
 <b>Steel Dynamics, Inc.</b> Structural & Rail Division 2601 County Road 700 E Columbia City, IN. 46725	<b>Raw Material Specification</b>	Document # :  <b>RMS 1400 – 000 - 001</b>	Revision # :  <b>7</b>
		Title :  <b>Steel Scrap General Requirements</b>	Issue Date :  <b>07/18/2013</b>
			Page # :  <b>1 of 3</b>

<b>Material :</b>	Steel Scrap	<b>Grade :</b>	All	<b>SDI Part #</b>	na
<b>Industry Id :</b>	ISRI #'s: na	<b>A.K.A. :</b>	na		
<b>Scope :</b>  These general specifications apply to all scrap grades purchased by Steel Dynamics, Inc. for the purposes of melting at the Columbia City, Indiana mill.  Specifications for the various "types" and "grades" of scrap consumed by Steel Dynamics, Inc., Structural and Rail Mill are found in the RMA 1400-XXX-001 series of documents.					
<b>Special Definitions :</b>					
<b><u>"downgrade"</u></b>		When a particular grade of scrap is found to not conform to its represented grade, it may, by agreement by SDI-CCI and supplier, be downgraded and accepted as an inferior grade of scrap.			
<b><u>"free of"</u></b>		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.			
<b><u>"free of alloys"</u></b>		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)         0.45% Manganese (Mn)    1.65% Molybdenum (Mo)  0.10% The combined residual level, exclusive of manganese, shall not exceed 0.60%			
<b><u>"Grade", "type"</u></b>		A classification of scrap type based upon Institute of Scrap Recycling Industries (ISRI) ferrous scrap classification, or; SDI-CCI / vendor description.			
<b><u>"Off-Grade"</u></b>		A load of scrap shall be considered <b>off grade</b> 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).			
<b><u>"NORM"</u></b>		<b>Naturally Occurring Radioactive Material</b> (radioactive material emitting at less than 2X background radiation level)			
<b>General Specifications :</b>					
<b>Cast Iron</b>		Unless specifically purchased as a Cast Iron or Pig Iron grade, all scrap grades shall contain less than 15% (by weight) of cast irons. This includes but is not limited to Cast Iron, Pig Iron, composite brake shoes, engine blocks, railway wheels, castings, etc.			
<b>Cleanliness</b>		All grades shall be free of excessive rust, corrosion, dirt, oil, swarf, grinding dust, scale, or grease.			
<b>Hazardous Materials</b>		All grades shall be free of hazardous materials, such as, but not limited to; oil filled devices (e.g. Transformers – even if drained may contain PCB residues), explosives, radioactive materials, electronic waste, etc.			
<b>Inspection:</b>		All material is to be suitable and acceptable to Steel Dynamics, Inc.			
<b>Lead:</b>		All grades are to be free of Lead and lead containing materials. Lead containing materials 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, leaded joints in soil pipe, forklift and equipment counter-weights, etc.			
<b>Loading:</b>		All grades must be capable of being loaded and unloaded by electromagnet.			

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- Mercury:** All grades are to be free of Mercury and mercury containing materials. Mercury containing materials include, but are not limited to: Mercury wetted or containing Relays, switch gear, rectifiers, gages, manometer, barometers, fluorescent lighting fixtures, etc.
- 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), lead, etc.
- Fracking scrap** All scrap grades are to be free of gas and oil well perforation tools/piping and all other hazardous materials (e.g. explosives) associated with fracking.
- 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, grease, oils, and etc.
- 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 SOP 6400-006-017 (*Exploranium Alarm Procedure*). Under no circumstances shall any radioactive scrap be subject to acceptance through downgrade.  
Potential radioactive items that might be found in the scrap stream are:

Material	Typical Radioisotope(s) found in scrap stream							
	<sup>60</sup> Co	<sup>90</sup> Sr	<sup>137</sup> Cs	<sup>192</sup> Ir	<sup>226</sup> Ra	<sup>232</sup> Th	<sup>241</sup> Am	norm
Industrial gaging devices	X		X		X		X	
Industrial radiography sources	X			X			X	
Medical therapy devices	X		X					
Beta emitting devices		X						
Static eliminators					X		X	
Pipe / casing scale								X
Contaminated metal	X					X		
Welded pieces						X		


- 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.

