
STAVIAN®
INDUSTRIAL METAL
DRI/HBI
(SPONGE IRON)
B R O C H U R E

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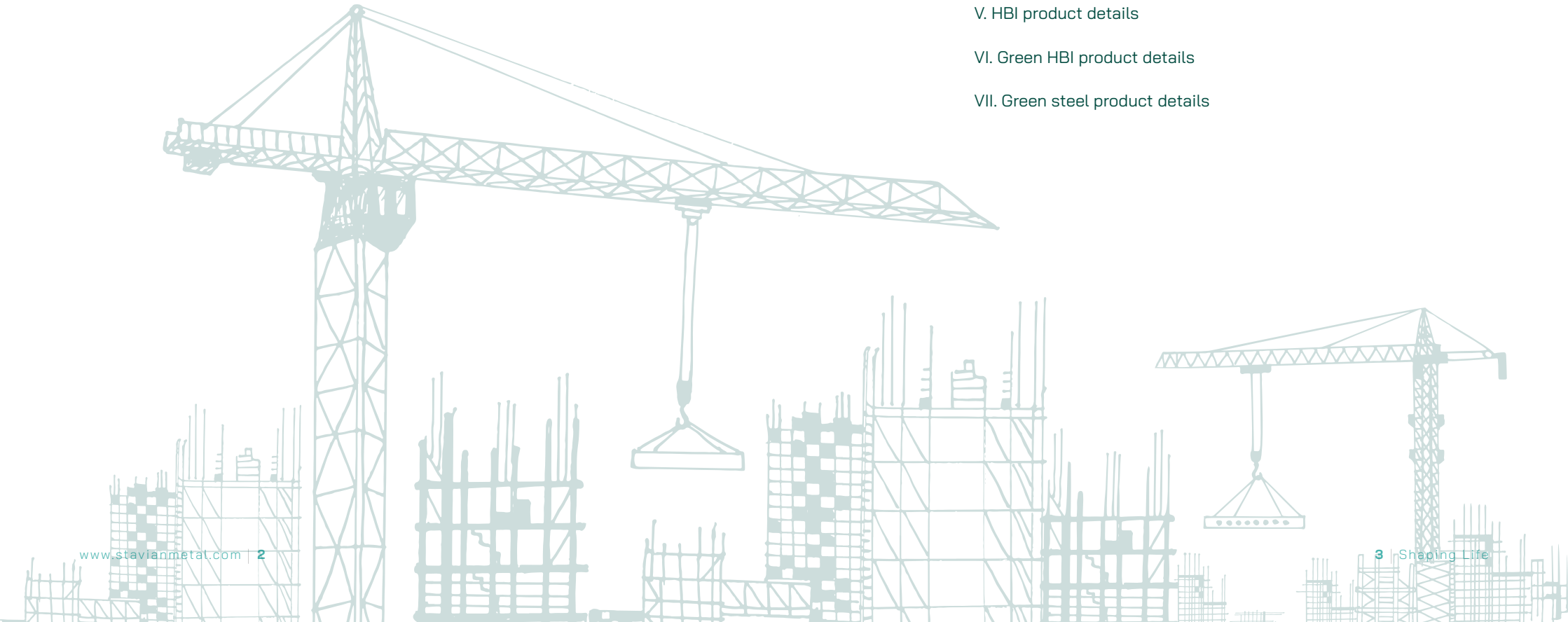




I. ABOUT US

Stavian Industrial Metal - a member of Stavian Group

Stavian Industrial Metal Joint Stock Company (abbr. "Stavian Industrial Metal") is proud to be a member of Stavian Group – leading infrastructure enterprise with four pillars: Industry, Technology, Energy, and Trade.

STAVIAN GROUP – A MULTINATIONAL COMPANY'S OUSTANDING CAPABILITIES

Founded in
2009

Revenue
~USD 2.8 billion (2025)

Customer network
20.000+ Partners & customers

Market presence
100+ Countries & territories

Global facilities
30+ International offices
40+ Worldwide logistics hubs
10+ Manufacturing factories
5 Industrial zones & Digital parks

Vision

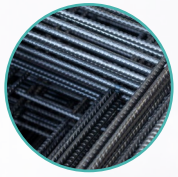
Stavian Industrial Metal is continuously pursuing its ambition for global expansion, striving to become one of the world's Top 10 enterprises in industrial metal processing, manufacturing investment and trading, while maintaining its position as the No.1 green metal business and carbon credit service provider in Southeast Asia.

