

Cladding, Carbides and Weld Overlay Materials

Metco Joining & Cladding is a world-class manufacturer and supplier of cladding and weld surfacing materials for a wide range of industrial applications. Our portfolio includes products for laser cladding, plasma transferred arc, oxygen-acetylene welding and arc welding processes.

Our materials are designed to protect your components in different service environments, including many of the harshest known. Through the use of our unique Scoperta™ rapid alloy development process, we formulate new compositions from a totally different viewpoint.

Metals & Alloys Portfolio

Type	Product	Particle Size/ Wire Diameter	Form	Nominal Chemistry	Processes
Cobalt-Based Alloys	Metco 1220A	-150 +53 µm	Powder	Co 28.5Cr 4.5W 3Fe 1.6Si 1.1C	LC, PTA
	Metco 1220B	-106 +45 µm	Powder	Co 28.5Cr 4.5W 3Fe 1.6Si 1.1C	LC, PTA
	Metco 1220C	-53 +20 µm	Powder	Co 28.5Cr 4.5W 3Fe 1.6Si 1.1C	EHLA
	Metco 1221A	-125 +45 µm	Powder	Co 27Cr 5.5Mo 3Fe 2.75Ni 1Si 0.3C	LC, PTA
	Metco 1223A	-125 +53 µm	Powder	Co 25.5Cr 9Ni 5Mo 3.5Fe 2W 0.08C	LC, PTA
	Metco 8100	1.2, 1.6 mm	Wire	Co 32Cr 13W 2.5C 2.5Fe 2.5Ni	GMAW, GTAW
	Metco 8101	1.2, 1.6 mm	Wire	Co 27Cr 4.3W 1Fe 0.5Mn 1.2C 0.9Si	GMAW, GTAW
	Metco 8102	1.2, 1.6 mm	Wire	Co 26Cr 7W 2Ni 1Fe 0.3Mn 1.4C 1Si	GMAW, GTAW
	Metco 8103	1.2, 1.6 mm	Wire	Co 25Cr 5.5Mo 2.5Ni 1Fe 0.2Mn 0.2C 0.5Si	GMAW, GTAW
	Metco 18C	-125 +53 µm	Powder	Co 27Ni 18Cr 6Mo 3.5Si 3B 2.5Fe 0.2C	LC, PTA, OAW, SF
Iron-Based Alloys	Metco 1001A	-150 +53 µm	Powder	FeB FeMo ELC FeCr FeMn B4C [PROPRIETARY]	SAW-BPW
	Metco 1016A	-106 +45 µm	Powder	Fe 17Cr 12Ni 2.5Mo 2.3Si	LC, PTA
	Metco 1018A	-250 +45 µm	Powder	FeMo FeCr FeB FeNb B4C [PROPRIETARY]	SAW-BPW
	Metco 1020A	-150 +53 µm	Powder	Fe Cr Mo Nb Ti [PROPRIETARY]	LC, PTA
	Metco 1020B	-53 +20 µm	Powder	Fe Cr Mo Nb Ti [PROPRIETARY]	EHLA