**Referenced Documents** RMA 1400-XXX-001 – Scrap type Specifications (various)  
SOP 6400-006-017 (*Exploranium Alarm Procedure*)

Approvals	Name	Title / Position
	Patrick Lueckenhoff	Melt Shop Metallurgist

Revisions	#	Nature of Change	Effective
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		Title :	Issue Date :
		Steel Scrap General Requirements	07/18/2013
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0	Original Issue	02 / 12 / 02
1	Additional prohibition on forklift and equipment counter-weights (Lead bearing)	10 / 27 / 04
2	Updated NORM definition & Radioactivity response SOP reference	03 / 23 / 05
3	Corrected document ref number to Exploranium Alarm Procedure	02 / 16 / 07
4	Reapproved	6/23/10
5	Added Electronic waste to hazardous material	08/6/12
6	Included Fracking pipe as prohibited materials	05/13/13
7	Updated fracking section	07/18/13



**Steel Dynamics, Inc.**  
Structural & Rail Division  
2601 County Road 700 E  
Columbia City, IN. 46725

# Raw Material Specification

Document # :

RMS 1400 – 001 - 001

Revision # :

5

Title :

Issue Date :

03 / 04 / 2020


Steel Scrap

Page # :

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# 1 Heavy Melting Steel


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<b>Material :</b> Steel Scrap				<b>Grade :</b> # 1 Heavy Melting Scrap				<b>SDI Part #</b> 1400-001-01					
<b>Industry Id :</b> ISRI #'s: 200, 201, 202				<b>A.K.A. :</b> #1, #1 Steel, Heavy Melt, HMS, HMS #1									
<b>Description :</b> <ul style="list-style-type: none"><li>Clean steel scrap ¼” thickness and over.</li></ul>													
<b>Typical Appearance</b> 						<b>Typical Constituents</b> <ul style="list-style-type: none"><li>Structural Items</li><li>Plates</li><li>Truck Parts</li><li>Large Machinery parts</li><li>Small Diameter Pipe</li></ul>							
<b>Sizing</b>		Thickness (minimum)		≥ 1/4 “		<b>Typical Density</b>				45 - 60 ( lbs / ft <sup>3</sup> )			
		Maximum		60” x 24”									
<b>Chemistry</b>		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)				.05	.05		.35	.25	.25	.06	.025		
<b>Prohibitions</b> In addition to commonly prohibited materials (RMA 1400-000-01), may not contain the following: <ul style="list-style-type: none"><li>Transmission parts</li><li>Torque converters</li><li>Gears</li><li>Chains</li><li>Cables</li><li>Forklift and Equipment Counter-Weights</li><li>Pipe with pinched ends trapping water or liquid.</li><li>Springs</li><li>Stainless Steel</li><li>Galvanized scrap</li><li>Automotive parts</li><li>Reinforcing bar</li><li>Hatfield Steel</li></ul>													
<b>Allowances</b> <ul style="list-style-type: none"><li>Alloy steel content must not exceed 15% by weight</li><li>Dies by SDI pre-approval</li></ul>													
<b>Acceptance Criteria:</b> Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.													

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Dustin Arvola	Melt Shop Metallurgist
	David Lunceford	Day Melting Supervisor


<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Prohibition on Forklift and Equipment Counter-weights	10 / 27 / 04
	2	Addition of Acceptance Criteria section	03 / 23 / 05
	3	Prohibitions: Added "Hatfield Steel"	08 / 01 / 07


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		Title :	<b>Steel Scrap # 1 Heavy Melting Steel</b>	Issue Date :	03 / 04 / 2020
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4	Reapprove	06/23/10
5	Piping with pinched ends not allowed & Approvers	03/01/2020