Mission

Creating the utmost values for customers, shareholders, personnel, the community and natural environment through sustainable business.

Products & Services

Stavian Industrial Metal distributes a diverse range of industrial metal products with clear origins and abundant supply sources, including four main product categories:



1. STEEL



2. ALUMINIUM



3. COPPER



4. ZINC



II. SUPPLY CAPABILITY

Leveraging the global ecosystem of Stavian Group, together with its extensive operational network, warehousing system, and domestic & international partnerships, Stavian Industrial Metal possesses comprehensive supply capabilities for strategic raw materials serving the steel industry, with a strong focus on Direct Reduced Iron (DRI) and Hot Briquetted Iron (HBI).

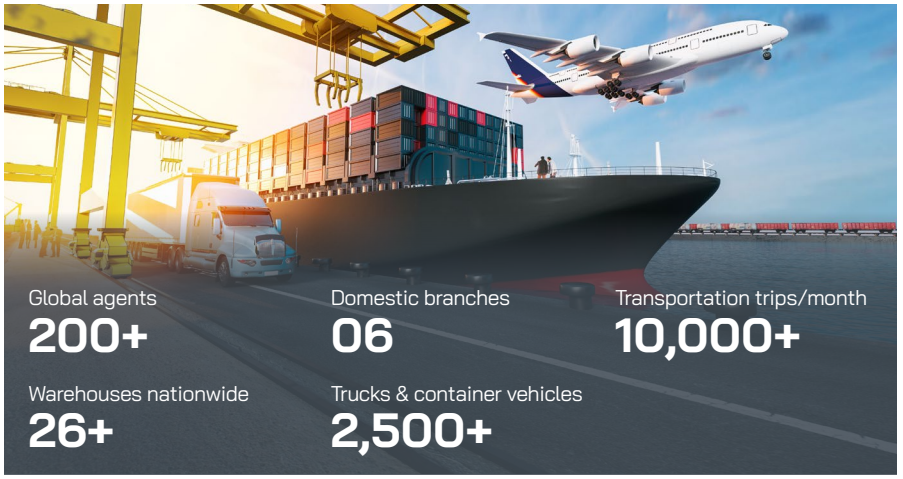
Through strategic cooperation with large-scale manufacturers equipped with advanced technologies and annual production capacity of millions of tons, Stavian Industrial Metal ensures a stable, flexible supply of DRI/HBI that meets international standards. In particular, HBI, with its high iron content, excellent stability, and advantages in long-term storage and transportation, serves as a high-quality raw material for various steelmaking technologies, including Electric Arc Furnace (EAF) and Blast Furnace/Basic Oxygen Furnace (BF/BOF) processes.

Anticipating the global steel industry's green transition, Stavian Industrial Metal focuses on developing a comprehensive portfolio of DRI/HBI and green DRI/HBI solutions, aiming to reduce emissions, optimize steelmaking efficiency, and enhance the quality of finished steel products. These solutions support steel manufacturers in reducing dependence on high-emission raw materials, improving batch consistency, controlling impurity levels, and gradually meeting increasingly stringent requirements from high-standard markets such as Europe, the United States, and Canada.

