



Farabaugh Engineering and Testing Inc.

PERFORMANCE TEST REPORT

5000 SERIES
DOUBLE HUNG WINDOW

H-R30
(3'-8" X 5'-0")

FOR

DOVE INDUSTRIES
767 SAN SOUCI PARKWAY
WILKES BARRE, PA 18702

Project No. T219D-04

11/4/04

REVISED: 5/2/07

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

PERFORMANCE TEST REPORT

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

Product Identification

Product Type: Double Hung Window
Series/Model #: 5000 Series
Specification: AAMA/NWWDA 101/I.S.2-97
Designation: H-R25 (44-1/2" X 60-3/8") AAMA/NWWDA 101/I.S.2-97
GRADE 25
Product Description: Attached
Test Results: Attached
Test Equipment: FET
Testing Date: 11/3/04

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 Dove Industries, 5000 Series, Double Hung Vinyl Prime, one-over-one (tilt loading type) double hung window, with an overall master frame size measuring 44-1/2" wide X 60-3/8" high. The top sash measured 40-3/4" wide X 29-3/8" high overall. The bottom sash measured 41-3/4" wide X 29-3/8" high overall. The frame and sash corners were of a welded, mitered type construction. One extruded channel shaped steel reinforcement member filled the member hollow of the bottom locking sash meeting rail. The reinforcement was attached using the locking screws. The entire window had an exterior full screen. A 1-1/2" nailing flange was located around the perimeter of the frame.

Weather-stripping:

MEMBER	WEATHERSTIPPING	QUANTITY	WIDTH X HEIGHT (INCHES)	LOCATION
Frame Header	Center Fin Pile Seal	1	0.187 x .26" ht	Interior leg
Frame Sill	Center Fin Pile Seal	1	0.187 x .26" ht	Interior leg
Frame Jambs	none	0	-	none
Top sash – top rail (lift rail)	Center Fin Pile Seal	1	0.187" w x .26" ht	Exterior face
Top sash – bot rail (keeper rail)	Rubber Bulb	1	0.15" diameter	Interior face
* Top sash – jamb stiles *	Center Fin Pile Seal	1	0.187" w x .26" ht	side face
	Center Fin Pile Seal	1	0.187" w x .26" ht	Exterior face
** Bot. sash – top rail ** (meeting rail)	Center Fin Pile Seal	1	0.187" w x .21" ht	Exterior face
Bottom sash – bot rail (lift rail)	Bulb Foam Seal with flap	1	0.30" ht	Bottom face
Bottom sash – jamb stiles	Center Fin Pile Seal	1	0.187" w x .26" ht	side face
	Center Fin Pile Seal	1	0.187" w x .26" ht	Exterior face

* - A 3/4" x 1/4" plastic pad was attached with one screw at the bottom interior face of the stile using a 0.187" w x 0.26" ht. pile seal slid into track of plastic pad. Weather-stripping pad was at bottom side face of the stiles of the top sash.

** - A 1/2" w x 5/8" long adhesive plastic pad with (2) 5/8" long x 0.375" ht. pile seal was at ends of the exterior face of the locking rail.

Operators and Other Hardware:

The operable sash had two block and tackle balances one per jamb. Two cam-type sweep locks were attached to the bottom sash meeting rail with keepers on top sash meeting rail. Each lock located 7-1/2" from each end. One plastic (spring loaded) tilt latch with thumb actuator was housed at each end of the top rail of both sashes. The tilt latch housing was sided loaded into the top rail of both sashes. One (rectangular shaped) aluminum pivot bar was fastened with (2) screws at each end of the bottom horizontal rails of both sashes.

