



Iron & Steel Scrap Specifications Manual

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INTRODUCTION

Steel Dynamics Columbus Division wishes to consistently provide the highest quality Ferrous Scrap Commodities and Alternative Iron units to our melt shop through global sourcing and procurement. You, our VALUED SUPPLIERS, play an integral role in our success. In order to pay competitive prices for raw materials and meet the quality demands of finished product by our customers, it is imperative that the quality of the raw materials purchased is of a high standard and delivered in a timely manner to the mill. Dirty scrap, loose bundles, oversized, or non-conforming chemistry scrap (against the mill specification hereunder), cannot be used to produce a high quality finished product.

This raw materials manual is to assist in informing our suppliers of what we deem to be acceptable quality and standards in each raw material commodity. Your efforts in applying these standards will help ensure a long, continuing relationship with supplying raw materials for our mill. Please be assured that the personnel involved in the purchasing, receiving, grading or unloading of raw materials are trained in their respective areas and are taught to be 'FAIR AND CONSISTENT' for all of our customers.

The standards used in this manual are derived from the Institute of Scrap Recycling Industries' (ISRI) specifications and have been modified to meet the needs of our melt shop in Columbus.

Thank you for being a VALUED SUPPLIER and if you have any questions regarding the Raw Materials Specification Manual, please feel free to contact us for further clarification.

Steel Dynamics Flat Roll Group
Columbus Division
1945 Airport Road
Columbus MS 39701

662-245-4200

GENERAL TERMS AND CONDITIONS

1. **The Purchasing of Iron & Steel Scrap** is handled by OmniSource LLC a wholly owned subsidiary of Steel Dynamics on behalf of this division. Questions related to quality and information provided in this manual should be directed to 662-244-6744.
2. **Prices** are quoted for each commodity primarily at the beginning of each month. Steel Dynamics reserves the right to cancel any and all unfulfilled contracts on the last day of the calendar month at 5:00 P.M. CST. A purchase contract with a corresponding purchase order number will be issued for specific grades and quantities to be delivered within a specified period of time. Balances remaining on any purchase order not shipped by the specified completion date may be cancelled or extended at the discretion of the SDI Columbus. All prices are quoted in gross tons and all quantities expressed on the purchase order are in gross tons unless otherwise specified.
3. **Delivery** may be in truckload, rail, or barge at agreed upon minimum weights as specified at the time of purchase.
4. **Scale Hours** are subject to change, but are considered to be daylight hours. Please confirm with the OmniSource Representative or Scrap Procurement Specialist at SDI Columbus prior to shipping by truck.

Steel Dynamics reserves the right to modify or update this specifications manual as required.

Shipping Guidelines for Truck, Rail and Barge:

Truck

- **Shipping Terms:** Typically prepaid unless otherwise stated in the purchase order. A rejected truck will be assessed a \$125 fee.
A partial rejection/reload of a truck will be assessed a \$100 fee.
Suppliers trucks requiring the assistance of a mag crane will be assessed a \$150 fee.
*If fees are not paid within 30 days there will be a direct deduction from payment of delivery.

The purchase order number, material commodity code and description should be clearly reflected on the bill of lading.

- **Payment Terms:** Typically net 45 days.
- **Shipment Period:** Material must be shipped by 5:00 P.M. CST the last day of the calendar month stated on the contract. Steel Dynamics reserves the right at its own discretion to review the status of the contract, on the last calendar day of the month in which the scrap was purchased, at which time the contract may be cancelled or continued until the contractual obligation has ended.
- **Freight Terms:** Prepaid unless stated otherwise in the purchase order.

Steel Dynamics weight tickets are the governing weight for invoices.

Rail

5. **Shipping Terms:** Typically prepaid unless otherwise stated in the purchase order. Shipments arriving at the mill without shipping notices will be assessed a \$500 fee. A rejected railcar will be assessed a \$350 fee.

A partial rejection/reload of a railcar will be assessed a \$100 fee.

*If fees are not paid within 30 days there will be a direct deduction from payment of delivery.

- **Payment Terms:** Typically net 45 days.
6. **Shipment Period:** Material must be shipped by 5:00 P.M. CST the last day of the calendar month stated on the contract. Steel Dynamics reserves the right at its own discretion to review the status of the contract, at which time the contract may be cancelled or continued until the contractual obligation has ended.

7. **Freight Terms:** Prepaid unless stated otherwise in the purchase order.

Consignee: Steel Dynamics, Columbus Division

Rail Station: Arbela, MS

Final Rail Carrier: CAGY or KCS

Max Car Limit: 286,000 lbs.

Min Car Limit: Not applicable unless Steel Dynamics is covering the freight, then the GT Min Weight will be listed.

Steel Dynamics weight tickets are the governing weight for invoices.

8. **Delivery Terms:** Shipments will only be received at the Columbus mill against purchase orders where supplier enters shipping notices via Steel Dynamics Columbus Division website, <http://sip.colfr.steeldynamics.com/>. If you are not a registered user and need to know how to sign-up for a new account, visit the website for detailed instructions and videos. Please contact the Scrap Procurement Department. Any exceptions to the above must be pre-approved by Steel Dynamics.

Barge

9. **Shipping Terms:** FOB delivered to WATCO Port in Columbus, MS unless otherwise stated in the purchase order. There are additional freight charges to get material from the port to the mill. Shipments arriving at the port without shipping notices will be assessed a \$500 fee. Supplier is responsible for all incurred freight and handling charges of a partial/full rejected barge.

