

EVRAZ manufactures a variety of premium rail in standard lengths of up to 80 feet (25 meters) at its facility in Pueblo, Colorado, USA. The product offering includes deep head hardened (DHH), one carbon pearlite (OCP), intermediate hardness high strength (IHHS), micro alloyed deep head hardened (DS), and now Apex™ G2 HH next generation head hardened premium rail. The most significant advance with Apex G2 HH next generation rail is the combination of properties delivered. The very high strength rail delivers a 20% improvement in ductility along with a 15% increase in K_{IC} fracture toughness. This combination of properties provides improved wear and rolling contact fatigue (RCF) resistance, along with good weldability for superior performance in track. Delivery options include rail car, truckload, and maritime service.

DIMENSIONS	115RE	119RE	132RE	133RE	136RE	141RE
Lb./Ft.	38.3	39.6	44.0	44.3	45.3	47.0
Height	6.610" - 6.655"	6.797" - 6.842"	7.110" - 7.155"	7.047" - 7.092"	7.297" - 7.342"	7.422" - 7.467"
Base Width	5.460" - 5.540"	5.460" - 5.540"	5.960" - 6.040"	5.960" - 6.040"	5.960" - 6.040"	5.960" - 6.040"
Head Width	2.694" - 2.744"	2.631" - 2.681"	2.975" - 3.025"	2.975" - 3.025"	2.913" - 2.963"	3.037" - 3.087"
Web Thickness	0.605" - 0.665"	0.605" - 0.665"	0.636" - 0.696"	0.668" - 0.728"	0.668" - 0.728"	0.668" - 0.728"

CHEMICAL COMPOSITION	C	Mn	P	S	Si	Ni	Cr	Mo	V
min	0.70-	0.20-			0.20-		0.40-		
max	0.90	0.90	0.020	0.020	0.80	0.25	0.90	0.060	0.010

MECHANICAL PROPERTIES	Yield Strength	Ultimate Tensile Strength	Elongation (min)	Reduction of Area
	145,000 psi	210,000 psi	10%	33% - 35%

MATERIAL TEST REPORTS

Chemical Composition, BHN Hardness, Hardness at Depth, Tensile Strength, Yield Strength, Elongation

HEAT TREATMENT

EVRAZ Rocky Mountain Steel produces steel from an Electric Arc Furnace (EAF) melt shop that features hydrogen removal through Vacuum Tank Degassing (VTD) and continuous bloom casting. The rail facility utilizes a second generation in-line head hardening system, Line Slack Quench (LSQ), which employs air as the quenching medium. This technology achieves superior hardness at depth and consistently exceeds AREMA requirements for surface hardness. Other operational features include advanced Profile Check technology and a new state-of-the-art Non-Destructive Testing (NDT) suite to help ensure exact geometrical profile and high quality. The combination of alloy design, rail rolling, and LSQ treatment is required to produce the Apex G2 HH next generation rail.

APPLICATIONS

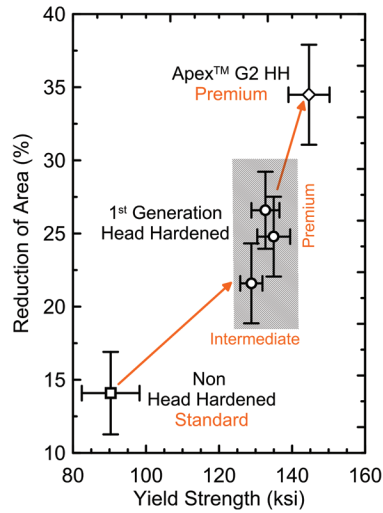
Typical applications are: curves that are greater than approximately 2 degrees; heavy haul tangent track; and any and all severe track conditions.

