



1. **PURPOSE:**

1.1 To inform both current and future scrap aluminum suppliers of the requirements that Alcoa places on its vendors. The main points of this specification (i.e., water/moisture, closed tubes, contamination, etc.) have been established to ensure the safety of our personnel, plants, and equipment. Your adherence to this specification is a requirement for remaining an approved supplier.

2. **SCOPE:**

2.1 This specification applies to all scrap purchased by North American Rolled Products (NARP) acting not as principle but as an agent for Alcoa Mill Products, Alcoa Rigid Packaging Division, Alcoa Mill Products, Alcoa Rigid Packaging Division, North American Extrusion and NAPM Metal Purchasing
All purchases are subject to final approval by the applicable Alcoa plant.

NARP Scrap Sales & Purchasing

North Administration Building
2300 N Wright Rd.
Alcoa, TN 37701

	<u>Telephone</u>	<u>Fax</u>	<u>Email Address</u>
Gary Doughty	(865) 977-2372	(865) 977-3620	Gary.Doughty@alcoa.com
Robert T. Gately	(865) 977-2834	(865) 977-3620	Robert.Gately@alcoa.com
Cindy J. Thompson	(865) 977-2576	(865) 977-3620	Cindy.Thompson@alcoa.com

Manager Secondary Metal Services

North Administration Building
2300 N Wright Rd.
Alcoa, TN 37701

	<u>Telephone</u>	<u>Fax</u>	<u>Email Address</u>
Dave Meditz	(865) 977-2064	(865) 977-3620	Dave.Meditz@alcoa.com

3. GENERAL INFORMATION:

3.1 DEFINITIONS:

3.1.1 Written agreement to this specification must be received by North American Rolled Products (NARP) from the supplier prior to any sale of scrap by such supplier. Any deviation from this specification must be approved in writing by Alcoa.

3.2 REFERENCES:

3.2.1 Table – Alcoa Summary of Scrap Packages.
Please refer to the Summary of Scrap Packages for specific information about types of scrap and packaging accepted by each Alcoa facility.

3.2.2 Attachment (1) Material Delivery Quality Report
Attachment (2) Example of Packaging List
Attachment (3) Alcoa Rigid Packaging RSI Specification

4. SHIPPING SPECIFICATION:

4.1 RECEIVING HOURS:

4.1.1 Scrap will be received by appointment only unless otherwise specified on the Purchase Order. Delivery appointments must be scheduled with each Alcoa facility as noted on the Purchase Order.

4.1.2 Appointments should be scheduled as directed on the Purchase Order. Shipments that arrive before or after their appointment time will be unloaded during the next available appointment time. Appointments are also required for delivery of RSI sows unless otherwise specified.

4.1.3 Notice of three (3) business days is required for cancellation of delivery appointments. In the event of a violation of this provision, the supplier could be charged \$200.00 at Alcoa's discretion.

4.2 SHIPPING REQUIREMENTS:

4.2.1 All suppliers delivering scrap must ensure that metal is dry and free of contamination. Wet and contaminated loads of scrap are subject to rejection. RSI Note: RSI must be free of contamination, road salt, contaminants from road, trucking and debris.

- 4.2.2 All trucks must be capable of being locked to the dock and unloaded from Alcoa docks from the rear with forklift equipment. RSI sows delivered on flatbed trucks must be capable of being unloaded from the side with forklift equipment. Any trailer with deteriorated floorboards will be subject to rejection.
- 4.2.3 All orders must be delivered within thirty (30) days or as specified on the purchase order. If a load of scrap is not delivered within the specified time stated on the purchase order, Alcoa may cancel the purchase order.
- A DQR (Delivery Quality Report) will be issued for delinquent shipments.

