	Title:	WI-08-04	Owner:	Operations
ROLLED ALLOYS	Description:	Packaging	Users:	Operations Personnel
	Rev:	B		
	Date:	3/23/2021		

Reference: AS9100. Section 8.5.4 Preservation
Title: Packaging

Purpose and Scope:

This procedure has been established to preserve product during internal processing and delivery to the intended destination in order to maintain conformity to requirements. As applicable, preservation shall include identification, handling, packaging, storage and protection.

Responsibilities:

The facility General Managers shall be responsible for the implementation of this procedure.

General:

Verification of compliance and effectiveness is done through the following:
- Internal Audits which are performed at least yearly.
- Customer feedback via the RGA system

Procedure:

Rolled Alloys product shall be handled manually or with equipment designed in such a way that it will cause minimal damage the material. This may include, but is not limited to forklifts, overhead cranes, and vacuum lifts.

Efforts shall be made by plant personnel to protect the surface finish of the material from any type of F.O.D. (foreign object damage).

Basic packaging guidelines are listed below – exceptions are acceptable provided they meet customer requirements and sufficiently protect the material from damage.

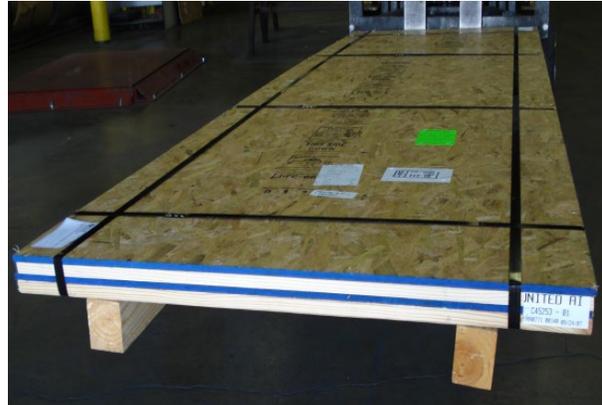|				
ROLLED ALLOYS	**Title:**	WI-08-04	**Owner:**	Operations
	Description:	Packaging	**Users:**	Operations Personnel
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International Packaging

All International Skids are constructed using Heat Treated Pine Wood and IPPC Stamped or otherwise 100% Export Compliant Plywood/OSB

CINCINNATI EXPORT SEA SKID 1 (AEROSPACE, .125" AND THINNER)

Constructed

- 2000 LBS Maximum per Skid
- 2- 3"x 4" Runners
- 9- 1"x 6" Bottom Slats Minimum (at the minimum, 50% of material will be supported by slats)
- 4- 1"x 6" Braces Between First Two Slats on Both Ends
- 1"x 2", 2"x 2", 2"x 4" or 2"x 6" Framing around Material
- Plastic Wrap- Material is Wrapped in Thick Plastic
- 2- OSB Sheets, Above and Beneath Material
- 2- Metal/ Polyester Bands across Length
- 3- Metal/ Polyester Bands across Width, Minimum
- IPPC Stamped

Sizes

- Larger than 48"x 144", Additional Cost and Time WILL be Required: See Specialized International Skid
- * Material Thickness Under .035 are Constructed with a Solid Bottom
- * Used if Shipping West of Mississippi River (No Plastic Wrap or Heat Treated Wood)

EXPORT SEA SKID 2 (INDUSTRIAL)

Constructed

- 3500 LBS Maximum per Skid
- 2- 3"x 4" Runners, or Equivalent
- 1- 2"x 4" Middle Runner
- 5- 1"x 6" Slats Minimum
- 4- 1"x 4" Braces Between First Two Slats on Both Ends
- 2- Composite Boards/ OSB, Above and Beneath Material
- Plastic Wrap- Material is Wrapped in Thick Plastic
- 3- Metal/ Polyester Bands across Width, Minimum
- IPPC Stamped

Sizes

- 48"x 144" (W x L) and Smaller

ROLLED ALLOYS	**Title:**	WI-08-04	**Owner:**	Operations
	Description:	Packaging	**Users:**	Operations Personnel
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- **Larger than 48"x 144", Additional Cost and Time WILL be Required: See Specialized International Skid**

