



LASER WELDING CORED WIRES

DSI LASER SERVICE (THAILAND) CO., LTD.



dsilaser.com





DSI Laser Service (Thailand) CO., LTD

33/1 Moo 5 T. Nongmaidang, A. Muang Chonburi 20000

 +66 (0) 98 275 4833

 wires@dsilaser.com



DSI Laser Welding
Cored Wires Catalog

Edition 08/2026

Table of Content

Committed to Quality

02

Material Groups

03

Technical Data Sheets

04 - 14

DSI Laser Wires - How to select

15

Hardness conversation table

16

DSI Total Solution

17





Committed to Quality

DSI Laser Cored Wires are ...

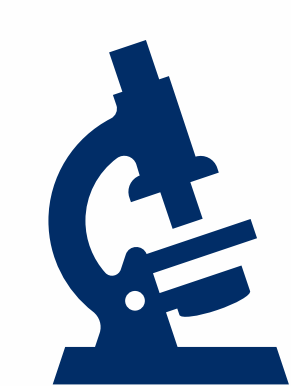
“The selection of the appropriate Laser Wire is a major factor to provide premium weld quality”



Made in Germany



Incoming inspection by XRF (X-ray fluorescence) for to determine and confirm the elemental composition



Randomly checks of Hardness Vickers (HV 0.3) by third party



Available in different diameters on spools and as rods



Vacuum packed and corrosion protected



EN 10204 / 3.1 Quality Certified



Obtainable for customers in whole Southeast Asia and beyond

25 years experience in Pulse Laser Welding



MADE IN GERMANY



GERMAN WELDING
SOCIETY

EN 10204 / 3.1 Quality Certified

Material Groups



TECHNICAL DATA

Standards

DIN EN 14700 :	T Fe 15-55-CGT
----------------	----------------

General Properties / Field of Applications

DSI M 20/59F is a C-Cr-Ni-Mo alloyed Laser Welding Cored Wire with a 32% Cr-Alloy corrosion resistant matrix. Suitable for applications in high mineral wear, for hard facing of parts that are exposed to high abrasion and partly corrosion e.g. kneading machines, liners, pumps, mixer parts, conveyer screws, oil screws, mixer paddles ect. Applicable for maximum operating temperatures up to 450–500°C.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	500
Max. operation temperature	[°C]	700
Hardness	[HRC]	53 - 56

Chemical Composition (Standard Values in %)

C	Si	Mn	Cr	Mo	Ni
3.0	1.3	0.6	32	0.5	3.0

Compatible Materials (Samples)

STAVAX / KSP1 / HPM38 / KTSM60 / SUS420J2 / STAVAX (Edge and hard areas)
1.2083 / 1.2316 / 1.2082 / 1.2085 / 1.4057 / 1.4125 / AISI 440A / AISI 420

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

DIN EN 14700 :	T Fe 16-70-GTZ
----------------	----------------

General Properties

DSI M 80F is a high alloyed cored Laser Welding Cored Wire which form extremely hard carbides. The deposit retains its wear resistance up to 800°C. The structure consists of primilary and eutectic solidifying Cr-carbides plus Co-Nb-Mo-W-V-carbides The hardness reduction at a temperature of at 800°C approximately 5%.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	400 - 600
Max. operation temperature	[°C]	800
Hardness	[HRC]	65 - 68

Chemical Composition (Standard Values in %)

C	Cr	Mo	Co	Nb	V	W	B
4.0	16	4.0	4.0	4.0	1.5	0.7	0.9

Field of Applications (Samples)

Parts in hot screening units, grates, sinter breaker.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

Material : correspond to Stellite 1

AWS 5.21 :	ERCCoCr-C
DIN EN 14700 :	T Co 3-55-CGTZ

General Properties

DSI M Co1F is the hardest standard Cobalt-base alloyed Laser Welding Cored Wire with an austenitic-leaduburitic structure. It has and excellent wear resistance to corrosion, especially to reducing acids and impacts. Beside it's high resistant to extreme wear and temperature shocks, erosion and cavitation at elevated temperatures. The weld is only machinable by grinding.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	700 - 800
Max. operation temperature	[°C]	700
Hardness	[HRC]	52 - 55