	Metco 1030A	-150 +53 µm	Powder	Fe Mo V C B Ni Mn Si [PROPRIETARY]	LC, PTA
	Metco 1030B	-53 +20 µm	Powder	Fe Mo V C B Ni Mn Si [PROPRIETARY]	EHLA
	Metco 1040A	-150 +53 µm	Powder	Fe V Cr Mn C [PROPRIETARY]	LC, PTA
	Metco 1051A	-150 +53 µm	Powder	Fe Cr Nb W Ti V C Mn B Si [PROPRIETARY]	LC, PTA
	Metco 8224	1.6 mm	Wire	Fe Mo V C B Ni Mn Si [PROPRIETARY]	GMAW, OA, SAW, GTAW
	Metco 8226	2.8, 3.2 mm	Wire	Fe Cr Nb Mo B C [PROPRIETARY]	OA, SAW
	Metco 8233	1.6, 2.8 mm	Wire	Fe Mn C B [PROPRIETARY]	GMAW, SAW, OA
	Metco 8247	1.6 mm	Wire	Fe Cr Mn Mo Ti Si C [PROPRIETARY]	GMAW, SAW
	Metco 8250	1.2 mm	Wire	Fe V Cr Mn C [PROPRIETARY]	GMAW, GTAW, SAW
	Metco 8288	1.6 mm	Wire	Fe Cr Nb Mn Mo V C [PROPRIETARY]	GMAW, GTAW
Nickel-Based Alloys	Amdry 7050	-150 +45 µm	Powder	Ni 3.2B 3Si	LC, PTA
	Diamalloy 2001	-45 +15 µm	Powder	Ni 17Cr 4Fe 4Si 3.5B 1C	EHLA, SF
	Metco 11A	-53 +20 µm	Powder	Ni 15Cr 4.2Si 3.5Fe 3.1B 0.7C	EHLA, SF, OAW
	Metco 11B	-106 +45 µm	Powder	Ni 15Cr 4.2Si 3.5Fe 3.1B 0.7C	LC, PTA, SF, OAW
	Metco 12C	-125 +53 µm	Powder	Ni 7.5Cr 3.5Si 2.5Fe 1.7B 0.25C	LC, PTA, SF
	Metco 14E	-125 +45 µm	Powder	Ni 11Cr 3.7Si 2.75Fe 2.2B 0.5C	LC, PTA, SF
	Metco 15E	-125 +53 µm	Powder	Ni 17Cr 4Fe 4Si 3.5B 1C	LC, PTA, SF
	Metco 15F	-53 +15 µm	Powder	Ni 17Cr 4Fe 4Si 3.5B 1C	EHLA, SF
	Metco 16C-NS	-125 +53 µm	Powder	Ni 17Cr 4Si 3.7B 3Fe 2.5Cu 2.5Mo 0.6C	LC, PTA, SF
	Metco 1625B	-90 +45 µm	Powder	Ni 21.5Cr 9Mo 5Fe 4Nb+Ta	LC, PTA
	Metco 1625F	-53 +20 µm	Powder	Ni 21.5Cr 9Mo 5Fe 4Nb+Ta	EHLA
	Metco 1700A	-125 +45 µm	Powder	Ni 15.5Cr 16 Mo 4Fe 4.5W	LC, PTA
	Metco 1700B	-125 +53 µm	Powder	Ni 15.5Cr 16 Mo 4Fe 4.5W	LC, PTA
	Metco 1718A	-90 +45 µm	Powder	Ni 19Cr 3Mo 18Fe 5Nb+Ta 1Ti 0.08Mn 0.05C 0.2Si	LC, PTA
	Metco 1720A	-150 +53 µm	Powder	Ni Cr Mo Nb Ti [PROPRIETARY]	LC, PTA
	Metco 1720B	-53 +20 µm	Powder	Ni Cr Mo Nb Ti [PROPRIETARY]	EHLA
	Metco 7010	-180 +53 µm	Powder	Ni 3.5Si 1.8B	OAW, SF, PTA

