

Base Materials

	YIELD STRENGTH MPa (psi)	BASE HARDNESS, ROCKWELL	AVAILABLE HARDNESS, ROCKWELL	OD WEAR RESISTANCE	ROOT WEAR RESISTANCE	CORROSION RESISTANCE
ALLOY STEELS						
XALOY SM-59	655 (95,000)	28 - 32 Rc	54 Rc ¹	FAIR	POOR	POOR
AISI 4140	689 (100,000)	28 - 32 Rc	48 - 55 Rc ¹	FAIR	POOR	POOR
AISI 4340	758 (110,000)	28 - 32 Rc	48 - 55 Rc ¹	FAIR	POOR	POOR
NITRALLOY 135M	586 (85,000)	33 Rc	60 - 70 Rc ²	GOOD	GOOD	POOR
TOOL STEELS						
D-2	2068 (300,000)	96 Rb	58 - 60 Rc ⁴	GOOD	GOOD	POOR
CPM-9V	1965 (285,000)	52-55 Rc	52-55 Rc ⁴	EXCELLENT	EXCELLENT	FAIR
CPM-S90V	2241 (325,000)	30 Rc	54-57 Rc ⁴	GOOD	GOOD	GOOD
H-13	2068 (300,000)	96 Rb	50 - 60 Rc ⁴	GOOD	GOOD	POOR
STAINLESS STEELS						
304	241 (35,000)	80 Rb	90 Rb	POOR ³	POOR	GOOD
316	241 (35,000)	95 Rb	90 Rb	POOR ³	POOR	GOOD
416	793 (115,000)	30 Rc	30 Rc	POOR ³	POOR	FAIR/GOOD
17-4PH	1207 (175,000)	38 Rc	42 Rc	POOR ³	FAIR/POOR	GOOD
SPECIALTY MATERIALS						
DURANICKEL 301	862 (125,000)	30 - 38 Rc	32 Rc	POOR ³	POOR	EXCELLENT
HASTELLOY® C-276	552 (80,000)	86 Rb	86 Rb	POOR ³	POOR	EXCELLENT

Notes: 1 - Flame-hardened; 2 - Nitrided; 3 - Requires hardsurfacing; 4 - Heat-treated.

Hardsurfacing Materials

Our proprietary PTA technology and rigorous quality control systems ensure consistent hardness and minimize cracking and bonding problems. The chart below lists available hardsurfacing materials and summarizes their wear resistance, barrel compatibility and applications.

TYPE	APPLIED BASE MATERIAL	HARDNESS, ROCKWELL	BARREL COMPATIBILITY		APPLICATION INFORMATION
			STANDARD BIMETALLIC	TUNGSTEN CARBIDE BIMETALLIC	
XALOY® X-183	NICKEL	48 - 52 Rc	EXCELLENT	GOOD	General purpose
XALOY® X-832	TUNGSTEN CARBIDE COMPOSITE	48 - 55 Rc*	POOR	OPTIMUM	All, including abrasive and/or corrosive materials
COLMONOY 56	NICKEL	46 - 52 Rc	EXCELLENT	GOOD	General purpose
COLMONOY 83	NICKEL	46 - 52 Rc	POOR	EXCELLENT	General purpose
FLAME-HARDENING	ALLOY STEEL	48 - 58 Rc	GOOD	FAIR	General purpose
STELLITE 6	COBALT	32 - 36 Rc	FAIR	POOR	General purpose
STELLITE 12	COBALT	34 - 38 Rc	FAIR	POOR	General purpose
INCONEL® 625	Ni-Cr-Mo	52 - 72 Ra	N/A	FAIR	Corrosive materials

* Based on lab results per ASTM G77-98: Lower value offers enhanced fracture resistance and higher wear resistance; test data available. Please contact your sales representative for further illustration.

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Our worldwide presence includes sales and service offices located in the United States, Europe, Thailand, Japan, China and India and a global network of agents geographically positioned to serve customers throughout the world.

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