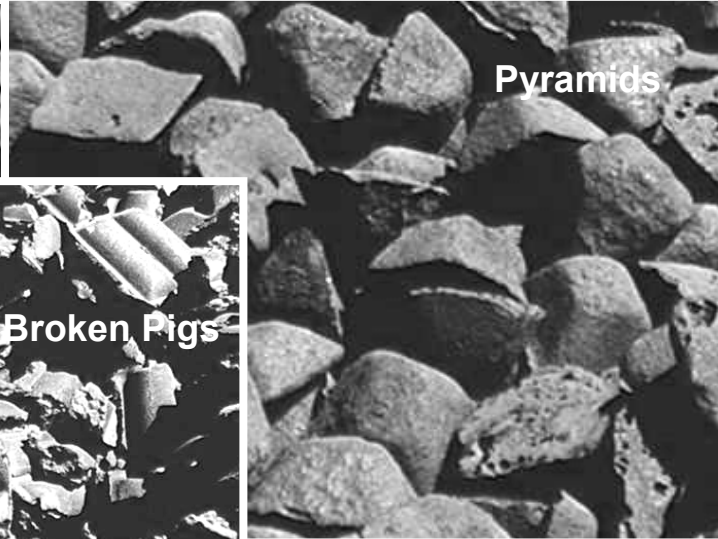


Material :	Steel Scrap	Grade :	All	SDI Part #	N/A
Industry Id :	ISRI #'s: N/A	A.K.A. :	N/A		
Scope :	The following general quality specifications apply to all scrap grades purchased by Steel Dynamics, Inc. for the purposes of melting at the Pittsboro, Indiana mill.				
Special Definitions :					
<u>“Downgrade”</u>	When a particular grade of scrap is found to not conform to its represented grade, it may, by agreement by SDI-PIT and supplier, be downgraded and accepted as an inferior grade of scrap. Refer to SOP TR-SOP-809 for downgrading procedures.				
<u>“Free of”</u>	When specified to be “free of”, the grade shall not contain any amount of prohibited material in any amount greater than that which is unavoidable in the customary preparation and handling of that particular grade.				
<u>“Free of alloys”</u>	Scrap is “free of alloys” if the residual content of the elements listed below, contained within the steel, do not occur at levels consistent with the purposeful creation of an Alloy Steel. Residual level of elements contained within the Scrap shall not exceed: Chromium (Cr) 0.20% Nickel (Ni) 0.30% Manganese (Mn) 1.5% Molybdenum (Mo) 0.10% The combined residual level, exclusive of manganese, shall not exceed 0.60%.				
<u>“Grade”</u>	A classification of scrap type based upon Institute of Scrap Recycling Industries (ISRI) ferrous scrap classification or SDI-PIT / vendor description.				
<u>“Off-Grade”</u>	A load of scrap shall be considered off grade if it fails to meet: 1. Applicable size limitations 2. Applicable requirements of material “kind” 3. Applicable requirements of material quality as specified in the material's (grade's) Raw Material Specification (RMS).				
General Specifications :					
Cast Iron	Unless specifically purchased as a Cast Iron or Pig Iron grade, all scrap grades shall contain less than 1% (by weight) of cast irons unless otherwise noted in the spec. This includes, but is not limited to, Cast Iron, Pig Iron, composite brake shoes, engine blocks and castings.				
Cleanliness	All grades shall be free of excessive rust, corrosion, dirt, oil, or grease.				
Fracking Scrap	All grades are to be free of gas and oil well perforation tools/piping and all other hazardous materials (e.g. explosives) associated with fracking.				
Hazardous Materials	All grades shall be free of hazardous materials, including, but not limited to, asbestos, electronic waste (to the extent practicable), explosives, flammable materials, hazardous waste, military-scrap (including ammunition casings), oil-filled devices (e.g. transformers or capacitors), radioactive materials, or refrigerants or refrigerant-containing materials (e.g., air conditioners or condensers),- All grades must be depleted to the extent practicable of chlorinated plastics. Materials that may contain chlorinated plastics include, but are not limited to, consumer products (e.g., carpeting, clothing, foam, furniture, Styrofoam), containers (e.g. bags, bottles, food packaging, packaging materials), or plastic motor vehicle components (e.g. battery casings, bumpers, plastic parts). All grades must be depleted to the extent practicable of lead and lead-containing materials. Materials that may contain lead include, but are not limited to batteries, lead-based paints, gasoline tanks, metal guttering and other terne material, mufflers and tail pipes, wheel balancing weights, babbitt, solder, radiators, and leaded joints in soil pipe.				