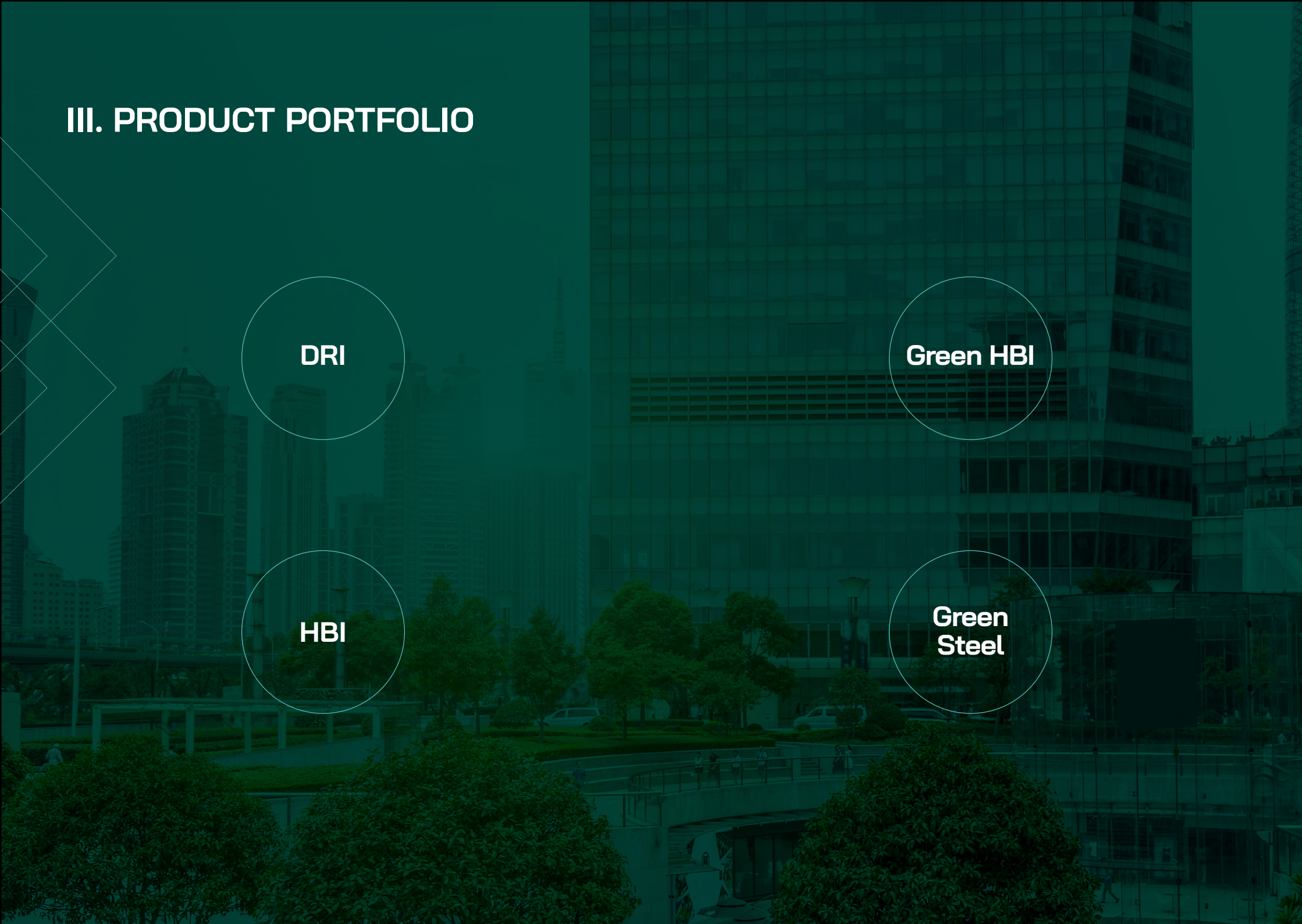
Beyond the role of a raw material supplier, Stavian Industrial Metal is committed to becoming a green metal supply chain solution partner, accompanying customers in their transition toward low-carbon steel production. This capability is strengthened by a solid financial foundation, a global partner network, strategic sourcing capabilities, and an integrated logistics system covering transportation, warehousing, coordination, and multimodal delivery.

Through these advantages, Stavian Industrial Metal helps customers secure stable supply, optimize costs, shorten delivery lead times, and ensure continuity throughout the raw material supply chain — key factors for steel manufacturers in a volatile market where sustainable development requirements are becoming new competitive standards.

SUPPLY & LOGISTICS NETWORK



III. PRODUCT PORTFOLIO





IV. DRI PRODUCT DETAILS

1. OVERVIEW

DRI – Direct Reduced Iron, also known as sponge iron, is a high-quality iron metallic raw material produced through the removal of oxygen from iron ore pellets or lump ore in a solid-state process without melting.

