

Section 1

Re: TW PG I

Report Number: HM 10130
Date of Report: October 25, 2018
Date of Test: October 23, 2018

Test performed by: **Advanced Packaging Technology Laboratories, Inc.**
200 Larkin Drive, Unit H
Wheeling, IL 60090

Test conducted for: **Aramsco Inc.**
1480 Grandview Ave.
Paulsboro, NJ 08066

Attention: Jennifer Miller

Items tested: One (1) sample set of fiberboard IBC's intended for the transport of hazardous solids.

Box: 112 ECT RSC style / triple-wall L/C/A flute corrugated box.

Approximate Overall Dimensions on Pallet (O.D.): 38" X 37.75" X 43"

Nominal Tare Weight: 63.83 lbs.
Nominal Gross Weight: 2063 lbs.

Object of test: Design qualification testing to determine compliance with applicable sections of 49 CFR pertaining to the transport of dangerous goods – Packing Group I.

Findings: As submitted and tested, this package design was considered to comply with noted requirements.



11G / X / 10 18* / USA / +BR10710 / 1700 / 935
Tare Weight: 28.94 kg

Not to scale, for example purposes only.
*indicates the month and last two digits of year of manufacture as per 178.703 (a) (1) (iv).

Expiration: This package certification expires 1 year(s) from the date of this report.

Kimberly Grumbos
UN Project Lead

Rafael Cameron
UN/DOT Department Manager

Table of Contents

Section 1	Cover Page
Section 2	Package Description
Section 3	Testing Procedures and Results
Section 4	Calculations
Section 5	Drawings and Pictures of Packaging Components
Appendix A	Test Equipment and Instrumentation
Appendix B	Definitions / Abbreviations / Conversions

Section 2 - Package Description

Fiberboard IBC

Package identification:	UN 11G			
Manufacturer:	WestRock, Baltimore, MD			
Box style:	RSC	Flute:	LCA	
Material:	Fiberboard (Kraft)	Number of walls:	Three (3)	
Caliper:	0.536 in.	Combined weight of facings:	284.33	#/MSF
International box code:	0201			
Part number:	UN 11G BIN			
Box maker's certification:	Mullen burst:	N/A	ECT:	112
Outer dimensions (including pallet & closed top)				
Length	38	in	965.2	mm
Width	37.75	in	958.85	mm
Height	43	in	1092.2	mm
Outer dimensions (box only)				
Length	37.5	in	952.5	mm
Width	37	in	939.8	mm
Height	38.625	in	981.075	mm
Inner dimensions (erected)				
Length	36.25	in	920.75	mm
Width	36	in	914.4	mm
Height	36.375	in	923.925	mm
Top flap inner gap	0	in	0	mm
Top flap outer gap	0	in	0	mm
Bottom flap inner gap	0	in	0	mm
Bottom flap outer gap	0	in	0	mm
Manufacturers joint width:	3.5" outside corner glued			
Gram weight:	16329.6 grams (36 lbs.)			
Quantity:	One (1)			
Board combination indicated:	N/I – client noted boxes will be made within +/- 5% of the below values			
Board combination actual:	72.34-37.86L-69.08-38.52C-70.66-39.66A-72.25			
Unique features:	None			

IBC Closure

Manufacturer:	Nashua Tapes Products, Franklin, KY				
Part number:	300				
Style:	2" wide PS duct tape				
Material:	Rubber adhesive polyethylene coated cloth				
Closure gram weight:	18.1 grams				
Dimensions:	Width	1.94	in	49.276	mm
	Length	61.50	in	1562.1	mm
	Thickness (min)	0.009	in	0.228	mm
Orientation:	On the top; tape runs lengthwise over the center gap extending a minimum of 12" over the edges. Three (3) strips total run parallel overlapping 1".				
Quantity:	Three (3)				

Lining

Manufacturer:	Champion Plastics, Clifton, NJ				
Part number:	86345				
Style:	6mil tubular style gusseted poly liner				
Location:	Inner Packaging				
Material:	Black LDPE				
Lining dimensions:	Thickness	0.0055	in	0.139	mm
	Height	85	in	2159	mm
	Gusset Depth	40	in	1016	mm
	Width	41	in	1041.4	mm
Gram weight:	1203.6 grams				
Quantity:	One (1)				

Lining Closure

Closure method:	Taped				
Manufacturer:	Nashua Tapes Products, Franklin, KY				
Part number:	300				
Style:	2" wide PS duct tape				
Location:	Secures the top of the liner closed, approximately 8" from the top of the bag				
Material:	Rubber adhesive polyethylene coated cloth				
Dimensions:	Width	1.94	in	49.276	mm
	Length	16.00	in	406.4	mm
	Thickness (min)	0.009	in	0.228	mm
Gram weight:	3.7 grams				
Quantity:	One (1)				