(continued on back)

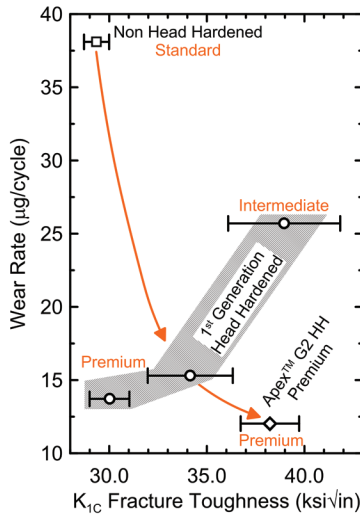
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STRENGTH AND DUCTILITY

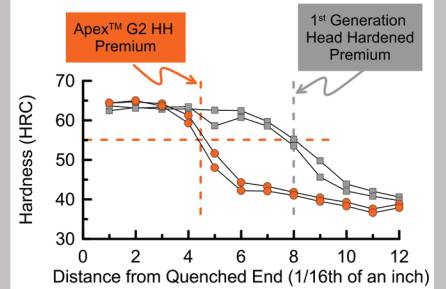


RAIL LIFE AND SAFETY

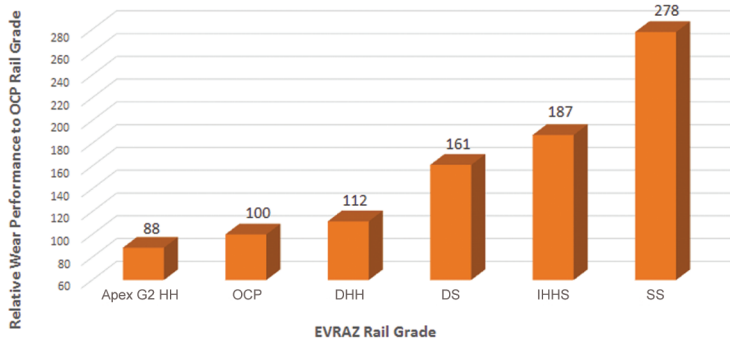


WELDING PERFORMANCE

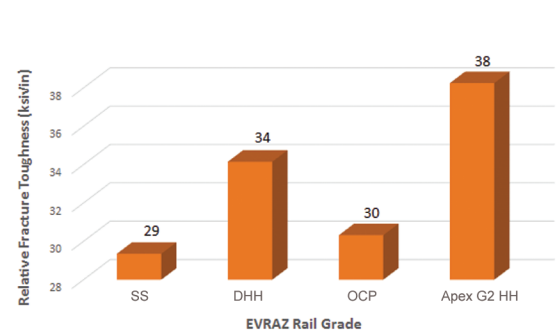
Jominy End Quench Testing



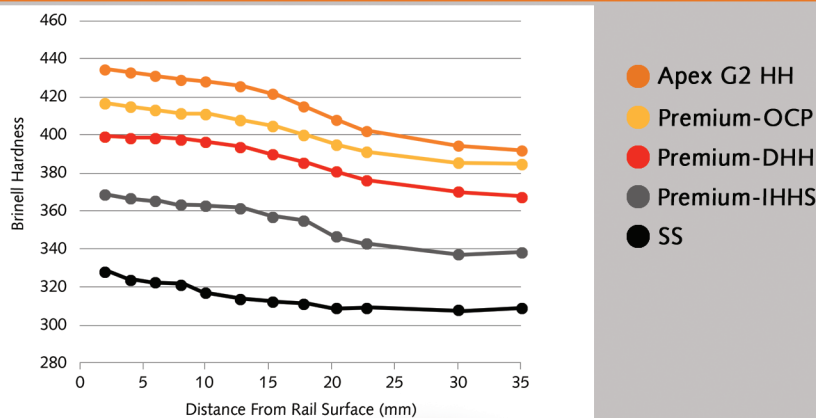
LABORATORY WEAR TESTING RESULTS (AS A FUNCTION OF GRADE)



FRACTURE TOUGHNESS (AS A FUNCTION OF GRADE)



RAIL HARDNESS (AS A FUNCTION OF DEPTH)



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