EXPORT SEA COIL

Constructed

- 3- 4"x 4" Runners, Minimum
- 2- 8"x 4" Slates or Cradle with One Corner Notched
- Plastic Wrap- Material is Wrapped in Thick Plastic
- Cardboard Wrapped Outside Diameter
- 4- Metal/ Polyester Bands, Minimum
- Aerospace Grades are Crated
- IPPC Stamped

Sizes

- All Coil

U-TUBE (Ocean)
Uses- Bar, Flat Metal Strips, Smaller Shapes, Pipe

Constructed

- Custom Cut Reinforced Cardboard Shell
- HT Wood Tube Ends
- Plastic Wrap- Material is Wrapped in Thick Plastic
- 2- Metal Bands around Material, (spacers between bands and material)
- 3- Metal/ Polyester Bands around Box, Minimum
- 2- 3"x 4" Stand Boards for Easier Handling
- IPPC Stamped

Sizes

- 9"x 9"x Custom Length Under 24'
- 5"x 6"x Custom Length Under 17'
- * All Schedule 10 Pipe Must be Packaged in Closed Container

CRATE

Constructed

- 2 Plywood/ OSB Sheets (Bottom)
- 2- 2"x 8" Side Walls and End Caps, or Equivalent
- 1 Plywood/ OSB Sheet (Top)
- Wrapped in Plastic (Ocean Freight Only)
- 3- Metal/ Polyester Bands around Box, Minimum
- IPPC Stamped

Sizes

- Various Sizes
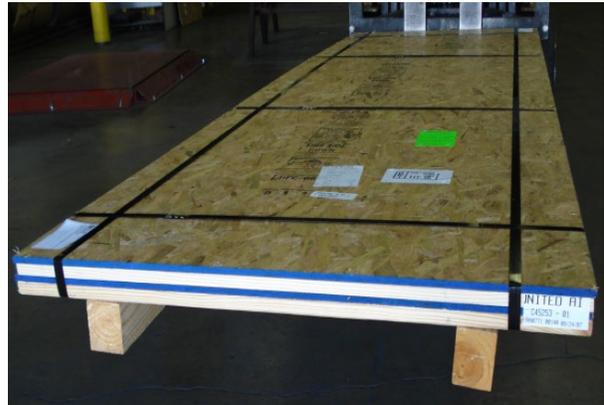- * All Schedule 10 Pipe Must be Packaged in Closed Container

ROLLED ALLOYS	**Title:**	WI-08-04	**Owner:**	Operations	
	Description:	Packaging	**Users:**	Operations Personnel	
	Rev:	B			
	Date:	3/23/2021			

CINCINNATI EXPORT AIR SKID 1 (AEROSPACE, .125" AND THINNER)

Constructed

- 2000 LBS Maximum per Skid
- 2- 3"x 4" Runners
- 9- 1"x 6" Bottom Slats Minimum (at the minimum, 50% of material will be supported by slats)
- 4- 1"x 6" Braces Between First Two Slats on Both Ends
- 1"x 2", 2"x 2", 2"x 4" or 2"x 6" Framing around Material
- 2- OSB Sheets, Above and Beneath Material
- 2- Metal/ Polyester Bands across Length
- 3- Metal/ Polyester Bands across Width, Minimum
- IPPC Stamped

Sizes

- **Larger than 48"x 144", Additional Cost and Time WILL be Required: See Specialized International Skid**

* Material Thickness Under .035 are Constructed with a Solid Bottom

EXPORT AIR SKID 2 (INDUSTRIAL)

Constructed

- 3500 LBS Maximum per Skid
- 2- 3"x 4" Runners, or Equivalent
- 1- 2"x 4" Middle Runner
- 5- 1"x 6" Slats Minimum
- 4- 1"x 4" Braces Between First Two Slats on Both Ends
- 2- Composite Boards/ OSB, Above and Beneath Material
- 3- Metal/ Polyester Bands across Width, Minimum
- IPPC Stamped