 <p><b>Steel Dynamics, Inc.</b> Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</p>	<h1>Raw Material Specification</h1>	Document # :	RMS 1400 – 002 - 001	Revision # :	3
		Title :	Steel Scrap # 2 Heavy Melting Steel	Issue Date :	03 / 04 / 2020
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<b>Material :</b>	Steel Scrap	<b>Grade :</b>	# 2 Heavy Melting Steel	<b>SDI Part #</b>	1400-002-01
<b>Industry Id :</b>	ISRI #'s: 203, 204, 205, 206	<b>A.K.A. :</b>	#2, HMS #2, #2 Steel		
<b>Description :</b>	<ul style="list-style-type: none"> <li>Steel Scrap, black or galvanized 1/8" thickness and over.</li> <li>May include automotive scrap if properly prepared (rear ends, torque converters, and transmissions must be cut and drained).</li> <li>Free of sheet iron and thin gage material</li> </ul>				
<b>Typical Appearance</b>			<b>Typical Constituents</b> <ul style="list-style-type: none"> <li>Small Diameter Pipe</li> <li>Automotive Wheel rims</li> <li>Reinforcing bar</li> <li>Prepared automotive parts</li> <li>Post-consumer steel goods</li> <li>Light-weight structural items</li> <li>Small machinery parts</li> </ul>		
<b>Sizing</b>	Thickness (minimum) Maximum		$\geq 1/8"$ 36" x 24"		<b>Typical Density</b> 40 - 55 ( lbs / ft <sup>3</sup> )
<b>Chemistry</b>	C	Mn	P	S	Si
Maximum (wt%)			.03	.070	
<b>Prohibitions</b>	In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following: <ul style="list-style-type: none"> <li>Municipal scrap</li> <li>Turnings</li> <li>Electrical steels w/ &gt; .5% Silicon</li> <li>Powder metallurgy parts</li> <li>Stainless steels</li> <li>Tin Coated steel</li> <li>Lead Coated Steel</li> <li>Vitreous enameled materials</li> <li>White Goods</li> <li>Pipe with pinched ends trapping water or liquid..</li> </ul>				
<b>Allowances</b>	<ul style="list-style-type: none"> <li>Alloy steel content must not exceed 25% by weight.</li> <li>Cast Iron content not to exceed 1%.</li> <li>May contain undersized #1 Heavy Melting Steel if prepared for compact charging.</li> <li>Reinforcing bar must not exceed 25% by weight</li> </ul>				
<b>Acceptance Criteria:</b>	Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.				
<b>Approvals</b>	<b>Name</b>		<b>Title / Position</b>		
	Dustin Arvola		Melt Shop Metallurgist		
	David Lunceford		Day Melting Supervisor		


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Revisions	#	Nature of Change	Effective
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Reapprove	06/23/10
	3	No piping allowed with pinched ends and new Approvers	03/01/2020



 <p><b>Steel Dynamics, Inc.</b> Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</p>	<h1>Raw Material Specification</h1>	Document # :	<b>RMS 1400 – 003 - 001</b>	Revision # :	<b>2</b>
		Title :	<b>Steel Scrap # 2 Shredded Steel</b>	Issue Date :	<b>06 / 23 / 10</b>
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<b>Material :</b>	Steel Scrap	<b>Grade :</b>	# 2 Shredded Steel	<b>SDI Part #</b>	1400-003-01							
<b>Industry Id :</b>	ISRI #'s: 210, 211	<b>A.K.A. :</b>	Auto Shredded, Fragmentized Scrap, Shredded									
<b>Description :</b>	<ul style="list-style-type: none"> <li>Homogeneous shredded steel scrap magnetically separated, originating from automobiles, unprepared # 1 Heavy Melting Steel and # 2 Heavy Melting Steel, and miscellaneous sheet steel.</li> </ul>											
<b>Typical Appearance</b> <div style="display: flex; justify-content: space-around;">   </div>												
<b>Sizing</b>	Thickness (minimum) Maximum		N/a 10" x 10" x 10 "		<b>Typical Density</b> 55 - 70 ( lbs / ft <sup>3</sup> )							
<b>Chemistry</b>	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)			.04	.015		.20	.15	.15	.03	.015		
<b>Prohibitions</b>	In addition to commonly prohibited materials (RMA 1400-000-01), may not contain the following: <ul style="list-style-type: none"> <li>Municipal Scrap</li> <li>Incinerator Scrap</li> <li>Lead Coated Steel</li> <li>Vitreous enameled materials</li> <li>Tin cans</li> <li>Excessive fluff</li> <li>Copper clad or plated steel</li> </ul>											
<b>Allowances</b>	<ul style="list-style-type: none"> <li>Cast iron content not to exceed 5% by weight. Cast iron pieces may exceed 10", but must not exceed 16"</li> </ul>											
<b>Additional Notes</b>	<ul style="list-style-type: none"> <li>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%</li> </ul>											
<b>Acceptance Criteria:</b>	Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.											

