

# enduro

**FRP Solutions for Water &  
Wastewater Treatment**

# EcoEX "D" Structural Baffle & Partition Walls

## System Overview

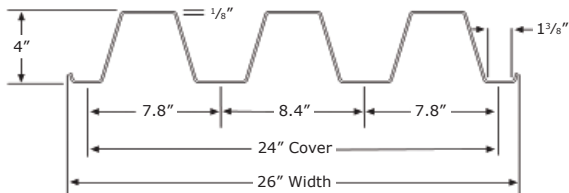
To meet the need for a lower cost, FRP baffle panel that would effectively address rigidity and other structural requirements, Treadwell developed its "D" series panel.

With an advantaged strength to weight ratio, the 104mm deep, profile section has an extremely efficient design to address emanding wall requirements.

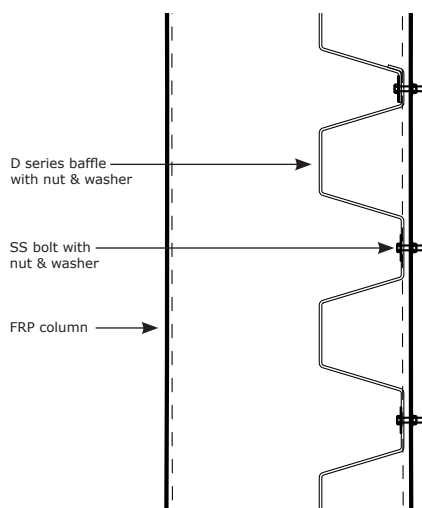
Designed for bolted installation, Exduro's "D" system has a proven track record of outstanding performance for numerous installations.



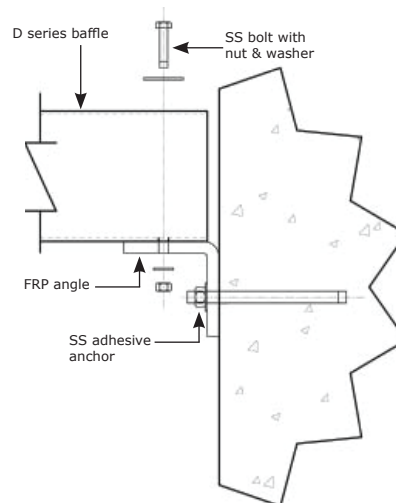
"D" structural baffle wall system - solid and slotted with FRP columns  
Sedimentation and Flocculation Basins