Sizes-

- 48"x 144" (W x L) and Smaller
- **Larger than 48"x 144", Additional Cost and Time WILL be Required: See Specialized International Skid**

ROLLED ALLOYS	**Title:**	**WI-08-04**	**Owner:**	**Operations**
	Description:	**Packaging**	**Users:**	**Operations Personnel**
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EXPORT AIR COIL

Constructed
- 3- 4"x 4" Runners, Minimum
- 2- 8"x 4" Slates or Cradle with One Corner Notched
- Cardboard Wrapped Outside Diameter
- 4- Metal/ Polyester Bands, Minimum
- IPPC Stamped

Sizes
- All Coil

U-TUBE (Air)
Uses- Bar, Flat Metal Strips, Smaller Shapes

Constructed
- Custom Cut Reinforced Cardboard Shell
- HT Wood Tube Ends
- 3- Metal/ Polyester Bands around Box, Minimum
- 2- 3"x 4" Stand Boards for Easier Handling
- IPPC Stamped

Sizes
- 9"x 9"x Custom Length Under 24'
- 5"x 6"x Custom Length Under 17'
* All Schedule 10 Pipe Must be Packaged in Closed Container

SPECIALIZED INTERNATIONAL SKID

Construction
- 2"x 6" Runners (6 Minimum)
- 1"x 6" Deck
- Composite Boards, Above and Beneath Material
- Wrapped in Plastic (Ocean Freight Only)
- 4- Metal / Polyester Bands across Width, Minimum
- IPPC Stamped

Sizes
- Exports Wider than 48" and/or Longer than 144"

Special Instructions
- Contact Production with Dimensions, NO LESS than 4 Days Before Ship Date
- Additional Costs are Involved

ROLLED ALLOYS	**Title:**	**WI-08-04**	**Owner:**	**Operations**
	Description:	**Packaging**	**Users:**	**Operations Personnel**
	Rev:	**B**		
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SPECIALIZED INTERNATIONAL CRATE

Construction
- 3"x 4" or 2"x6" Runners
- 7/16" Plywood/ OSB or Solid 2"x6" Enclosure
- 2"x 4" Support
- Wrapped in Plastic (Ocean Freight Only)
- 3- Metal/ Polyester Bands around Box, Minimum
- IPPC Stamped

Special Instructions
- Contact Production with Dimensions, NO LESS than 3 Days Before Ship Date
- All Schedule 10 Pipe Must be Packaged in Closed Container
- Additional Costs are Involved

PLASTIC BUCKETS

Uses- Small Pieces, Nuts, Bolts, Washers

Constructed-
- Plastic Bucket
- Plastic Locking Lid
- Plastic Handling Strap

Sizes
- 7"x 5"x 8"- 1 Gallon
- 9"x 9"x 7"- 2.1 Gallon

- **UPS/ FedEx ALLOWED-** Buckets Placed inside Cardboard Box to Avoid Unconventional Packaging Charges

CARDBOARD TUBES
Uses- Small Diameter Bar and Some Flat Product

Constructed-
- 2.25", 2.75", or 4" Inside Diameter Cardboard Tube
- Metal/ Wood End Covers/ Caps
- Ends Wrapped with Packing Tape or Stapled

Sizes
- Custom Sizes up to 156"

ROLLED ALLOYS	**Title:**	WI-08-04	**Owner:**	Operations
	Description:	Packaging	**Users:**	Operations Personnel
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- **UPS/ FedEx ALLOWED**

CARDBOARD ENVELOPE
Uses- Flat Sheet Products

Constructed-
- Cardboard Shell
- Plywood/ OSB Frame
- Top Sealed with Packing Tape
- Paper Cushion and Spacers can be Added per Customer Request, Size Conditions
- 70 lbs Maximum Weight