Glazing System:

Each lite were interior drop glazed with 3/4" thick (nominal) insulated glass that set on perimeter bead of silicone. Each lite utilized two (0.09" nominal) thick clear annealed glass lites with a 0.57" continuous 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 (5/16" diameter) weep holes were located down through (full height) the bottom glazing track of both operable sashes, each one 3" from each end. 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 2-3/4" from each end. The top of sill corner ends just below interior operable track in jamb had weep opening 1/2" x 1-1/4" at each corner. The sill exterior leg used for the screen was cut 3/4" from each end. The sill interior leg used for the screen was cut 1/2" from each end. Two (1/4" side x 1/4" side x 5/16" side) triangular weep slots were at each end of sill on center wall of sill.

Sealant:

Silicone sealant was applied to all the following areas:

- Perimeter of the glazing was set in continuous bead of silicone.
- Exterior face of buck that the nailing flange was set on.

Anchorage:

A 1-1/2" nailing flange was around the perimeter of the frame. The screw pattern for the nailing flange into the buck was 7-1/2" c/c around the perimeter. Silicone sealant was used at nailing flange to buck location and around the perimeter.

5000 SERIES DOUBLE HUNG WINDOW**Test Results**

<u>Paragraph</u>	<u>Test Title / Referenced Test Method</u>	<u>Test Results</u>	<u>Allowable</u>
<u>Gateway Performance Requirements</u>			
2.1.2	Air Infiltration Test (ASTM E-283-91) @ 1.57 psf	0.134 cfm/sf	0.30 cfm/sf
<i>The test specimen meets the performance levels specified in AAMA/NWWDA 101/I.S.2-97 for Air Infiltration.</i>			

5000 SERIES DOUBLE HUNG WINDOW
Test Results (cont.)

<u>Paragraph</u>	<u>Test Title / Referenced Test Method</u>	<u>Test Results</u>	<u>Allowable</u>
2.1.3	Water Resistance Test (ASTM E547-96) @ 2.86 psf (w/wo screen)	No penetration	No penetration
2.1.4.2	Uniform Load Structural Test (see optional performance results)		
2.1.7	Welded Corner Test	Meets	As Stated
2.1.8	Forced Entry Resistance (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

