



**Farabaugh Engineering and Testing Inc.**

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**PERFORMANCE TEST REPORT**

**MODEL# 4100/4200/4400 SERIES SLIDER  
HORIZONTAL SLIDING WINDOW (OX)  
(72" X 48")**

**DOVE INDUSTRIES  
767 SANS SOUCI PARKWAY  
WILKES BARRE, PA 18702**

**Project No. T201D-04**

**10/2/04**

**REVISED: 5/2/07**

**401 Wide Drive • McKeesport, PA 15135  
(412) 751-4001 • FAX (412) 751-4003**

**PERFORMANCE TEST REPORT**

Manufacturer: DOVE INDUSTRIES  
767 SANS SOUCI PARKWAY  
WILKES BARRE, PA 18702

**Product Identification**

Product Type: Horizontal Sliding Window (OX)  
Series/Model #: 4100/4200/4400 SERIES SLIDER  
Specification: AAMA/NWWDA 101/I.S.2-97  
Designation: HS-R25 (72" X 48") AAMA/NWWDA 101/I.S.2-97  
Product Description: Attached  
Test Results: Attached  
Test Equipment: FET  
Testing Date: 9/29/04

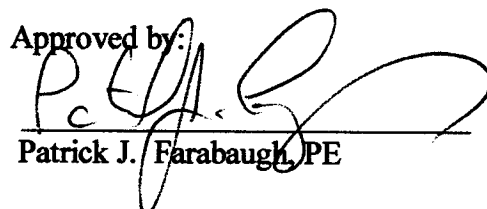
Detailed assembly drawings showing wall thickness of all members, corner construction and hardware application are on file and have been compared to the sample submitted. A copy of this report and test sample will be retained at FET for a period of 4 years. The results obtained apply only to the specimen tested. No conclusions of any kind regarding the adequacy or inadequacy of the glass in the test specimen may be drawn from this test.

The above results were secured by using the designated test methods and they indicate compliance with the performance requirements of the referenced specification. This report does not constitute certification of this product, which may only be granted by the certification program administrator.

Prepared by:

  
Paul G. Farabaugh

Approved by:

  
Patrick J. Farabaugh, PE

**Product Description****General:**

Test sample was comprised of series Dove Industries, 4100/4200/4400 Series Slider Horizontal Sliding (OX) Vinyl Prime window, with an overall master frame size measuring 72-1/2" wide X 48-3/8" high. Both operable sashes measured 35-3/8" wide X 45-7/8" high overall. The frame and sash corners were of welded, mitered type construction. The fixed meeting stile was of a coped, butt type construction with a two screw attachment at the header and sill location. One extruded aluminum reinforcement member filled the member hollow of the locking operable sash meeting stile. The interior right operable sash used an exterior screen.

**Weather-stripping:**

MEMBER	WEATHERSTIPPING	QUANTITY	WIDTH X HEIGHT (INCHES)	LOCATION
Frame Header	Center Fin Pile Seal	1	0.187" w x .18" ht	Interior Leg
Frame Sill	Center Fin Pile Seal	1	0.187" w x .18" ht	Interior Leg
Frame Jamb	Center Fin Pile Seal	1	0.187" w x .18" ht	Interior Leg
Operable Locking Sash (Top & Bottom rail)	Center Fin Pile Seal	1	0.187" w x .21" ht	Exterior face
Operable Locking sash (Locking stile)	Center Fin Pile Seal	1	0.187" w x .24" ht	Exterior face
Operable Locking sash (Jamb stile)	Center Fin Pile Seal	1	0.187" w x .21" ht	Exterior face
Fixed Keeper Stile (meeting keeper rail)	Center Fin Pile Seal	1	0.187" w x .21" ht	Interior face

**Operators and Other Hardware:**

Two metal rollers with plastic housing was located at each end of each operable sash bottom rail. Two cam-type sweep lock were attached to the locking sash meeting rail, one 7" from each end and corresponding keepers on the adjacent meeting rail.

**Glazing System:**

Each sash was exterior drop glazed with 0.75" thick insulated glass. The sash utilized two (0.09" nominal) thick clear annealed glass lites with a 0.57" perimeter metal spacer. The glazing was set on a bead of silicone along the perimeter of the frame. A interior snap-in rigid vinyl-glazing bead secured the glass.

**Weep Holes:**

Two (1-3/8" w x 5/16" h reduced to 1-3/16"w x 1/8"h) weeps with flaps were located on the exterior face of the sill, one 3-1/4" from each end. Two (3/16" diameter) weep holes were down through the top exterior track and next lower layer just below the top track of the sill, one 2-1/8" from each end. Two on top track (one each side) and two on middle layer (one each side). Two (1/4" side x 1/4" side x 5/16" side) triangular weeps at each end of sill on center wall of sill. Two (1/8" diameter) weep holes were thru the top of glazing track bottom rail for each sash, one 2-1/2" from each end.