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Patrick Lueckenhoff	Melt Shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Reapproved	06/23/10





**Steel Dynamics, Inc.**  
Structural & Rail Division  
2601 County Road 700 E  
Columbia City, IN. 46725

# Raw Material Specification

Document # :

RMS 1400 – 004 - 001

Title :

Steel Scrap  
Bushelling

Revision # :

3

Issue Date :

03 /04 / 2020

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<b>Material :</b>	Steel Scrap	<b>Grade :</b>	Bushelling	<b>SDI Part #</b>	1400-004-01							
<b>Industry Id :</b>	ISIS #'s: 207, 207A, 212, 234	<b>A.K.A. :</b>	#1 Bushelling, Black Bushellig, Clippings, Punching									
<b>Description :</b>	<ul style="list-style-type: none"> <li>Clean steel – factory scrap: bushelling, clippings, or punchings.</li> </ul>											
<b>Typical Appearance</b>												
<p>clippings &amp; punchings</p>		<p>bushelling</p>		<p>punchings</p>								
<b>Sizing</b>	Thickness (minimum) Maximum		na 60" x 24"		<b>Typical Density</b> 70 - 80 ( lbs / ft <sup>3</sup> )							
<b>Chemistry</b>	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn		
Maximum (wt%)		1.50	.05	.05	.50	.10	.10	.10	.03	.01		
<b>Prohibitions</b>	In addition to commonly prohibited materials ( <a href="#">RMA 1400-000-01</a> ), may not contain the following: <ul style="list-style-type: none"> <li>Auto body stock</li> <li>Auto fender stock</li> <li>De-tinned materials</li> <li>Electrical steel over 0.5 silicon</li> <li>Metal coated, limed, or vitreous enameled steels</li> </ul>											
<b>Allowances</b>	<ul style="list-style-type: none"> <li>Black Steel clippings</li> <li>Zinc or galvanized coated materials</li> </ul>											
<b>Acceptance Criteria:</b>	<ul style="list-style-type: none"> <li>Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i>, apply.</li> <li>Any Bushelling containing pipe will have no pinched pipe ends which trap water or liquid.</li> </ul>											

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Dustin Arvola	Melt Shop Metallurgist
	David Lunceford	Day Melting Supervisor

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Reapprove	06/23/10
	3	No piping allowed with pinched ends and new Approvers	03/01/2020


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		Title :	Steel Scrap # 1 Bundles	Issue Date :	05/ 28 / 2010
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<b>Material :</b> Steel Scrap				<b>Grade :</b> # 1 Bundles				<b>SDI Part #</b> 1400-005-01			
<b>Industry Id :</b> ISIS #'s: 208				<b>A.K.A. :</b> Factory Bundles, Black Bundles							
<b>Description :</b> <ul style="list-style-type: none"> <li>Clean Steel scrap, bushelling, clippings, sheet, or skeleton scrap compressed into a bundle All new generation</li> </ul>											
<b>Typical Appearance</b>						<b>Typical Constituents</b>					
						Hydraulically compressed bundles consisting of: <ul style="list-style-type: none"> <li>Bushelling</li> <li>Clippings</li> <li>Punchings</li> <li>Sheet steel</li> <li>Skeleton scrap</li> </ul>					
<b>Sizing</b>		Thickness (minimum)		na		<b>Typical Density</b>				75 - 90 ( lbs / ft <sup>3</sup> )	
		Maximum		48" x 36" x 36"							
<b>Chemistry</b>		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn
Maximum (wt%)			1.50	.05	.05	.50	.10	.10	.10	.03	.01
<b>Prohibitions</b> In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following:											
<ul style="list-style-type: none"> <li>Auto body stock</li> <li>Auto fender stock</li> <li>De-tinned materials</li> <li>Greater than 10% painted material</li> <li>Electrical steel over 0.5 silicon</li> <li>Metal coated, limed, or vitreous enameled steels</li> <li>Obsolete materials</li> </ul>											
<b>Allowances</b> <ul style="list-style-type: none"> <li>Zinc or galvanized coated materials</li> </ul>											
<b>Acceptance Criteria:</b> Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.											