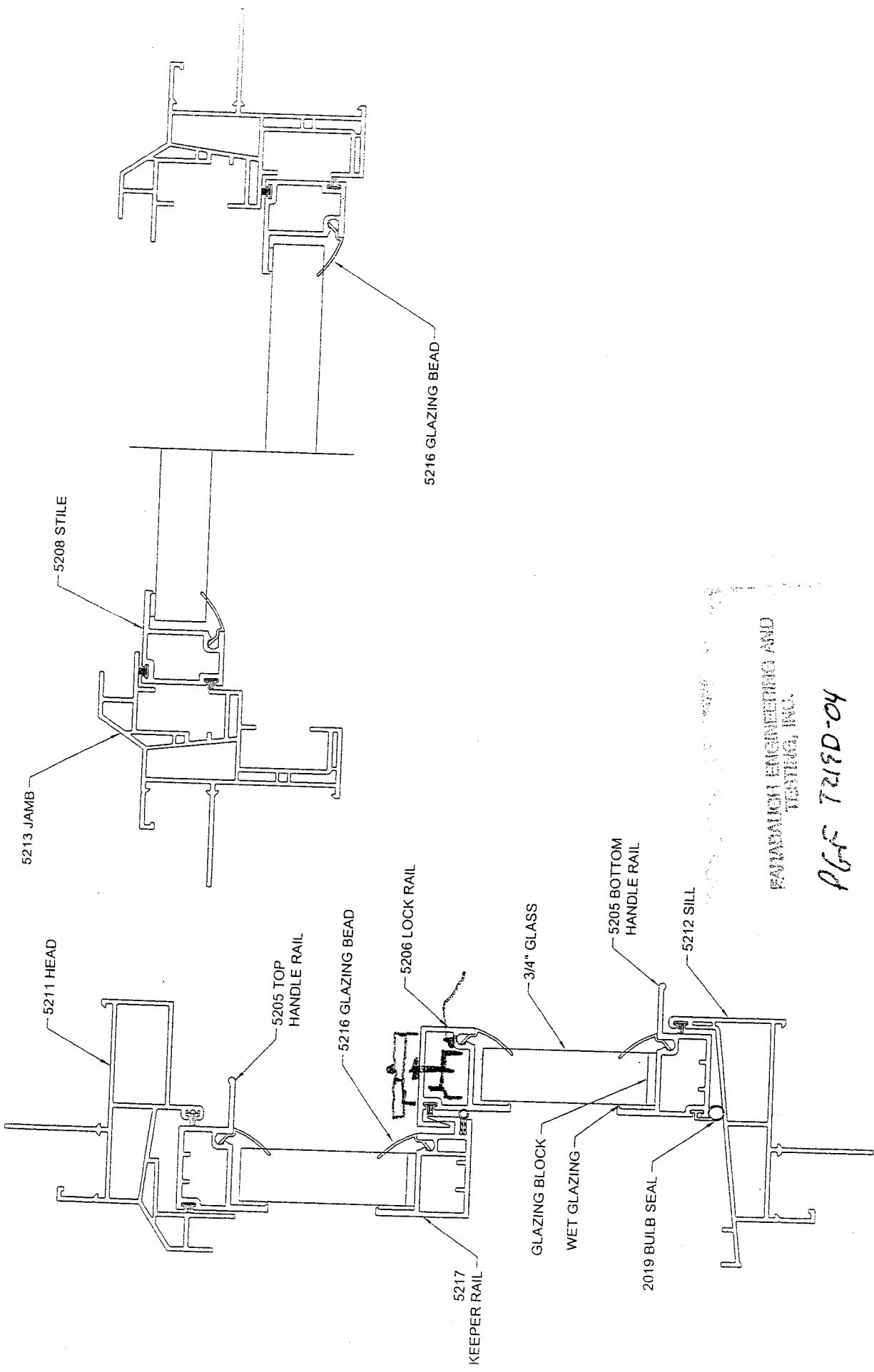
Specific Window Performance Results

2.2.1.6.1	Operating Force Test		
	top sash	14 lb up, 20 lb dn	30 lb
	bottom sash	19 lb up, 15 lb dn	30 lb

5000 SERIES DOUBLE HUNG WINDOW
Test Results (cont.)

<u>Paragraph</u>	<u>Test Title / Referenced Test Method</u>	<u>Test Results</u>	<u>Allowable</u>
2.2.1.6.2	Deglazing Test (ASTM E987-88, Method B)		
	<u>Top sash</u>		
	left stile @ 50 lbf	6 %	<100%
	right stile @ 50 lbf	6 %	<100%
	top rail @ 70 lbf	13 %	<100%
	bottom rail @ 70 lbf	13 %	<100%
	<u>Bottom sash</u>		
	left stile @ 50 lbf	6 %	<100%
	right stile @ 50 lbf	6 %	<100%
	top rail @ 70 lbf	25 %	<100%
	bottom rail @ 70 lbf	25 %	<100%
	<u>Optional Performance Results</u>		
4.3	Water Resistance Test (ASTM E547-96) @ 6.0 psf (w/wo screen)	No penetration	No penetration
4.4.2	Uniform Load Structural Test (ASTM E-330-97)		(0.4%xL)
	@ 37.5 psf positive	0.016" *	0.167"
	@ 37.5 psf negative	0.016" *	0.167"
	@ 37.5 psf positive	0.011" *	0.117" (stile)
	@ 37.5 psf negative	0.016" *	0.167" (bot. rail)

* - Maximum Permanent Deformations.