Hazardous Materials - Continued	All grades must be depleted to the extent practicable of mercury and mercury-containing materials. Materials that may contain mercury include, but are not limited to: mercury-wetted or -containing relays, switch gear, rectifiers, gauges, manometer, barometers, thermometers, and fluorescent lighting fixtures. All grades must be depleted to the extent practicable of organic liquids. Materials that may contain free organic liquids include, but are not limited to, oil filters engine blocks, oily turnings, oily machine shop borings, or storage drums or totes.
Inspection	All material is to be suitable and acceptable to Steel Dynamics, Inc. based upon inspection as per TR-SOP-809.
Loading/Unloading	All grades must be capable of being loaded and unloaded by electromagnet. Seller's indemnification includes indemnification for delivery under this Purchase Order by means of any frameless trailer. Seller agrees that it shall be solely liable for any and all damages, including any clean up and/or SDI down time resulting from Seller's utilization of any frameless trailers for delivery of the product covered by this Purchase Order. Seller shall be responsible for any costs, attorney fees or any consequential damages incurred by SDI for recovery of the Items due or owed by Seller under this paragraph.
Motor Vehicle Shred	Motor vehicle shred providers must participate in the National Motor Vehicle Switch Removal Program (NMVSRP) or another U.S. EPA-approved mercury switch removal program.
Non-Ferrous	Non-Ferrous: All grades are to be free of Non-Ferrous materials. Non-Ferrous materials include, but are not limited to, copper (electric motors, piping, compressors, wires, brass/bronze castings), aluminum, chromium (plated articles) or lead.
Non-Metallics	All grades are to be free of Non-Metallic Materials. Non-Metallic Materials include, but are not limited to, wood, paper, fiber, plastics, rubbers, foam, fluff, slag, concrete, dirt, or grease and oils.
Off-Grade	The grade shall be free of Off-Grade materials except where the vendor can demonstrate that inclusion of negligible amounts of Off-Grade materials are unavoidable in the customary preparation and handling of the grade involved.
Radioactivity	All grades shall not contain radioactive materials. Scrap loads found containing radioactive sources are to be immediately rejected and managed in accordance with TR-SOP-809. Under no circumstances shall any radioactive scrap be subject to acceptance through downgrade. Potential radioactive items that might be found in the scrap supply include, but are not limited to, industrial gauges, industrial radiography devices, medical therapy devices, beta- or gamma- particle emitting devices, static eliminators, pipe or casing scale, contaminated metal, or welded pieces.
Sealed Containers	All grades shall not contain Closed, Enclosed or Sealed Containers. Such containers may be accepted providing they have been processed such that; one end has been removed, a minimum of two large holes broach the "sealed" portion of the container, or the container has been cut in half. Closed, Enclosed, or Sealed Containers include, but are not limited to: • Hydraulic or gas cylinders • Air, Freon, Acetylene, Oxygen, Propane tanks • Automotive rear ends • Gear cases • Shock absorbers • Closed ball valves • Sealed units (e.g. refrigeration compressors) • Any vessel which contains and retains gases, oils, or fluids
Stainless Steel	All grades shall be free of stainless steel.
Tin Plate	All grades shall be free of tin-plated materials.

