



MONTANA FLUME SPECIFICATION

SECTION 11205 MONTANA FLUMES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Montana flumes.

1.2 RELATED SECTIONS

1.3 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.
- D. United States Department of the Interior, Bureau of Reclamation, Water Measurement Manual.

1.4 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.
 - 4. Color(s).
- D. Samples: 8-inch square sample of representative fiberglass reinforced plastic laminate.
- E. Manufacturer's installation instructions.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store products indoors or in weather protected area until installation. Protect from construction traffic and damage.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. The product shall be manufactured by TRACOM, Inc.; 6575-A Industrial Way, Alpharetta, Georgia 30004; Tel. (877) 435-8637, Fax (770) 664-6565, 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 MONTANA FLUMES

- A. Flume Type: Provide flumes of the following type(s):
 - 1. Size: _____.
 - i. Single-piece construction, 1 inch through 84 inch sizes.
 - ii. Two-piece (minimum) construction, 98 inch, 120 inch, and 144 inch sizes.
 - iii. Nested flumes of size and type where indicated.
- B. Materials:
 - a. One-piece, fiberglass reinforced plastic.
 - b. Gloss inside surfaces, free of irregularities.
 - c. Minimum 3/16 inch wall thickness.
 - d. Minimum 30% E-glass by weight.
 - e. Isophthalic polyester resin.
 - f. Pultruded fiberglass reinforced plastic bracing at top of flume (inlet and outlet), T-304 stainless steel hardware.
 - g. 2 inch (minimum) top and end flanges.
 - h. Molded-in stiffening ribs, maximum 12 inch center to center spacing.
 - i. 15 mil Isophthalic U.V. resistant gel coat on all surfaces.
 - j. Integral anchor clips drilled for 3/4 inch.
 - k. Tensile strength (ASTM D 638): 14,000 psi.
 - l. Flexural strength (ASTM D 790): 27,000 psi.
 - m. Flexural modulus (ASTM D 790): 1,000,000 psi.
 - n. Barcol hardness (ASTM D 2583): 50.
- C. Options:
 - 1. Stilling well:
 - a. 8 inch diameter, attached.
 - b. 12 inch diameter, attached.
 - c. 8 inch diameter, detached with 1/2 inch NPT coupling.
 - d. 12 inch diameter, detached with 1/2 inch NPT coupling.
 - 2. 5-mil mylar, laminated, high visibility staff gauge:
 - a. graduated in tenth and hundredths of a foot.
 - b. graduated in meters with 2 millimeter divisions.
 - c. graduated in MGD (*select sizes only*).

d. custom:_____.

3. Removable T-304 1/8 inch O.D. stainless steel bubble tube.
4. Removable T-304 3/8 inch O.D. stainless steel sample tube.
5. 2 inch bushing for ultrasonic mounting stand.
6. 1 3/4 inch T-304 stainless steel ultrasonic mounting stand (for 3/4 inch NPT sensor).
7. Adjustable T-304 stainless steel and aluminum ultrasonic mounting stand (for 3/4 inch NPT sensor).
8. Inlet end adapter piece.
9. Inlet flat-faced flange: Size:_____, Style:_____ (*in conjunction with Option 8*).
10. Inlet pipe stub with flexible PVC boots and stainless steel bands: Size:_____ (*in conjunction with Option 8*).
11. Inlet caulking collar: Pipe I.D.:_____ (*in conjunction with Option 8*).
12. Inlet wingwalls (specify radius or 45 degree angle type).
13. Removable stainless steel probe carrier (specify length and O.D. of probe).
14. Submerged probe / area velocity probe cavity (specify length and O.D. of probe).
15. Flat, bolted FRP cover, T-304 stainless steel hardware.
16. FRP grating over flume.
17. Sectioned – to fit through 22 1/2 inch manhole opening.
18. Molded-in Drexelbrook track.
19. Bullseye level.
20. _____ sets of pultruded FRP flow straighteners in the inlet of the flume.
21. Special resin for temperatures above 150 degrees F or chemical resistant service. Temperature:_____, Chemical(s):_____.

PART 3 EXECUTION

3.1 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.

3.2 INSTALLATION

- A. Install products in accordance with engineer's instructions, plans, blueprints, etc.
- B. Ensure that the product is installed plumb and that the 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 12 inch lifts; internally brace the flume as necessary to ensure bowing does not occur.

3.3 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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By: Jon Wachter