistant materials.

General description:

NST MIG 308LSi is a low-carbon, solid MIG/MAG wire for welding of corrosion resistant materials such as AISI 304, EN 1.4301, EN 1.4307 etc.

Normally, mixed gas Argon/CO₂ or Argon/O₂ are used as the shielding gas.

This ensures a user friendly, stable welding arc with less spatter, a good visual bead appearance and smooth transition to the parent material.

The wire can be used both with or without Pulse-synching.

And it can also be used for welding of Nb- and Ti-stabilized materials (i.e. ASTM 321) when operating

temperature does not exceed 400 °C.

By higher operating temperatures, a Nb-stabilized welding wire is used.

"Purity" is the keyword when welding high alloyed materials.

Impurities in the weld, will cause porosity.

Inter-pass temperature should not exceed 150 °C.

Heat input should not exceed <2.0kJ/mm.

The weld metal will have an Austenitic structure with a low portion of Ferrite (typically 5-9% ferrite).

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
Max 0.03	0.65-1.0	1.0-2.5	Max 0.03	Max 0.02	Max 0.30	9.0-11.0	19.5-21.0	Max 0.30

Shielding gas:

Shielding gas: Ar+2-3% CO₂, Ar+2% O₂.

Purge gas: Ar.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths		
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %
410	590	44

Ferrite content(typical):

WRC	De long	Schaeffler
13.3FN	15.4%	12.6%

Packaging information:

1,0mm x 12,5kg D300
1,0mm x 200kg Ø51cm drum
1,2mm x 12,5kg D300
1,2mm x 200kg Ø51cm drum

Approvals:

CE

Reference / date:

NST MIG 308LSi,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST MIG 309 LSi

AWS: A5.9 ER 309LSi

EN ISO 14343: 2009 23 12 LSi



Solid wire for welding of corrosion resistant materials (without Mo) against carbon steel.

General description:

NST MIG 309LSi is a low-carbon, solid MIG/MAG wire for welding of corrosion resistant materials such as AISI 304, EN 1.4301, EN1.4307 against carbon steel. The wire is also used for cladding of carbon steel. Normally an Argon/CO₂ or Argon/O₂ mix are used as the shielding gas. This ensures a user friendly stable welding arc, with less spatter, good visual bead appearance and smooth transition to the parent material. The wire can be used both with or without Pulse-synching.

When cladding carbon steel, the analysis of the weld metal in first layer is equivalent to AISI304. "Purity" is the keyword when welding high alloyed materials. Impurities in the weld will cause porosity. Inter-pass temperature should not exceed 150 °C. Heat input should not exceed <2.0kJ/mm. The weld metal will have an Austenitic structure with a low portion of Ferrite, typically 5-9%.

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
Max 0.03	0.65-1.0	1.0-2.5	Max 0.03	Max 0.02	Max 0.30	12.0-14.0	23.0-25.0	Max 0.30	-

Shielding gas:

Shielding gas: Ar+2-3% CO₂, Ar+2% O₂.
Purge gas: Ar.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
410	575	42		

Ferrite content(typical):

WRC	De long	Schaeffler	
8.7FN	12.8%	9.6%	

Packaging information:

1,0mm x 12,5kg D300
1,2mm x 12,5kg D300

Approvals:

TÜV, CE

Reference / date:

NST MIG 309LSi,
English, 04.02.2016.

Perfect Welding

www.nst.no

NST MIG 316LSi

AWS: A5.9 ER 316LSi

EN ISO 14343: 2009 G 19 12 3 LSi



Solid wire for welding of corrosion resistant and stainless materials.

General description:

NST MIG 316LSi is a solid, MIG/MAG wire for welding of corrosion resistant materials such as AISI 316, EN 14401, EN 14404 etc. Normally Argon/CO₂ or Argon/O₂ mix are used as the shielding gas.

This ensures a user friendly, stable welding arc, with less spatter, good visual bead appearance and smooth transition to the parent material.

The wire can be used both with or without Pulse-synching.

It can also be used for welding of Nb- and Ti-stabilized materials (i.e. ASTM 316Ti) when operating

temperature does not exceed 400 °C.

In higher operating temperature a Nb-stabilized welding wire should be used.

"Purity" is the keyword when welding high alloyed materials.

Impurities in the weld, will cause porosity.

Inter-pass temperature should not exceed 150 °C.

Recommended heat input should be low: <2.0kJ/mm, typically between 0.5-2.0 kJ/mm.

The wire gives an Austenitic structure with very low Ferrite (typically 5-9%).

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	
Max 0.03	0.65-1.0	1.0-2.5	Max 0.03	Max 0.02	Max 0.30	11.0-14.0	18.0-20.0	2.5-3.0	

Shielding gas:

Shielding gas: Ar+2-3% CO₂, Ar+2% O₂.