*If fees are not paid within 30 days there will be a direct deduction from payment of delivery.

- **Payment Terms:** Typically net 45 days.

10. **Shipment Period:** Material must be shipped by 5:00 P.M. CST the last day of the calendar month stated on the contract. Steel Dynamics reserves the right at its own discretion to review the status of the contract, at which time the contract may be cancelled or continued until the contractual obligation has ended.

11. **Freight Terms:** Prepaid unless stated otherwise in the purchase order.

Minimum Weights:

Rake: 1250 NT

Box: 1428 NT

D/F Rate: will be assessed accordingly

Steel Dynamics weight tickets are the governing weight for invoices.

12. **Delivery Terms:** Shipments will only be received at the Columbus mill against purchase orders where supplier enters shipping notices via Steel Dynamics Columbus website, <http://sip.colfr.steeldynamics.com/>. If you are not a registered user and need to know how to sign-up for a new account, please contact the Scrap Procurement Department for further assistance. Any exceptions to the above must be pre-approved by Steel Dynamics.

13. **Special Instruction:** 2 days free to load. \$300 per day after 2 free days for demurrage will be assessed which will be deducted from payment of delivery.

Barge Receiving/Payment Procedures:

- All barges are also surveyed by the mill designated surveyor. Mill draft survey weights govern and will be the final weight for invoices payable.
- Mill barge survey weights are cross-referenced and reconciled against the truck weights hauling from the port to the mill.

- Steel Dynamics Columbus Division accepted mill tolerance – less than (<) 2% from shipper survey and mill survey. All payments for material will be based on a less than <2% tolerance from the supplier origin survey and mill survey.
- In the event of a discrepancy greater than 2% mill tolerance, Shippers/Vendors should immediately contact Steel Dynamics Columbus with their concerns together with supporting documentation. Steel Dynamics will arrange for the two distinct surveyor parties to meet, exchange and verify calculations of the barge draft survey weights are consistent following a certified procedure. Once this has been done the vendor will have the right to address invoice questions with the Steel Dynamics Purchaser. Any settlements of disputed weights will be at the mutual consent between Steel Dynamics and the shipper (vendor).

GENERAL IRON & STEEL SPECIFICATIONS

In order to better understand this manual, the following definitions are provided.

- 1. Cleanliness:** All grades shall be free of dirt, non-ferrous metals, excessive rust and corrosion, or foreign material of any kind. Steel Dynamics Columbus will not accept any non-metallic materials (wood, concrete, dirt, fluff, plastics etc.) in loads. Any charges billed to SDI Columbus for dunnage left in a railcar or barge will be passed on to the shipper.
- 2. Closed Containers:** Shipments containing any closed containers including but not limited to sheared pipe (has to be open on both ends), gas tanks, oxygen/propane tanks, fire extinguishers or any sealed units designed for containing pressurized gas, liquid or substances, which have not been emptied and cut in half lengthwise, will be rejected.
- 3. Off-Grade Material:** The inclusion in a shipment of a particular grade of iron and steel scrap of a negligible amount of metallic material which exceeds to a minor extent the applicable size limitations, or which fails to a minor extent to meet the applicable requirements as to quality or kind of material, shall not change the classification of the shipment, provided it can be shown that the inclusion of such off-grade material is unavoidable in the customary preparation and handling of the grade involved.
- 4. Residual Alloys:** Wherever the term “free of alloys” is used in the classifications given herein, it shall mean that any alloys contained in the steel are residual and have not been added for the purpose of making alloyed steel.
- 5. Deviations:** Deviations from the general classifications of iron or steel commodities given herein may be allowed by mutual written agreement between Steel Dynamics Columbus and the supplier.

SAFETY AND ENVIRONMENTAL POLICIES

1. **Radioactive Material:** Steel Dynamics Columbus has radiation detection equipment located on all inbound shipping lanes and any shipment that triggers a radiation alarm will be rejected.
2. **Contractor and Visitor Safety Guidelines:**
 - At least 2 full business days advance request for a visit must be made to the OmniSource representative or the SDI Columbus Scrap Procurement Specialist. The request should include names, titles and affiliation of the contractors and/or visitors and purpose of the visit. Depending on the nature of business, a visitor's video or contractor video orientation must be completed prior to visiting any scrap receiving , processing, or steel production units.
 - Personal Protective Equipment must be worn onsite. Required equipment for this site include: hardhat, safety glasses or goggles to cover prescription glasses, safety vests, hearing protection as needed and steel-toed boots or metatarsals.
 - Follow all state road laws, plant speed limits and other traffic controls, such as stop signs and railroad crossings; adhere to safe approach and passage distances. Come to a complete stop if your view is blocked by steam or fog.
 - Dangerous areas have signage and signals to warn of potential site hazards. Remotely activated signs will notify and warn site travelers not to enter designated areas when lights are flashing.
 - Remain aware of audio warning devices – trains, auto, mobile equipment back up alarms, overhead cranes, plant start-up etc.
 - Heavy equipment has the right of way at all times. Stay at least 100 feet back from all equipment. Do not move to the back of equipment that has not acknowledged your presence.
 - Continually check your surroundings and never position yourself in the swing radius or blind spot of a material handler, forklift, pot-hauler, or loader. Stay out of tipping radius of any trailer that raises its bed to dump.
 - Do not park on or near a railroad track. Maintain a clearance of 10 feet from the centerline of the railroad tracks at all times.
 - All pedestrian and vehicle traffic is prohibited from going under any conveyor system when the slag plant is operating, due to the hazard of falling material.