4.3 **WEIGHT:**

- 4.3.1 Each supplier delivering scrap must weigh its trailers on Alcoa plant scales or other designated receiving locations certified scale. If a delivery is made on a straight truck vs. tractor-trailer, it must to be noted on the scale ticket and the driver and any riders must be out of the truck and off of the scale.
- 4.3.2 The net weight of each load, after deducting tare weight (pallets, boxes, banding, etc.) from the scale ticket, shall be compared with the supplier's manifest and packing list. Piece counts (number of boxes, bales, bundles, etc.) must match. Any weight discrepancies in which piece counts do not match those on the supplier's manifest will result in the load being held within the plant and the supplier being notified. In addition, the supplier will be notified 24 hours from receipt for any weight discrepancy of 2% or more.
- 4.3.3 Purchase orders of 200,000 lb. or less will be considered complete when the received net weight is +/- 10% of the total quantity ordered. Purchase orders of 200,001 lb. or more will be considered complete when the received net weight is within 20,000 lb. of the total quantity ordered or can be closed out at the discretion of the buyer.
- 4.3.4 Alcoa will pay based on received net weights as determined by the receiving plant. Received weights will be received in our system within 48 hours of receipt date.
- 4.3.5 No freight collect shipments will be accepted without prior written approval. (ie. Purchase Order)

4.4 **PAPERWORK:**

- 4.4.1 All orders are subject to the terms and conditions of the applicable Alcoa purchase order and these specifications. In the event of a conflict in terms between the purchase

order and these specifications, the terms of the purchase order shall govern. In the event that a discrepancy is found, the supplier has 5 days to notify their buyer and resolve differences.

- 4.4.2 Shipment of scrap to Alcoa shall constitute supplier's acceptance of Alcoa's terms and conditions of purchase, including this specification and the applicable purchase order.
- 4.4.3 All documents accompanying the shipment of scrap must contain Alcoa's purchase order number, appointment number (as required), and the supplier's name. Failure to comply will result in immediate rejection. The bill of lading must include a commodity description, number of packages, and individual gross, tare, and net weights for each item. Alloys must be properly segregated (if the purchase order specifies segregated material) and clearly marked or tagged to ensure proper identification. A signed bill of lading will confirm delivery. (Alcoa Standard Packing List Attached – Printable)
- 4.4.4 All packages (bales, bundles, skids, etc.) of scrap must be tagged and the tag must include gross, tare, and net weight of the package. The tag must also include the alloy of the material and the supplier's name. For Alcoa RPD plants the alloy must be painted on both sides of the bales in six (6) inch high numbers.
- 4.4.5 No more than two (2) items/alloys per truckload of scrap will be accepted unless otherwise specified. Alcoa RPD plants accept only one (1) item/alloy per truck **unless approved by plant.**
- 4.4.6 There is no need to send invoices unless instructed to do so. Payments are based on Pay From Receipt. To obtain information about received net weights and payments, log on to <http://www.alcoadirect.com>

4.5 **PACKAGING SPECIFICATION**

- 4.5.1 **All scrap must be loaded in a manner that allows unloading with forklift equipment or other specified equipment noted on PO in a reasonable time.** Scrap must be loaded so as to ensure safe unloading which will cause no damage or injury to shipper's or receiver's equipment or personnel. Any scrap that arrives at an Alcoa location or approved shipped to location loaded in an unsafe manner will be rejected.
- 4.5.2 Scrap must be packaged in sound bales securely strapped or banded, briquettes stacked on pallets no higher than five feet, or Gaylord standard boxes on pallets. Bales should not exceed 4' x 4' x 6' in dimension unless otherwise noted on the Summary of Scrap Packages table. Cardboard, shrink wrap, or burlap wrapped bales, which do not allow for visual inspection of the contents, will not be accepted. Plastic wrapped bales,

boxes, or bundles will not be accepted. Bundles loaded on end will not be accepted. Boxes must be securely bulk headed to prevent breakage. A box charge will be assessed to offset the cost of disposal of these containers.