Chemical Composition (Standard Values in %)

Co	Cr	W	C	Fe	Mn	Si
Base	29	11.5	2.4	≤ 3	0.4	0.7

Field of Applications (Samples)

Best used on wear pads, rotary seal rings, pump sleeves, centerless grinder work rests, bearing surfaces, hot shear blades, valves and other chemical industry components.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

Material : correspond to Stellite 6

AWS 5.21 :	ERCoCr-A
DIN EN 14700 :	MF 20-55-CGTZ

General Properties

DSI M Co6F is a Cobalt-base alloyed cored Laser Welding Cored Wire with an excellent wear resistance to abrasion and in metal to metal application. contain an austenitic-ledeburitic structure containing chrome and tungsten carbides. Resistant to high corrosion and abrasion, high impact stress and extreme temperatures shocks. The weld is machinable by hard metal tools.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	1000 - 1100
Max. operation temperature	[°C]	750
Hardness	[HRC]	40 - 43

Chemical Composition (Standard Values in %)

Co	Cr	W	C	Fe	Mn	Si
Base	28	4.5	1.1	≤ 3	1.0	1.0

Field of Applications (Samples)

Valve seats, flow control components. Turbine engine parts, exhaust valves. Steam and gas turbine blades. Surgical instruments and implants. Cutting tools, dies, and wear-resistant coatings.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com



Cobalt-base Hardfacing

EN 10204 / 3.1

TECHNICAL DATA

Standards

Material : correspond to Stellite 12

AWS 5.21 :	ERCCoCr-B
DIN EN 14700 :	T Co 3-50-CTZ

General Properties

DSI M Co12F is the toughest Cobalt-base alloyed Laser Welding Cored Wire, providing the highest corrosion and thermal resistance of all cobalt-base alloys. It is used on components that are exposed to high temperatures. It's resistant to thermal shocks, corrosion, abrasion, erosion, cavitation and impact stress. Typically used for valve seats, bearing surfaces, hot shear blades and for other components in the chemical industry. The weld is machinable by hard metal tools.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	900 - 1000
Max. operation temperature	[°C]	720
Hardness	[HRC]	45 - 48

Chemical Composition (Standard Values in %)

Co	Cr	W	C	Fe	Mn	Si
Base	29	8.0	1.4	≤ 3	0.8	1.0

Field of Applications (Samples)

Valve seats, flow control components. Turbine engine parts, exhaust valves. Steam and gas turbine blades. Surgical instruments and implants. Cutting tools, dies, and wear-resistant coatings. Bearing surface, hot shearing blades.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

Material : correspond to Stellite 21

AWS 5.21 :	ERCoCr-C
DIN EN 14700 :	T Co 1-350-CKTZ

General Properties

DSI M Co21F is a Cobalt-base alloyed Laser Welding Cored Wire with an excellent wear resistance to abrasion and in metal to metal application. It contains an austenitic-ledeburitic structure containing chrome and tungsten carbides. Resistant to high corrosion and abrasion, high impact stress and extreme temperatures shocks. The weld is machinable by hard metal tools.

Mechanical Properties

Tensile strength R_m	[MPa] / [N/mm ²]	900 - 1050
Max. operation temperature	[°C]	800
Hardness	[HRC]	30 - 35

Chemical Composition (Standard Values in %)

Co	Cr	Ni	C	Fe	Mo	Si	Mn
Base	27	2.5	0.25	≤ 3	5.0	1.0	1.0

Field of Applications (Samples)

Valve seats, flow control components. Turbine engine parts, exhaust valves. Steam and gas turbine blades. Surgical instruments and implants. Cutting tools, dies, and wear-resistant coatings. Bearing surfaces.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com



TECHNICAL DATA

Standards

Material : correspond to Stellite 1

DIN EN 14700	T Z Ni1
DIN 8555	MF 22-60-CGTZ

General Properties / Field of Applications

DSI M NiCr1/58F is a Nickel-based hard facing alloyed Laser Welding Cored Wire. The essential characteristic correspond to the Cobalt-based alloys, especially the hardness, corrosion resistance, pitting (inter granular corrosion), heat resistance, wear resistance and thermal shock constancy. Applications are found in the chemical industry, nuclear technology, engine parts.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	550 - 700
Max. operation temperature	[°C]	500 - 550
Hardness	[HRC]	55 - 60