Purge gas: Ar.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
411	598	40		

Ferrite content(typical):

WRC	De long	Schaeffler	
8.0FN	10.8%	10.5%	

Packaging information:

0,8mm x 5,0kg D200 + 12,5kg D300 + 200kg Ø51cm drum
 1,0mm x 12,5kg D300 + 250kg drum
 1.2mm x 12,5kg D300 + 250kg drum
 1,6mm x 12,5kg D300

Approvals:

TÜV, CE

Reference / date:

NST MIG 316LSi,
 English, 04.02.2016.

Perfect Welding

www.nst.no

NST MIG Duplex 2209

AWS: A5.9 ER 2209

EN ISO 14343: 2009 22 9 3 N L



Solid wire for welding of Duplex materials.

General description:

NST MIG Duplex 2209 is a low-carbon, solid MIG/MAG wire for welding of Duplex materials such as SAF2205. Normally, Argon/CO₂ or Argon/O₂ mix are used as the shielding gas.

This provides a user friendly, stable welding arc with minimum spatter, excellent visual bead appearance and smooth transition to the parent material.

The wire can be used both with or without Pulse-synching.

"Purity" is the keyword when welding high alloyed materials.

Impurities in the weld, will cause porosity.

Inter-pass temperature should not exceed 150 °C. Heat input needs extra attention with regards to the cooling rate in order to ensure the correct balance between Austenite and Ferrite, typically between 0.5 and 2.0kJ/mm.

The wire gives an Austenitic-Ferrite weld metal with good mechanical properties combined with good corrosion ability (typically 45-55% ferrite).

Welding positions:



Welding current:

DC+

Gas flow:

12-20 l/min.

Chemical composition of all-weld-metal:

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	N
Max 0.03	Max 0.90	Max 2.0	Max 0.03	Max 0.02	Max 0.30	7.5-9.5	21.5-23.5	2.5-3.5	0.10-0.20

Shielding gas:

Shielding gas: Ar+2% O₂, Ar+2-3% CO₂.

Purge gas: Ar, Ar+N₂, N₂.

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
660	830	30		

Ferrite content(typical):

WRC	De long	Schaeffler	
50FN	28,6%	55%	

Packaging information:

1,0mm x 12,5kg D300
1,2mm x 12,5kg D300

Approvals:

Reference / date:

NST MIG Duplex 2209,
English, 11.04.2016.

Perfect Welding

www.nst.no

NST MIG ERNiCrMo-3(625)

AWS A5.14/A5.14M: 2011 ERNiCrMo-3
EN ISO 18274: 2011 NiCr22Mo9Nb



MIG Wire for welding of 6Mo alloy (i.e 254 SMO and Inconel 625).

General description:

NST MIG ERNiCrMo-3 is used for welding of 6Mo alloy (i.e. 254 SMO and Inconel 625) and for cladding of mild steel and other stainless steels. The filler metal is used for both manual welding and for robotic or mechanized application on both pipes and plates. Normally Ar/He is used as shielding gas. The level of gas flow will depend upon wire diameter and the specific application. When welding pure Austenite materials, it is recommended to use very low heat input, low mixture with parent material and low interpass temperature.

"Purity" is the keyword when welding high alloyed materials. Impurities in the weld, will cause porosity. Welding of pipes require the use of purge gas in order to ensure a stainless root face of the weld. Please contact us for further details on purge equipment. Interpass temperature should not exceed 150 °C, and heat input should not exceed 1,5kJ/mm.

Can be supplied in dull or bright surface.

Welding positions:



Welding current:

DC+

Gas flow:

Typ. 15-20 l/min

Typical chemical composition of welding wire:

C	Mn	Si	P	S	Cu	Ni	Cr	Mo	Fe	Ti	Al	Nb+Ta	Other
0.01	0.01	0.07	0.003	0.001	<0.01	64.33	22.32	9.10	0.3	0.018	0.12	3.44/0.01	Max 0.50

Shielding gas:

Shielding gas: Ar/He.
Root gas/Purge gas for single sided welding: Ar

Typical mechanical properties of all-weld-metal:

Yield and Tensile Strengths				
Yield Mpa(Rp0.2)	Tensile Mpa(Rm)	Elongation %		
470	750	42		

Packaging information:

1.0mm x 15kg D300
1.14mm x 15kg D300
1.2mm x 15kg D300
1.0mm x 250kg Ø 51cm drum
1.14mm x 250kg Ø 51cm drum
1.2mm x 250kg Ø 51cm drum

Approvals:

CE

Reference / date:

NST MIG ERNiCrMo-3(625),
English, 10.02.2016.

Perfect Welding

www.nst.no