Stavian Industrial Metal supplies a diverse range of DRI products, including Cold Direct Reduced Iron (CDRI), Hot Direct Reduced Iron (HDRI), and Hot Briquetted Iron (HBI), providing flexible raw material solutions for steel mills utilizing EAF and BF/BOF technologies.

With clear origins, international quality standards, and broad applications, DRI products supplied by Stavian Industrial Metal contribute to optimizing metallurgical efficiency, improving finished steel quality, and supporting customers in their transition toward low-carbon steel production.

2. DRI PRODUCT CHARACTERISTICS



HBI



CDRI



HDRI

DRI is not merely an alternative to scrap steel; it serves as a strategic supplementary raw material that enhances charge quality, stabilizes metallurgical composition, and reduces dependence on inconsistent-quality scrap sources.

With high iron content, low impurity levels, and strong quality control capabilities, DRI is widely used in the production of high-quality steel grades, particularly suitable for steel mills requiring stable, clean, and efficient raw materials.

DRI PRODUCTS ARE AVAILABLE IN THREE MAIN FORMS, INCLUDING:

- **CDRI - Cold Direct Reduced Iron:** Cold DRI, suitable for storage, transportation, and flexible use in steel production.
- **HDRI - Hot Direct Reduced Iron:** Hot DRI, typically charged directly into the furnace to utilize residual heat, helping reduce energy consumption and improve operational efficiency.
- **HBI - Hot Briquetted Iron:** DRI compacted into briquettes at high temperatures, offering enhanced stability, better suitability for sea transportation, long-term storage, and international trade.

With these advantages, DRI/HBI are becoming increasingly important raw material solutions for the global steel industry's transition toward high-quality steel production, energy efficiency, and carbon emission reduction.



V. HBI PRODUCT DETAILS

1. OVERVIEW

HBI — Hot Briquetted Iron is a product formed from Direct Reduced Iron (DRI) through a hot briquetting process at temperatures above 650°C. This process creates high-density iron briquettes, typically achieving a density of over 5,000 kg/m³, with significantly improved stability compared to conventional DRI.

Thanks to its compact structure, HBI has lower porosity, better resistance to re-oxidation, and enhanced safety during storage, handling, and long-distance transportation, especially sea freight. The proportion of fines and particles smaller than **6.35 mm** is strictly controlled and maintained below **5% by weight**, ensuring consistent quality during steelmaking.

With its excellent stability, high iron content, and flexible applications, HBI is widely used as a high-quality metallic raw material for steel mills, particularly as the global steel industry shifts toward more efficient, cleaner, and lower-carbon production models.

2. HBI PRODUCT CHARACTERISTICS

HBI is a high-purity raw material with low impurity levels, helping improve charge quality and enhance the stability of finished steel. Compared with traditional raw materials that heavily rely on coke and limestone, HBI provides significant advantages in controlling chemical composition and minimizing unwanted elements during the steelmaking process.

Compared with conventional DRI, HBI offers significantly higher resistance to re-oxidation while limiting moisture absorption during storage and transportation. As a result, the product reduces risks of heat generation, improves storage safety, and enhances reliability during handling and international transportation.

The chemical composition of HBI is strictly controlled, certified by manufacturers, and compliant with ISO quality management standards, meeting the requirements of both domestic and international steel mills.

Key advantages of HBI

• High iron content, suitable for high-quality steel production.

• Low impurity levels, supporting more stable control of metallurgical composition.

• High density and low porosity, improving mechanical strength & product durability.

• Better resistance to re-oxidation than conventional DRI, enhancing safety during storage and transportation.

• Suitable for international trade, especially in long-distance supply chains.

• Supports low-carbon steel production, particularly when produced using renewable energy or green hydrogen.



3. TECHNICAL SPECIFICATIONS

Source: Midrex.com

Stavian Industrial Metal provides various types of HBI products depending on customer requirements:

Criteria	Unit	Specification
Total Fe	%	88 - 94.0
Metallization Rate	%	92 - 96
Apparent Density	Ton/m³	⩾ 5.0
Typical Dimensions	mm	Length: 90-140mm Width: 48-58mm Thickness: 30-34mm

4. DELIVERY

• HBI (Hot Briquetted Iron) is classified as Direct Reduced Iron (A) under the IMSBC Code, categorized as Group B – MHB (Material Hazardous only in Bulk).

