

## SECTION 15098

### FIBERGLASS-REINFORCED PLASTIC DAMPERS AND APPURTENANCES

#### PART 1 - GENERAL

##### A. Description

This section includes materials, testing, and installation of FRP dampers and appurtenances.

##### B. Submittals

1. Submit shop drawings in accordance with the General Conditions, Section 01340, and the following.
2. Submit a certificate from the resin manufacturer listing the type of resin to be used, describing the manufacturer's brand name or designation, composition, and characteristics.
3. Submit manufacturer's certification that fabrication complies with the referenced standards, e.g., ASTM D3567, D2992, C582, D3982, and D2310.
4. Submit manufacturer's recommended torques for tightening bolts on flanged connections.

#### PART 2 - MATERIALS

##### A. Dampers

1. Provide FRP dampers manufactured from the same material and resin as specified for the FRP pipe. Dampers shall be supplied in accordance with AMCA requirements.
2. Provide damper blades offset 5 degrees in the closed position to form a normal stop.
3. Provide an axle extending 6 inches beyond frame of control shaft
4. Provide opposed multi-blade type dampers for balancing. For isolation, provide butterfly type dampers constructed of one gauge heavier than the respective duct. Isolation dampers shall be equipped with full circumference extruded double tadpole blade seals
  - a. Butterfly damper shall have no leakage.
5. Provide motor operated dampers. Valve actuators shall be in accordance with section 151119 – Electric Actuators.
6. Dampers shall be self-supporting construction and shall not deflect or deform while free standing. Dampers shall have flanged ends for connection to ductwork and equipment.

7. Materials of construction shall be as listed below.

<b>Component</b>	<b>Material</b>
Blades	Premium vinyl ester, two (2) piece molded, including blade stiffeners.
Axle	Pultruded FRP made of the same resin as specified for the FRP duct and continuous strand roving
Control Shaft	Full length vinyl ester with Type 316 stainless steel pins embedded transverse of axle
Bearings	Molded PTFE with 10% carbon and graphite fill
Hardware	316 stainless steel
O-rings	Viton

B. Quality Control

Construction shall comply with ASTM D2563. Wall hardness shall be at least 90% of the resin manufacturer's recommended Barcol hardness, with a minimum Barcol hardness of 36, with the resin fully cured. Maximum air bubble size in the laminate shall be 1/16 inch. Maximum frequency of air bubble shall be 10 per square inch of laminate. Fillers other than antimony trioxide added for flame retardancy are not acceptable and shall not exceed 5% by weight.

PART 3 - EXECUTION

A. Shop Inspection and Testing

Comply with AWWA C950, Section 5.

B. Hydrostatic Testing

Hydrostatically test pipe and fittings at 1.5 times the system design pressure and in accordance with Section 15041. Determine leakage by loss of pressure, soap solution, chemical indicator, or other positive and accurate method. All fixtures, devices, or other accessories connected to the lines and which would be damaged if subjected to the test pressure shall be disconnected and ends of the branch lines plugged or capped as required during the testing procedures. See the Piping Schedule in the drawings for test pressures.

END OF SECTION