Pallet

Manufacturer:	B & B Albany Pallet Co., Jamesville, NY		
Part number:	ARAM-3838		
Style:	Partial four way entry non-reversible stringer pallet		
Manufacturing method:	Pallet assembled utilizing coated spiral nails.		
Material:	Hardwood	Species:	Oak and Maple
Pallet description:			
Boards:	Size:	Location:	
Five (5) widthwise top deck boards	38" X 37.75" X 4.5"	Evenly spaced	
Four (4) lengthwise stringer boards		Two (2) on ends, two (2) centered in middle	
Three (3) widthwise bottom deck boards		Evenly spaced	
Additional pallet materials:	Nail quantity:	Sixty-four (64)	
Pallet weight:	11340 grams (25 lbs.)		
Quantity:	One (1)		

Pallet Attachments

Closure method:	Nailed					
Manufacturer:	Independent Nails, Peru, IL					
Part number:	Q5A050					
Style:	Square-Hed Cap Nails					
Location:	Attaches the bottom box flaps to the pallet top deck					
Material:	Steel					
Dimensions:	Diameter	0.127	in	3.225	mm	
	Length	1.78	in	45.212	mm	
	Width	0.94	in	23.876	mm	
Gram weight:	6.2 grams					
Quantity:	Four (4)					

Additional Test Information

Overall tare weight of package:	63.83	lbs.	28.94	kg.
Test contents:	Fine sand (0.125mm-0.25mm) & grade 4 vermiculite			
Density:	72.8 lbs. / ft ³			
Test weight of package:	2063.83	lbs.	935.97	kg.
Authorized package gross weight based on Density:	2063		lbs.	

Equipment used to prepare the packages for testing

- Tape dispenser- ULINE, 2" wide hand-held, #H-150
- Tape dispenser- ULINE, 3" wide hand-held, #H-596
- Glue gun- 3M Industrial, Set @ 220° F, # 75S9
- Poly bag sealer- MEC roller style, Set @ 410° F, #ME-803HW
- Bander- ULINE H-540/ H-572 strapping tensioner
- Hand applied
- Other: Standard Hammer

Customer or Filler's (End-User's) Assembly & Closure Instructions

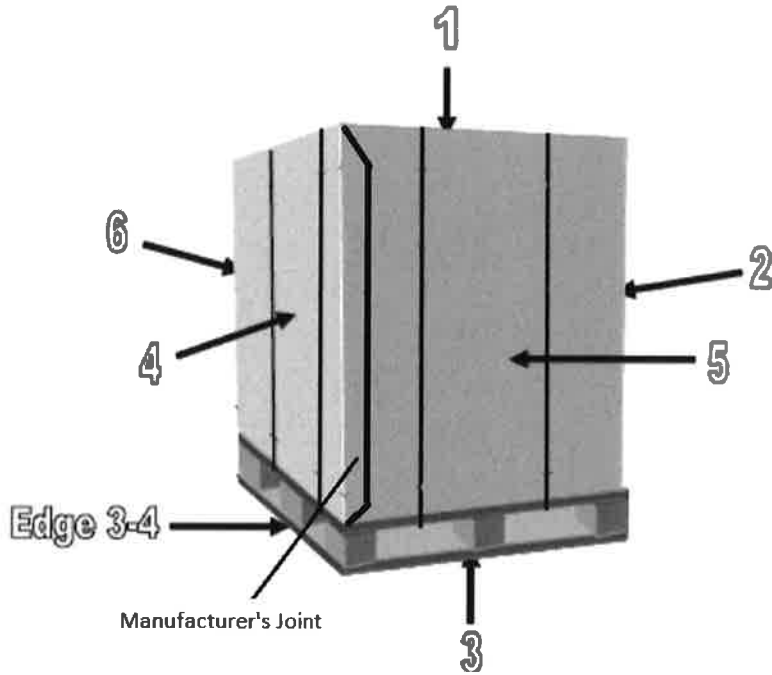
Assembly / Closure Instructions

1. Place the wood pallet on level ground.
2. Square up the corrugated box.
3. Lay the box on its side, and using one bottom flap, line up the edge of the flap with the center of the pallet.
4. Nail the flap to the pallet, one (1) nail goes into each corner, be sure the nail is lined up with the deck boards or stringer boards for a secure connection.
5. Fold the opposite bottom flap in and flip the box to an upright position.
6. Fold back the top flaps.
7. Place the poly liner into the box, be sure the liner is tucked into each corner and is pulled back over the box so filling is easier.
8. Fill the poly liner with product to the correct level and or weight not to exceed the maximum allowable net weight.
9. Secure the poly liner closed by gathering up the top portion of the liner, twisting the liner a minimum of 1 complete twist to make it tighter.
10. Secure the liner with a strip of 2" wide duct tape, minimum of 2 complete wraps, and the tape should be located approximately 8" from the top edge of the liner.
11. Fold the top flaps closed.
12. Seal the top flaps. The 2" wide duct tape runs lengthwise over the center gap extending a minimum of 12" over the edges; three (3) strips total run parallel overlapping 1".

Package Preparation – For All Testing

The packages were filled to a minimum of 95% full (see Section 4 for calculation).

