



FST

Flame Spray Technologies

WIRES

THERMAL SPRAY CONSUMABLES GUIDE

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Wires

CROSS REFERENCE LIST (chemistry only)				
Wire Type	FST p/n	TAFA/PX	Sulzer Metco	Page Nr.
Pure Zinc	W-100	02Z	Zinc	29
Zinc – Aluminum	W-115	02A	Zn/Al	29
Pure Aluminum	W-200	01T	Aluminum	29
Alloy C-276	W-322	77T	8276	29
NiCrTi	W-345	45CT	8500	29
Alloy 625	W-365	71T	8625	29
NiCrAl	W-373	73MXC	8443	30
NiAlMo	W-374	74MXC	8447	30
NiAl 95/5	W-375	75B	8400	30
NiAl 80/20	W-377	–	405	30
NiCr 80/20	W-385	06C	8450	30
NiCr 80/20	W-386	06C	8450	30
Molybdenum	W-400	13T	Sprabond	31
Stainless Steel 420	W-504	60T	2	31
Stainless Steel 316L	W-510	85T	4	31
Stainless Steel 307	W-515	55T	5	31
1.0%C-Steel	W-550	38T	Sprasteel	31
Ni-Base WC	W-610	–	–	32
FeCrMnSiB	W-662	95MXC	–	32
FeCrMnSiB	W-664	96MXC	–	33
Fe-Base CrC	W-671	98MXC	–	33
Fe-Base WC	W-679	97MXC	8297	34
Fe-Base Super Hard Steel	W-686	FST Proprietary Material	FST Proprietary Material	34
Pure Copper	W-700	05T	Copper	34
CuAl	W-710	10T	Sprabronze	34
Monel	W-717	70T	Monel	34
Babbitt	W-970	04T	Sprababbitt	35

Wires

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Wire Type	Composition		FST p/n	Diameter (mm)	Typical Properties and Applications
Pure Zinc	Zn	99.9%	W-100.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Steel protection against corrosion both in atmospheric and immersed in either fresh or salt water • EMI/RFI Shielding • Electrical conductivity.
			W-100.3	3.2 mm (1/8")	
Zinc – Aluminum	Al Zn	15.0% Bal.	W-115.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Better corrosion protection than pure zinc • Steel protection against corrosion both in atmospheric and immersed in either fresh or salt water • Difficult to spray by the Arc-Spray Process.
			W-115.3	3.2 mm (1/8")	
Pure Aluminum	Al	99.0%	W-200.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Coatings are resistant to atmospheric, chemical and heat corrosion • Electrical and heat conductive.
			AW1350	W-200.3	
	AW1100	W-201.1	1.6 mm (1/16")		
		W-201.3	3.2mm (1/8")		
Alloy C-276	NiCrMoFeW		W-322.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Excellent high temperature oxidation and corrosion properties • Good for repair and build-up of similar chemistry super alloy components.
NiCrTi	Cr Ti Ni	45.0% 1.0% Bal.	W-345.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Specially designed for Boiler applications • Titanium pre-alloyed, resulting in superior bondstrengths • W-345.1 produces coatings which are extremely resistant to corrosive vanadium and sulfur gases in boiler atmospheres.
Alloy 625	Cr Fe Mo Nb-Ta Ni	22.0% 5.0% 9.0% 3.6% Bal.	W-365.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Excellent high temperature oxidation and corrosion properties • Good for repair and build-up of similar chemistry super alloy components • Useful up to 980°C (1800°F) • Similar to Inconel® 625

Inconel is a registered trade mark of Inco.

Wires

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Wire Type	Composition	FST p/n	Diameter (mm)	Typical Properties and Applications
NiCrAl	Cr 20.0% Al 7.0% Ni Bal. Cored Wire	W-373.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Resistant to oxidation and corrosion at high temperature Undercoat for ceramics topcoat Recommended for salvage and build-up of mis-machined or worn machine parts.
NiAlMo	Mo 5.0% Al 5.5% Ni Bal. Cored Wire	W-374.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Recommended for salvage and build-up of both machinable and grindable carbon steels Good resistance against wear and particles Used for high strength and low shrink coatings.
NiAl 95/5	Al 5.0% Ni 95.0%	W-375.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Excellent bonding Oxidation and abrasion resistant at elevated temperatures Self bonding material. Suitable for dimensional restoration.
NiAl 80/20	Al 20.0% Ni 80.0% Cored Wire	W-377.3	3.2 mm (1/8")	<ul style="list-style-type: none"> Self bonding material. Coatings are dense, resistant to oxidation and high temperature and temperatures changes Mainly used for Flame Wire Spraying.
NiCr 80/20	Ni 80.0% Cr 20.0%	W-385.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Produces coatings which resist corrosive gasses and oxidation temperatures up to 980°C (1800°F) Used as bond coat for ceramic materials Coatings are machinable.
		W-385.3	3.2 mm (1/8")	
NiCr 80/20	Ni 80.0% Cr 20.0% Cored Wire	W-386.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Produces coatings which resist corrosive gasses and oxidation temperatures up to 980°C (1800°F) Used as bond coat for ceramic materials Coatings are machinable Low cost alternative to W-385.
		W-386.3	3.2 mm (1/8")	