Material :		Steel Scrap Substitute				Grade :		Pig Iron				SDI Part #		P0100820			
Industry Id :						A.K.A. :								Basic Pig Iron			
Description :		• Cast Iron or Blast Furnace Iron, cast into Individual “Pigs”, grouped “pigs” (broken into smaller pieces), or pyramids. • Pigs’ weighing-30 – 100 pounds each.															
Typical Appearance																	
																	
																	
Sizing		Thickness (minimum)				≤ 8 "		Typical Density						180 - 200 (lbs / ft ³)			
		Maximum				28" x 12"											
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn						
Minimum (wt%)		3.00															
Maximum (wt%)		5.00	1.20	.15	.05	1.20											
Prohibitions		In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: • Beach Iron • Kish • Home Scrap • Broken Castings (other than broken Pigs) • Cast Iron Castings															
Allowances																	
Additional Notes																	

Material : Steel Scrap				Grade : # 1 Bundles				SDI Part # P0060110				
Industry Id : ISIS #s: 208				A.K.A. : Dealer Bundles								
Description : Clean Steel scrap, bushelling, clippings, sheet, or skeleton scrap compressed into a bundle												
Typical Appearance 						Typical Constituents Hydraulically compressed bundles consisting of: - Bushelling - Clippings - Punchings - Sheet steel 						
Sizing		Thickness (minimum)			na		Typical Density				75 - 90 (lbs / ft ³)	
		Maximum			48" x 36" x 36"							
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)			1.50	.05	.05	.50	.10	.10	.10	.03	.01	
Prohibitions		In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Auto body stock - Auto fender stock - De-tinned materials - Metal coated, limed, or vitreous enameled steels										
Allowances		Zinc or galvanized coated materials										
Additional Notes												

Material : Steel Scrap				Grade : # 1 Heavy Melting Scrap				SDI Part #		P0010510			
Industry Id : ISRI #s: 200, 201, 202				A.K.A. : #1, #1 Steel, Heavy Melt, HMS, HMS #1									
Description : Clean steel scrap ¼” thickness and over.													
Typical Appearance 							Typical Constituents - Structural Items - Plates - Truck Parts - Large Machinery parts - Automotive Parts excluding: - Gears - Transmission Parts - Torque Converters						
Sizing		Thickness (minimum)				≥ 1/4 "		Typical Density				45 - 60 (lbs / ft ³)	
		Maximum				60" x 24"							
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)				.05	.05		.35	.25	.25	.06	.025		
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Transmission parts - Torque converters - Gears - Chains - Cables - Springs - Stainless Steel - Galvanized scrap - Reinforcing bar													
Allowances - Alloy steel content must not exceed 15% by weight - Dies by SDI pre-approval - Cast Iron allowed to 10% - A few wheel rims - Gas cylinders sheared into two or more pieces allowed to 10% - A few springs													
Additional Notes Pipe over 8" diameter must be split													

Material : Steel Scrap				Grade : # 2 Bundles				SDI Part # P0070120				
Industry Id : ISRI #s: 209, 218				A.K.A. : Bales, Bundles								
Description :				• Old Black and galvanized sheet steel hydraulically compressed into rectangular cubes. • Unprepared #2 Heavy Melting Scrap hydraulically compressed into rectangular cubes for the purposes of increasing density								
Typical Appearance				Typical Constituents • “Post Consumer” goods • “White Goods” (appliance shells) • Used sheet goods (siding, canning stock, etc.) • Low density # 2 Heavy Melting Steel (compressed to increase density)								
												
Sizing		Thickness (minimum)			N/a		Typical Density				60 - 70 (lbs / ft ³)	
		Maximum			24" x 36" x 48"							
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)		Maximum Chemistries are difficult to determine as content varies widely from bundle to bundle										
Prohibitions		In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: • Municipal Scrap • Incinerator Scrap • Lead Coated Steel • Excessive fluff										
Allowances		• Vitreous enameled materials up to 15% by weight, provided the “white goods” do not contain wiring harnesses, motors, compressors, or capacitors. • Any individual bundle may contain up to 15% reinforcing bar.										
Additional Notes												