Package Panel Orientation – For All Test setups



Vibration Standard

Test Method: 49 CFR 178.819

Test contents of inner containers:	Fine sand (0.125mm-0.25mm) & grade 4 vermiculite			
Number of packages tested:	One (1)			
Weight of packages tested:	2063 lbs.			
Duration:	1 hour			
Frequency:	4.07	Hz	244.2	rpm

The packages were conditioned in accordance with 49 CFR 178.802 to 50% +/- 2% relative humidity at 23 °C +/- 2° for at least 24 hours. The samples were placed on the table and the steel shim (2" wide x 10" long by 1/16" thick, steel) was used (inserted a minimum of 4" under the test sample and along the full length of the IBC on all sides) to assist in adjusting the frequency.

Results

Package #	Pass / Fail	Description of Results
1	Pass	No visible damage or leakage. The IBC remained centered on the pallet. The pallet remained intact and all boards showed no signs of fatigue. Small tears on bottom corners.

Pass/Fail Criteria

A packaging passes the vibration test if there is no rupture or leakage. The test sample should show any deterioration which could adversely affect transportation safety or any distortion liable to reduce packaging strength.

Bottom Lift Test

Test Method: 49 CFR 178.811

Test contents of inner containers:	Fine sand (0.125mm-0.25mm) & lead shot #7
Number of packages tested:	One (1)
Number of possible entry/lifting points:	Four (4)

The packages were conditioned in accordance with 49 CFR 178.802 to 50% +/- 2% relative humidity at 23 °C +/- 2° for at least 24 hours. The additional test weight used to achieve bottom lift test weight and was applied to the top of the packages (centrally located). The tested IBC was raised and lowered twice by a lift truck with the forks centrally positioned and spaced at three quarters of the dimension of the side of entry. The forks must penetrate to three quarters of the direction of entry. The test must be repeated from each possible direction of entry.

Bottom lift test weight:	2600.00	lbs.	1179.13	kg
Rounded up from required weight:	2578.75	lbs.	1169.5	kg

See Section 4 for Calculation.

Results

Package #	Pass / Fail	Description of Results
1	Pass	No damage or leakage of contents. The package lifted clear of the ground without any IBC or pallet damage.

Pass/Fail Criteria

No loss of contents and no permanent deformation which renders the corrugated intermediate bulk container unsafe for transportation, and no loss of content.

Stacking Test

Test Method: 49 CFR 178.815

Free standing:	<input checked="" type="checkbox"/>	Guided Load:	<input type="checkbox"/>
Packages tested:	One (1)	Test duration:	24 hours

The packages were conditioned in accordance with 49 CFR 178.802 to 50% +/- 2% relative humidity at 23 °C +/- 2° for at least 24 hours.

Stacking test weight:	3750.00	lbs.	1700.68	kg
Rounded up from:	3713.40	lbs.	1684.08	kg

See Section 4 for Calculation.

The stacking test load was applied to the top of the packages by loading each package with the stacking test weight (above) and the weight was maintained for 24 hours. The above calculated weight represents a minimum of 1.8 times the expected gross stacking weight.

Results

Package #	Pass / Fail	Description of Results
1	Pass	No leakage of content. Slight bulging and slight crushing on top corners.

Pass/Fail Criteria

No loss of contents and no permanent deformation which renders the corrugated intermediate bulk container unsafe for transportation, and no loss of content.

Drop Test

Test Method: 49 CFR 178.810

Test contents of inner containers:	Fine sand (0.125mm-0.25mm) & grade 4 vermiculite	
Number of packages tested:	One (1)	
Drop height:	1.8	meters

Testing was conducted to certify the package for Packing Group:	I
Density:	72.8 lbs. / ft ³
Weight of package as tested:	2063 lbs.

Conditioning

The packages were conditioned in accordance with 49 CFR 178.802 to 50% +/- 2% relative humidity at 23 °C +/- 2° for at least 24 hours. Drop testing was conducted approximately 2 minutes after removing the test package from the conditioning chamber.

Results

Package #	Orientation	Results & Description
2	Flat on Bottom angled to manufacturer's joint corner approximately 5°	Pass. Package had slight bowing in the side walls and pallet top deck boards cracked. Manufacturer's joint split 3/4 of the way up but no leakage of contents. The package remained intact and is considered safe for further shipment or disposal/salvage.

Pass/Fail Criteria

A package is considered to successfully pass the drop tests if no loss of contents is achieved. A slight discharge that stops flowing from a closure upon impact is not considered to be a failure of the intermediate bulk container if it stops.

Cobb Test

Test Method: ISO International Standard 535 as required by 49 CFR 178.708 (c) (2).

The packages were conditioned in accordance with 49 CFR 178.802 to 50% +/- 2% relative humidity at 23 °C +/- 2° for at least 24 hours. Five (5) samples were tested from the IBC and subjected to a water absorption test in accordance with ISO International Standard 535.

Results

Sample Number	Water Absorption		Pass / Fail
1	106	g/m ²	Pass
2	110	g/m ²	Pass
3	109	g/m ²	Pass
4	99	g/m ²	Pass
5	97	g/m ²	Pass
Average	104.2	g/m ²	Pass

Pass/Fail Criteria

An increase in mass of greater than 155 g/m² over the 30 minute duration of the test represents an unacceptable level of water resistance.