Sizes
- 24x24, 24x36, 36x36, 36x48, and 48x48

- **UPS/ FedEx ALLOWED**

CARDBOARD BOX
Uses- Pieces Unable to be Packaged in Buckets

Constructed-
- Cardboard Shell
- Bottom Sealed with String Supported Packing Tape
- Top Sealed with Packing Tape
- Peanuts and Spacers can be Added per Customer Request
- 70 lbs Maximum Weight

Sizes
- 7" x 7" x 7"
- 9" x 9" x 9"
- 10" x 10" x 8"
- 10" x 6" x 4"
- 17" x 6" x 3"
- 18" x 6" x 6"
- 25" x 4" x 4"
- 16" x 16" x 6"
- 13" x 13" x 5.5"
- 18" x 10" x 8"
- 20" x 20" x 4"
- 13" x 13" x 9"
- 24" x 14" x 14"
- 42" x 6" x 6"

	Title:	WI-08-04	**Owner:**	Operations	
ROLLED ALLOYS	**Description:**	Packaging	**Users:**	Operations Personnel	
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Domestic Packaging

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All Domestic Skids are constructed using Pine or Compliant Plywood/ OSB

**FLATBED Shipments: Packaging is Minimized
- Standard Packaging does Not Apply
- Gauge Material MUST be Skidded- 5000 lb Max
- Loads are Required to be Covered
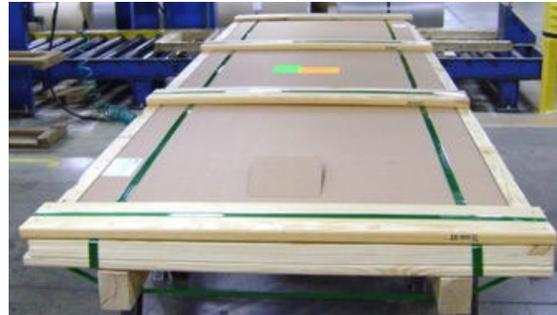
BLOCKED PLATE

Constructed
- 2- 3"x 4" or 2"x 4" Stand Boards for Easier Handling
- 2- Metal/ Polyester Bands, (spacers between bands and material)
- * NO Gauge material can be bundled

CINCINNATI STANDARD SKID 1 (AEROSPACE, .125" AND THINNER)

Constructed
- 2000 LBS Maximum per Skid
- 2- 3"x 4" Runners
- 9- 1"x 6" Bottom Slats Minimum (at the minimum, 50% of material will be supported by slats)
- 4- 1"x 6" Braces Between First Two Slats on Both Ends
- 1"x 2", 2"x 2", 2"x 4" or 2"x 6" Framing around Material
- 2- Cardboard Covers, Above and Beneath Material
- 3- 1"x 6" Top Slats Minimum, for Extra Protection
- 1- Additional Top Cardboard Cover with Slot for Shipping Documents
- 2- Metal/ Polyester Bands across Length
- 3- Metal/ Polyester Bands across Width, Minimum

Sizes
- All Sizes
- .030" and Thinner or Shipments West of Mississippi, Plywood/ OSB Will Be Added, an Additional Runner Will Be Added if Material is 48" or Wider

	Title:	WI-08-04	Owner:	Operations
	Description:	Packaging	Users:	Operations Personnel
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STANDARD SKID 2 (INDUSTRIAL)

Constructed
- 3500 LBS Maximum per Skid
- 2- 3"x 4" Runners, or Equivalent
- 1- 2"x 4" Partial Center Runner
- 2- 3"x 4" Center Blocks, or Equivalent
- 5- 1"x 6" Slats Minimum
- 2- Cardboard Covers, Above and Beneath Material for Sheet Product, Plate Does NOT Require Cardboard
- 3- Metal/ Polyester Bands across Width, Minimum

Sizes
- All Sizes
- 16 GA and Thinner, Additional Slats will be Added

STANDARD COIL

Constructed
- 3- 4"x 4" Runners, Minimum
- 2- 8"x 4" Slates or Cradle with One Corner Notched
- Cardboard Wrapped Outside Diameter
- 4- Metal/ Polyester Bands, Minimum