Contaminants such as chlorinated plastics, free organic liquids, lead (except for leaded steel) and mercury are not appropriate or desired for the production of steel in EAF facilities. However, these contaminants are found in the scrap metal that is the basic feedstock for the production of new steel.

EPA has identified EAF facilities as potential sources of HAP emissions and, on December 28, 2007, promulgated final regulations (codified at 40 CFR Part YYYYYY) intended to control or minimize such emissions.

The regulations require EAF facilities, among other things, to restrict the use of certain scrap or follow a pollution prevention plan (PPP) for scrap purchased as production feedstock to minimize the amount of specified contaminants in such scrap.

Steel Dynamics is committed to complying with the requirements of the EAF Area Source Rule and to the goal of removing at least 80% of mercury convenience-light switches from motor vehicle scrap. Steel Dynamics is also committed to minimizing to the extent practicable the presence of other contaminants in scrap that may result in the emission of hazardous air pollutants (HAP).

Accordingly, Steel Dynamics has adopted and will comply with the provisions of this PPP designed to control the presence of such contaminants in scrap that is consumed in the EAF by adopting:

1. A specification for scrap that addresses contaminants identified by EPA
2. Procedures for verifying compliance with the specification
3. Procedures for taking corrective action against vendors who do not comply with the specification
4. Program policies, implementation elements, and training and outreach materials sufficient to demonstrate how Steel Dynamics will appropriately implement its responsibilities under the EPA-approved program.

This PPP must be approved by USEPA or a delegated authority. Any deficiencies identified by the permitting authority must be addressed within 60 days of disapproval of the PPP. A copy of the plan and supportive documentation must remain onsite for a period of three years.

The terms used in this Pollution Prevention Plan and in the outreach materials attached and incorporating to the PPP shall have the same definitions as those enumerated in EPA's Final Area Source Rule found at 40 CFR Part 63 Subpart YYYYYY. As outlined in the final rule, the term

“mercury switch” denotes only mercury switches that are part of a convenience light switch mechanism installed in a vehicle.

General Scrap Specifications:

The following restrictions apply to all scrap steel purchased or used by Steel Dynamics in its EAF steelmaking process:

- A. Scrap materials must be depleted to the extent practicable of used oil filters that are not drained, chlorinated plastics, and free organic liquids at the time of charging to the furnace.
- B. Lead-containing components of scrap, such as batteries, battery cables, and wheel weights, must be removed, to the extent practicable, prior to charging in the furnace unless the scrap is used to produce leaded steel.
- C. Scrap must be purchased from providers that have minimized the presence of mercury in scrap through current participation in the NVMSRP or another EPA-approved program.

Verification of Compliance with Specifications

- A. Free Organic Liquids, Chlorinated Plastics, Lead and Lead-Containing Components:
 - 1. Visual Inspection: Steel Dynamics conducts a visual inspection of incoming scrap loads to ensure that the scrap meets existing quality and/or purchase order specifications for grade, type, density, and content. Scrap is also inspected to determine whether there is an obvious presence of free organic liquids, chlorinated plastics, or lead-containing components. Every truck or railcar which enters the facility will be inspected at the scales, will pass through radiation detection, and will be inspected by trained inspectors when dumped or unloaded.
 - 2. Site Inspection: Steel Dynamics periodically visits scrap suppliers to audit conformance to Steel Dynamics Scrap Specifications.
 - 3. Depletion of Lead and Chlorinated Plastics from Shredded Scrap: Scrap that has been processed through a shredder that utilizes magnetic or density separation techniques to separate ferrous and non-ferrous materials will be

presumed to be depleted scrap of chlorinated plastics and lead to the extent practicable.

4. Unrestricted Scrap: Certain types of scrap, including “factory bundles,” “demolition debris,” “home scrap,” “return scrap,” “rail,” and “flashings,” as defined by common industry practice, as well as similar uncontaminated scrap, are not expected to contain free organic liquids, chlorinated plastics, or lead and will be presumed to be free of these contaminants. Suppliers are accountable to ensure that these contaminants do not get shipped with scrap to SDI Columbus. This scrap is not subject to the inspection and verification requirements of this plan.

B. Mercury

1. Steel Dynamics only purchases motor vehicle scrap from suppliers that participate in the National Vehicle Mercury Switch Recovery Program (NVMSRP).
2. Supplier Confirmation: Steel Dynamics Scrap Procurement annually sends out letters to motor vehicle scrap suppliers to verify their participation in the National Vehicle Mercury Switch Recovery Program (NVMSRP). Each supplier must sign the letter and send back to Steel Dynamics to confirm participation in the program for the previous and current calendar years.
3. Site Inspection: Steel Dynamics periodically visits motor vehicle scrap suppliers to check for conformance to Steel Dynamics Scrap Specifications and to confirm participation in the NVMSRP.

III. Corrective Action

A. Lead, Chlorinated Plastics, Free Organic Liquids

1. If, during inspection of scrap pursuant to Part II(A) above, Steel Dynamics determines that the scrap provider has not met the specifications in part I, the scrap provider will be subject to corrective action.