**Sealant:**

Silicone sealant was applied to all the following areas:

- Perimeter of the glazing was set in continuous bead of silicone.
- Exterior face of frame to buck intersection.

**Anchorage:**

A 1-1/2" nailing flange was around the perimeter of the frame. A #6 x 1-1/4" long flat head wood screws were used to attach the nailing flange to the buck. The screw pattern for the nailing flange into the buck was 10" c/c around the perimeter. Silicone sealant was used at nailing flange to buck location and around the perimeter.

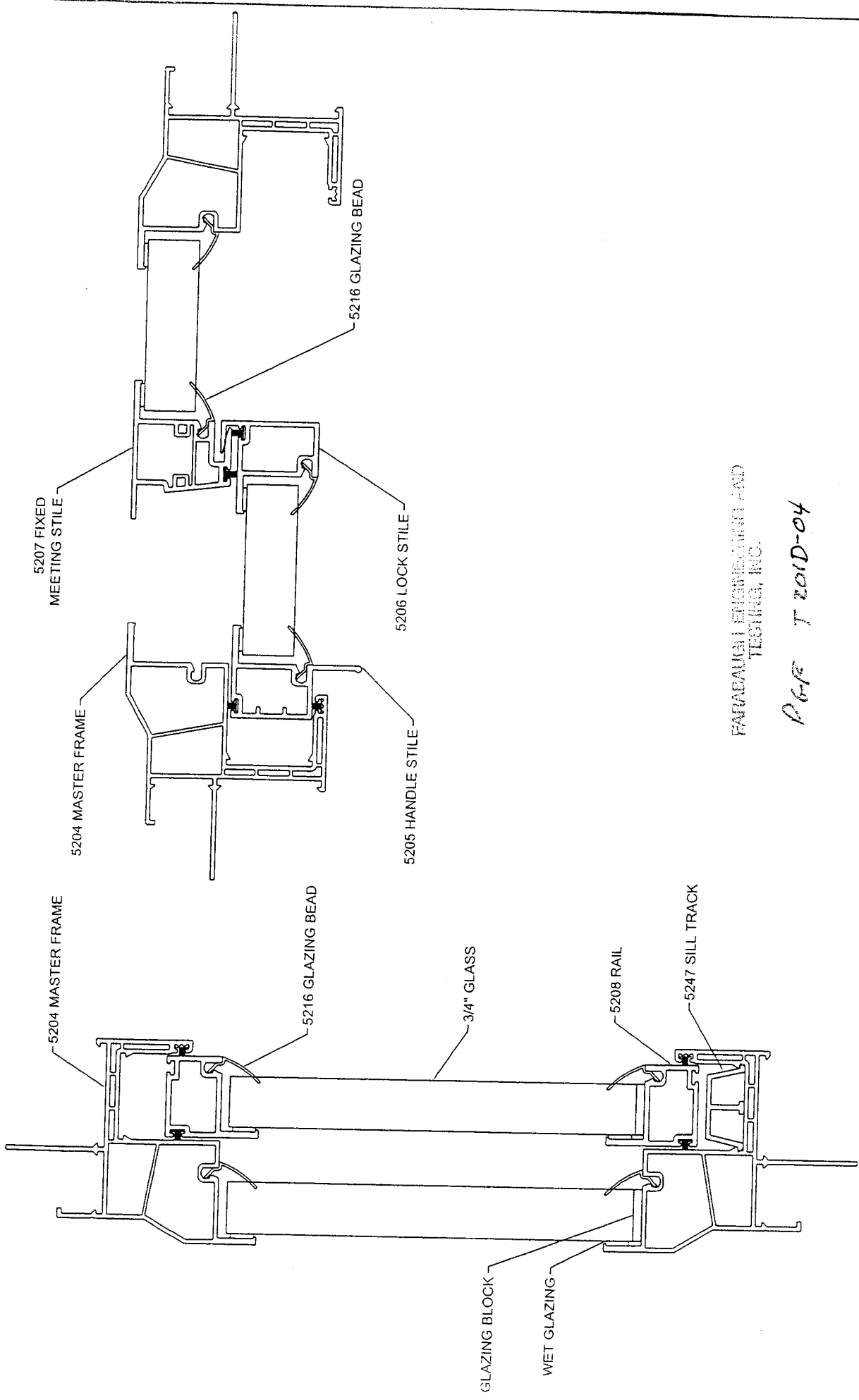
**MODEL #4100/4200/4400 SERIES SLIDER**  
**HORIZONTAL SLIDING WINDOW**  
**Test Results**