Chemical Composition (Standard Values in %)

Ni	C	Cr	Si	B	Fe
Base	0.75	20.0	4.7	3.2	<5.0

Compatible Materials (Samples)

Wear protection : Valves, Screws, Extruders, Pumps, Dies, Tools, Crushers
Corrosion Resistance : Chemical Plants Components, Oil and Gas, Petrochemical

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

Material : correspond to Stellite 1

DIN EN 14700	T Z Ni1
DIN 8555	MF 22-60-CGTZ

General Properties / Field of Applications

DSI M NiCrMo1/58F is a Nickel-based hard facing alloyed Laser Welding Cored Wire with 2% Molybdenum for an enhanced sulphidation protection at elevated temperatures. The essential characteristic correspond to the Cobalt-based alloys, especially the hardness, corrosion resistance, pitting (inter granular corrosion), heat resistance, wear resistance and thermal shock constancy. Applications are found in the chemical industry, nuclear technology, engine parts e.g. piston crowns.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	500
Max. operation temperature	[°C]	600
Hardness	[HRC]	57 - 61

Chemical Composition (Standard Values in %)

Ni	C	Cr	Si	B	Fe	Mo
Base	0.75	20.0	4.7	3.2	<5.0	2.0

Compatible Materials (Samples)

Piston Crowns and other (marine) engine parts, nuclear technology.
Chemical Plants Components, Oil and Gas, Petrochemical.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com

TECHNICAL DATA

Standards

Material : correspond to Stellite 6

DIN EN 14700	T Ni 1-45-CGTZZ
--------------	-----------------

General Properties

DSI M NiCr6/40F is a Nickel-based hard facing alloyed Laser Welding Cored Wire. Because of high chrome and its other alloys like Boron, Carbon and Molybdenum it's highly corrosion, oxidation, abrasion, heat and pitting (inter granular corrosion) resistant. On top its thermal shock contancy.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	850 - 1000
Max. operation temperature	[°C]	620 - 650
Hardness	[HRC]	41 - 43

Chemical Composition (Standard Values in %)

Ni	C	Cr	Si	B	Fe
Base	0.35	22.0	4.5	1.6	<5.0

Field of applications (Samples)

Wear protection : Valves, Screws, Extruders, Pumps, Dies, Tools, Crushers
Corrosion Resistance : Chemical Plants Components, Oil and Gas, Petrochemical

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com



TECHNICAL DATA

Standards

Material : correspond to Stellite 12

DIN EN 14700	T Z Ni1
DIN 8555	MF 22-50-CGTZ

General Properties

DSI M NiCr12/50F is a Nickel-based hard facing Ni-Si-Cr-Mo-B-alloyed Laser Welding Cored Wire. The essential characteristics correspond to the Cobalt-base alloys, especially the hardness, corrosion resistance, pitting (inner granular corrosion), heat and wear resistance and thermal shock constancy.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	650 - 800
Max. operation temperature	[°C]	580 - 600
Hardness	[HRC]	50 - 54

Chemical Composition (Standard Values in %)

Ni	C	Cr	Si	B	Fe	Mo
Base	0.6	20.0	4.9	2.8	<5.0	2.5

Field of applications (Samples)

Fittings, chemical plant components, food industry, nuclear technology.
Oil and gas, petrochemical, extrusion screws.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

wires@dsilaser.com



TECHNICAL DATA

Standards

Material : correspond to Stellite 21

DIN EN 14700	T Ni1-35-CGTZ
--------------	---------------

General Properties

DSI M NiCr21/35F is a Nickel-based hard facing Ni-Si-Cr-Mo-B-alloyed Laser Welding Cored Wire. The essential characteristics correspond to the Cobalt-base alloys, especially the hardness, corrosion resistance, pitting (inner granular corrosion), heat and wear resistance and thermal shock constancy.