2. Any loads failing to meet standards will be rejected and a nonconforming scrap report will be generated.
 - a. After a failure to meet the scrap specifications in Part I, the scrap provider must sign a statement acknowledging the requirements of the scrap specifications and provide either certification or another comparable form of reasonable assurance that the scrap specifications will be met in the future.
 - b. If the vendor continues to fail to meet the scrap specifications, Steel Dynamics will consult with the scrap provider on the cause or reasons why the scrap loads are nonconforming and will inform the scrap provider that it may be suspended if the problem is not resolved.

B. Mercury

1. If, Steel Dynamics reasonably believes, either as a result of inspection, site visits to a scrap yard, review of supplier verification letters, review of the End of Life Vehicle Solutions (ELVS) database or by other means, that a scrap supplier is not taking appropriate steps to minimize the presence of mercury switches in scrap from end-of-life vehicles, Steel Dynamics will suspend purchase of motor vehicle scrap from the supplier.
2. The suspended motor vehicle scrap provider will not be allowed to supply motor vehicle scrap until it can demonstrate proof that they are participating in the NVMSRP and complying with mercury requirements.

IV. Program Policies, Implementation Elements, and Training and Outreach Materials

Steel Dynamics provides directive to staff and suppliers throughout the scrap supply chain of the need to remove mercury switches from end of life vehicles and participate in the NVMSRP. The following documents are part of our implementation elements and outreach materials.

- A. Steel Dynamics Iron & Steel Scrap Specifications Manual
- B. Steel Dynamics Supplier NVMSRP Confirmation Letter

CLOSED CONTAINERS/SEALED UNITS

The **SAFETY** of our employees comes first and foremost along with protecting our property and equipment. Closed containers and sealed units are a serious explosion hazard, which may result in the loss of life, limb, and /or property. Any vendor that fails to address the issue may result in the suspension or termination as an approved scrap supplier to Steel Dynamics Columbus.

No acetylene cylinder of any kind (pressurized or depressurized) can be accepted by Steel Dynamics Columbus because they typically contain asbestos.

No other closed containers will be accepted. These include, but or not limited to propane cylinders, Freon canisters, auto/truck drive shafts, shock absorbers, struts, torque convertors, gear boxes, conveyor rollers, compressed gas cylinders, fire extinguishers, hydraulic cylinders, munitions, air compressor tanks, fuel tanks, and any other sealed or closed container.

Any iron or steel shipment arriving at Steel Dynamics Columbus that is found to contain a closed container will be rejected.



OTHER UNACCEPTABLE MATERIAL

- No Asbestos – Typically in brake shoes, pipe insulation, etc.
- No Tires or tie pieces of any type.
- No free flowing oil either on the surface or containerized.
- No units containing PCS's of any type. (Polychlorinated biphenyls)
- No batteries of any type.
- No items containing Freon.
- No other types of refrigerants.
- No hazardous waste.
- No transformers.
- No flammable material.
- No liquids of any type.
- No foreign material (wood, insulation, concrete, dirt, plastic, etc.)
- No electric motors.
- No mercury containing scrap, including mercury contaminated automotive shred or frag.
- No fracking pipe or munitions of any type.
- No medical or industrial x-ray sources (sealed, shielded or unshielded)

IRON AND STEEL SPECIFICATIONS – Factory Bundles

Grade: Factory Bundles

Grade Code: ME0021

Dimensions: 48"x36"x24" maximum

Maximum Weight per Piece: n/a

Minimum Density: 80 lbs. per cubic ft.

Description: New automotive stampings derived from a single source baled at the factory source, not at a scrap yard or collection yard.

Fe Total		Fe Metallic		C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
98.00%	97.00%	n/a	n/a	n/a	.200%	n/a	n/a	n/a	n/a	n/a	.100%
Al ₂ O ₃		P		Cu		Ni		Cr			
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	.05%	n/a	0.080%	n/a	.300%	n/a	.20%		
Mo					Sn						
Min		Max			Min			Max			
n/a		.030%			n/a			.015%			

*Any other residual elements should be discussed

Factory Bundles



IRON AND STEEL SEPCIFICATIONS - #1 Busheling

Grade: #1 Busheling

Grade Code: ME0010

Dimensions: 60" x 24" maximum, 1"x1" minimum

Thickness: 1/8" maximum

Maximum Density: 45 lbs. per cubic ft.

Restrictions: Non-metallic, non-ferrous metals, excessive dirt, grease, oil, tin cans, vitreous enameled steel, radioactive material, tanks, cylinders, sealed units, heavy rust, electrical steel containing over .20% Si, bundles, nails, wire, high alloy steel, structural steel beams, mandrel coils, slitter coils, streamers, strapping, and torque converters. **Refer to pages 15 and 16 for other restricted items.**

Description: Prompt, clean industrial sheet steel scrap, can be "fluffy", typically that remains of a stamping, punching, or steel processing operation. Dense busheling is much more desirable than low density busheling.

Fe Total	Fe Metallic	C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max
98.00%	97.00%	n/a	n/a	n/a	0.20%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.05%	n/a	0.10%	n/a	0.300%	n/a	0.200%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.015%

*Any other residual elements should be discussed

#1 Busheling



IRON AND STEEL SPECIFICATIONS – Plate & Structural

Grade: Plate & Structural

Grade Code: ME0065

Dimensions: 60"x24"x12" maximum, 3/16" minimum thickness

Maximum Weight per Piece: 1500 lbs.