Puncture Test

Test Method: ISO International Standard 3036 as required by 49 CFR 178.708 (c) (2) i.

On double wall, and triple wall corrugated and solid fiberboard, make four punctures which comprise a set. One set constitutes one test. The plane of the curved pendulum arm is used as the reference in relating the position of the specimens to the testing machine. Directions refer to the direction of the corrugations of corrugated board or grain direction of uncombined sheets or solid fiber. The orientation of the specimens for a set follows; (a) parallel, with one surface down; (b) parallel, with the other surface down; (c) perpendicular, with one surface down; and (d) perpendicular, with the other surface down.

The results will be the average of at least two sets in scale units of three significant figures. (Each unit is equal to 0.0299 joules.) The total tearing length of the head is 107.7 mm (4.24 in.)

Panels Tested:

Three (3)

Results

Sample	Units	Joules	Pass / Fail
Top sample 1 average	**	35+	Pass
Top sample 2 average	**	35+	Pass
Side sample 1 average	940	28.106	Pass
Side sample 2 average	970	29.003	Pass
Bottom sample 1 average	**	35+	Pass
Bottom sample 2 average	**	35+	Pass

Pass/Fail Criteria

A resistance puncture force greater than 15 Joules (11 foot-pounds of energy) when averaged for two consecutive sets of tests for the top, bottom, and sides.

Section 4 - Calculations**Weight of Test Package**

Weight of box:	36	lbs.	16.326	kg
Weight of components:	27.83	lbs.	12.621	kg

Capacity

Capacity of IBC:	27.47	ft ³	0.77	meters ³
------------------	-------	-----------------	------	---------------------

Empty Package Weight

Box:	36	lbs.	16.326	kg
Lid / Pads:	N/A	lbs.	N/A	kg
Inner packaging and components:	2.83	lbs.	1.283	kg
Pallet:	25	lbs.	11.337	kg
Total:	63.83	lbs.	28.94	kg

Filled Package Weight

Weight of fill (100% full):	2000.00	lbs	907.02	kg
Weight of filled package:	2463.83	lbs	1117.38	kg

Drop Test Height

Maximum density of certification:	72.8 lbs. / ft ³			
Packing group of certification:	I			
Drop height:	1.8	meters		

Marked Weight to Accommodate Actual Product

Weight of fill	2000	lbs	907.02	kg
Total tare weight	63.83	lbs	28.94	kg
Marked weight rounded down	2063.83	lbs	935.9	kg

Certified Weights

Certified actual product weight	2000	lbs	907	kg
Certified package gross weight	2063	lbs	935	kg

Stack Test Weight

Load = 1.8 x N

N = combined maximum permissible gross mass of number of IBC's intended to be stacked.

S= Number of IBC's stacked on top. S=1

Where: N= S x 2063 lbs.

Required applied weight = 3713.4 lbs.

Actual stack weight	3750.00	lbs.	1700.68	kg
---------------------	---------	------	---------	----

Bottom Lift Test Weight

Load = 1.25 x Gross Mass

Required applied weight = 2578.75 lbs.

Actual applied load	2600.00	lbs.	1179.13	kg
---------------------	---------	------	---------	----

Section 5 - Drawings and Pictures of Packaging Components

Pictures





<p>Customer: Aramsco</p> <p>Design Style: RSC</p> <p>Description: UN 11G BIN</p> <p>Cust. Part #: UN 11G BIN</p> <p>Size ID (in): 36 x 36 x 35+7/8</p> <p>Size OD (in): x x</p> <p>Blank Size (in): 74+1/8 x 150+1/4</p> <p>Blank: 77.34 Sq Ft</p> <p>HazMat Tracking#:</p> <p>Patent Info:</p> <p>Instructions:</p> <p>Notes:</p> <p>Test Results:</p>	<p>CAD File: 17BS0094.01.ARD</p> <p>Project Desc: ARAMSCO UN 11G</p> <p>Project #: 17BS0094</p> <p>Coatings:</p> <p>Adhesive:</p> <p>Board Desc: ECT 112 LCA (KL / KL)</p> <p>Board Comb: 69hz-me36ht-69hz-me36ht-69hz</p> <p>Tare Weight: 31,774 Lbs</p> <p>Good Board: 75.62 Sq Ft</p> <p>Brd Restrictions:</p> <p>Approved By:</p> <p>Print Info:</p> <p>Approval Date:</p>	<p>WestRock Philadelphia BU Baltimore, MD (South) - Corrugated 14 Pittman Road Baltimore, MD 21286 410-789-9400 - 410-789-1433 (Fax)</p> <p>Sales Rep: Skip McNeal</p> <p>Designed By: Timothy Quinn</p> <p>Created: 6/30/2017</p> <p>Printed: 6/30/2017</p> <p>Design Last Saved: 6/30/2017</p> <p>KIWI PD#:</p> <p>WESTROCK CONFIDENTIAL AND PROPRIETARY INFORMATION</p> <p><small>This drawing is the property of WestRock and is not to be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of WestRock. All rights reserved. © 2017 WestRock Company. All other trademarks are the property of their respective owners.</small></p> <p><small>Printed on 6/30/2017 10:08:30 AM</small></p>
--	---	--

Print Orientation:

Print Orientation: Unknown

View: Outside

Revision History	Date	Auth
	2017-06-30	104988

Nashua Tapes Products 300 MULTI-PURPOSE DUCT TAPE

Excellent for general repair, bundling, patching and mending, conformable, excellent adhesion to variety of surfaces, no curl.

