



PALMER-BOWLUS FLUME SPECIFICATION

SECTION 11206 PALMER-BOWLUS FLUMES

PART 1 GENERAL

1. SECTION INCLUDES
 - A. Palmer-Bowlus flumes.
2. RELATED SECTIONS
3. REFERENCES
 - A. ASTM D 638 – Standard Test Method for Tensile Properties of Plastics.
 - B. ASTM D 790 – Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - C. ASTM D 2583 – Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
4. SUBMITTALS
 - A. Submit under provisions of Section 01300.
 - B. Product Data: Test results of representative fiberglass reinforced plastic laminate.
 - C. Shop Drawings: Show:
 1. Critical dimensions, jointing and connections, fasteners and anchors.
 2. Materials of construction.
 3. Sizes, spacing, and location of structural members, connections, attachments, openings, and fasteners.
 - D. Samples: 8-inch square sample of representative fiberglass reinforced plastic laminate.
 - E. Manufacturer's installation instructions.
5. DELIVERY, STORAGE, AND HANDLING
 - A. Store products indoors or in weather protected area until installation. Protect from construction traffic and damage.

PART 2 PRODUCTS

1. MANUFACTURER
 - A. The product shall be manufactured by TRACOM, Inc.; 6575-A Industrial Way, Alpharetta, Georgia 30004; Toll-Free Voice (877) 435-8637, Toll-Free Fax (866) 435-8637, www.tracomfrp.com.
 - B. Requests for substitution must be made in writing and received by the engineer's office a minimum of ten (10) business days before bid opening. Substitutions shall be made in accordance with the provisions of Section 01600.
 - C. Substitutions: Manufacturers not pre-approved shall not be allowed.
 - D. Warranty: Flumes shall be warranted to be free of defects in workmanship and materials for a period of two years from shipment.



2.2 PALMER-BOWLUS FLUMES

- A. Flume Type: Provide flumes of the following type:
1. Size: _____ INCH.
 2. Style:
 - i. Permanent type (4D+1" length): Provided with integral anchor clips drilled for 3/8" connection, minimum two (2) per side (maximum 18 inch center to center spacing).
 - ii. Permanent type (2D+1" length): Provided with integral anchor clips drilled for 3/8" connection, minimum one (1) per side (maximum 18 inch center to center spacing).
 - iii. Insert type (2D+1" length): For insertion into existing u-channel or half pipe section.
 - iv. Cutback – Exit Type (2D+1" length): For insertion into existing downstream pipe.
- B. Construction:
1. One-piece construction.
 2. Two-piece construction for field assembly (by others), includes T-304 stainless steel connection hardware **(OPTIONAL)**.
- C. Materials:
1. Fiberglass reinforced plastic.
 2. Gloss inside surfaces, free of irregularities.
 3. Minimum 3/16 inch wall thickness.
 4. Minimum 30% glass by weight.
 5. Isophthalic polyester resin.
 6. Removable pultruded fiberglass bracing at top of flume with T-304 stainless steel hardware.
 7. 2 inch (minimum) top and end stiffening flanges.
 8. Molded-in stiffening ribs, maximum 12 inch center to center spacing.
 9. 15 mil Isophthalic U.V. resistant gel coat on all surfaces, white interior, grey exterior.
 10. Anchor clips, pre-drilled with a 3/4 inch hole, pultruded fiberglass construction.
 11. Tensile strength (ASTM D 638): 14,000 PSI.
 12. Flexural strength (ASTM D 790): 27,000 PSI.
 13. Flexural modulus (ASTM D 790): 1,000,000 PSI.
 14. Barcol hardness (ASTM D 2583): 50.

2.3 OPTIONS (select all that apply)

- A. Stilling well:
1. 2 inch coupling, for user-supplied stilling well.
 2. 8 inch diameter attached, with 2 inch opening.
 3. 8 inch diameter detached, with 2 inch coupling, interconnection tubing by others.
 4. 12 inch diameter attached, with 2 inch opening.
 5. 12 inch diameter detached, with 2 inch coupling, interconnection tubing by others.
- B. Laminated **(OR)** Molded-in, high visibility staff gauge:
1. Graduated in 1/10 foot and 1/100 foot increments.
 2. Graduated in 2mm increments.
- C. Ultrasonic mounting bracket:
1. Fixed position, horizontally adjustable, T-304 stainless steel.
 2. Horizontally and vertically adjustable stainless steel.
 3. Vertically adjustable, over-channel, 304 stainless steel.
- D. Removable T-316 stainless steel bubble tube, for 1/8 inch O.D. bubble.
- E. Removable T-316 stainless steel sample tube, for 3/8 inch O.D. sample line.
- F. End Connections:
1. Inlet and / or outlet bulkheads with:
 - i. _____ inch inlet and / or outlet pipe stubs with flexible PVC boot(s) and stainless steel bands to connect to _____ inch, _____ piping.



- ii. _____ inch, _____ style inlet and / or outlet ANSI 150 lb. flat-faced flanges.
- 2. Inlet and / or outlet bulkheads to span a channel width of _____ inches.
- G. Removable stainless steel probe carrier (**specify length and O.D. of probe**).
- H. Submerged probe / area velocity probe cavity (**specify length and O.D. of probe**).
- I. Removable open cell fiberglass grating over the flume.
- J. Removable cover with T-304 stainless steel bolt hardware over the flume:
 - 1. Flat fiberglass.
 - 2. Lexan.
- K. Sectioned into _____ pieces to fit through 22-1/2 inch manhole opening, with T-304 stainless steel connection hardware, for field assembly (by others) (**10-15 inch sizes only**).
- L. Reduced length: _____ inches L (**4D+1" style only**).
- M. Chemical or temperature resistant service (**the standard flexible boots are PVC, ensure that either the chemical or temperature is compatible with PVC or that alternate end connects are provided**):
 - 1. Gel coat only.
 - 2. Gel coat and resin (required for temperature service).
 - 3. Maximum temperature: _____ ° F.
 - 4. Chemical(s) and concentration(s): _____.

PART 3 EXECUTION

1. EXAMINATION

- A. Verify that the flume dimensions are correct and project conditions are suitable for installation. Do not proceed with installation until condition deficiencies have been corrected.

2. INSTALLATION

- A. Install products in accordance with engineer’s instructions, plans, blueprints, etc.
- B. Ensure that the product is installed plumb and that the upstream floor is level.
- C. Set the flume at the elevation indicated on the engineer’s drawings.
- D. Embed flume in concrete; pour concrete in maximum 6 inch lifts; internally brace the flume as necessary to ensure bowing does not occur.
- E. For additional installation instructions refer to latest revision of document PB-I.

3. ADJUST AND CLEAN

- A. Clean surfaces in accordance with the manufacturer’s instructions.
- B. Remove trash and debris, and leave the site in a clean condition.

END OF SECTION

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