Carbide Powder Portfolio

Type	Product	Particle Size	Form	Nominal Chemistry	Processes
Carbide – Self-Fluxing Alloy Blends	Metco 51019A	-355 +20 µm	Powder	60CTC-S 40(NiCrBSi) [PROPRIETARY]	OAW, SF, PTA
	Metco 51058	-150 +53 µm	Powder	60MTC 60CTC-S 40(NiCrBSi) [PROPRIETARY]	LC, PTA
	Metco 51059A	-106 +45 µm	Powder	60CTC-S 40(NiCrBSi) [PROPRIETARY]	LC, PTA
	Metco 51060A	-106 +45 µm	Powder	60CTC-S 40(NiCrBSi) [PROPRIETARY]	LC, PTA
	Metco 51151B	-420 +50 µm	Powder	55CTC-S C [DIAMOND] 45(Ni Cr B Si Fe C) [PROPRIETARY]	OAW, SF
	Metco 52053A	-150 +45 µm	Powder	70CTC-S 30(NiCrBSi) [PROPRIETARY]	LC, PTA
	PlasmaDur 51022	-180 +63 µm	Powder	60 CTC 40(Ni 3B 3Si) [CHROMIUM FREE]	LC, PTA
	PlasmaDur 51027	-150 +63 µm	Powder	60 CTC 40(Ni 3B 3Si) [CHROMIUM FREE]	LC, PTA
	PlasmaDur 51122	-180 +63 µm	Powder	60MTC 40(Ni 11Cr 3.8Si 2.7Fe 2.2B 0.4C)	LC, PTA
	PlasmaDur 51142	-180 +63 µm	Powder	60MTC 40(Ni 7.5Cr 3.5Si 2.5Fe 1.6B 0.2C)	LC, PTA
	Woka 53114	-106 +20 µm	Powder	50CTC 50(Ni 15.5Cr 3.8Fe 3.2B 4.2Si)	LC, PTA, SF
	Woka 53134	-106 +20 µm	Powder	60CTC 40(Ni 15.5Cr 3.8Fe 3.2B 4.2Si)	LC, PTA, SF
	Woka 53164	-106 +20 µm	Powder	60CTC 40(Ni 7.0Cr 3.0Fe 3.2B 4.15Si)	LC, PTA, SF
Carbide Blend Materials	Woka 56006	-125 +45 µm	Powder	60CTC 40(Ni 11Cr 2.8Fe 2.3B 3.8Si)	LC, PTA
	Metco 50002A	-106 +45 µm	Powder	SCTC WC/8Co Hardmetal Grit	OAW, SF, PTA
	Metco 50050A	-106 +45 µm	Powder	CTC-S	LC, PTA
	Metco 50075A	-106 +45 µm	Powder	SCTC WC/6Co	LC, OAW, SF, PTA
	Metco 50201A	-150 +53 µm	Powder	WTiC (W 22Ti 8C)	LC, PTA
	Woka 50001	-53 +20 µm	Powder	CTC	OAW, SF, LC, PTA
	Woka 50005	-90 +45 µm	Powder	CTC	OAW, SF, LC, PTA
	Woka 50007	-150 +63 µm	Powder	CTC	OAW, SF, LC, PTA, GMAW
	Woka 50009	-125 +4 5 µm	Powder	CTC	OAW, SF, LC, PTA, GMAW
	Woka 50024	-212 +150 µm	Powder	CTC	OAW, SF, LC, PTA, GMAW
	Woka 50037	-150 +106 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50040	-75 +38 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50043	-106 +75 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50051	-53 +20 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50052	-53 +20 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50054	-106 +45 µm	Powder	CTC-S	OAW, SF, LC, PTA
	Woka 50059	-125 +45 µm	Powder	CTC	OAW, SF, LC, PTA
	Woka 50101	-53 +20 µm	Powder	MTC	OAW, SF, LC, PTA, GMAW
	Woka 50105	-90 +45 µm	Powder	MTC	OAW, SF, LC, PTA, GMAW, GTAW
	Woka 50107	-150 +63 µm	Powder	MTC	OAW, SF, LC, PTA, GMAW
	Woka 50115	-180 +63 µm	Powder	MTC	OAW, SF, LC, PTA, GMAW
	Metco 50143A	-63 +38 µm	Powder	MTC	OAW, SF, LC, PTA
Carbide Sinter Pellets	WOKA 50504	-180 +75 µm	Pellets	CTCP: WC 6Co	OAW, SF, PTA, LC, GMAW
	WOKA 50505	-125 +75 µm	Pellets	CTCP: WC 6Co	OAW, SF, PTA, LC, GMAW
	WOKA 50512	-250 +125 µm	Pellets	CTCP: WC 6Co	OAW, SF, PTA, LC, GMAW
	WOKA 50532	-250 +125 µm	Pellets	CTCP: WC 6Ni	OAW, SF, PTA, LC, GMAW
	WOKA 50538	-180 +106 µm	Pellets	CTCP: WC 6Ni	OAW, SF, PTA, LC, GMAW
	WOKA 50610	-600 +425 µm	Pellets	CTCP: WC 6Co	OAW

Rods, Electrodes and Wires Portfolio

Type	Product	Rod/Electrode/ Wire Diameter	Form	Nominal Chemistry	Processes
Carbide + Iron	WokaDur OAM	1.6, 2.4, 2.8 mm	Wire	50MTC 50(Fe 1.6Mn)	GMAW, GTAW
	WokaDur A	3.2, 3.5, 4, 5, 6 mm	Rod	60CTC 40(Fe 2.4C)	OAW
	WokaDur A-Plus	3.2, 3.5, 4, 5, 6 mm	Rod	60CTC-S 40(Fe 2.4C)	OAW
	WokaDur S70	4, 5 mm	Electrode	66SCTC 16.5Fe 6Cr 7.5C 4Nb	MMAW

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Rods, Electrodes and Wires Portfolio [continued]

