

## MATERIAL SPECIFICATIONS

Half Arrow Boron Profile		HA8 / 8x8	HA11 / 8x10	HA19 / 16x10
Mill Grade		MRM41B18	MRM41B18	MRM41B18
<b>C</b>	Min	.15	.15	.15
	Max	.21	.21	.21
<b>Mn</b>	Min	.95	.95	.95
	Max	1.30	1.30	1.30
<b>S</b>	Max	.040	.040	.040
<b>P</b>	Max	.035	.035	.035
<b>Si</b>	Min	.20	.20	.20
	Max	.35	.35	.35
<b>Cu</b>	Max			
<b>Cr</b>	Min	.40	.40	.40
	Max	.65	.65	.65
<b>Mo</b>	Min	.25	.25	.25
	Max	.35	.35	.35
<b>V</b>	Min			
	Max			
<b>Ti</b>	Min	.03	.03	.03
	Max	.05	.05	.05
<b>B</b>	Min	.0005	.0005	.0005
	Max	.005	.005	.005

### Key to Elements

<b>C</b> - Carbon	<b>Mo</b> - Molybdenum
<b>Mn</b> - Manganese	<b>Ni</b> - Nickel
<b>Si</b> - Silicon	<b>Cr</b> - Chromium
<b>B</b> - Boron	



## MATERIAL HARDNESS VALUES

All Black Cat Blades **Through Hardened** cutting edges for Mining, Road Maintenance, and Construction applications are manufactured using high alloy "Boron" steels which are then heat treated, quenched and tempered to the following specifications:

### **BCB400 High Alloy Weld Friendly Quenched and Tempered**

#### **Including:**

Weld on Blades

Bolt on C.A.R.M Blades

Half Arrow Weld On (Rolled Bar)

Half Arrow Bolt On (Rolled Bar)

Wear Bar

#### **Target Hardness:**

301 to 390 Brinell (32 to 42 HRC)\*

336 to 421 Brinell (36 to 45 HRC)

362 to 421 Brinell (39 to 45 HRC)

410 to 512 Brinell (44 to 52 HRC)

336 to 390 Brinell (36 to 42 HRC)

### **BCB500 High Alloy High Abrasion Quenched and Tempered**

#### **Including:**

Bolt on Blades

Heat Treated Grader Blades

End Bits

Weld on Blades

#### **Target Hardness:**

410 to 512 Brinell (44 to 52 HRC)

421 to 512 Brinell (45 to 52 HRC)

381 to 443 Brinell (41 to 47 HRC)

301 to 390 Brinell (32 to 42 HRC)



## MATERIAL HARDNESS VALUES

Black Cat Blades **High Carbon** “as rolled” cutting edges for Road Maintenance and Construction applications are manufactured using high carbon alloy steels which are processed in “as rolled” condition and meet the following specifications:

### **BCB 1084 High Carbon Alloy Abrasion Resistant Bar**

#### **Including:**

#### **As Rolled:**

Bolt on Carbon Grader Blades	250 to 320 Brinell (25 to 34 HRC)
Bolt on Snow Plow Blades	250 to 320 Brinell (25 to 34 HRC)
Bolt on Construction Blades	250 to 320 Brinell (25 to 34 HRC)

### **BCB1055 Medium Carbon Alloy Weld Friendly Bar**

#### **Including:**

#### **As Rolled:**

Small Sizes Weld in Single Bevel	240 to 300 Brinell (22 to 32 HRC)
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\*Rockwell (HRC) hardness values are conversions using SAE tables, all process hardness measurements at Black Cat Blades are obtained with Brinell test equipment.