Material : Steel Scrap				Grade : # 2 Heavy Melting Scrap				SDI Part # P0020520					
Industry Id : ISRI #s: 203, 204, 205, 206				A.K.A. : #2, HMS #2, #2 Steel									
Description : - Steel Scrap, black or galvanized 1/8” thickness and over. - May include automotive scrap if properly prepared (rear ends, torque converters, and transmissions must be cut and drained). - Free of sheet iron and thin gage material													
Typical Appearance 					Typical Constituents - Small Diameter Pipe - Automotive Wheel rims - Reinforcing bar - Prepared automotive parts - Post-consumer steel goods - Light-weight structural items - Small machinery parts								
Sizing		Thickness (minimum)			≥ 1/8 “			Typical Density				40 - 55 (lbs / ft ³)	
		Maximum			36” x 24”								
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)				.03	.070		.55	.20	.20	.04	.04		
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Municipal scrap - Turnings - Stainless steels - Tin Coated steel - Lead Coated Steel - Vitreous enameled materials - White Goods													
Allowances - Alloy steel content must not exceed 25% by weight - Cast Iron content allowed to 25% by weight - May contain undersized <u>#1 Heavy Melting Steel</u> if prepared for compact charging - Gas cylinders sheared into two or more pieces allowed to 10% - Reinforcing bar must not exceed 25% by weight													
Additional Notes Pipe over 8” diameter must be split.													

Material : Steel Scrap				Grade : Plate and Structural Steel				SDI Part # P0110410				
Industry Id : ISRI #s: 231, 232				A.K.A. : P&S								
Description : • Clean cut structural and plate scrap. • Clean cut structural shape crop ends, shearings, or broken steel wheels												
Typical Appearance 					Typical Constituents • Structural Items • Plates • Large diameter pipe • Heavy walled pipe							
Sizing		Thickness (minimum)		≥ 1/4 "		Typical Density				60 - 70 (lbs / ft ³)		
		Maximum		60" x 24"								
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)				.04	.04		.30	.15	.15	.03	.015	
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: • Reinforcing bar must not be present												
Allowances • Heavy Walled Pipe must not exceed 20% by weight • This grade may be mixed with #1 Railway Scrap, provided that car sides do not exceed 20% by weight												
Additional Notes • Pipe over 8" diameter must be split												

Material : Steel Scrap				Grade : # 2 Shredded Steel				SDI Part # P0040320					
Industry Id : ISRI #s: 210, 211				A.K.A. : Auto Shredded, Fragmentized Scrap, Shredded									
Description :				• Homogeneous shredded steel scrap magnetically separated, originating from automobiles, unprepared # 1 Heavy Melting Steel and # 2 Heavy Melting Steel, and miscellaneous sheet steel.									
Typical Appearance													
													
Sizing		Thickness (minimum)				N/a		Typical Density				55 - 70 (lbs / ft ³)	
		Maximum				10" x 10" x 10 "							
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)				.04	.015		.32	.15	.15	.03	.015		
Prohibitions		In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: • Municipal Scrap • Incinerator Scrap • Lead Coated Steel • Vitreous enameled materials • Tin cans • Excessive fluff • Copper clad or plated steel											
Allowances		• Cast iron content not to exceed 5% by weight. Cast iron pieces may exceed 10", but must not exceed 16"											
Additional Notes		• Due to the nature of processing, this grade of scrap steel will contain small quantities of copper wiring and motor windings. Total copper content must not exceed 0.32%											

Material : Steel Scrap				Grade : Busheling				SDI Part # P0050210				
Industry Id :				A.K.A. : #1 Busheling								
Description : Clean steel scrap, including new factory busheling (for example, sheet clippings, stampings, flashings, etc.).												
Typical Appearance   												
Sizing	Thickness (minimum)			≤ 1/4"		Typical Density				60 - 75 (lbs / ft ³)		
	Maximum			36" x 60"								
Chemistry	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Minimum (wt%)												
Maximum (wt%)		0.60	0.02	0.02	0.30	0.10	0.08	0.08	0.02	0.02		
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Old auto body or fender stock - Tin or lead-coated materials - Limed, vitreous enameled materials												
Allowances Chemically detinned materials												
Additional Notes												

Material : Steel Scrap				Grade : Cast Iron Borings				SDI Part # P0160620				
Industry Id : ISRI #'s: 220, 222, 223				A.K.A. : Machine shop turnings, shoveling turnings								
Description : Clean steel turnings, wrought iron or cast iron borings, free of nonferrous metals, excessive oil, and scale.												
Typical Appearance 						Typical Constituents - Machine shop turnings - Cast iron borings - Malleable iron borings 						
Sizing		Thickness (average)		< 1/8"		Typical Density				35 - 50 (lbs / ft ³)		
		Diameter (average)										
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)				.03	.070		0.25	0.15	.20	.04	0.03	
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Excessive oil - Excessive rust - Dirt or scale - Nonferrous metals												
Allowances												
Additional Notes												