Sizes
- All Coil

U-TUBE
Uses- Bar, Flat Metal Strips, Smaller Shapes, Pipe

Constructed
- Custom Cut Reinforced Cardboard Shell
- Wood Tube Ends
- 3- Metal/ Polyester Bands around Box, Minimum
- 2- 3"x 4" Stand Boards for Easier Handling

Sizes
- 9"x 9"x Custom Length Under 24'
- 5"x 6"x Custom Length Under 17'
* All Schedule 10 Pipe Must be Packaged in Closed Container

	Title:	WI-08-04	Owner:	Operations
ROLLED ALLOYS	Description:	Packaging	Users:	Operations Personnel
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STANDARD SINGLE BAR

Constructed
- 1- 2"x 4", 2"x 6" or 2"x 10" Board Running Full Length of Material
- 2- 2"x 4" Stand Boards for Easier Handling
- 3- Metal Bands, Minimum (spacers between bands and material)
- Some Orders will be Sandwiched Between 2 Boards

STANDARD BAR CRADLE

Constructed
- 2- 2"x 4", 2"x 6" or 2"x 10" Cradle Boards Running Full Length of Material
- 1- 1"x 3" Board, (underneath protection)
- 2- 2"x 4" Stand Boards for Easier Handling
- 3- Metal Bands, Minimum (spacers between bands and material)

CRATE

Constructed
- 2 Plywood/ OSB Sheets (Bottom)
- 2- 2"x 8" Side Walls and End Caps, or Plywood/ OSB
- 1 Plywood/ OSB Sheet (Top)
- 3- Metal/ Polyester Bands around Box, Minimum

Sizes
- Various Sizes
- * All Schedule 10 Pipe Must be Packaged in Closed Container

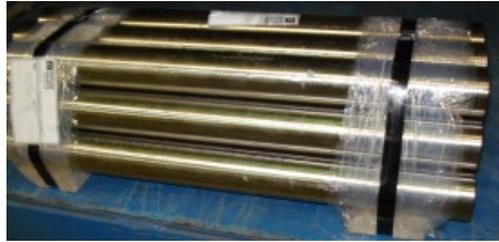|			
ROLLED ALLOYS	**Title:** WI-08-04	**Owner:**	**Operations**
	Description: Packaging	**Users:**	**Operations Personnel**
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STANDARD BUNDLES
Uses- Bar or Plate

Constructed

- 2- 3"x 4" or 2"x 4" Stand Boards for Easier Handling
- 5- Metal/ Polyester Bands, Minimum on Full Length Random Bars(spacers between bands and material)
- 2- Metal/ Polyester Bands, Minimum on other Length Bar and Plate(spacers between bands and material)

* NO Gauge material can be bundled
* All Schedule 10 Pipe Must be Packaged in Closed Container

PLASTIC BUCKETS

Uses- Small Pieces, Nuts, Bolts, Washers

Constructed-

- Plastic Bucket
- Plastic Locking Lid
- Plastic Handling Strap

Sizes

- 7"x 5"x 8"- 1 Gallon
- 9"x 9"x 7"- 2.1 Gallon

- **UPS/ FedEx ALLOWED-** Buckets Placed inside Cardboard Box to Avoid Unconventional Packaging Charges

CARDBOARD TUBES
Uses- Small Diameter Bar and Some Flat Product

Constructed-

- 2.25", 2.75", or 4" Inside Diameter Cardboard Tube
- Metal/ Wood End Covers/ Caps
- Ends Wrapped with Packing Tape or Stapled

Sizes

- Custom Sizes up to 156"
- UPS/ FedEx ALLOWED

	Title:	WI-08-04	Owner:	Operations
ROLLED ALLOYS	Description:	Packaging	Users:	Operations Personnel
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CARDBOARD ENVELOPE
Uses- Flat Sheet Products

Constructed-
- Cardboard Shell
- Plywood/ OSB Frame
- Top Sealed with Packing Tape
- Paper Cushion and Spacers can be Added per Customer Request, Size Conditions
- 70 lbs Maximum Weight