Maximum Density: 65 lbs. per cubic ft.

Restrictions: Non-metallic, non-ferrous metals, excessive dirt, grease, oil, soil pipe with leaded joints, tin plate, tin cans, radioactive material, uncut tanks, cylinders, sealed units, bundles, nails, wire, high alloy steel, and torque converters. **Refer to pages 15 and 16 for other restricted items.**

Description: Side frames and bolsters from rail cars, vintage ship and barge plate of known chemistry, heavy gauge tubing and pipes. Pipe over 6" in diameter must be split.

Fe Total	Fe Metallic	C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max
98.00%	98.00%	n/a	n/a	n/a	0.600%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.05%	n/a	0.170%	n/a	0.300%	n/a	0.200%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.030%

*Any other residual elements should be discussed

Plate and Structural



IRON AND STEEL SPECIFICATIONS - #1 Heavy Melt

Grade: # 1 Heavy Metal

Grade Code: ME0210

Dimensions: 60"x24"x12" maximum, 1/8" minimum thickness

Maximum Weight per Piece: 1500 lbs.

Minimum Density: 55 lbs. per cubic ft.

Restrictions: Non-metallic, non-ferrous metals, excessive dirt, grease, oil, soil pipe with leaded joints, tin plate, tin cans, municipal waste, turnings, borings, radioactive material, engine blocks, transmissions, exhaust system components, torque converters, uncut tanks, cylinders, sealed units, electric motors, alternators, wiring harnesses, cast iron, nails, high alloy steel, finer stock, no more than 25% coated material. Refer to pages 15 and 16 for other restricted items.

Description: Consists of steel scrap and wrought iron. This material may be black, painted, or galvanized. It may also include automobile scrap that has been properly prepared, skeleton plate and structural beams.

Fe Total	Fe Metallic	C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max
96.00%	96.00%	n/a	n/a	n/a	0.600%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.050%	n/a	0.30%	n/a	0.300%	n/a	0.500%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.050%

*Any other residual elements should be discussed

#1 Heavy Melt



IRON AND STEEL SPECIFICATIONS – Regular Shred

Grade: Regular Shred

Grade Code: ME0070

Dimensions: 12" max on any direction

Minimum Density: 70 lbs. per cubic ft.

Restrictions: Over 1T non-metallic, non-metallic over 1 foot, non-ferrous metals, excessive dirt, grease, oil, tin plate, Babbitt, radioactive materials, tanks, cylinders, sealed units, electric motors, rebar, incinerator scrap, turnings, borings, high alloy steel. **Refer to pages 15 and 16 for other restricted items.**

Description: Scrap that has been processed through a shredder. Feed stock is typically automotive and appliance based. Non-ferrous metals and non-metallic are removed after shredding automatically with a magnetic separator and then manually on a conveyor belt. All obvious non-metallic and copper should be removed.

Fe Total		Fe Metallic		C		Si		SiO ₂		S	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
98.00%		97.00%		n/a	n/a	n/a	0.200%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.050%	n/a	0.250%	n/a	0.300%	n/a	0.200%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.015%

*Any other residual elements should be discussed

Regular Shred



IRON AND STEEL SPECIFICATIONS – HBI

Grade: HBI

Grade Code: ME0040

Dimensions: 1.10 x 50 x 30 mm
 1" minimum thickness (2% maximum fines <1/4")

Bulk Density: 2.5 – 2.8 metric

tons/m³ Apparent Density

5.0-5.5 metric tons/m³

Restrictions: A quality certification must be sent for each barge/shipment. No loose DRI pellets.

Description: Briquetted iron made in a process that uses natural gas or other reductant to reduce iron ore. Lump or pelletized DR is compacted into briquettes during the later stages of processing. Briquettes are typically 4" x 2". The material requires more energy to melt than scrap due to the presence of non-metallic.

Chemistry specifications are defined mutually for each lot purchase or a contract. Actual examples of materials used by SDI Columbus are given below:

HBI Received at SDI Columbus					
	# 1	# 2	# 3	# 4	# 5
Fe (Total), %	91	90	91	89.5	90
Fe (Met), %	85.5	83.5	81	85	85.5
Metallization, %	94	91.5	93	94	94.5
C-Content, %	1.5	0.8	0.8	1	0.8
P-Content, %	0.04	0.13	0.08	0.08	0.08
S-Content, %	0.01	0.02	0.03	0.01	0.01
Gangue, %	6	7	4.4	6.5	6.6
SiO ₂ , %	2.5	2.75	2.5	3.5	3.75

HBI



IRON AND STEEL SPECIFICATIONS – Rail Road Wheels

Grade: Rail Road Wheels

Grade Code: ME0060

Dimensions: 42" diameter maximum

Maximum Weight per Piece: N/A

Minimum Density: N/A

Restrictions: No Axels. Axels cut flush to wheel is acceptable.

Description: Solid cast steel, forged, pressed and/or rolled steel car and/or locomotive wheels, not over 42 inches diameter.