- 4.5.3 Scrap will not be accepted in wooden boxes or in metal or cardboard drum. Only exception to this rule is if there is prior approval from the plant.
- 4.5.4 Coils must be packaged to prevent movement in transit. Refer to the Summary of Scrap Packages for maximum dimensions of coils accepted by each location. No steel or fiber cores will be accepted unless prior approval is received. **RPD will only accept large coils “eye horizontal” on flat bed. Pup coils on vans must be banded 3 together for fork truck unloading no skids. See PO for packaging requirements prior to shipment.**

4.6 PHYSICAL CHARACTERISTICS:

- 4.6.1 Alcoa buys an aluminum scrap package that varies among plants. See the Summary of Scrap Packages table for a list of the most common scrap types accepted at each plant. This list is not a complete list as scrap requirements change periodically. If there are any questions regarding what types of scrap are accepted by each plant, contact one of the Alcoa buyers noted in section 2 of this specification.
- 4.6.2 Scrap must be free of metals other than the aluminum alloy specified on the purchase order such as steel, lead, copper, zinc, etc. Steel banding around bales will be accepted.
- 4.6.3 Scrap must be free of all contaminants and chemical substances such as dirt, grease, oil, corrosion, oxidation, fertilizer, nitrites, insulation, free lead, batteries, felt, screws, rubber, caulking, liquids, or any powders. (Any exceptions to this rule will be noted on the PO for TN/L) – see specification table for exceptions.
- 4.6.4 Supplier warrants that no metal delivered to Alcoa hereunder contains any materials regulated as radioactive materials under Federal or State law or regulations. Supplier agrees to indemnify and hold Alcoa harmless from any and all claims, demands costs, and expenses (including reasonable attorney’s fees), resulting from or arising under, in whole or in part a breach of the foregoing warranty. Supplier agrees to be responsible for proper removal and disposal of any such materials brought to Alcoa and to pay the costs of any necessary clean up.
- 4.6.5 Painted scrap/**coated** is not accepted unless otherwise specified on the purchase order.

- 4.6.6 No chips, borings, turnings, or punchings will be accepted. Alcoa requires dense, heavy scrap material. Light gauge scrap requires written sample approval by Alcoa facilities.
- 4.6.7 No, aluminum baseball/softball bats will be accepted.
- 4.6.8 Canisters such as aerosol cans, fire extinguishers, propane tanks, beer kegs, auto air bag inflation cartridges, ammunition cartridges, freon tanks, oxygen and acetylene tanks, detonators, butane lighters, CO₂ cartridges, or similar objects will not be accepted.
- 4.6.9 PCB's or other toxic materials will not be accepted.
- 4.6.10 Hypodermic needles or other biomedical waste will not be accepted.
- 4.6.11 Ordnance scrap or any type of munitions scrap will not be accepted. If found, will be cause for immediate rejection and being removed from the approved supplier list.**
- 4.6.12 No UBC's will be accepted. A single UBC found in a load of scrap will be cause for rejection of the load.
- 4.6.13 RSI aluminum sows must be free of internal cavities, corrosion, drosses, and other foreign materials. Sows must be single pour containing no cold folds or layers.
- 4.6.14 All RSI sows must be low profile with ingot width-to-ingot height ratio (the aspect ratio) of 4:1 unless prior arrangements have been made with Alcoa. (Refer to table)
- 4.6.15 For RSI sows delivered to Alcoa RPD locations, see attached Rigid Packaging Division Specification.

4.7 CHEMICAL COMPOSITION OF SCRAP:

- 4.7.1 Each shipment of scrap may be sampled for chemical composition by Alcoa. The method and frequency of sampling will be at Alcoa's discretion. Samples representative of the load will be taken and analyzed by spectrometer. Scrap loads containing a chemical composition that varies from the chemical composition of the ordered alloy will be subject to rejection or downgrade at Alcoa's discretion. **Beryllium above .0001 will not be accepted and will be a cause for immediate rejection unless otherwise noted on Purchase Order.**