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Patrick Lueckenhoff	Melt shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Changed the material spec to reflect only new generation acceptable	5/28/10


 <b>Steel Dynamics, Inc.</b> Structural & Rail Division 2601 County Road 700 E Columbia City, IN. 46725	<b>Raw Material Specification</b>	Document # :  <b>RMS 1400 – 006 - 001</b>	Revision # :  <b>3</b>
		Title :  <b>Steel Scrap # 2 Bundles</b>	Issue Date :  <b>06 / 23 / 10</b>
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<b>Material :</b>		Steel Scrap				<b>Grade :</b>				# 2 Bundles		<b>SDI Part #</b>		1400-006-01			
<b>Industry Id :</b>		ISRI #'s: 209, 218				<b>A.K.A. :</b>		Bales, Bundles									
<b>Description :</b>		<ul style="list-style-type: none"><li>• Obsolete Black and galvanized sheet steel. Light gauge angles and shapes, hydraulically compressed into rectangular cubes.</li><li>• Unprepared #2 Heavy Melting Scrap hydraulically compressed into rectangular cubes for the purposes of increasing density</li></ul>															
<b>Typical Appearance</b>						<b>Typical Constituents</b> <ul style="list-style-type: none"><li>• “Post Consumer” goods</li><li>• Stripped appliance shells (without wiring, motors, compressors, circuit boards, plastic, or insulation)</li><li>• Used sheet goods (siding, un-tinned canning stock, etc.)</li><li>• Low density # 2 Heavy Melting Steel (compressed to increase density)</li></ul>											
																	
<b>Sizing</b>		Thickness (minimum)				N/a				<b>Typical Density</b>				60 - 70 ( lbs / ft <sup>3</sup> )			
		Maximum				60" x 48" x 36"											
<b>Chemistry</b>		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															
<b>Prohibitions</b>		In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following: <ul style="list-style-type: none"><li>• Municipal Scrap</li><li>• Incinerator Scrap</li><li>• Lead Coated Steel</li><li>• Excessive fluff</li></ul>															
<b>Allowances</b>		<ul style="list-style-type: none"><li>• Vitreous enameled materials up to 15% by weight, provided the “white goods” do not contain copper wire, harnesses, motors, compressors, capacitors, circuit boards, plastic or insulation.</li><li>• Any individual bundle may contain up to 15% reinforcing bar.</li></ul>															
<b>Acceptance Criteria:</b>		Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.															


<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Patrick Lueckenhoff	Melt Shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Change of Description and Allowances	04 / 18 / 08
	3	Reapproved	6/23/10

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 <div>Steel Dynamics, Inc. Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</div>	<b>Raw Material Specification</b>	Document # : <b>RMS 1400 – 006 - 001</b>	Revision # : <b>3</b>
		Title : <b>Steel Scrap # 2 Bundles</b>	Issue Date : <b>06 / 23 / 10</b>
			Page # : <b>2 of 2</b>


 <p><b>Steel Dynamics, Inc.</b> Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</p>	<h1>Raw Material Specification</h1>	Document # :	RMS 1400 – 010 - 001	Revision # :	5
		Title :	Steel Scrap Plate and Structural Steel	Issue Date :	03 / 04 / 2020
				Page # :	1 of 1


<b>Material :</b>	Steel Scrap	<b>Grade :</b>	Plate and Structural Steel	<b>SDI Part #</b>	1400-010-01						
<b>Industry Id :</b>	ISRI #'s: 231, 232	<b>A.K.A. :</b>	P&S								
<b>Description :</b>	<ul style="list-style-type: none"> <li>Clean cut structural and plate scrap.</li> <li>Clean cut structural shape crop ends, shearings, or broken steel tires</li> </ul>										
<b>Typical Appearance</b>			<b>Typical Constituents</b> <ul style="list-style-type: none"> <li>Structural Items</li> <li>Plates</li> <li>Large diameter pipe</li> <li>Heavy walled pipe</li> </ul>								
<b>Sizing</b>	Thickness (minimum) Maximum		$\geq 1/4$ " 60" x 24"		<b>Typical Density</b> 60 - 70 ( lbs / ft <sup>3</sup> )						
<b>Chemistry</b>	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)			.04	.04		.12	.15	.15	.03	.015	
<b>Prohibitions</b>	In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following: <ul style="list-style-type: none"> <li>Reinforcing bar must not be present</li> <li>Hatfield Steel – high Manganese Steel and Castings – railway frogs</li> <li>Pipe with pinched ends trapping water or liquid.</li> </ul>										
<b>Allowances</b>	<ul style="list-style-type: none"> <li>Heavy Walled Pipe must not exceed 20% by weight</li> <li>This grade may be mixed with #1 Railway Scrap, provided that car sides do not exceed 20% by weight</li> <li>With prior approval; delivered loads of this grade may contain (in part or whole) <u>clean truck rims</u>.</li> </ul>										
<b>Additional Notes</b>	<ul style="list-style-type: none"> <li>Pipe over 8" diameter must be split</li> </ul>										
<b>Acceptance Criteria:</b>	Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.										