Mechanical Properties

Tensile strength R _m	[MPa] / [N/mm ²]	950 - 1100
Max. operation temperature	[°C]	620 - 650
Hardness	[HRC]	34 - 36

Chemical Composition (Standard Values in %)

Ni	C	Cr	Si	B	Fe	Mo
Base	0.4	20.0	4.5	0.7	<5.0	2.0

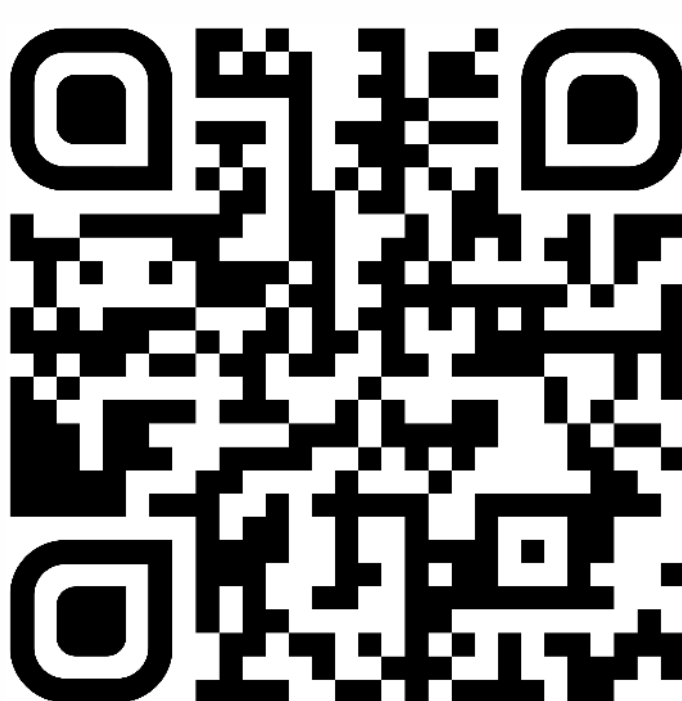
Field of applications (Samples)

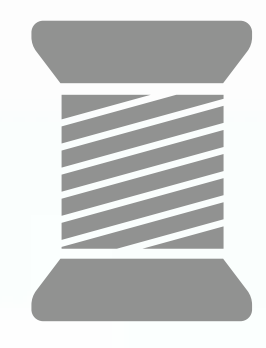
Fittings, chemical plant components, food industry, nuclear technology.
Oil and gas, petrochemical, extrusion screws.

