



# TRAPEZOIDAL FLUME SPECIFICATION

## SECTION 11208 TRAPEZOIDAL FLUMES

### PART 1 GENERAL

#### 1.1 SECTION INCLUDES

- A. Trapezoidal 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. "Trapezoidal Flumes for Open-Channel Flow Measurement." Transactions of The American Society of Agricultural Engineers.

#### 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 TRAPEZOIDAL FLUMES

- A. Flume Type: Provide flume(s) of the following type(s):
  - 1. Style: \_\_\_\_\_, Size: \_\_\_\_\_.
- 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. 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 (not adjusted).
    - c. 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 and / or outlet end adapters.
9. Inlet and / or outlet flat-faced flanges: Size:\_\_\_\_\_, Style:\_\_\_\_\_ (*in conjunction with Option 8*).
10. Inlet and / or outlet pipe stubs with flexible PVC boots and stainless steel bands: Size:\_\_\_\_\_ (*in conjunction with Option 8*).
11. Inlet and / or outlet caulking collars: Pipe I.D.:\_\_\_\_\_ (*in conjunction with Option 8*).
12. Removable stainless steel probe carrier (specify length and O.D. of probe).
13. Submerged probe / area velocity probe cavity (specify length and O.D. of probe).
14. Flat, bolted FRP cover, T-304 stainless steel hardware.
15. FRP grating over flume.
16. Sectioned – to fit through 22 1/2 inch manhole opening.
17. Molded-in Drexelbrook track.
18. Bullseye level.
19. 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