FADAVACH ENGINEERING AND TESTING, INC.
 P/G-F 7218D-04

PRELIMINARY PART #		5200 SERIES	
TITLE		NEW CONSTRUCTION DOUBLE HUNG	
DRAWN BY:	DESIGNED BY:	DATE	SCALE
EAS	EAS	0-1-03-01	NIS-1
CHECKED BY:	APPROVED BY:	DRAWING No.	
		5200S003	
 CHELSEA BUILDING PRODUCTS, INC. 565 CEDAR WAY, OAKMONT PA 15139		COPYRIGHT 2002 THIS DRAWING AND ITS CONTENTS ARE THE SOLE PROPERTY OF CHELSEA BUILDING PRODUCTS, INC. ANY UNAUTHORIZED USE OR REPRODUCTION IS STRICTLY PROHIBITED.	
No.	REVISION	BY	DATE
1	REPLACES 5216 BEAD WITH 5216 BEAD V10 2002	EAS	07-30-02
1	BEAD CHANNEL	EAS	08/21/02

QC POINT NUMBER: 3206QC

APPROVED BY: J.S.

DATE:

DEVELOP

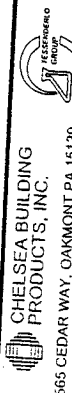
INPROCESS

PRODUCTION

PART NAME: 5206

DESCRIPTION: LOCK RAIL/STILE

SUPPLIER/PLANT: CHELSEA BUILDING PRODUCTS



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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 = .070
 - RADIUS = .010
 - LOCATION FOR IMPACT TEST [Symbol]
 - ANGULARITY = [Symbol]
 - PERPENDICULARITY = [Symbol]
 - PARALLELISM = [Symbol]
 - FLATNESS = [Symbol]
 - SPECIFICATION LENGTH TO ± 1"
 - 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



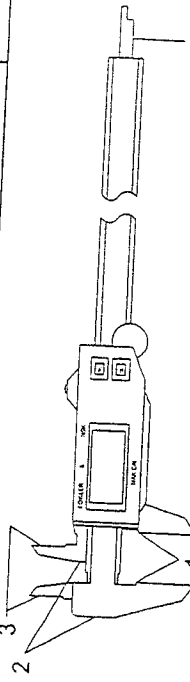
FAVORABLE ENGINEERING AND TESTING, INC.
Plw-F 7219D-04

7	DIM 983 WAS CRITICAL; WOM498	EAS	03-26-04	CUSTOMER LENGTH	TOLERANCE
6	REVISED DIM 14; WO#487	JPP	03-09-04		
5	ADDED DIM 14; WO#3233	JPP	07-02-03		
4	REVISED DIMS; WO#287	JPP	10-31-02		
3	REVISED DIMENSIONS	BLG	10/15/02		
2	ADDED FUNCTIONAL CHECK; WO #1084	EAS	09-06-01		
NO.	REVISION	BY	DATE		

DRAWN DATE: 04-10-01

Use the caliper diagram as your guide to measure the following control points.
Measure the following control points using #1 on the caliper diagram.
Measure the following control points using #2 on the caliper diagram.
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.
Auditor- 1 sample per shift recorded 1 hour after shift start.

IF ANY CONTROL POINTS ARE NOT IN SPEC. CORRECTIVE ACTION REQUIRED



QC NUMBER

5216QC

DRAWN BY: EAS

APPROVED BY:

DATE:

DEVELOP


INPROCESS





PRODUCTION

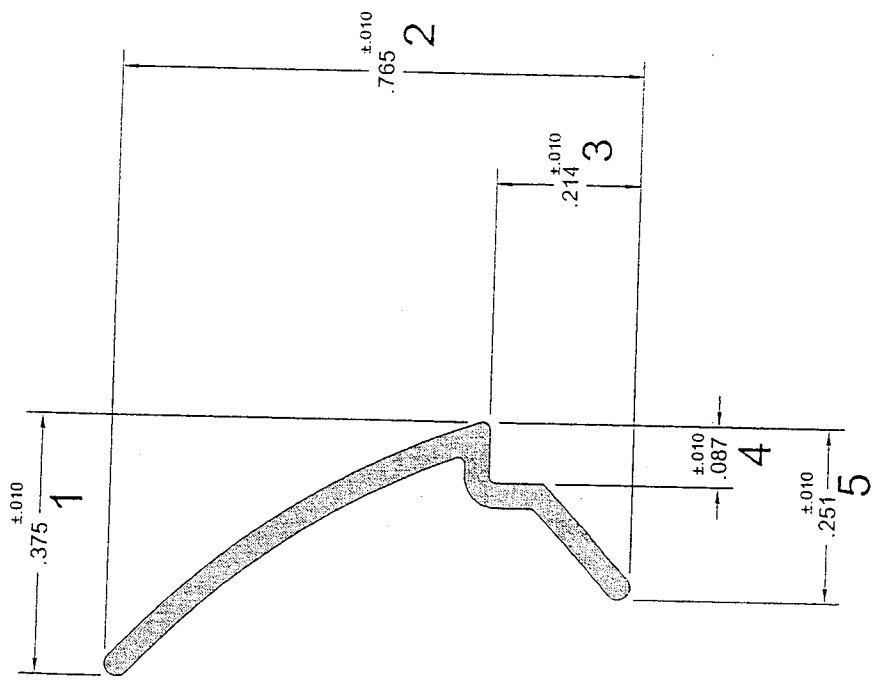
PART NAME: 5216
DESCRIPTION: GLAZING BEAD

SUPPLIER/PLANT:
CHELSEA BUILDING PRODUCTS

ILLUSTRATION OF PART AND CONTROL POINTS


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- NOTES:
1. MATERIAL = RIGID P.V.C.
 2. FLEXIBLE P.V.C. = 
 3. EXTERIOR COATING = 
 4. LAMINATE = 
 5. THINNER INTERIOR WALLS = 
 6. WALL THICKNESS = .035
 7. RADIUS = .010 R
 8. LOCATION FOR IMPACT TEST
 9. ANGULARITY =
 10. PERPENDICULARITY =
 11. PARALLELISM =
 12. FLATNESS =
 13. SPECIFICATION LENGTH TO ±3/8"
 14. ANGULARITY TO BE ± 1°
 15. PROFILE MUST MEET Q-303 PER AAMA SPECIFICATIONS
 16. PROFILE MUST MEET Q-304 PER AAMA SPECIFICATIONS
 17. PROFILE MUST MEET Q-901 PER AAMA SPECIFICATIONS
 18. PROFILE MUST MEET Q-902 IMPACT RESISTANCE PER AAMA SPECIFICATIONS



FAVARDON ENGINEERING AND TESTING, INC.
REF 7219D-04

WEATHERSTRIP SPECIFICATION	POSITION	SIZE	WEATHERSTRIP TYPE

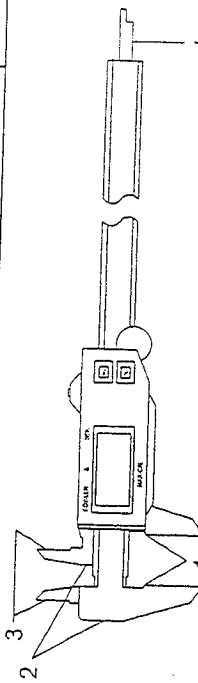
FUNCTIONAL CHECK
5203 JAMB
5204 FRAME
5231 FRAME
5241 FRAME

5207 MEETING RAIL
5208 STILE

DRAWN DATE: 06-18-02

CUSTOMER LENGTH	CHELSEA CUT LENGTH	TOLERANCE
BLG 10/30/02		
BLG 10/22/02		
BLG 7/22/02		
BY	DATE	

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.
 Auditor- 1 sample per shift recorded 1 hour after shift start.



IF ANY CONTROL POINTS ARE NOT IN SPEC.
CORRECTIVE ACTION REQUIRED