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Wire Type	Composition		FST p/n	Diameter (mm)	Typical Properties and Applications
Molybdenum	Mo	99.9%	W-400.3	3.2 mm (1/8")	<ul style="list-style-type: none"> Galling and Scuffing resistance Typical applications include synchroniser rings, selector forks and piston rings.
Stainless Steel 420	13% Cr-Steel		W-504.1	1.6 mm (1/16")	<ul style="list-style-type: none"> The best all purpose material for general engineering applications Excellent wear properties and fair corrosion resistance Typically used for reclamation Low shrinkage, allows for thick build-up.
			W-504.3	3.2 mm (1/8")	
Stainless Steel 316L	Cr	18.0%	W-510.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Type 316L Austenitic Stainless Steel Good corrosion resistance Dimensional restoration.
	Ni	12.0%	W-510.3	3.2 mm (1/8")	
Stainless Steel 307	Cr	18.0%	W-515.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Type 307 Austenitic Stainless Steel Good corrosion resistance Dimensional restoration.
	Ni	8.0%	W-515.3	3.2 mm (1/8")	
1.0%C-Steel	Mn	6.0%			
	Fe	Bal.			
1.0%C-Steel	Cr	1.50%	W-550.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Can be used wherever hard, low shrink steel is required Poor corrosion resistance Dimensional restoration.
	Si	0.25%	W-550.3	3.2 mm (1/8")	
	C	1.00%			
	Fe	Bal.			

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Wire Type	Composition	FST p/n	Diameter (mm)	Typical Properties and Applications
Ni-base WC Ni-Hardcore™	WC 50% Si 4,5% B 1,8% C 04% Ni Bal. Cored wire	W-610.1	1.6 mm (1/16")	<ul style="list-style-type: none"> Dense and smooth layers with 50% content of wear-resistant FTC particles with hardness >2200 HV0.1 High resistance against abrasion. Good corrosion protection.
Alloy 88 Ni-Hardcore™	C 0.8% Si 3.0% Mn 0,17% Cr 16.00% B 2.8% Fe 1.0% W 15% Ni Bal Cored Wire	W-612.1	1.6mm (1/16")	<ul style="list-style-type: none"> Equivalent to Collmonoy 88 Provides extended service life at elevated temperatures to parts exposed to abrasion, erosion, fretting and galling. petroleum industry components such as pump sleeves, pump shafts, plungers, bushings, wear rings and compressor rods.
Ni S/F Alloy + W	C 1.1% Si 2.5% Mn 0.1% Cr 24.00% B 2.7% W 22% Ni Bal Cored Wire	W-614.1	1.6mm (1/16")	<ul style="list-style-type: none"> Hardness approx. 880 HV0.3 Coating could be fused after spraying. Suitable for thick-coating on parts subject to both high abrasion and corrosion: feeding screw in the wood industry, hammers, dredging wear parts, etc.
NiCr 30 Ceramic	30(YSZ / Al2O3 / Cr2O3) Cored Wire	W-630.1	1.6mm (1/16")	<ul style="list-style-type: none"> Hardness <1000 HV0.3 NiCr base cored wire filled with a special blend of ceramic oxides. Gives a dense coating resistant both against abrasive and erosive wear, wet corrosion and oxidation at high temperatures