<b><u>Paragraph</u></b>	<b><u>Test Title / Referenced Test Method</u></b>	<b><u>Test Results</u></b>	<b><u>Allowable</u></b>
<b><u>Gateway Performance Requirements</u></b>			
2.1.2	<b>Air Infiltration Test</b> (ASTM E-283-91) @ 1.57 psf <i>The test specimen meets the performance levels specified in AAMA/NWWDA 101/I.S.2-97 for Air Infiltration.</i>	0.09 cfm/sf	0.30 cfm/sf
2.1.3	<b>Water Resistance Test</b> (ASTM E547-96) @ 2.86 psf (w/wo screen)	No penetration	No penetration
2.1.4.2	<b>Uniform Load Structural Test</b> (see optional performance results)		
2.1.7	<b>Welded Corner Test</b>	Meets	As Stated

**MODEL #4100/4200/4400 SERIES SLIDER**  
**HORIZONTAL SLIDING WINDOW**

**Test Results (cont.)**


<b><u>Paragraph</u></b>	<b><u>Test Title / Referenced Test Method</u></b>	<b><u>Test Results</u></b>	<b><u>Allowable</u></b>
2.1.8	<b>Forced Entry Resistance</b> (ASTM F588-97) Performance Level 10 Type A (Section 10)		
	Sec. 10.1 Lock Manipulation Test	No Failure	As Stated
	Sec. 10.2.1.1 Test A1	No Failure	As Stated
	Sec. 10.2.1.2 Test A2	No Failure	As Stated
	Sec. 10.2.1.3 Test A3	No Failure	As Stated
	Sec. 10.2.1.4 Test A4	No Failure	As Stated
	Sec. 10.2.1.5 Test A5	No Failure	As Stated
	Sec. 10.2.1.6 Test A6	No Failure	As Stated
	Sec. 10.2.1.7 Test A7	No Failure	As Stated
	Sec. 10.2.1.8 Lock Manipulation Test	No Failure	As Stated
	<b><u>Specific Window Performance Results</u></b>		
2.2.2.5.1	<b>Operating Force Test</b> Operable sash	13 lb left, 12 lb right	20 lb
2.2.2.5.2	<b>Deglazing Test</b> (ASTM E987-88, Method B)		
	<b><u>Operable sash</u></b>		
	left stile @ 70 lbf	13 %	<100%
	right stile @ 70 lbf	13 %	<100%
	top rail @ 50 lbf	6 %	<100%
	bottom rail @ 50 lbf	6%	<100%
	<b><u>Optional Performance Results</u></b>		
4.3	<b>Water Resistance Test</b> (ASTM E547-96) @ 4.5 psf (w/wo screens)	No penetration	No penetration
4.4.2	<b>Uniform Load Structural Test</b> (ASTM E-330-96)		(0.4% $\times$ L)
	@ 37.5 psf positive	0.041" *	0.183"
	@ 37.5 psf negative	0.031" *	0.183"
	* - Maximum Deformations.		



FARADAIN ENGINEERING AND TESTING, INC.

P66 T201D-04

PRELIMINARY PART #		5200 SERIES	
TITLE		NEW CONSTRUCTION X0 SLIDER	
DRAWN BY:	EAS	DESIGNED BY:	DATE
CHECKED BY:		APPROVED BY:	04-04-01
			SCALE
			M/S 1
			DRAWING No.
			5200S002


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 565 CEDAR WAY, OAKMONT PA 15139

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No.	REVISION	BY	DATE
1	ISSUED FOR CONSTRUCTION	EAS	04-04-01
2	REVISED PER CHANGE ORDER	EAS	04-04-01
3	REVISED PER CHANGE ORDER	EAS	04-04-01
4	REVISED PER CHANGE ORDER	EAS	04-04-01
5	REVISED PER CHANGE ORDER	EAS	04-04-01