- 4.7.2 Chemical analysis and button samples by heat number must be provided by the supplier and shall precede or accompany shipment of RSI sows. Chemical analysis must include the following elements: Si, Fe, Cu, Mn, Mg, Cr, Zn, Pb, Ti, Ni, Bi, B, Li, Na, Ca, Be, Zr, Sn, Cd, Ga, Sb, V, and As. Sample disks, preferably from top pour sample molds with one-inch (1") flat surface area minimum, must accompany shipment of the material. Heat numbers must be legibly marked on each sow, on each corresponding sample disk, and on the accompanying chemical analysis sheet. **Beryllium above .0001 will not be accepted and will be a cause for immediate rejection unless otherwise noted on Purchase Order.**

***** MSDS may be required upon request *****

4.8 REJECTIONS, DOWNGRADES, CANCELLATIONS, AND ADJUSTMENTS

- 4.8.1 **Alcoa reserves the right to reject or downgrade scrap that does not comply with the terms of this specification document and the applicable purchase order.**
- 4.8.2 In cases where scrap does not comply with this document and the applicable purchase order or where other problems or discrepancies occur with respect to such scrap supplier agrees to divulge the name of the party who sold the material to the supplier.
- 4.8.3 Rejected scrap that has not been unloaded at an Alcoa plant site will be returned immediately. Supplier shall have two (2) working days to pick up rejected scrap that has been unloaded at an Alcoa plant site. If the scrap is not picked up within the two days, Alcoa will arrange to have the scrap returned to the supplier. Any rejected loads will be returned at the Supplier's expense. Supplier will be billed for all transportation related charges if the rejected scrap was purchased on a picked up basis. If rejected material was unloaded at the plant, the Supplier will also pay a \$200.00 reloading fee.
- 4.8.4 If a load of scrap does not conform to this specification document and the applicable purchase order and is rejected, Alcoa will issue a Delivery Quality Report, also known as a DQR, containing the specifics regarding the rejection. The supplier must respond within five (5) business days following receipt of the DQR. Supplier's response must clearly address the root cause of the rejection and the corrective action that will be instituted to eliminate the recurrence of the problem. The corrective action must be approved by Alcoa. Failure to respond to DQR's may result in the supplier's removal from Alcoa's approved supplier list.
- 4.8.5 **In the event that a supplier provides Alcoa with non-conforming scrap hereunder**

and such non-conforming scrap is later combined with other metal and melted resulting in a contaminated heat or off analysis furnace to Alcoa, the supplier shall be responsible for all costs, damages and charges incurred by Alcoa related to the incident.

5. INDEMNIFICATION/INSURANCE:

5.1 Each supplier shall procure and maintain Comprehensive General Liability and Products Liability insurance coverage in such amounts as are prudent and customary in supplier's industry, endorsed as required, at all times while conducting business with Alcoa.

6. INTERNAL CONTROLS/SAFEGUARDS:

Supplier represents and warrants that (i) no scrap sold to Alcoa hereunder was obtained in violation of any law, regardless of whether such violation occurred prior to supplier taking title to the scrap and (ii) it does not purchase and/or sell metal which was stolen or otherwise obtained through false pretenses. Supplier further represents and warrants that it has implemented commercially reasonable procedures, and consistently adheres to such procedures, to prevent the purchase and resale of stolen scrap metal, and such procedures include, at a minimum: 1) requiring photo identification from every party selling scrap to the supplier and maintaining a copy of the same, 2) maintaining written documentation of every purchase of scrap by the supplier, including the identity of the seller and the quantity and type of metal sold, and 3) utilizing camera surveillance to record the likeness of each party selling scrap to the supplier.

Supplier acknowledges that its breach of any of the representations and warranties set forth herein gives Alcoa the right to cancel any and all open orders with the supplier. This right of cancellation is cumulative and in addition to any other remedies provided to Alcoa in law, equity or by statute.