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	David Lunceford	Day Melting Supervisor
	Dustin Arvola	Melt Shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	02 / 12 / 02
	1	Addition of Acceptance Criteria section	03 / 23 / 05
	2	Clean Truck Rim Allowance - with prior approval added	08 / 17 / 06
	3	Prohibition – added hatfield Steel	08 / 01 / 07
	4	Reapproved	6/23/10
	5	No piping allowed with pinched ends and new Approvers	03/01/2020




 <p><b>Steel Dynamics, Inc.</b> Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</p>	<h1>Raw Material Specification</h1>	Document # :	RMS 1400 – 011 - 001	Revision # :	2
		Title :	Steel Scrap Compressed/Briquetted Steel Blocks	Issue Date :	07 / 18 / 2013
				Page # :	1 of 1


<b>Material :</b>	Steel Scrap	<b>Grade :</b>	Briquetted Steel	<b>SDI Part #</b>	1400-010-01
<b>Industry Id :</b>	ISRI #'s: 226 227	<b>A.K.A. :</b>	Bricks, Pucks, Candy Bars, Blocks, Briquetted cast iron turnings and borings		
<b>Description :</b>	<ul style="list-style-type: none"> <li>Clean cut steel, wrought iron, and cast borings free of excessive oil, nonferrous materials, and scale</li> <li>Compressed into a high density Briquette shape</li> </ul>				
<b>Typical Appearance</b>			<b>Typical Constituents</b> <ul style="list-style-type: none"> <li>Steel turnings</li> <li>Cast iron turnings/borings</li> <li>Wrought iron turnings/borings</li> <li>Naturally Occurring Organic Binder</li> </ul>		
<b>Sizing</b>	Thickness (Average)	3-4"	<b>Typical Density (bulk)</b>		40-55 ( lbs / ft <sup>3</sup> )
	Diameter (average)	6-7"			
<b>Chemistry</b>	C	Mn	P	S	Si
Maximum (wt%)			0.03	0.08	
<b>Prohibitions</b>	In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following: <ul style="list-style-type: none"> <li>No more than 15% fines (material less than 2 " in thickness)</li> <li>Metallization must greater than 90%</li> <li>excessive oil, rust, dirt, scale</li> </ul>				
<b>Allowances</b>	<ul style="list-style-type: none"> <li>Binder other than naturally occurring organics must be disclosed and approved by SDI</li> </ul>				
<b>Additional Notes</b>	<ul style="list-style-type: none"> <li></li> </ul>				
<b>Acceptance Criteria:</b>	Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.				

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Patrick Lueckenhoff	Meltshop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	8 / 17 / 06
	1	Changed the ISRI #	12 / 31 / 2009
	2	Update	07/18/2013



 <p><b>Steel Dynamics, Inc.</b> Structural &amp; Rail Division 2601 County Road 700 E Columbia City, IN. 46725</p>	<h1>Raw Material Specification</h1>	Document # :	RMS 1400 – 014- 001	Revision # :	1
		Title :	Steel Scrap Densified and Loose Tire Wire	Issue Date :	07/18/2013
				Page # :	1 of 1