Fe-Hardcore™ is a Trade name of Praxair

Wires

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Wire Type	Composition	FST p/n	Diameter (mm)	Typical Properties and Applications
FeCrMnSiB Fe-Hardcore™	Cr 29.0% Si 1.4% Mn 1.7% B 3.7% Fe Bal. Cored Wire	W-662.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Hardness approx 55 HRC • Equivalent to 95MXC(*) • Produces a hard, abrasive and corrosion resistant coating • Material has unique feature to increase hardness while in service • Conventional machining provide hard chrome like finish • Low coefficient of friction.
FeCrMnSiB Fe-Hardcore™	Ni 8% Cr 21% Mo 3.2% Si 1.1% Mn 1.2% Cu 1.9% B 2.2% Fe Bal.	W-663.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Hardness approx 45 HRC • Equivalent to 98MXC(*) • Produces a hard, abrasive and corrosion resistant coating • Material has unique feature to increase hardness while in service • Conventional machining provide hard chrome like finish • Low coefficient of friction.
FeCrMnSiB Fe-Hardcore™	Ni 6.0% Cr 23.0% Mo 3.5% Si 2.0% Mn 1.0% Cu 2.0% B 2.5% Fe Bal. Cored Wire	W-664.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Hardness approx 50 HRC • Equivalent to 96MXC(*) • Good abrasive and corrosion resistant coating at high temperature • Material has unique feature to increase hardness while in service • Low coefficient of friction.
Fe-Base CrC Fe-Hardcore™	Ni 3.0% Cr 26.0% Mo 0.8% Si 1.6% Mn 1.6% C 1.7% Fe Bal. Cored Wire	W-671.1		<ul style="list-style-type: none"> • Hardness approx 40 HRC • Equivalent to 98MXC(*) • Produces a hard, abrasive and corrosion resistant coating • Material has unique feature to increase hardness while in service • Conventional machining provide hard chrome like finish • Low coefficient of friction.

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Fe-Base WC Fe-Hardcore™	Ni 6.0% Cr 13.0% Si 1.0% Mn 1.0% B 2.0% TiC 6.0% WC 26.0% Fe Bal. Cored Wire	W-679.1	1.6 mm (1/16")	<ul style="list-style-type: none"> • Hardness approx 65 HRC • Equivalent to 97MXC(*) • Excellent abrasion resistance • Typical applications include: mining equipment, pump equipment etc.
NiCrAlY Ni-Hardcore™	C 0.02% Si 0.40% Mn 0,04% Cr 19,50% Al 10,50% Y 0,8% Ni Bal. Cored Wire	W-691.1	1.6mm (1/16")	<ul style="list-style-type: none"> • Used as BondCoat for many materials • Good diffusional stability and oxidation properties up to 980°C (1800°F) • Typically used as a TBC bondcoat • Wet grind with Silicon-Carbide wheels.
Pure Copper	Cu 99.9%	W-700.1 W-700.3	1.6 mm (1/16") 3.2 mm (1/8")	<ul style="list-style-type: none"> • Used for electrical conductivity applications, copper reclamation and decorative coatings.
CuAl	Al 8.0% Cu Bal.	W-710.1 W-710.3	1.6 mm (1/16") 3.2 mm (1/8")	<ul style="list-style-type: none"> • Produces dense, wear resistant coatings which are very machinable.
Monel	Cu 30.0% Ni Bal.	W-717.1 W-717.3	1.6 mm (1/16") 3.2 mm (1/8")	<ul style="list-style-type: none"> • Used for corrosion protection against brine or lye solutions;. however should not be used in acidic environments. • Marine corrosion protection • Excellent finishing.
Alloy 6 Co-Hardcore™	C 0,95% Si 1.4% Mn 0.8% Cr 30% Fe 3.0% W 4.20% Co Bal.	W-856.1	1.6mm (1/16")	<ul style="list-style-type: none"> • Equivalent to Alloy 6 • To be used when excellent resistance to metal to metal wear, oxidation,. High temperatures and corrosive environments • Valves in power industry • Forging and mixing tools • Risers

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Wire Type	Composition	FST p/n	Diameter (mm)	Typical Properties and Applications
Alloy 12 Co-Hardcore™	C 1.15% Si 1.8% Mn 0.9% Cr 29% Fe 3.0% W 6.50% Co Bal.	W-866.1	1.6mm (1/16")	<ul style="list-style-type: none"> • Equivalent to Alloy 12 • To be used when excellent resistance to metal to metal wear, oxidation, . High temperatures and corrosive environments • Valves in power industry • Forging and mixing tools • Risers
Alloy T-400 Co-Hardcore™	Mo 28.0% Cr 8.5% Si 2.5% Co Bal.	W-850.1	1.6mm (1/16")	<ul style="list-style-type: none"> • Excellent sliding wear properties up to 800 C • Good hardness, oxidation and corrosion properties • Low coefficient of friction • Suitable for applications with low lubrication • Similar to Triballoy 400
Babbitt	Sb 7.5% Cu 3.5% Sn Bal.	W-970.2 W-970.3	2.0 mm 3.2 mm (1/8")	<ul style="list-style-type: none"> • Produces dense coatings which are suitable for high speed and heavy duty bearings • Bearing reclamation.

NOTE: in this Consumable Guide the most generally industrial used wire products are listed. If products other than listed in this catalogue are required, please contact our customer support team.

Notes
