

Product Introduction: *Hi – Cal*®

1. Introduction

Hi – Cal® is a revolutionary new calcium treatment process adding calcium to liquid steel for castability improvement and inclusion modification. It combines technology changing ultra-high recoveries of calcium, with the ability to be injected with standard feeding technology.

Hi – Cal® is unique in the fact that pure calcium is encased in our unique and patented welded seam sheath.

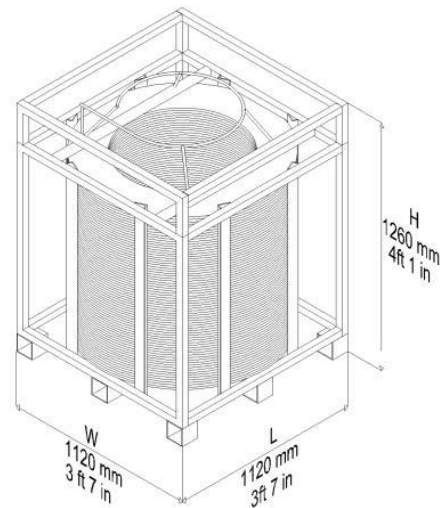
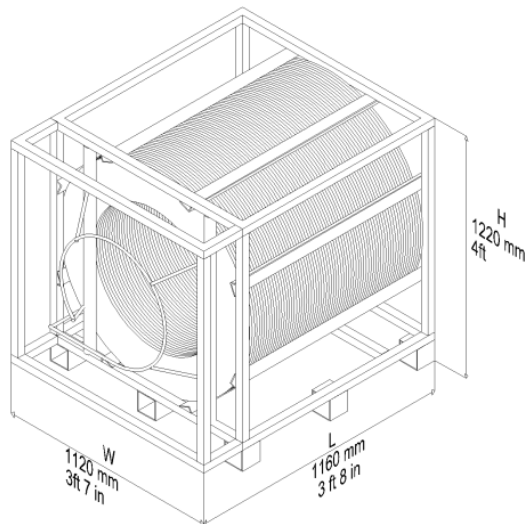
2. Technical specification

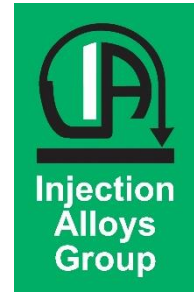
Chemical Analysis:

Calcium 98% min.



	Metric	Imperial
Wire diameter	10 mm	0.39 in
Powder weight	69 g/m	0.046 lb./ft.
Wire weight	292 g/m	0.196 lb./ft.
Net powder weight	359 kg	791 lb.
Coil gross weight	1518 kg	3347 lb.





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3. Previous results

Case Study 1

This facility produces slab using the traditional blast furnace route with ladle furnace and RH degassing capabilities. Calcium is used for casing and inclusion modification. Point of control is the secondary metallurgy stations. This facility is a silicon killed processor.

Hi – Cal® was introduced and optimized for the specific requirements of the facility. During trials, the speed was adjusted to obtain optimal recovery and satisfactory fuming. Below is a comparison of CaSi CCW vs *Hi – Cal*® at this facility, a decrease in cost per liquid ton treated was achieved:

	CaSi CCW	<i>Hi – Cal</i> ®
Standard deviation	13	7.8
Average recovery	27%	49%

Overall fuming, injection time and injection amount was reduced, and recovery was increased.

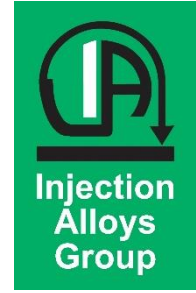
Case Study 2

The facility produces steel using the EAF route using a treatment station, using either silicon or aluminum to kill the steel. Point of control is the treatment station.

Hi – Cal® was introduced and optimized for the specific requirements of the facility. Below is a comparison of calcium wire vs *Hi – Cal*® at this facility:

	Calcium wire	<i>Hi – Cal</i> ®
Average amount Ca injected per treatment	Not available	17.42 kg
Average amount of wire injected	390 m	260 m
Average ppm Ca achieved	Not available	41 ppm
Average recovery	Not available	39.7%
Amount of Ca per liquid ton treated	0.154 kg/ton	0.104 kg/ton

Cost savings was achieved by reduced consumption, this also leads to reduced inventory and freight.



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Case Study 3

The facility produces billets using the EAF route using a ladle furnace.

Hi – Cal® was introduced and optimized for the specific requirements of the facility. Below is a comparison of calcium wire vs *Hi – Cal*® at this facility:

	CCW cal	<i>Hi – CaSi</i> ®
Average amount Ca injected per treatment	9.91 kg	7.94 kg
Average amount of wire injected	Not available	115 m
Average ppm Ca achieved	20 ppm	33 ppm
Average recovery	15.5%	32 %
Amount of Ca per liquid ton treated	0.124 kg/ton	0.08 kg/ton

Overall amount of material required was decreased, thus decreasing inventory required, reducing freight cost, reducing treatment time. This facility uses *Hi – Cal*® as its preferred calcium addition method.