6. APPROVERS/REVIEWERS:

LOCATION	APPROVED BY	DATE
Alcoa, TN	Jack Jackson	09/26/2008
Davenport, IA	Randy Huber	02/01/2009
Lancaster, PA (Sheet Mill)	Ed Specht	04/01/09

Lancaster, PA (Plate Mill)	Dave Taylor	02/9/2011
Warrick, IN	Chris Bennett	02/9/2011
Massena West	William Brown	02/9/2011
Chandler, AZ (Pimalco)	Kevin West	02/9/2011
Lafayette, IN	Greg Krueckeberg	02/9/2011
Intalco, WA	Michelle Lehnert	02/9/2011
Mt. Holly	Dennis Gregory	02/9/2011

JOB TITLE	REVIEWED BY	DATE
Manager Secondary Metal Services	Dave Meditz	8/17/2004
Scrap Materials Manager	Gary Doughty	1/10/09
Senior Metal Buyer	Robert T. Gately	6/9/2004
Senior Metal Buyer	Cindy J. Thompson	6/9/2004

7. REVISION HISTORY:

REVISION	DATE	NEW/REVISE/ REVIEWED BY	DESCRIPTION/REASON FOR CHANGE
A	03/11/97	New	
B	11/30/99	Robert J. McHale	Completely revised.
C	04/24/02	George Guidas	Completely revised.
D	10/26/04	Nick A. Badgett	Completely revised.
E, F, G, H	03/07/07	Sandy King	Revised plant details / Added personnel
I	12/11/07	Nicklaus A Oliver / Sandy King	Revised legal details / Reviewed
J	1/15/09	Sandy Kruse	Revised plant details / Added personnel/added painted requirement for Texarkana
K	6/4/09	Sandy Kruse	Revised Loose specification for TN/Loudon
L	11/4/09	Sandy Kruse	Updated Lancaster spec – Removed Jon Mulder as buyer –removed TEX (plant closed down)
M	01/18/10	Sandy Kruse	Updated Davenport spec 4.3 and 7
N	02/9/11	Sandy Kruse	Revise and combine specs PS-002H-DOC with PD-001M

Hyperlink for Plant Specifications Table

[PD-001N Plant Specification Chart](#)



DQR: Delivery Quality Report

Alcoa Plant Location	Today's Date	Delivery Date	DMR Number
Purchase Order	Item Number(s)	Bill Of Lading	Receiving Tally

NCR Written By	Samples sent to supplier?	Photos taken?
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Supplier Name & Address	Originating Yard Name & Address
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Phone	Fax	Phone	Fax
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Order Written Between (Supplier Contact)	And (Alcoa Metal Buyer)
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ITEM(S) CONTAINING DEFECT

Item #	Quantity Ordered	Description of Item(s) As Ordered:

REASON FOR NCR – PLEASE “X” ALL DEFECTS THAT APPLY

Safety Hazard	Wrong or Mixed Alloys	Contamination	Packaging	Paperwork	Other
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Detailed Description of Defect:

STATUS OF LOAD

Item #	Quantity Accepted	Quantity Rejected	Was this specific shipment previously rejected? If yes, please advise previous DMR # .
Alcoa Personnel: Complete top portion of DQR and email to: sandra.kruse@alcoa.com			

SUPPLIER REPLY SECTION

Do you agree with the reason for this DMR?	If not in agreement, please explain why.
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Please explain "Corrective Action" taken for this shipment (even if shipment is accepted).

Please explain "Preventative Action" for future shipments.

Supplier Representative Completing Form:	Title:	Date:
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Supplier: Complete "Supplier Reply Section" and email within five (5) business days to: sandra.kruse@alcoa.com

DQR 2/11/11



ALCOA – RIGID PACKAGING DIVISION

SPECIFICATION FOR PURCHASE OF RECLAIMED SCRAP INGOT (RSI) INGOT/SOW

I. SCOPE

This specification governs all sales of RSI ingot/sow to the Rigid Packaging Division (RPD) of Alcoa, Inc. It must be referenced on all Alcoa-RPD purchase orders for RSI from sources outside Alcoa. Master purchasing agreements will be arranged through Alcoa Material Management, Knoxville, TN, and administered by RPD.

