

ASTRALLOY SOLUTIONS

Astralloy-V[®] Dutchman

"We are amazed at the increase in life cycle we have experienced since using Astralloy's AV Dutchman solution. The reduction in downtime and maintenance has really made a positive impact on our business."

– Valued Customer

www.astralloy.com





Astralloy-V® Dutchman

The Astralloy-V® (AV) Dutchman acts as the “door stop” of a dipper. Its purpose is to receive and hold the dipper door shut and allow the door to open only when needed. The AV Dutchman experiences a tremendous amount of wear, due to the energy it absorbs from the continuous opening and closing of the dipper door. The AV Dutchman is made up of several components including: Latch Bar, Catch Insert, and Dutchman Block. All AV Dutchman parts can be produced from our Astralloy-V® steel grade.

TECHNICAL SPECIFICATIONS

Astralloy-V® is a unique, deep air-hardened steel that is rich in chemical composition and physical properties. It is through-hardened and unsurpassed in impact and abrasion resistance. With continuous impact and abrasion, Astralloy-V can reach a hardness in excess of 550 BHN without brittleness.

SOLUTION

Astralloy-V is specifically engineered for applications such as the AV Dutchman and its components. In some cases, we have seen our customers increase the wear life of these parts by up to 30% through the use of Astralloy-V. With the increase in wear life, Astralloy-V users have seen a decrease in downtime and maintenance, thus representing an increase in profits.

Astralloy-V’s unique chemical composition, along with its inherent air hardening process, create a grade that can reach a BHN hardness of up to 550, without showing signs of brittleness.

Unlike Manganese parts, Astralloy-V can be welded and “hard-faced” in the field using normal welding procedures. Additionally, by producing parts using Astralloy-V plate, Astralloy is able to offer the most versatile Dutchman packages in the market today. No matter the size of the dipper being used or the ore that is being mined, Astralloy will dramatically decrease your cost per hour.

Chemical Composition* – % Weight							
C	Mn	P	S	Si	Ni	Cr	Mo
.29	1.20	0.015	.010	.40	4.00	2.00	.50

Physical Properties – Typical Values at 68°F				
BHN Hardness	Tensile Strength	Yield Strength	Elongation in 2"	Charpy Test Toughness Index
418 – 512	241 ksi	157 ksi	12%	22 ft. lbs. @ RT

Comparative Benefits	
Astralloy-V Air Hardened	Quenched and Tempered Wear Steel
1. Hardness combined with toughness	1. Hardness with less toughness
2. Work hardenability up to 550 BHN	2. No work hardening ability
3. Lower coefficient of friction	3. Higher coefficient of friction
4. Excellent cold weather properties	4. Loss of properties at lower temperatures
5. Cold and hot formable and weldable, without loss of properties	5. Loss of properties during heating and welding

Note: The data contained in this document is accurate at time of printing, and intended for use as a general guide.
* Typical maximum values. Mill certifications are available upon request.



Astralloy’s AV Dutchman solution with a 30%+ improved wear life.



Dutchman block with the two bolts holding Astralloy’s insert in place. The Dutchman “latch” slides through the hole and catches on our AV insert.



Old Manganese insert which was removed.



Spring Creek Coal.

Call Us Today to Discuss Your Stopper Needs:

Toll-free: **866.587.6970** • Sales: **724.230.5100** | sales@astralloy.com