Fe Total	Fe Metallic	C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max
93.00%	93.00%	2.00%	n/a	n/a	0.600%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.050%	n/a	0.170%	n/a	0.300%	n/a	0.200%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.030%

*Any other residual elements should be discussed

Rail Road Wheels



IRON AND STEEL SPECIFICATIONS – Rail Road Crops

Grade: Rail Road Crops

Grade Code: ME0220

Dimensions: 3' sections

Maximum Weight per Piece: N/A

Minimum Density: N/A

Description: Standard section, original weight 50 lbs. per yard and over, 3 feet in length

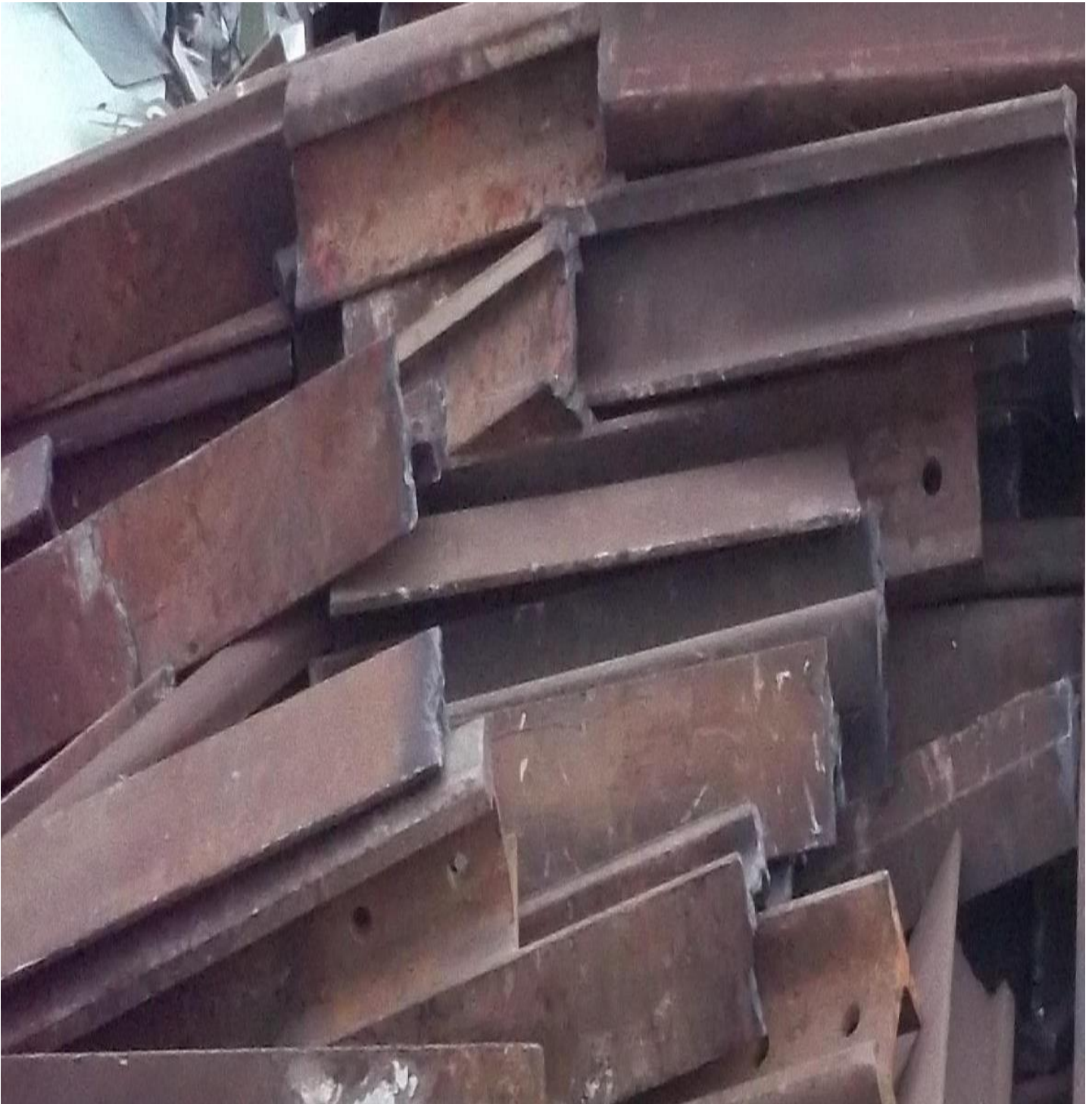
Fe Total	Fe Metallic	C		Si		SiO ₂		S	
Min	Min	Min	Max	Min	Max	Min	Max	Min	Max
93.00%	93.00%	2.00%	n/a	n/a	0.600%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.050%	n/a	0.170%	n/a	0.300%	n/a	0.15%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.030%

*Any other residual elements should be discussed

Rail Road Crops



IRON AND STEEL SPECIFICATIONS – Processed Slabs

Grade: Processed Slabs

Grade Code: ME0125

Dimensions: 36"x24"x12" maximum

Maximum Weight per Piece: 1500 lbs.

Minimum Density: 105 lbs. per cubic ft.

Description: length of metal that is rectangular in cross-section. It is created directly from continuous casting or indirectly by rolling an ingot.

Fe Total		Fe Metallic		C		Si		SiO ₂		S	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
97.00%	97.00%	97.00%	97.00%	2.00%	n/a	n/a	0.600%	n/a	n/a	n/a	0.100%

A1203		P		Cu		Ni		Cr	
Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
n/a	n/a	n/a	0.050%	n/a	0.080%	n/a	0.300%	n/a	0.200%

Mo		Sn	
Min	Max	Min	Max
n/a	0.030%	n/a	0.030%

*Any other residual elements should be discussed

Processed Slabs



IRON AND STEEL SPECIFICATIONS – Pig Iron

Grade: Pig Iron

Grade Code: ME0050

Dimensions: 4" to 9" base, pyramid shape is typical

Maxes: 6"x12"x6" & 5% fines

Minimum Density: 250 lbs. per cubic ft.