Applications Features & Benefits

Home and general repair. Bundling, Versatile polyethylene coated cloth tape. Conforms well to patching and mending. Emergency irregular surfaces. Tears straight, hangs straight, curl resistant. tape for automotive breakdowns.

Product Construction Special Conditions

Adhesive: Rubber Low VOC

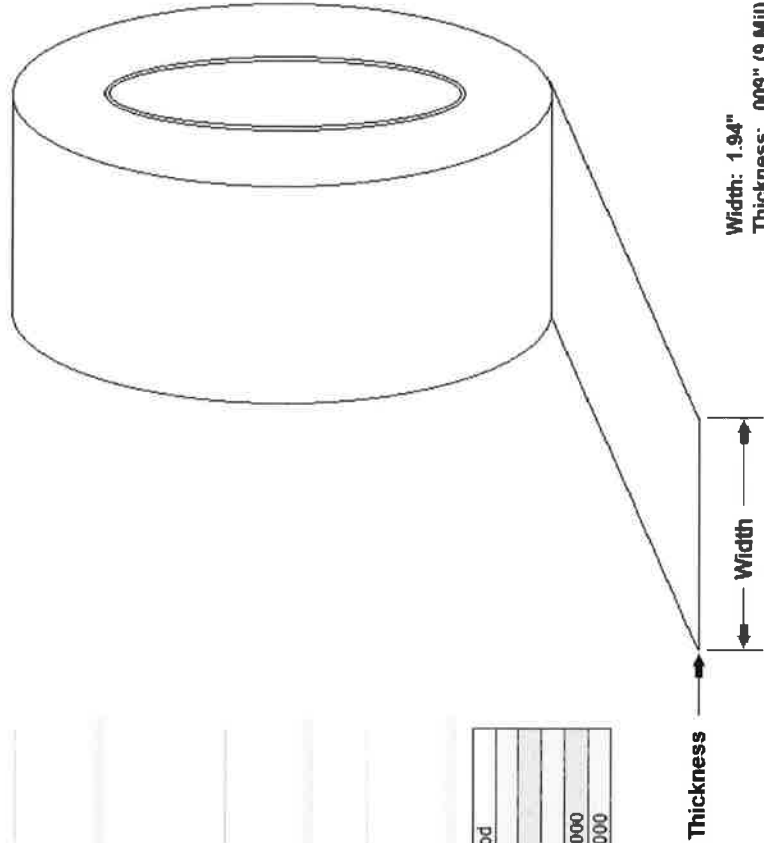
Backing: Polyethylene coated cloth

Certifications

LEED - Contributes toward satisfying EQ Credit 4.1 (Low Emitting Materials)

Performance Specifications

Measurement	US Value	Metric Value	Test Method
Adhesion to Backing	43oz/in	48g/mm	PSTC-1
Adhesion to Steel	46oz/in	51g/mm	PSTC-1
Maximum Temperature	200°F	93°C	
Tensile	23lb/in	0.41kg/mm	ASTM D-1000
Thickness	10Mils	0.25mm	ASTM D-1000



Tapes and Coatings Division, Franklin, KY 42134



CP CHAMPION PLASTICS
Manufacturer of Plastic Bags and Films



Part Number: 86345

Length: 41.0"

Width: 40.0"

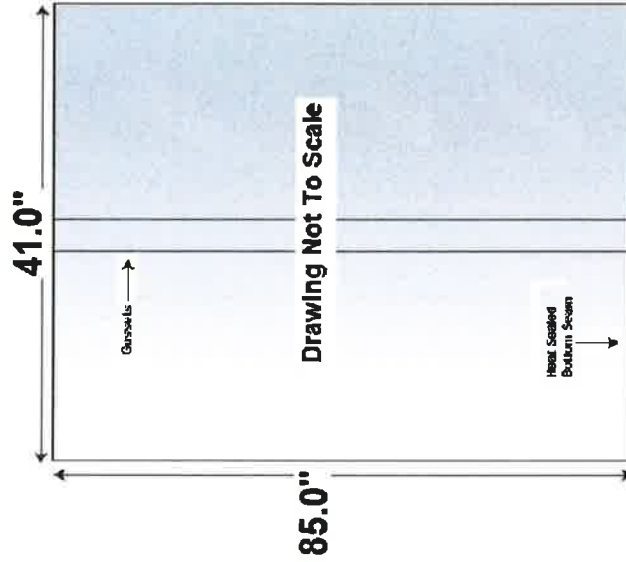
Height: 85.0"

Thickness: .006" (6 Mil)

Style: Tubular, Gusseted

Material: Black LDPE (LTA Blown Film Resin)

Gram Weight: 1,222.0 Grams



220 Clifton Boulevard, Clifton, New Jersey 07011
Phone: 800-526-1230 · Fax: 800-526-1238

Nashua Tapes Products 300 MULTI-PURPOSE DUCT TAPE

Excellent for general repair, bundling, patching and mending, conformable, excellent adhesion to variety of surfaces, no curl.