Material : Steel Scrap				Grade : Briquettes				SDI Part # P0150910				
Industry Id : ISRI #'s: 226, 227				A.K.A. : Briquetted Iron Borings, Briquetted Steel Turnings								
Description : Clean steel turnings, wrought iron borings, or cast iron borings, free of excessive oil, nonferrous metals, and scale. Compressed into a high-density briquette shape.												
Typical Appearance 						Typical Constituents - Steel turnings - Cast iron borings 						
Sizing		Thickness (average)		3 - 4"		Typical Density				40 - 55 (lbs / ft ³)		
		Diameter (average)		6 - 7"								
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)				0.03	0.08		0.25	0.15	0.20	0.04	0.03	
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Excessive oil - Excessive rust - Dirt or scale												
Allowances												
Additional Notes												

Material : Steel Scrap				Grade : Internal Re-melt Scrap				SDI Part # N/A					
Industry Id :				A.K.A. : Home Scrap, Tundish Skulls, Bar Crops, Pit Scrap									
Description : Bars or blooms of local origin cut into size appropriate for remelting. Tundish skulls and pit scrap broken down to usable dimensions. Material is color-coded to identify chemistry.													
Typical Appearance  Pit Scrap  Home Scrap						Typical Constituents - Caster head crops and tail crops - Furnace and ladle slag - Caster tundish skulls - Scrapped blooms or bars - Bar crops - Etch lab and Met lab samples  Tundish Skull							
Sizing		Thickness (average)				Typical Density				80 - 100 (lbs / ft ³)			
		Length (maximum)		5'									
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)											0.04		
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following:													
Allowances													
Additional Notes Color Code System: Green: Plain Carbon Steel Yellow: Resulfurized/Rephosphorized Steel/Rebar/Angle/High Copper Red: Chrome-Moly Alloy Steel Silver: High Chrome-Moly Alloy Steel Blue: Nickel-Chrome-Moly Alloy Steel													

Material : Steel Scrap				Grade : Gamma Shred				SDI Part # P0030310					
Industry Id : ISRI #'s: 210, 211, 212				A.K.A. : Auto Shredded, Fragmentized Scrap, Shredded									
Description : Homogeneous shredded steel scrap magnetically separated then subsequently analyzed by gamma excitation analysis and certified below 0.20 Cu, originating from automobiles, unprepared # 1 Heavy Melting Steel and # 2 Heavy Melting Steel, and miscellaneous sheet steel.													
Typical Appearance													
													
Sizing		Thickness (minimum)			N/A		Typical Density				55 - 70 (lbs / ft ³)		
		Maximum			10" x 10" x 10"								
Chemistry		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)				.04	.015		.20	.15	.15	.03	.015		
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Municipal Scrap - Incinerator Scrap - Lead Coated Steel - Vitreous enameled materials - Tin cans - Excessive fluff - Copper clad or plated steel													
Allowances Cast iron content not to exceed 5% by weight. Cast iron pieces may exceed 10", but must not exceed 16"													
Additional Notes Due to the nature of processing, this grade of scrap steel will contain small quantities of copper wiring and motor windings. Total copper content must not exceed 0.20%													

Material : Steel Scrap Substitute				Grade : B-Scrap				SDI Part # P0190510			
Industry Id : N/A				A.K.A. : Ladle B-Scrap							
Description : The steel/slag mixture leftover after a ladle (EAF or LMF) tear out. Commonly found on the rim of a ladle. Material is crushed before being received.											
Typical Appearance						Typical Constituents					
						EAF or LMF ladle scrap 					
Sizing	Thickness (minimum)						Typical Density			200-300 lbs/ft3	
	Maximum			0.5" x 24"							
Chemistry	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)		1.0	0.05	0.08		0.30		0.20			
Prohibitions In addition to commonly prohibited materials (PUR-SS-001), may not contain the following: - Dirt - Fines - Slag - Debris - Other material not identified as B Scrap											
Allowances Ladle skulls and/or lips not to exceed 20% by weight.											
Additional Notes											