PART NAME: 5204

DESCRIPTION: XO SLIDER FRAME

SUPPLIER/PLANT: CHELSEA BUILDING PRODUCTS

# CHELSEA BUILDING PRODUCTS

## ILLUSTRATION OF PART AND CONTROL POINTS

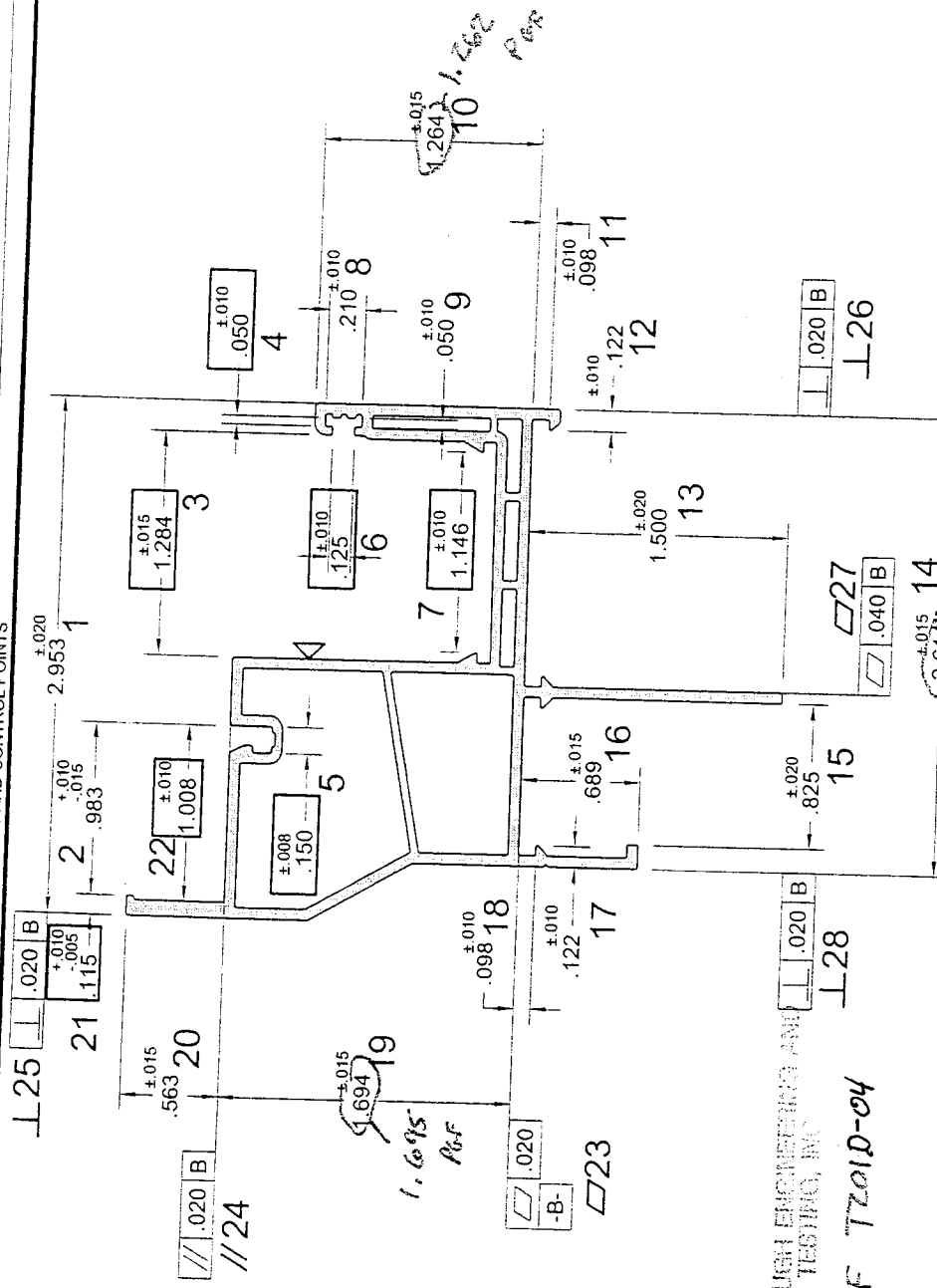


15138

CHELSEA BUILDING PRODUCTS, INC.  
565 CEDAR WAY, OAKMONT, PA 15138

### NOTES:

- MATERIAL = RIGID P.V.C.
- FLEXIBLE P.V.C. = [XXXXXX]
- EXTERIOR COATING = [XXXXXX]
- LAMINATE = [ZZZZZZ]
- THINNER INTERIOR WALLS = [ ]
- WALL THICKNESS = .062
- RADIUS = .010 R
- LOCATION FOR IMPACT TEST
- ANGULARITY =
- PERPENDICULARITY =
- PARALLELISM =
- FLATNESS =
- SPECIFICATION LENGTH TO ±.3/8"
- ANGULARITY TO BE ± 1°
- PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS



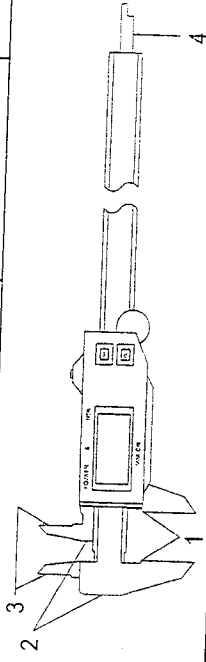
FARABAUGH ENGINEERING AND TESTING, INC.  
P6-F T701D-04

NO.	REVISION	BY	DATE
9	DIM .983 WAS CRITICAL 2.614 WAS 2.613; 1.694 WAS 1.697; WO #498	EAS	03-28-04
8	REVISED DIM 22; WO #487	JPP	03-09-04
7	ADDED DIM 22; WO #3233	JPP	07-02-03
6	REVISED DIMS; WO #287	JPP	10-30-02
5	REVISED GLAZING BEAD POCKET; WO #0034	EAS	02-25-02
4	ADDED FUNCTIONAL CHECK; WO 1189	EAS	12-05-01

AWN DATE: 04-11-01

the caliper diagram as your guide to measure the following control points.  
 sure the following control points using #1 on the caliper diagram:  
 sure the following control points using #2 on the caliper diagram:  
 sure the following control points using #3 on the caliper diagram:  
 sure the following control points using #4 on the caliper diagram:  
 agency of sampling: Process Specialist. 3 samples per shift recorded every 4 hours.  
 loc. 1 sample per shift recorded 1 hour after shift start.