Packaging and available Sizes*

Spool : SH 253 / BS 300	Ø mm	1.2 / 1.6
Rod : 500 / 1000 mm	Ø mm	1.2 / 1.6

* Other dimensions available on request

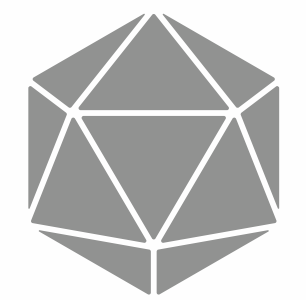




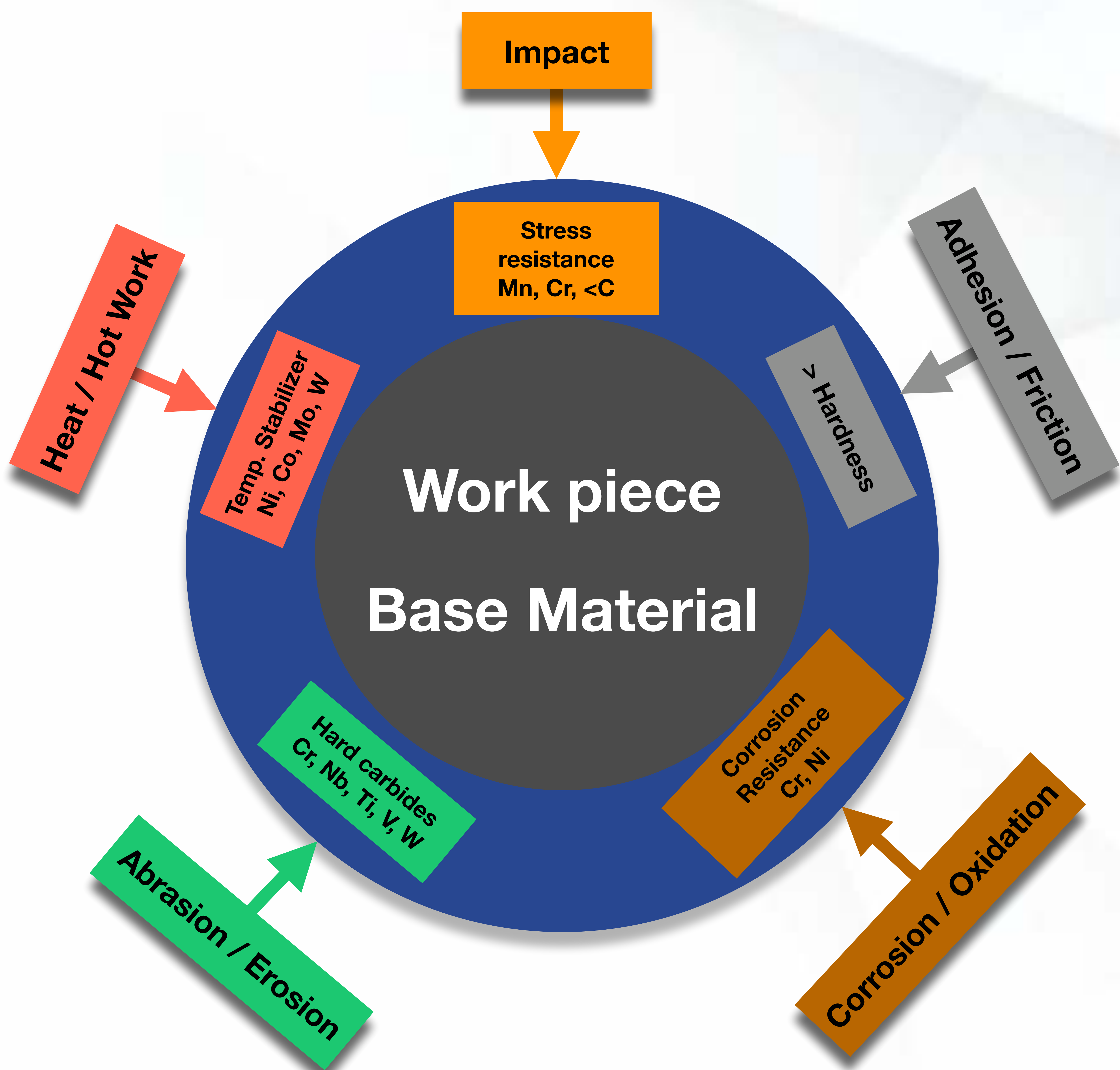
How to select the right Filler Material ?



Which operating conditions does the workpiece face ?



Which wire-alloys improves the performance ?



Both similar and dissimilar filler materials can be used for (Pulse) Laser Welding

Hardness Conversation Table for Non- Austenitic Steels

(Rockwell C Hardness)