Applications

Home and general repair. Bundling, versatile polyethylene coated cloth tape. Conforms well to patching and mending. Emergency irregular surfaces. Tears straight, hangs straight, curl resistant. tape for automotive breakdowns.

Features & Benefits

Product Construction

Adhesive: Rubber
Backing: Polyethylene coated cloth

Special Conditions

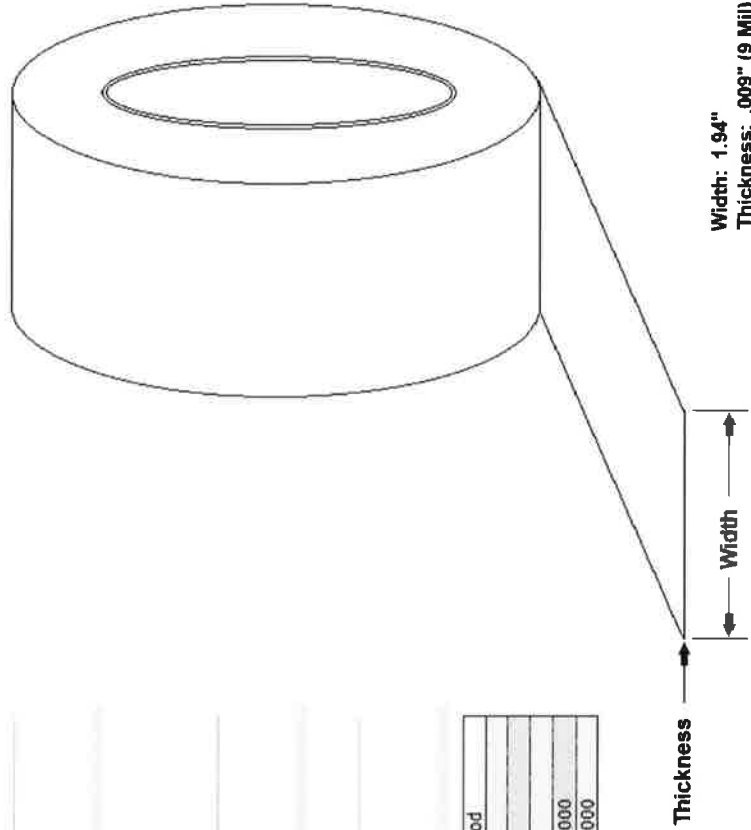
Low VOC

Certifications

LEED - Contributes toward satisfying EQ Credit 4.1 (Low Emitting Materials)

Performance Specifications

Measurement	US Value	Metric Value	Test Method
Adhesion to Backing	43oz/in	48g/mm	PSTC-1
Adhesion to Steel	46oz/in	51g/mm	PSTC-1
Maximum Temperature	200°F	93°C	
Tensile	23lb/in	0.41kg/mm	ASTM D-1000
Thickness	10Mils	0.25mm	ASTM D-1000