ANY CONTROL POINTS ARE NOT IN SPEC.  
CORRECTIVE ACTION REQUIRED









PRINT NUMBER: 5208QC

DRAWN BY: J.S.

APPROVED BY:

DATE:

DEVELOP

INPROCESS

PRODUCTION

PART NAME: 5208

DESCRIPTION: RAIL/STILE

SUPPLIER/PLANT: CHELSEA BUILDING PRODUCTS



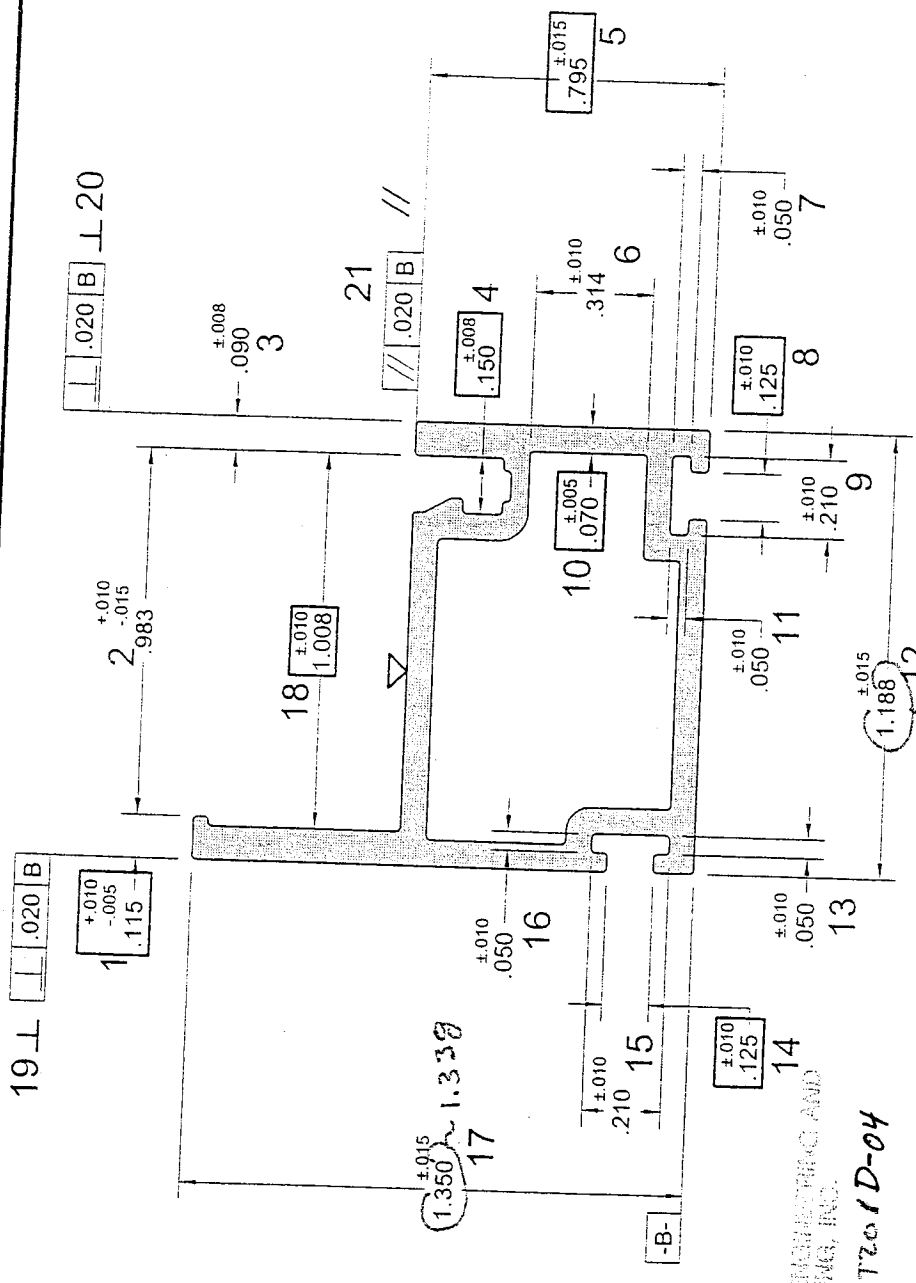
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NOTES:

- MATERIAL = RIGID P.V.C.
- FLEXIBLE P.V.C. = [XXXXXX]
- EXTERIOR COATING = [ ]
- LAMINATE = [ZZZZZZ]
- THINNER INTERIOR WALLS = [ ]
- WALL THICKNESS = .070
- RADIUS = .010
- LOCATION FOR IMPACT TEST
- ANGULARITY = [ ]
- PERPENDICULARITY = [ ]
- PARALLELISM = [ ]
- FLATNESS = [ ]
- SPECIFICATION LENGTH TO ANGULARITY TO BE ± 1"
- PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
- PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS

ILLUSTRATION OF PART AND CONTROL POINTS



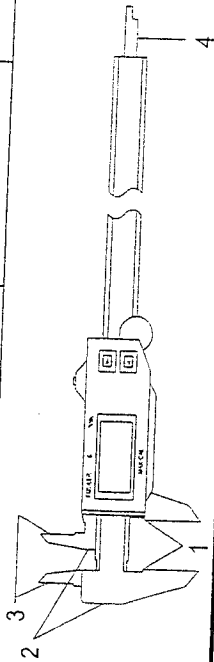
RAVADAVO ENGINEERING AND TESTING, INC.  
PGF 7201D-04

NO.	REVISION	BY	DATE
7	DIM 983 WAS CRITICAL: WO#198	EAS	03-26-04
6	REVISED DIM 18: WO#487	JPP	03-09-04
5	ADDED DIM 18: WO#3233	JPP	07-02-03
4	REVISED DIMENSIONS	JPP	10-23-02
3	REVISED DIMENSIONS	BLG	10/15/02
2	ADDED FUNCTIONAL CHECK: WO #1084	EAS	09-06-01

OWN DATE: 04-10-01

Refer to caliper diagram as your guide to measure the following control points. Use the following control points using #1 on the caliper diagram: 1, 3, 6, 8, 17. Use the following control points using #2 on the caliper diagram: 4, 5, 7, 9, 10, 11, 12, 13, 14, 15, 16. Use the following control points using #3 on the caliper diagram: 2. Agency of sampling: Process Specialist - 3 samples per shift, recorded every 4 hours. 1 sample per shift recorded 1 hour after shift start.

ANY CONTROL POINTS ARE NOT IN SPEC.  
CORRECTIVE ACTION REQUIRED



PRINT NUMBER: 5247QC  
 DRAWN BY: EAS  
 APPROVED BY: [ ]  
 DEVELOP [ ] INPROCESS [ ] PRODUCTION [ ]  
 DATE: [ ]  
 SUPPLIER/PLANT:  
**CHELSEA BUILDING PRODUCTS**