Restrictions: A quality certification must be sent for each barge/shipment.

Description: Iron that has been reduced from iron ore in a blast furnace or similar device. The liquid iron is poured into small castings called pigs. Because it is made from iron ore the residual content is extremely low.

Chemistry specifications are defined mutually for each lot purchase or a contract. Actual examples of materials used by SDI Columbus are given below:

	Pig Iron Received at SDI Columbus						
	# 1	# 2	# 3	# 4	# 5	# 6	# 7
Fe, %	94.5	94.8	95	94.3	94.5	94.8	94.3
C, %	4.75	4.5	4.5	4.6	4.75	4.75	4.5
Si, %	0.45	0.75	0.4	1	0.3	0.3	0.82
Mn, %	0.25	0.05	0.07	0.15	0.4	0.33	0.13
P, %	0.05	0.035	0.05	0.04	0.09	0.125	0.095
S, %	0.01	0.0075	0.025	0.014	0.005	0.013	0.02

Pig Iron



IRON & STEEL QUALITY/INSPECTION POLICY AND PROCEDURES

Commodity quality is essential to the success of Steel Dynamics Columbus, and therefore, maintaining strict control standards is a priority. We clearly understand that iron and steel by their nature, are unique commodities, and will work with all our suppliers to ensure our standards are fair and equitable.

To complement our Iron and Steel Specifications manual, which will be provided to all Vendors, we have implemented the following:

1. A strict inspection procedure. Every truck or railcar which enters our facility will be inspected at our scales, pass through radiation detection, and be inspected by trained inspectors when dumped or unloaded. No raw materials will be received without a purchase order.
2. Any loads failing to meet our standards, as outlined, will be rejected. If the load is acceptable scrap, but does not match the intended purchased grade, it will be at the discretion of Steel Dynamics Columbus whether to accept the load as a downgrade or to reject the load. If Steel Dynamics chooses to downgrade the load then the vendor must determine whether to return the load or accept the downgraded price.
3. Ongoing rejections and downgrades are costly and inefficient for both suppliers and Steel Dynamics Columbus. To control the quality of our raw materials and to be consistent with our suppliers, we have developed the Steel Dynamics Columbus, Iron & Steel Specifications Manual.

Contact Information:

Steel Dynamics
1945 Airport Road
P. O. Box 1467
Columbus, MS 39703
Toll Free: 1-866-369-3047
Direct: 1-662-245-4233
Fax: 1-662-245-4295
Email: Stanley.Davis@steeldynamics.com

IRON & STEEL COMMODITY SPECIFICATION, SAFETY, AND ENVIRONMENTAL COMPLIANCE AGREEMENT

The undersigned seller has read and agreed to Steel Dynamics Columbus Iron & Steel Specification manual. This includes general terms and conditions, environmental issues, closed containers/sealed units, radioactive material, other unacceptable material, and material specifications.

Supplier acknowledges that Steel Dynamics Columbus may not accept any shipment in whole or in part that does not meet the conditions and specifications described within the Specifications Manual. Vendor also acknowledges that by violating this agreement they may be disqualified from supplying raw material to Steel Dynamics Columbus.

Although Steel Dynamics Columbus will exercise reasonable effort to inspect scrap shipments, materials supplied can contain constituents not readily detected during normal inspection, which expose Steel Dynamics Columbus to hazards associated with use. Such constituents may include, for example, sealed containers, radiation sources, hazardous or flammable liquids, etc. In all cases Steel Dynamics Columbus acceptance of any shipment shall not constitute any waiver of its rights to pursue claim of damages if subsequent use results in damage or injury to personnel or property.

I, the undersigned supplier, or authorized representative of said supplier, do hereby acknowledge receipt and understanding of the specifications and conditions of this agreement.

Please complete and return by fax or email upon receipt

Supplier's Name: _____

Company Name: _____

Address: _____

City/State/Zip: _____

Phone: _____ **Ext:** _____ **Mobile:** _____ **Fax:** _____

Email: _____

Signature: _____ **Title:** _____

Date Signed: _____

Radiation Detection Equipment

Manufacturer Name: Hand Held _____ Truck _____ Rail _____

Model #: Hand Held _____ Truck _____ Rail _____

Rail Line _____ **Shipping Yard Locations** _____

Date: 1/1/2018

NON-DISCLOSURE AGREEMENT

Dear Supplier:

Thank you for your interest in serving as a Supplier to Steel Dynamics Columbus. For purposes of evaluating a potential business relationship between Steel Dynamics and Supplier, Supplier has requested that Steel Dynamics furnish Supplier with certain information relating to the operations, assets, finances, transactions and general business of Steel Dynamics and its affiliates (the "Confidential Information"). Steel Dynamics agrees to provide such Confidential Information to Supplier, subject to the express terms of this agreement ("Agreement").

For purposes of this Agreement, Confidential Information shall include but not be limited to all data, reports, records, trade secrets, financial statement and projections, customer and supplier identities and information, and/or other information and materials, whether in written, oral, electronic or other format, disclosed to Supplier both prior to and subsequent to executing this Agreement; in addition to any analyses, notes, reports, memoranda, work papers or work product prepared by Supplier or any of Supplier's employees, agents or representatives ("Supplier Representatives") derived from, based upon or containing Confidential Information. Confidential Information shall be expressly included the fact that Steel Dynamics and Supplier are contemplating a business relationship and the fact that Supplier has been permitted access to the Confidential Information.