Tapes and Coatings Division, Franklin, KY 42134

Pallet

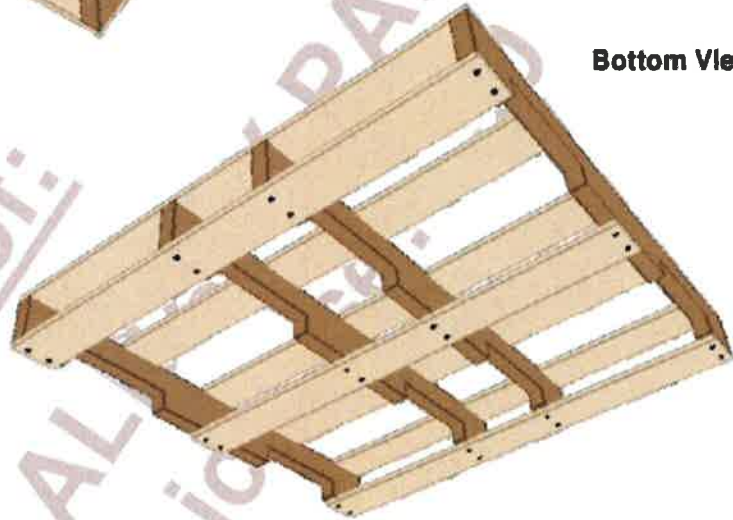
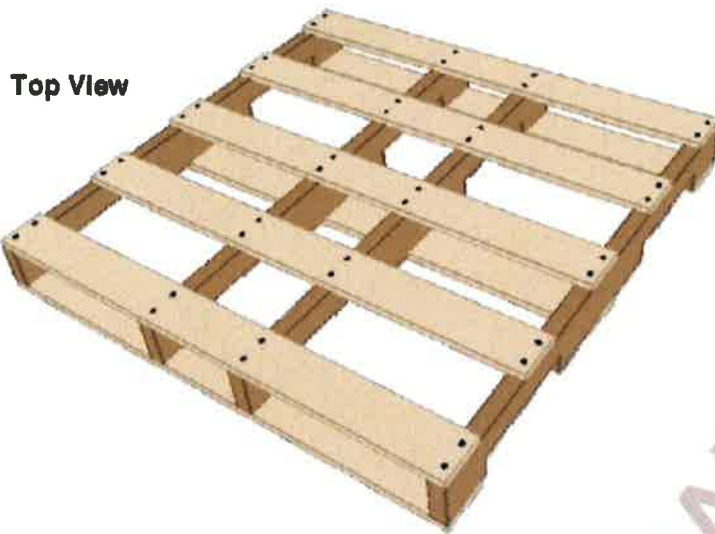
PALLET DESIGN SYSTEM Version 5.0 Pallet Specification Sheet		All dimensions in inches												
Customer: ARAMSCO THOROFARE NJ ATTENTION: DON MAURER PH: 856-686-6733 X: 7733 FX: 856-686-7261 DMAURER@ARAMSCO.COM	Prepared by: B&B ALBANY PALLET CO. DRAWER T 4800 SOLVAY ROAD JAMESVILLE, N.Y. 13078 Ph: 315/492-1786 Email: bill.dougherty@bblumber.com ANALYSIS BY: BILL DOUGHERTY Fax: 315/469-4946 PDS License: 30 Printed: December 05, 2012													
Pallet ID: ARAM-3838 Classification: 38.00 x 38.00, Stringer-Class, Double-Face Non-Reversible, Partial 4-Way, Limited-Use, New Manufacture														
Components	Materials													
Top Deck: Style: Deckboard Type: New Lumber <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Number</th> <th style="text-align: left;">Thickness</th> <th style="text-align: left;">Width</th> <th style="text-align: left;">Length</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>0.438</td> <td>3.500</td> <td>38.00</td> </tr> </tbody> </table> Volume: 2.0 bd ft	Number	Thickness	Width	Length	5	0.438	3.500	38.00	Fasteners: Fastener ID: PRK2-12 Fastener Type: Helically Threaded Nail Fastener Length: 2.00 Thread Length: 1.50 Thread Diameter: 0.123 Wire Diameter: 0.105 Head Diameter: 0.250 Flutes: 5 Helix: 8.5 Pitch: 0.176 Thread Angle: 66 MIBANT Angle: 38 FWC: 3.24 Total Number: 64					
Number	Thickness	Width	Length											
5	0.438	3.500	38.00											
Bottom Deck: Style: Deckboard Type: New Lumber <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Number</th> <th style="text-align: left;">Thickness</th> <th style="text-align: left;">Width</th> <th style="text-align: left;">Length</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>0.438</td> <td>3.500</td> <td>38.00</td> </tr> </tbody> </table> Volume: 1.2 bd ft	Number	Thickness	Width	Length	3	0.438	3.500	38.00	New Lumber: Lumber ID: ONE <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Species Class</th> <th style="text-align: left;">Grade</th> </tr> </thead> <tbody> <tr> <td>High Density Eastern Hardwoods</td> <td>Standard & BTR</td> </tr> </tbody> </table> Moisture Content (at manufacture and assembly): Green Total New Lumber Volume: 7.4 bd ft		Species Class	Grade	High Density Eastern Hardwoods	Standard & BTR
Number	Thickness	Width	Length											
3	0.438	3.500	38.00											
Species Class	Grade													
High Density Eastern Hardwoods	Standard & BTR													
Stringers: Type: New Lumber <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Number</th> <th style="text-align: left;">Width</th> <th style="text-align: left;">Height</th> <th style="text-align: left;">Length</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>1.125</td> <td>3.500</td> <td>38.00</td> </tr> </tbody> </table> Volume: 4.2 bd ft Partial 4-way Entry Notch: Depth: 1.500 Length: 9.00 Location: 4.00 Radius: 0.00	Number	Width	Height	Length	4	1.125	3.500	38.00						
Number	Width	Height	Length											
4	1.125	3.500	38.00											
Spec Sheet Notes: MANUFACTURED 100% IN USA. CONSTRUCTION ALL NEW STATE HIGH DENSITY HARDWOODS.														
All materials generated from the PDS software (including without limitation specification sheets, drawings, analyses and all other output) (PDS Materials) are protected by copyright and other intellectual property laws. The direct pallet user/customer may not copy the PDS materials without the express written permission of the PDS licensee that provided the customer with the PDS materials.														