• DRI (Direct Reduced Iron – B) requires transportation in an inert atmosphere (typically nitrogen) due to the risk of self-heating and hydrogen generation.

• Due to its significantly lower reactivity, HBI does not require an inert gas environment; transportation only requires proper ventilation and prevention of water accumulation throughout the shipping process.

• Stavian Industrial Metal cooperates with professional and reputable logistics partners to ensure safe, compliant, and efficient transportation of HBI products.

VI. GREEN HBI PRODUCT DETAILS

1. OVERVIEW

Green HBI is hot briquetted direct reduced iron produced through processes with significantly lower CO_2 emissions compared to conventional ironmaking methods using coke in blast furnaces.

Unlike conventional HBI, Green HBI is produced based on advanced direct reduction technologies, incorporating the use of hydrogen, renewable electricity, controlled-emission natural gas, or other suitable decarbonization solutions. As a result, the product contributes to reducing emission intensity across the steel production value chain, particularly when used as a raw material for Electric Arc Furnace (EAF) steelmaking.

With green metals development as a strategic focus, Stavian Industrial Metal is committed to building Green HBI supply capabilities through its international partner network, strategic sourcing channels, and integrated logistics system, supporting steel manufacturers in optimizing metallurgical efficiency, reducing emissions, and enhancing competitiveness in the global market.

2. DIFFERENTIATING BETWEEN CONVENTIONAL HBI & GREEN HBI

Criteria	Conventional HBI	Green HBI
Definition	HBI produced using conventional direct reduction technologies	HBI produced through low-carbon direct reduction processes
CO_2 Emissions	Relatively higher CO_2 emissions during the reduction process	Significantly lower CO_2 emissions, potentially approaching near-zero levels
Applications	Metallic iron feedstock for steelmaking processes such as EAF, IF, BOF, and BF to increase metallic iron content and improve production efficiency	Similar applications to conventional HBI, but specifically designed for low-emission and green steel production
Cost	Lower	Higher due to advanced technology & clean energy costs



3. APPLICATIONS

Green HBI serves as a high-quality raw material for steel production, particularly in low-carbon steelmaking models. The product helps stabilize charge quality, improve operational efficiency, reduce dependence on inconsistent scrap sources, and optimize production costs.

With its low emission intensity, Green HBI also plays an important role in accelerating decarbonization in the steel industry, helping businesses meet increasingly stringent environmental requirements in key markets such as the EU, the US, Canada, and other regions implementing similar emission control mechanisms such as CBAM.

4. CERTIFICATIONS

The HBI products supplied by Stavian Industrial Metal comply with international environmental standards & are recognized through reputable certifications such as ResponsibleSteel™ & EPD Certification (Environmental Product Declaration).

These certifications demonstrate environmental transparency, product traceability, and a strong commitment to emission reduction throughout the entire product life cycle.

5. EXCLUSIVE DISTRIBUTION PARTNERSHIP

Stavian Industrial Metal is the exclusive 10-year distribution partner for ACME's Green HBI products across Asia, Türkiye, and other international markets. The products are manufactured with a low emission intensity of below 150 kg CO_2 per ton of HBI, meeting increasingly stringent requirements for decarbonization & sustainable development in the steel industry.

Through a certified Green HBI supply source, Stavian Industrial Metal supports customers in enhancing supply chain transparency, meeting traceability requirements, and accelerating the transition toward sustainable steel production.



Photo: Signing ceremony for the cooperation agreement between ACME and Stavian Industrial Metal

VII. GREEN STEEL PRODUCT DETAILS

CO_2 emissions	< 0.6 tons CO_2e / ton of steel
Composition	(Max) 70% HBI
Technology	Energiron EAF technology (or equivalent)
Energy source	Utilization of natural gas, wind/solar power, and green hydrogen
Certifications	EPD - Environmental Product Declaration



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