Sizes
- 24x24, 24x36, 36x36, 36x48, and 48x48

- **UPS/ FedEx ALLOWED**

CARDBOARD BOX
Uses- Pieces Unable to be Packaged in Buckets

Constructed-
- Cardboard Shell
- Bottom Sealed with String Supported Packing Tape
- Top Sealed with Packing Tape
- Peanuts and Spacers can be Added per Customer Request
- 70 lbs Maximum Weight

Sizes:
- 7" x 7" x 7"
- 9" x 9" x 9"
- 10" x 10" x 8"
- 10" x 6" x 4"
- 17" x 6" x 3"
- 18" x 6" x 6"
- 25" x 4" x 4"
- 16" x 16" x 6"
- 13" x 13" x 5.5"
- 18" x 10" x 8"
- 20" x 20" x 4"
- 13" x 13" x 9"
- 24" x 14" x 14"
- 42" x 6" x 6"
- **UPS/ FedEx ALLOWED**

Appendix A:

	Title:	WI-08-04	Owner:	Operations
ROLLED ALLOYS	Description:	Packaging	Users:	Operations Personnel
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Buckets

- 35# Net limit
- Use shrink wrap on *all* parts and fill bucket with paper to prevent shifting during transit*
- Use bags for smaller parts (i.e. weld tabs, test coupons)*
- All "bucket" orders 20# or more should go in a box. Fill in bucket/box with paper.*
- Bags- 4x6 (3 x 5.5" max), 9 x 12 (8 x 11.75 max)*
- "Treat it like an egg"

* Excludes GE Bromont

U-TUBES

- Screws *only*
- Shrink wrap *all* parts and add paper or braces (1x2 or 2 x4's) to keep product from shifting during transit.
- Use runners if shipping by truck.
- Third runner to be added when package is 100# and 65" or more.

ROLLED ALLOYS	**Title:**	WI-08-04	**Owner:** Operations
	Description:	Packaging	**Users:** Operations
	Rev:	B	Personnel
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• 60" and above – 500# max, 59" and below 800# max
• Runners should be 12" in from each edge and cut long enough to have a minimum of 4" on each side.
• 4" tube (strapping tape in the middle and both ends)
• 6-12" (banding in the middle and both ends)

OSB Package

• Use for all *shapes* from Waterjet and Lasers (including stock-size orders shipping laser/Waterjet shapes. Excluding rectangles/squares going domestic .035 and above).*
• Use when shipping thinner material/parts (.035" or under)
• Add 3.5" to width and length to get proper fit for material
• Shrink wrap parts
• Use cardboard on top and bottom of parts
• "Smooth" side on the exterior, rough interior.
• Use T-50 stapler for securing order tags/labels.
• Use screws *only*. No staples in 1 x 2's or 2 x 4's.
• 1 x 2's - no more than "3 high" (if using more than one; stagger)
• If parts are exceed the height of 3 – 1 x 2's, use 2 x 4's.
• Do *not* use braces (1 x 2's) inside to keep parts in place
• If needed, make two OSB packages to balance out the weight.
• 75# **net** / 100# *gross*
*Excludes Solar and CCI

ROLLED ALLOYS	**Title:**	**WI-08-04**	**Owner:**	**Operations**
	Description:	**Packaging**	**Users:**	**Operations Personnel**
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Crates

- Shrink wrap parts
- "Brace in" parts when needed (if parts have any movement in crate)
- 2 x 4's are recommended for bracing, use slats if 2 x 4's are not feasible.
- Screws *only* for 2 x 4's and slats (make sure screws go in wood securely)
- Fill with paper for the sides and paper/ cardboard on the top of the material (fill in voids completely).
- Use T-50 stapler for securing order tags/labels.
- If needed, use two crates to balance out the weight.
- 750# **net** 800# **gross**

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![Rolled Alloys logo]	Description:	Packaging	Users:	Operations Personnel
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Cush Packs

- Domestic *only*
- 45# **net** 50# *gross*
- *No* screws
- Shrink wrap parts
- Cardboard on both sides of material.
- Rectangle/square material/parts *only.*
- Strapping tape completely around/top on both sides; in center from top to bottom (no openings)
- Use pack for actual size of material. If material is too big/small, build u-tube or OSB package.