In consideration of Steel Dynamics furnishing the Confidential Information, Supplier agrees to the following:

1. Supplier shall maintain such Confidential Information in strict confidence. Supplier shall not, directly or indirectly, disclose the Confidential Information to any other person or entity without the written consent of an authorized Officer of Steel Dynamics; provided, however, Supplier may disclose Confidential Information (a) subject to Paragraph 3 of this Agreement, to those of supplier's Representatives that have a need to review the Confidential Information to assist Supplier in evaluating the business relationship; and (b) subject to Paragraph 7 of this Agreement, if required by law or valid legal process.
2. Supplier shall not use the Confidential Information for any purpose other than in connection with the business relationship, and shall not use the Confidential Information in any manner that exploits or disadvantages Steel Dynamics or benefits any third party.
3. Supplier shall inform Supplier Representatives of Supplier's obligations under this agreement and will obligate Supplier Representatives to abide by the terms of this Agreement. In any event, the actions and omissions of Supplier Representatives shall be deemed by actions of Supplier with respect to the Confidential Information and, Supplier agrees that it is liable for any breach of this Agreement by Supplier

Representatives. Supplier acknowledges and agrees that any unauthorized use or disclosure of the Confidential Information shall constitute a material breach hereof and shall cause irreparable harm and loss to Steel Dynamics and its affiliates.

4. Upon Steel Dynamics request, Supplier shall either destroy or return to Steel Dynamics (at Steel Dynamics election) all Confidential Information (including all copies thereof) in possession of Supplier or Supplier Representatives.
5. Supplier shall take such action within five (5) business days of any such request and upon request of Steel Dynamics, shall supply Steel Dynamics with a written certification that Supplier has fulfilled its obligations under this Section 4.
6. Supplier acknowledges and agrees that Steel Dynamics is the exclusive owner of the Confidential Information, including all intellectual property rights contained therein. No license or conveyance of any such rights is granted to Supplier or implied under this Agreement.
7. In the event that Supplier and/or Supplier Representatives are required by law or valid legal process to disclose any of the Confidential Information, Supplier shall provide Steel Dynamics with prompt written notice so that Steel Dynamics may seek a protective order or other appropriate remedy and/or waive compliance with the provisions of this Agreement for purposes of such limited disclosure. If, in the absence of a protective order or the receipt of a waiver by Steel Dynamics, Supplier and/or Supplier Representative are nonetheless required to disclose Confidential Information, Supplier and/or Supplier Representatives may, without liability hereunder, disclose only that portion of the Confidential Information which, in the opinion of its respective counsel, is legally required to be disclosed.

Supplier understands that Steel Dynamics makes no representations or warranties regarding the accuracy or completeness of any Confidential Information. Supplier agrees that Steel Dynamics shall have no liability to Supplier or any Supplier Representative arising out of or in connection with the Confidential Information.

It is further understood that Steel Dynamics has appointed **Stan Davis**, or his designee ("Agent") as its contact person for purposes of this Agreement. Supplier agrees that it shall direct all communications and requests for information regarding Steel Dynamics through Agent or Agent's designated legal counsel. Supplier understands that unless specifically authorized by Agent, Supplier and Supplier's Representatives may not contact any other employee, or representative of Steel Dynamics. In addition Supplier and Supplier Representatives shall be prohibited from contacting any Steel Dynamics customers or Suppliers unless first receiving written authorization from Agent or an authorized Officer of Steel Dynamics.

Supplier further acknowledges and agrees that Steel Dynamics shall have no obligation to authorize or pursue a business relationship with Supplier or any other party. Steel Dynamics shall be free to pursue a potential business relationship with any party, as Steel Dynamics in its sole discretion shall determine.

This Agreement shall remain in full force and effect for so long as Supplier has access to any Confidential Information, and for a period of five (5) years thereafter. In the event of any breach of this Agreement by Supplier or Supplier's Representatives, Steel Dynamics and its affiliates, (in addition to and not in lieu of any other remedies at law or in equity that it may have), shall be entitled, without the requirement of posting a bond or other security, to equitable relief, including injunctive relief and specific performance.

This Agreement shall be governed by, and construed and enforced in accordance with, the laws of the State of Mississippi, without regard to its conflicts of law rules. In any action to enforce this Agreement, the prevailing party shall be entitled to recover its reasonable attorney's fees and costs. In the event that any portion of this agreement shall be deemed unenforceable, the balance of this Agreement shall remain enforceable and be interpreted as if the unenforceable provision is deleted from this Agreement. This Agreement shall bind Supplier's successors and assigns, and any assignment of this Agreement by Supplier without prior written consent of Steel Dynamics shall be void. This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and may be amended or modified only in a written instrument executed by the parties hereto.

If Supplier is in agreement with the foregoing, please sign and return one copy of this Agreement to Steel Dynamics, which thereupon will constitute an Agreement between parties, each intending to be legally bound, with respect to the subject matter hereof.

Very truly yours,

Steel Dynamics, Columbus

By: _____

Title: _____

**ACCEPTED AND AGREED TO:
SUPPLIER**

BY: _____

TITLE: _____

COMPANY: _____

Date Signed: _____