II. SHIPPING

A. Manifest

1. The shipping manifest and paperwork relating to the purchase order, including product identification, composition, supplier, and weights, are to accompany shipment.
2. Composition data must be faxed to the receiving location prior to delivery. Alcoa's Tennessee and Warrick plants must approve each load prior to scheduling.
3. Orders must be delivered within the specified contract validity dates. Late shipments may be cancelled at Alcoa's discretion.

B. Weights

1. Trucks must be weighed prior to and after unloading. Weighing shall be performed on certified scales. Piece count may be used at the option of the receiving Alcoa location.
2. If the deviation from stated weight is greater than 0.5% but less than 2%, the supplier will be notified as soon as practical. If a discrepancy of 2% or more is encountered, the supplier will be notified.
3. The receiving Alcoa plant's weights will govern in the case of a discrepancy.

C. Truck Shipments

Shipments are to be made in flatbed trucks that are clean and in good condition (as specified by the receiving Alcoa locations). Flatbeds must be side loaded only. Vans may be turned away at the supplier's expense.

D. Rail Shipments

Specific requirements for rail car shipments will be established by the Alcoa receiving plant locations. Rail cars are to be clean and in good condition. Supplier's loading of scrap onto railcars must facilitate safe unloading by fork trucks unless other arrangements are made with the receiving Alcoa plant. Should there be a weight discrepancy greater than 2%, the supplier will be notified and rail weights will be obtained for reference.

III. **PHYSICAL CONDITION**

Each shipment shall be subject to inspection by the receiving Alcoa location. Failure to comply with specifications will result in rejection.

A. **Surface**

1. Ingot must be skimmed and free of:
 - a. Surface contaminants such as skim/dross residue, salt cake, oxidation corrosion
 - b. Entrained salts
 - c. Seams and folds caused by pouring temperature and/or oxide levels
 - d. Seams and folds caused by double or multiple pours
2. Top edge of the ingot/sow shall **not** have a rim more than one inch high.

B. **Internal**

Ingot/sows shall not have open shrinkage cavities/internal voids, which connect to the surface.

C. **Melting Technology**

RSI produced from induction furnaces is not acceptable to Alcoa RPD melting locations.

D. **Identification**

Each sow will clearly display the appropriate alloy designator, heat number, name, or identification of the producer, and the predominant RSI source (e.g. skim, UBC, scrap, etc.). Alloy markings should be in black paint, 4" to 6" high, on both ends of each sow.

E. **Contamination**

Evidence of contamination by foreign materials, surface or imbedded, such as discreet non-aluminum fragments, iron, oxide flakes, rust, entrained salts, and materials such as fertilizers, nitrates, oxidizers, and hydroscopic scales will result in rejection.

F. **Size / Shape / Aspect Ratio**

1. Each sow shall be low profile and have an aspect ratio greater than or equal to 3.0, with a ratio of 3.5 preferred. This ratio is defined as the smallest dimension measured across the top surface of the ingot divided by the height of the ingot.
2. Minimum weight shall be 1,500 lb. per piece.
3. Bottom of ingot/sow shall be smooth: no pronged "feet".

IV. **COMPOSITION**

Each shipment is to be accompanied by chemical analysis data and sample buttons for each heat, with appropriate identification. Chemical composition requirements for RSI by type are attached hereto. Chemical analysis that exceeds the Alcoa specified limits shall be considered off-analysis and will be subject to rejection.

Attachment (3)

V. BASIS OF ACCEPTANCE

The results of physical inspection and/or discrepancies in composition of a shipment are cause for rejection. Physical unloading does not imply acceptance. More thorough examination of scrap after receipt may also result in rejection. Failure of the shipment to meet the conditions stated in this specification or the applicable purchase order may result in the rejection of the entire shipment. The receiving Alcoa locations may refuse to unload, or may assess extra handling charges on shipments not loaded or supplied in accordance with this specification and the applicable purchase order.