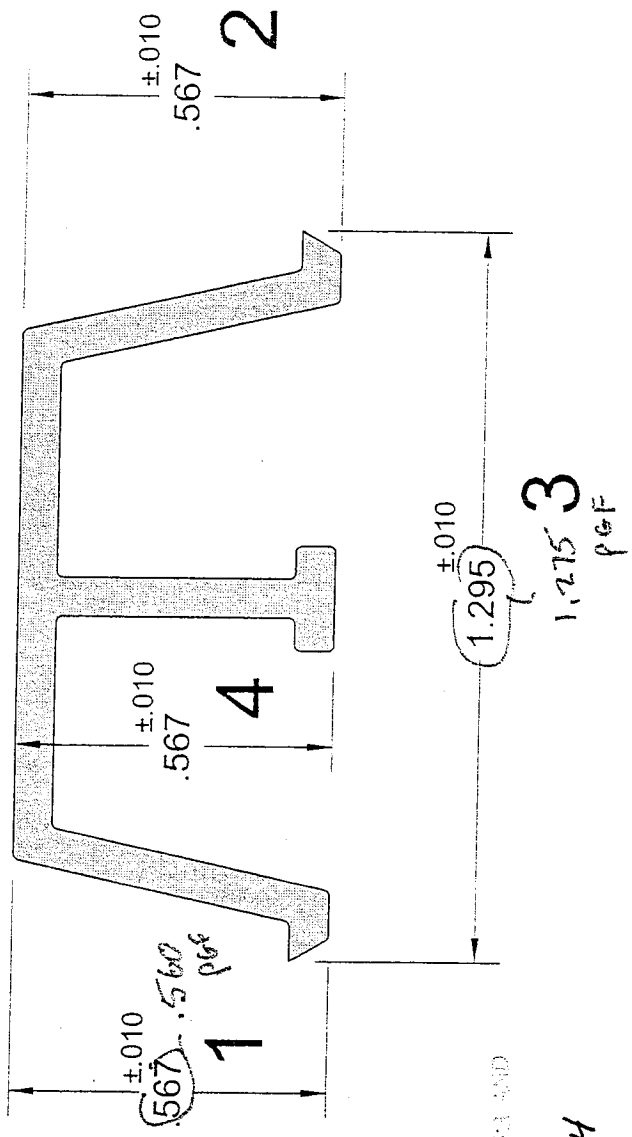
DESCRIPTION: **SILL TRACK**



6 CEDAR WAY, OAKMONT PA 15139

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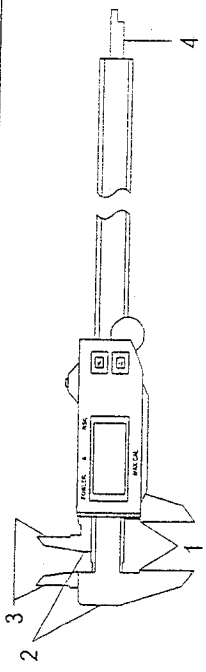
- NOTES:**
- MATERIAL = RIGID P.V.C.
  - FLEXIBLE P.V.C. = [ ]
  - CAPSTOCK = [ ]
  - LAMINATE = [ ]
  - THINNER INTERIOR WALLS = [ ]
  - WALL THICKNESS = 0.070
  - RADIUS = 0.10 R
  - LOCATION FOR IMPACT TEST
  - ANGULARITY = [ ]
  - PERPENDICULARITY = [ ]
  - PARALLELISM = [ ]
  - FLATNESS = [ ]
  - SPECIFICATION LENGTH TO ±3/8"
  - ANGULARITY TO BE ±1°
  - PROFILE MUST MEET Q-303
  - PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-304
  - PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-301
  - PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-902 IMPACT
  - RESISTANCE PER AAMA SPECIFICATIONS



PARALLELISM, ANGULARITY AND PERPENDICULARITY

P6F T201D-04

NO.	REVISION	DATE	CUSTOMER LENGTH	CHELSEA CUT LENGTH	TOLERANCE
2	ADDED FUNCTIONAL CHECK, WO 1189	12-10-01			
1	ADDED DIM #4 PER PDWO #1035	07-18-01			
	BY				



ensure the following control points using #1 on the caliper diagram: 1, 2, 3, 4  
 ensure the following control points using #2 on the caliper diagram:  
 ensure the following control points using #3 on the caliper diagram:  
 ensure the following control points using #4 on the caliper diagram:  
 frequency of sampling: Process Specialist: 3 samples per shift recorded every 4 hours.  
 lot: 1 sample per shift recorded 1 hour after shift start.

ANY CONTROL POINTS ARE NOT IN SPEC.  
 CORRECTIVE ACTION REQUIRED

AWN DATE: 04-16-01

PRINT NUMBER:

5216QC

DRAWN BY: EAS

APPROVED BY:

DATE:

DEVELOP

INPROCESS

PRODUCTION

DESCRIPTION:  
GLAZING BEAD

SUPPLIER/PLANT:  
CHELSEA BUILDING PRODUCTS

# CHELSEA BUILDING PRODUCTS

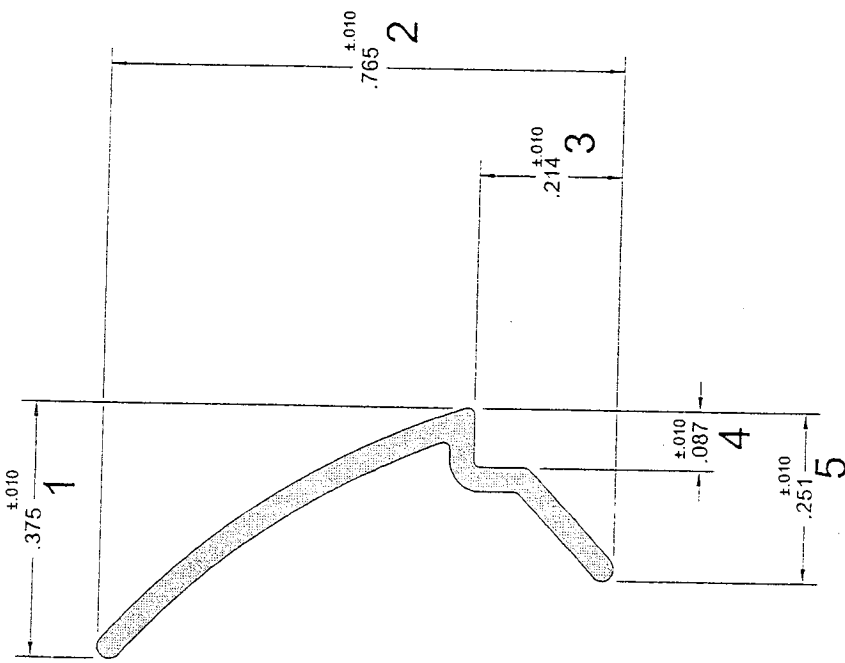
ILLUSTRATION OF PART AND CONTROL POINTS



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- NOTES:**
- MATERIAL = RIGID P.V.C.
  - FLEXIBLE P.V.C. = [Symbol]
  - EXTERIOR COATING = [Symbol]
  - LAMINATE = [Symbol]
  - THINNER INTERIOR WALLS = [Symbol]
  - WALL THICKNESS = .035
  - RADIUS = .010 R
  - LOCATION FOR IMPACT TEST [Symbol]
  - ANGULARITY = [Symbol]
  - PERPENDICULARITY = [Symbol]
  - PARALLELISM = [Symbol]
  - FLATNESS = [Symbol]
  - SPECIFICATION LENGTH TO ±.010
  - ANGULARITY TO BE ± 1°
  - PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
  - PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS



PARABALL ENGINEERING AND TESTING, INC.