Type	Product	Rod/Electrode/ Wire Diameter	Form	Nominal Chemistry	Processes
Carbide + Nickel	Metco 81022	2.4, 3.2, 4.8, 6.4 mm	Rod	60(WC) 40(NiCrBSi) [PROPRIETARY]	OAW
	Metco 81025	2.4, 4.0, 7.9, 11.1 mm	Rod	60(WC) 40(NiCrBSi) [PROPRIETARY]	OAW
	Metco 81030	4.0, 4.8 mm	Rod	60(WC) 40(NiCrBSi) [PROPRIETARY]	OAW, GTAW
	Metco 81586	2.4, 3.2, 4.8 mm	Rod	60(WC/C[DIAMOND]) 40(NiCrBSi) [PROPRIETARY]	OAW
	WokaDur NiA	4.0, 5.0, 6.0 mm	Rod	W 30Ni 2.5Cr 2.7C [CTC COATED]	OAW
		5.0, 6.0 mm	Wire		
	WokaDur NiA-Plus	8.0 mm	Rod	W 30Ni 2.5Cr 2.7C [CTC/CTC-S COATED]	OAW
		5.0, 6.0 mm	Wire		
	WokaDur NiA-Tube	2.8 mm	Rod	52.2W 37Ni 5.2Cr 2.9C 1.5Si 1.2B [CTC FILLED]	GTAW
	WokaDur NiE	4.0, 5.0, 6.0 mm	Electrode	60.4W 35Ni 3.5C 1.1B [CTC FILLED]	MMAW
	WokaDur NiE-Plus	4.0, 5.0 mm	Electrode	60.4W 35Ni 3.5C 1.1B [CTC-S FILLED]	MMAW
	WokaDur NiE-TM	1.4, 1.6, 2.4, 2.8 mm	Wire	50.8W 45Ni 2.4C 1.8B [MTC FILLED]	GMAW
	WokaDur NiE-Tube	1.6	Wire	50.8W 45Ni 2.4C 1.8B [CTC FILLED]	GMAW
	WokaDur NiE-Tube-Plus	1.6 mm	Wire	50.8W 45Ni 2.4C 1.8B [CTC-S FILLED]	GMAW
	WokaDur NiE-M	5.0, 6.0 mm	Electrode	60.4W 35Ni 3.5C 1.1B [MTC FILLED]	MMAW
	WokaDur S80-Ni-TIG	3.0, 4.0, 5.0	Electrode	7.7Fe 75W 10Ni 7.3C	GTAW
	WokaDur SA100	2.4, 4.0, 5.6, 7.2, 8.8 mm	Rod	54W 20Cu 16Zn 4Ni 3Co 3C	OAW

Welding Process

- **LC:** Laser cladding
- **SAW-BPW:** Submerged arc bulk powder welding
- **GMAW:** Gas metal arc welding (MIG)
- **GTAW:** Gas tungsten arc welding (TIG)
- **OA:** Open arc welding (e.g., without gas)
- **MMAW:** Manual metal arc welding
- **SAW:** Submerged arc welding
- **EHLA:** High speed laser cladding
- **Oxy-Fuel Welding:** Oxygen-fuel gas welding
- **OAW:** Oxygen-acetylene welding
- **SF:** Spray and fuse powder welding
- **PTA:** Plasma transferred arc

Carbide Type

- **CTC:** Cast and crushed tungsten carbide having a blocky shape, (W₂C-WC), 2000 to 2300 HV0.1. Alternate designations for CTC are FTC or WSC.
- **CTC-S:** Spherical cast tungsten carbide, dense, spheroidal particles manufactured using a unique process, high density and hardness, 2700 to 3100 HV0.1. Alternate designations for CTC-S are FTC-S or WSC-S.
- **MTC:** Macrocrystalline tungsten carbide having a blocky shape with low decarburization during processing, results in higher wear resistance, 1700 to 2000 HV0.1.
- **CTCP:** Cemented tungsten carbide pellets are agglomerated and sintered carbide with small amounts of a cobalt or nickel matrix and having a spheroidal shape, 1400 to 1600 HV0.1.
- **SCTC:** Sintered and crushed tungsten carbide of angular to blocky shape, 1400 to 2300 HV0.1, dependent on particle size.
- **Tetrahedral Cemented Carbide:** Very large and sharp-edged carbides for cutting applications, 1300 to 1600 HV0.1.