Weld Wire

- Use appropriate size boxes for the size of wire tubes/boxes
- For weld wire boxes; fill in void with paper or foam.
- Spools should be inspected prior to packing to verify they are not damaged.
- For 40" boxes; strapping tape in the middle and both ends
- For wire boxes that is less than 40" (strapping tape on both ends).
- Wrap spools in foam wrapping (length and width) with no parts of the spool showing.
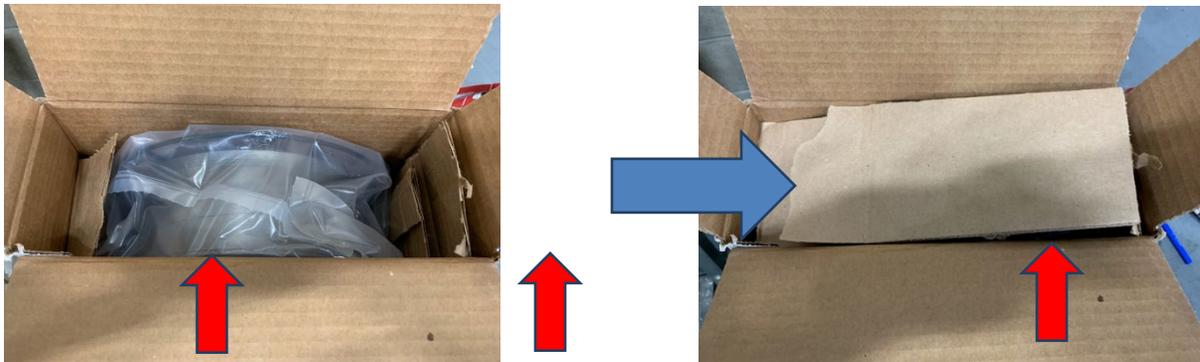
	Title:	WI-08-04	Owner:	Operations
ROLLED ALLOYS	Description:	Packaging	Users:	Operations Personnel
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• Spool boxes should be filled with foam if there's still a void in package
• Strapping tape on both all ends (length and width) including the flap in front of the spool box
• If wire is going by freight, use a crate that's appropriate for the size/ quantity of wire/spools you're shipping. ***All export shipments*** shipping freight should be in a crate or equivalent.
• Adding to a crate for wire/ spools is acceptable. Do ***not*** exceed 5" of added height to crates.
• Domestic freight shipments can be put on a skid/pallet and thoroughly shrink wrapped along with a "Do not stack" top hat. No taller than 30" in height including skid/pallet.
• 45# **net** / 50# ***gross*** for ***weld wire*** packages (**not spools**).

When foam is not available for packing spools of wire, follow this process.

- When Spool Weld Wire is pulled from stock, the Spool Box needs to be opened.
  a. Inspect condition of Spool and verify it is not damaged. Put it back in the Spool Box.
- Stuff pieces of cardboard along the sides and front of the box.
  a. Spool should not move or slide inside Spool Box once cardboard is in place.

- Tape box back up, wrapping the tape all the way around the box.

ROLLED ALLOYS	**Title:**	**WI-08-04**	**Owner:**	**Operations**
	Description:	**Packaging**	**Users:**	**Operations Personnel**
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- Place the Spool box inside the Rolled Alloys box. Pack with paper around all sides of the Spool box and close lid. Tape around the Rolled Alloys box, going all the way around.   18
- Spool Box should not be able to move or slide once packed in the Rolled Alloys box.

Revision History

REV	REV DATE	REVISED BY	REVIEWER	COMMENTS
A	03/01/2018	A. Schwartz	R. Riccio	New Doc for AS9100D, ref prior "PRO-13"
B	03/23/2021	M. Breining	J. Messerole	Added Appendix A for Cincinnati packaging requirements