<b>Material :</b>	Steel Scrap	<b>Grade :</b>	Tire Wire	<b>SDI Part #</b>	1400-014-01						
<b>Industry Id :</b>	ISRI #'s: 278 to 281	<b>A.K.A. :</b>	Wire, Tire Wire, 1080 thin gauge scrap wire grade 1 through 4 processed tire wire, bales, pucks								
<b>Description :</b> <ul style="list-style-type: none"> <li>Steel wire of a thin gauge with minimal nylon and rubber mixed</li> <li>The byproduct of tire recycling</li> </ul>											
<b>Typical Appearance</b> 			<b>Typical Constituents</b> <ul style="list-style-type: none"> <li>1080 wire</li> <li>Trace amounts of rubber and nylon</li> </ul>								
<b>Sizing</b>	Diameter (minimum)		0.007"		<b>Typical Density</b>						
	Maximum		60" x 24"								
<b>Chemistry</b>	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)			.04	.08		.40	.15	.15	.03	.015	
<b>Prohibitions</b> In addition to commonly prohibited materials (RMA 1400-000-001), may not contain the following: <ul style="list-style-type: none"> <li>No more than 25 % visible oxidation when the material is received.</li> <li>Metallization must greater than 80%</li> <li>This material must be stored in the scrap bay to reduce oxidation</li> </ul>											
<b>Allowances</b> <ul style="list-style-type: none"> <li>Up to 15 % combined rubber and nylon by weight</li> </ul>											
<b>Additional Notes</b> <ul style="list-style-type: none"> <li></li> </ul>											
<b>Acceptance Criteria:</b> Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.											

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	Patrick Lueckenhoff	Melt Shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	11/ 12/ 09
	1	Update	07/18/2013



Steel Dynamics, Inc.  
Structural & Rail Division  
2601 County Road 700 E  
Columbia City, IN. 46725

# Raw Material Specification

Document # :

RMS 1400 – 017 - 001

Revision # :

1

Title :

**Steel Scrap**  
**Mixed Heavy Melting**  
**Steel**


Issue Date :

03/04/2020

Page # :

1 of 1

This page printed: 9/10/2020

<b>Material :</b> Steel Scrap					<b>Grade :</b> Mixed Heavy Melting Scrap					<b>SDI Part #</b> 1400-017-01		
<b>Industry Id :</b> ISRI #'s: 200, 201, 202 ,203, 204					<b>A.K.A. :</b> 1.5 HMS, Mixed heavy, mixed, Heavy dense, export heavy							
<b>Description :</b> <ul style="list-style-type: none"><li>Clean Mixed #1 and #2 HMS steel scrap 1/8 " thickness and over. with over 80% #1 HMS</li></ul>												
<b>Typical Appearance</b> 							<b>Typical Constituents</b> <ul style="list-style-type: none"><li>Structural Items</li><li>Plates</li><li>Truck Parts</li><li>Large Machinery parts</li><li>Wire/ cables/ chains greater than 1/2" less than 5' long</li><li>Springs</li><li>Gears</li><li>Truck wheel rims</li></ul>					
<b>Sizing</b>		Thickness (minimum)			≥ 1/8 "		<b>Minimum Density</b>				50 ( lbs / ft <sup>3</sup> )	
		Maximum			60" x 24"							
<b>Chemistry</b>		C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	
Maximum (wt%)				.05	.05		.35	.25	.25	.06	.025	
<b>Prohibitions</b> In addition to commonly prohibited materials (RMA 1400-000-01), may not contain the following: <ul style="list-style-type: none"><li>Transmission parts</li><li>Torque converters</li><li>Forklift and Equipment Counter-Weights</li><li>Large Dies</li><li>Pipe with pinched ends trapping water or liquid.</li><li>Stainless Steel</li><li>Automotive parts</li><li>Hatfield Steel</li><li>Pit scrap, Skulls, spillings</li></ul>												
<b>Allowances</b> <ul style="list-style-type: none"><li>Alloy steel content must not exceed 15% by weight</li><li>Reinforcing bar must not exceed 5% by weight</li><li>Cast iron must not exceed 2% by weight</li><li>processed auto rims not to exceed 20 rims per truckload crushed or whole</li></ul>												
<b>Acceptance Criteria:</b> Material is subject to visual inspection and visual classification, inspection for prohibited items and over/under sized material, mechanical weighing on certified scales, and radiation detection. All conditions detailed in RMS 1400-000-001 <i>Steel Scrap: General Requirements</i> , apply.												

<b>Approvals</b>	<b>Name</b>	<b>Title / Position</b>
	David Lunceford	Day Melting Supervisor
	Dustin Arvola	Melt Shop Metallurgist

<b>Revisions</b>	<b>#</b>	<b>Nature of Change</b>	<b>Effective</b>
	0	Original Issue	07/24/13
	1	No piping allowed with pinched ends and new Approvers	03/01/2020

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