VI. INTERNAL CONTROLS/SAFEGUARDS

Supplier represents and warrants that (i) no scrap metal sold to Alcoa hereunder was obtained in violation of any law, regardless of whether such violation occurred prior to supplier taking title to the scrap and (ii) it does not purchase and/or sell metal which was stolen or otherwise obtained through false pretenses. Supplier further represents and warrants that it has implemented commercially reasonable procedures, and consistently adheres to such procedures, to prevent the purchase and resale of stolen scrap metal, and such procedures include, at a minimum: 1) requiring photo identification from every party selling scrap to the supplier and maintaining a copy of the same, 2) maintaining written documentation of every purchase of scrap by the supplier, including the identity of the seller and the quantity and type of metal sold, and 3) utilizing camera surveillance to record the likeness of each party selling scrap to the supplier.

Supplier acknowledges that its breach of any of the representations and warranties set forth herein gives Alcoa the right to cancel any and all open orders with the supplier. This right of cancellation is cumulative and in addition to any other remedies provided to Alcoa in law, equity or by statute.

CONTACT INFORMATION

A. Contract Administration

Phyllis Sloan
Alcoa-Rigid Packaging
Alcoa, TN 37701

Phone: (865) 977-3918
Fax: (865) 977-3602

Includes all correspondence for RPD purchases, such as contract confirmations, weight discrepancies, payment issues, etc. No invoicing required, payments will be initiated upon receipt of shipment.

B. Plant Information

Warrick	<u>CONTACT</u> Kim Bowen Ph: (812) 853-4293 Fx: (812) 853-4226	<u>APPOINTMENTS</u> Metal Center Ph: (865) 977-2052 Fx: (865) 977-3602	<u>SHIP TO ADDRESS</u> Alcoa-Rigid Packaging Warrick Operations U. S. Highway 66 Newburgh, IN 47629
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Tennessee	Jack Jackson Ph: (865) 977-3686 Fx: (865) 977-3655	Metal Center Ph: (865) 977-2052 Fx: (865) 977-3602	Alcoa-Rigid Packaging South Plant 300 N. Hall Road Alcoa, TN 37701
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C. Buyers

<u>CONTACT</u> <u>Gary Doughty</u> Robert Gately Cindy Thompson	<u>PHONE</u> (865) 977-2372 (865) 977-2834 (865) 977-2576	<u>FAX</u> (865) 977-3620 (865) 977-3620 (865) 977-3620
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<i>Maximum Limits</i>		3105 Alcoa (Tennessee)	3xxx Alcoa (Warrick)	5xxx Alcoa (Class 2)
Si	.21	.60	.50	.20
Fe	.45	.70	.60	.30
Cu	.25	.30	.30	.10
Mn	.5 - 1.2	.3 - 1.5	.5 - 1.5	.40
Mg	.7 - 1.5	.2 - 1.5	.4 - 1.5	2.5 - 5.5
Cr	.030	.120	.090	.050
Pb	.0100	.0140	.0120	.0100
Ni	.02	.05	.04	.02
Zn	.15	.40	.30	.150
Ti	.02	.10	.06	.05
B	.0020	.0020	.0020	.0020
Be	.0001	.0001	.0001	.0001
Bi	.01	.01	.01	.01
Ca	.02	—	—	.02
Cd	.0002	.0002	.0002	.0002
Li	.0005	.0005	.0005	.0005
Sb	.0050	.0050	.0050	.0050
V	.030	.030	.030	.030
As	.0050	.0050	.0050	.0050
Each	.03	.05	.03	.03
Total	.10	.15	.10	.10

- > RSI must be *low profile*. The shortest dimension across the top divided by the total height must be 3.0 or more. Preferred ratio is 3.5 or higher.
- > *Induction* furnace material is *not acceptable* for any RSI type.
- > All specifications are on a per piece basis unless negotiated otherwise. For *average loads* (Tennessee only), the maximum limit per piece is *two times* the limits indicated above.
- > All sow must be *marked on both ends* with the appropriate alloy designator (i.e. 3004, 3xxx, 3105, 5xxx, etc...)
- > Additional RSI types similar those detailed above will be considered.

Revised: June 25, 2007