Rockwell C	Vickers	Brinell Hardness Number C		Rockwell Hardness Number		Rockwell Superficial Hardness Number		
		10-mm	10-mm			15 N Scale,	30 N Scale,	45 N Scale,
Hardness	Hardness	Standard	Carbide	A Scale,	D Scale,	15 N Scale,	30 N Scale,	45 N Scale,
Number 150 kgs	Number	Ball, 3000-kgs	Ball, 3000-kgs	60-kgf (HRA)	100-kgf	15-kgf	30-kgf	45-kgf
(HRC)	(HV)	(HBS)	(HBS)	(HRA)	(HRD)	(HR 15-N)	(HR 30-N)	(HR 45-N)
68	940	...	...	85.6	76.9	93.2	84.4	75.4
67	900	...	...	85.0	76.1	92.9	83.6	74.2
66	865	...	...	84.5	75.4	92.5	82.8	73.3
65	832	...	(739)	83.9	74.5	92.2	81.9	72.0
64	800	...	(722)	83.4	73.8	91.8	81.1	71.0
63	772	...	(705)	82.8	73	91.4	80.1	69.9
62	746	...	(688)	82.3	72.2	91.1	79.3	68.8
61	720	...	(670)	81.8	71.5	90.7	78.4	67.7
60	697	...	(654)	81.2	70.5	90.2	77.5	66.6
59	674	...	634	80.7	69.9	89.8	76.6	65.5
58	653	...	615	80.1	69.2	89.3	75.7	64.3
57	633	...	595	79.6	68.5	88.9	74.8	63.2
56	613	...	577	79.0	67.7	88.3	73.9	62.0
55	595	...	560	78.5	66.9	87.9	73	60.9
54	577	...	543	78.0	66.1	87.4	72	59.8
53	560	...	525	77.4	65.4	86.9	71.2	58.6
52	544	(500)	512	76.8	64.6	86.4	70.2	57.4
51	528	(487)	496	76.3	63.8	85.9	69.4	56.1
50	513	(475)	481	75.9	63.1	85.5	68.5	55.0
49	498	(464)	469	75.2	62.1	85	67.6	53.8
48	484	451	455	74.7	61.4	84.5	66.7	52.5
47	471	442	443	74.1	60.8	83.9	65.8	51.4
46	458	432	432	73.6	60	83.5	64.8	50.3
45	446	421	421	73.1	59.2	83	64	49.0
44	434	409	409	72.5	58.5	82.5	63.1	47.8
43	423	400	400	72.0	57.7	82	62.2	46.7
42	412	390	390	71.5	56.9	81.5	61.3	45.5
41	402	381	381	70.9	56.2	80.9	60.4	44.3
40	392	371	371	70.4	55.4	80.4	59.5	43.1
39	382	362	362	69.9	54.6	79.9	58.6	41.9
38	372	353	353	69.4	53.8	79.4	57.7	40.8
37	363	344	344	68.9	53.1	78.8	56.8	39.6
36	354	336	336	68.4	52.3	78.3	55.9	38.4
35	345	327	327	67.9	51.5	77.7	55	37.2
34	336	319	319	67.4	50.8	77.2	54.2	36.1
33	327	311	311	66.8	50	76.6	53.3	34.9
32	318	301	301	66.3	49.2	76.1	52.1	33.7
31	310	294	294	65.8	48.4	75.6	51.3	32.5
30	302	286	286	65.3	47.7	75	50.4	31.3
29	294	279	279	64.8	47	74.6	49.5	30.1
28	286	271	271	64.3	46.1	73.9	48.6	28.9
27	279	264	264	63.8	45.2	73.3	47.7	27.8
26	272	258	258	63.3	44.6	72.8	46.8	26.7
25	266	253	253	62.8	43.8	72.2	45.9	25.5
24	260	247	247	62.4	43.1	71.6	45	24.3
23	254	243	243	62.0	42.1	71	44	23.1
22	248	237	237	61.5	41.6	70.5	43.2	22.0
21	243	231	231	61.0	40.9	69.9	42.3	20.7
20	238	226	226	60.5	40.1	69.4	41.5	19.6



Powered by SLV HANNOVER

DSI Total Solution for Pulse Laser Welding with DSI Laser Wires



PULSE LASER WELDING SERVICE

DSI LASER SERVICE (THAILAND) CO.,LTD.



dsilaser.com



LASER WELDING WIRES

DSI LASER SERVICE (THAILAND) CO.,LTD.



dsilaser.com



PULSE LASER WELDING ACADEMY

DSI LASER SERVICE (THAILAND) CO., LTD.



dsilaser.com



PULSE LASER WELDING MACHINES

DSI LASER SERVICE (THAILAND) CO.,LTD.
Authorised Dealer of ALPHA LASER



dsilaser.com



PULSE LASER MACHINE SERVICE & MAINTENANCE

DSI LASER SERVICE (THAILAND) CO.,LTD.



dsilaser.com



PRE- & FINISHING OF SURFACES MACHINE PROCESSING

DSI LASER SERVICE (THAILAND) CO.,LTD.



dsilaser.com





DSI Laser Service (Thailand) CO., LTD

33/1 Moo 5 T. Nongmaidang, A. Muang Chonburi 20000

 +66 (0) 98 275 4833

 wires@dsilaser.com



DSI Laser Welding
Cored Wires Catalog

Edition 08/2026