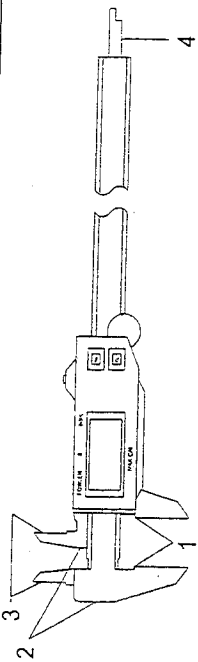
PGF T201D-04

CUSTOMER LENGTH	CHELSEA CUT LENGTH	TOLERANCE
BLG 10/30/02		
BLG 10/22/02		
BLG 7/22/02		
BY	DATE	
2		
2		
1		
NO. REVISION		

Use the caliper diagram as your guide to measure the following control points.  
 Measure the following control points using #1 on the caliper diagram: 1, 2, 5  
 Measure the following control points using #2 on the caliper diagram: 4  
 Measure the following control points using #3 on the caliper diagram:  
 Measure the following control points using #4 on the caliper diagram:

Frequency of sampling: Process Specialist: 3 samples per shift recorded every 4 hours.  
 or, 1 sample per shift recorded 1 hour after shift start.

ANY CONTROL POINTS ARE NOT IN SPEC.  
 CORRECTIVE ACTION REQUIRED

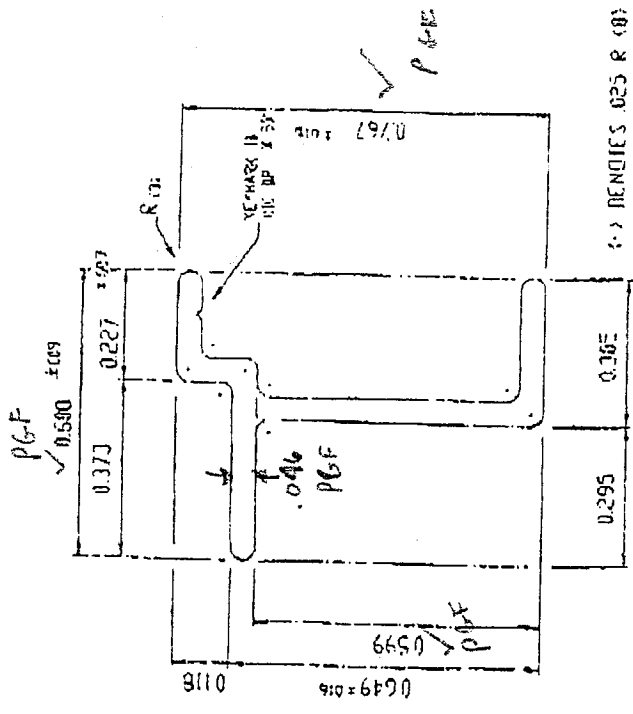


Dove Ind. To: Ron Dove

MAR 23 1998

S-22052  
P. Number

STANDARD DIMENSIONAL TOLERANCES FOR EXTRUDED  
PROFILES APPLY UNLESS SPECIFIED OTHERWISE



ACTUAL SIZE

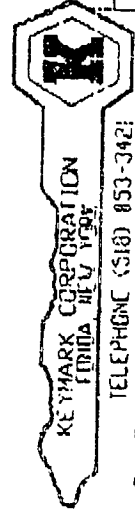


NO EXPOSED SURFACES

ATTN: PHILIP MARSHALL

PARADIGM ENGINEERING AND TESTING, INC.

PGF T201D-04



KEYMARK CORPORATION  
FLORIDA 32117-1700

TELEPHONE (518) 853-3421  
FAX ENG (518) 853-3435 SALES (518) 853-3130

Spec	Revisions	Date	Part Name	Scale	Customer's Part Number
1	PRINT REVISION	02-02-94	S.H. LOCK RAIL STITCHER	1:1	
Est. No.	Est. Date	Est. Price	Est. Weight	Est. Volume	Est. Area
6063	078	\$42	0.000	0.000	0.000
Temp.	Est. Weight	Est. Volume	Est. Area	Est. Weight	Est. Volume
1-6	0.000	0.000	0.000	0.000	0.000
Quality Size	Grade Size	Caliber	Material	Finish	Checklist
	0-1	0-1			

ATTN: RICK