PALLET DESIGN SYSTEM Version 5.0

3-D Pallet Drawings

Pallet ID: ARAM-3838

Classification: 38.00 x 38.00, Stringer-Class, **Double-Face** Non-Reversible, **Partial** 4-Way, Limited-Use, **New Manufacture**



All materials generated from the PDS software (including without limitation specifications of parts, drawings, analyses and all other output) (PDS Materials) are protected by copyright and other intellectual property laws. The direct pallet user/customer may not copy the PDS materials without the express written permission of the PDS licensee that provided the customer with the PDS materials.

Customer:

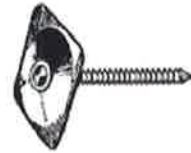
ARAMSCO
THOROFARE NJ
ATTENTION: DON MAURER
PH: 856-686-6733 X: 7733 FX: 856-686-7261
DMAURER@ARAMSCO.COM

Prepared by:

B&B ALBANY PALLET CO.
DRAWER T 4800 SOLVAY ROAD
JAMESVILLE, N.Y. 13078
Ph: 315/482-1786 Email: bill.dougherty@bblumber.com
ANALYSIS BY: BILL DOUGHERTY Fax: 315/489-4946
PDS License: 30 Printed: December 05, 2012

Independent Nail Hand-Driven Specialty Nails

SQUARE-HED® CAP NAILS (INDEPENDENT-MADE)



RING SHANK

RING SHANK:

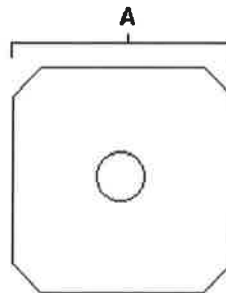
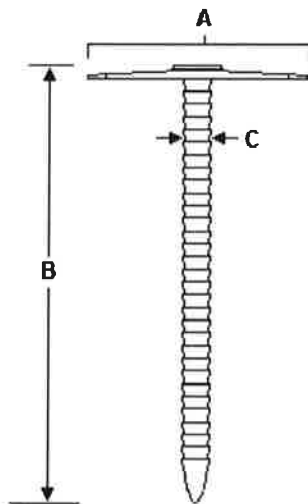
- Features a large, "domed" cap designed to meet the roofing industry's specifications.
- Popular for built-up roofing, rigid insulation, packaging furniture, lining freight cars, sheathing and veneering.
- STRONGHOLD® ring shanks give excellent holding power.
- SQUARE-HED® cap nails are provided with a bright mill finish.
- For PLASTIC-HED® cap nails, see page 24.

SPIRAL SHANK:

- These nails are made with a SCREWTITE® spiral shank for nailing into poured or precast gypsum roof decking.
- Diamond point penetrates easily and the shank drives well.
- SQUARE-HED® cap nails are provided with a bright mill finish.

LENGTH	DIAMETER	CAP SIZE	APPROXIMATE NAILS / LB	50 LB ITEM NUMBER
1"	.109"	15/16"	83	Q2A050
1 1/4"	.109"	15/16"	78	Q3A050
1 1/2"	.125"	15/16"	65	Q4A050
1 3/4"	.125"	15/16"	62	Q5A050
2"	.125"	13/16"	58	Q6A050
2 1/2"	.125"	15/16"	44	Q8A050
3"	.125"	13/16"	41	Q10A050

A - Width: 0.94"
 B - Length: 1.78"
 C - Shank Dia: 0.127"



Appendix A - Test Equipment and Instrumentation

Instrument or Equipment	Manufacturer	Model Number	Serial Number
Gram Scale	Mettler Toledo	PG4002-S	1122253714
Electronic Scale	American Scientific Products	TL-1600S	19538
Vibration Table	MTS	840	381A
Compression Tester	Tinius-Olsen	Electromatic	62560
Digital Micrometer	Mitutoyo	Digimatic	29376130
Mechanical Micrometer	Mitutoyo	MIC	LFM-1
Puncture Tester	TMI	A942	A942
Conditioning Chamber #2	Midwest Labs	922A	55455
Conditioning Chamber #6	Thermotron	SM-16C	23409
Conditioning Chamber #12	Thermotron	SM-16C	23408
Conditioning Chamber #16	Thermotron	SM-32C	42371
Drop Hook	Vestil	LM-HP	N/A
Fork Lift	Caterpillar	GC25K	AT 82C-90656
Fork Lift	Allis Chalmers	ACC40 PS	ALF111630

Calibration reports, certifications or additional information available upon request.

Appendix B - Definitions / Abbreviations / Conversions

Definitions

Proprietary – Customer was unable to obtain the required data or the MFG refused to provide this data due to trade secrets.

Abbreviations

MD-Machine direction

CMD-Cross direction

N/A-Not applicable

N/T-Not tested

N/I-Not indicated

DNA-Does not apply

MSF-1000 square feet

B/A-Board analysis

Conversions

mm = inches x 25.4

kg = lbs. / 2.205

1 ounce = 28.35 grams

meters³ = ft³ * 0.02831

mils = inches / 0.001

inches = meters x 39.37

feet = meters * 3.28083

lbs. = grams / 453.6

gal = liter / 3.785