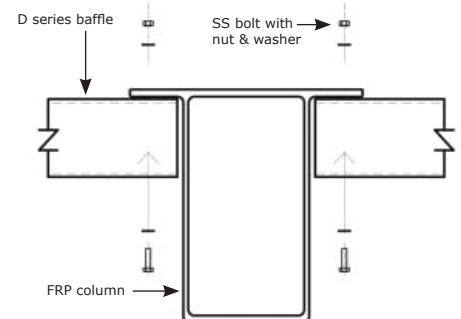
## Typical Details



**Panel Side Lap**



**Concrete Wall**



**12F12 FRP Column**

# EcoEX "D" Structural Baffle & Partition Walls

## Load Span Table

| Water Differential | 1"      |     | 2"       |     | 3"       |     | 4"       |     | 5"       |     | 6"       |     | 8"       |     | 10"      |     |
|--------------------|---------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|----------|-----|
| Uniform Load       | 5.2 psf |     | 10.4 psf |     | 15.6 psf |     | 20.8 psf |     | 26.0 psf |     | 31.2 psf |     | 41.6 psf |     | 52.0 psf |     |
| Span (Ft)          | L/D     | FOS | L/D      | FOS | L/D      | FOS | L/D      | FOS | L/D      | FOS | L/D      | FOS | L/D      | FOS | L/D      | FOS |
| 8                  | >360    | >6  | >360     | >6  | >360     | >6  | 280      | >6  | 224      | >6  | 187      | >6  | 140      | 4.9 | 112      | 3.9 |
| 9                  | >360    | >6  | >360     | >6  | 262      | >6  | 197      | >6  | 157      | >6  | 131      | 5.2 | 98       | 3.9 | 79       | 3.1 |
| 10                 | >360    | >6  | 287      | >6  | 191      | >6  | 143      | >6  | 115      | 5.0 | 96       | 4.2 | 72       | 3.2 |          |     |
| 11                 | >360    | >6  | 215      | >6  | 144      | >6  | 108      | 5.2 | 86       | 4.2 | 72       | 3.5 |          |     |          |     |
| 12                 | 332     | >6  | 166      | >6  | 111      | 5.8 | 83       | 4.4 | 66       | 3.5 |          |     |          |     |          |     |
| 13                 | 261     | >6  | 130      | >6  | 87       | 5.0 | 65       | 3.7 |          |     |          |     |          |     |          |     |
| 14                 | 209     | >6  | 104      | >6  | 70       | 4.3 |          |     |          |     |          |     |          |     |          |     |
| 15                 | 170     | >6  | 85       | 5.6 |          |     |          |     |          |     |          |     |          |     |          |     |
| 16                 | 140     | >6  | 70       | 4.9 |          |     |          |     |          |     |          |     |          |     |          |     |
| 17                 | 117     | >6  |          |     |          |     |          |     |          |     |          |     |          |     |          |     |
| 18                 | 98      | >6  |          |     |          |     |          |     |          |     |          |     |          |     |          |     |
| 19                 | 84      | >6  |          |     |          |     |          |     |          |     |          |     |          |     |          |     |
| 20                 | 72      | >6  |          |     |          |     |          |     |          |     |          |     |          |     |          |     |

Maximum spans are based on each panel being fastened with three (3) bolts to each support.

## Specification: Fiberglass Reinforced Plastic Baffle Wall - D Series

### Part 1 – General

#### 1.01 Description of Work

The scope of this specification shall include materials for the fiberglass reinforced plastic (FRP) Baffle Wall System including FRP baffle wall panels; FRP columns; FRP angles; column base plates/angles; fasteners and connections.

#### 1.02 Design Criteria

- A. Design Load (greater of water differential or wind load)
- Water Differential: \_\_\_\_\_ in. (uniform load over wall)
  - Wind Load: \_\_\_\_\_ lbs./SF uniform load
- B. Deflection Limit and Factor of Safety
- Baffle Panels: L/D=\_\_\_\_\_ ; Max Defl=Panel Depth; FOS = 2.0
  - Columns: L/D=100; FOS=2.5

### Part 2 – Products

#### 2.01 Manufacturer

Standard for design, characteristics, and performance is Enduro D Series Baffle Wall manufactured by Enduro Systems, Inc.

#### 2.02 Materials

- A. FRP Baffle Panels, Columns, and Angles
- FRP baffle panels, columns, angles, and associated components shall be ANSI/NSF Standard 61 certified for potable water application (as required).
  - FRP Baffle Panels shall exhibit these minimum properties:  
Stiffness (EI) 5,591,000 lb-in<sup>2</sup>/ft  
Moment Capacity 19,700 lb-in/ft

- FRP structural materials shall exhibit these minimum properties:

|                       |               |            |
|-----------------------|---------------|------------|
| Tensile Strength      | 40,000 psi    | ASTM D 638 |
| Flexural Strength     | 45,000 psi    | ASTM D 790 |
| Flexural Modulus      | 1,690,000 psi | ASTM D 790 |
| Izod Impact (Notched) | 25            | ASTM D 256 |
| Water Absorption      | .25% maximum  | ASTM D 570 |

- FRP Materials shall include UV stabilized polyester resin; surfacing veil at top and bottom sides; gray color.
  - Factory cut edges and drilled holes shall be sealed with ANSI/NSF approved material.
  - FRP baffle panels shall be Enduro Series D, 4 x .125 profile; 4" depth; 1/8" nominal thickness; 40% glass fiber reinforcing (by wt.); with top, horizontal ribs sloped downward not less than 10 degrees to minimize sediment build-up.
  - FRP Columns shall be Enduro Type \_\_\_\_\_ with 50% glass fiber reinforcing (by wt.). Column base plates or angles shall be 304/316 Stainless Steel.
  - FRP Angles shall be 3/8" thick and 90 degrees.
- B. Hardware
- Fasteners, anchors, and other structural hardware shall be 304/316 Stainless Steel.
  - Submerged anchors shall be epoxy adhesive type.

*For expanded specification, please contact us.*