

SPECIFICATIONS SECTION

FLOOD CONTROL VENT GATES

PART 1 GENERAL

* 1. SECTION INCLUDES
		1. Flood Control Ventilation Gates
	2. RELATED SECTIONS
		1. N/A.
	3. REFERENCES
		1. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
		2. ASTM F593 – Standard Specification for Stainless Steel Bolts, Hex Cap Screws and Studs
		3. AWS - American Welding Society.
		4. FEMA - Federal Emergency Management Agency.
		5. The Aluminum Association - Aluminum Design Manual, 2015
		6. ASCE 7-2010 – Minimum Design Loads for Buildings and Other Structures, 2010
	4. DEFINITIONS
		1. Mitigation Height: The height of flood waters based on the local FEMA five-hundred

(500) year flood plain plus one (1) inch.

* 1. SUBMITTALS
		1. Submit under provisions of Section .
		2. Product Data: Manufacturer's data sheets on each product to be used, including:
			1. Preparation instructions and recommendations.
			2. Storage and handling requirements and recommendations.
			3. Installation methods.
		3. Shop Drawings: Submit plan, section, elevation and perspective drawings as necessary to depict proper placement, installation and operation methods for each gate to be installed.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of 5 years' experience in installing and servicing passive flood solutions.
		2. Installer Qualifications: All Work listed in this section is to be installed under direct supervision of a Floodbreak representative. Floodbreak representative must be on- site during vent gate installation.
		3. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
			1. Finish areas designated by Architect.
			2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
			3. Refinish mock-up area as required to produce acceptable work.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Store products in manufacturer's unopened packaging until ready for installation.
		2. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
	4. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
	5. WARRANTY
		1. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

PART 2 PRODUCTS

* 1. MANUFACTURERS
		1. Acceptable Manufacturer: FloodBreak Automatic Floodgates, which is located at: 2800 Post Oak Blvd. Suite 5850 ; Houston, TX 77056; Tel: 713-980-6610; Fax: 713- 629-9936; Email: info@floodbreak.com; Web: [www.floodbreak.com](http://www.floodbreak.com/)
		2. Substitutions: Substitutions are allowed so long as all other requirements of the specification are met by the substitute bidder.
		3. Requests for substitutions will be considered in accordance with provisions of Section 01600.
	2. APPLICATIONS/SCOPE
		1. Provide a means of passively protecting human and property assets subject to damage during a flood caused by external forces. Passive shall mean that the vent gate functions without human intervention or power to make the vent gate deploy.
	3. DESIGN REQUIREMENTS
		1. Design vent gate system height based on the Mitigation Height at the location of the gate as determined by the Federal Emergency Management Agency (FEMA) or equivalent entity.
		2. Design the vent gate with minimal airflow reduction in the “open” position
		3. Design the vent gate to hinder the passage of floodwater and resist hydrostatic pressures while in its operating or "closed" position, and only” close” to the flood height.
		4. Per client request additional flooding loads could be considered, such as debris loads or greater hydrodynamic pressures.
		5. Design the gate to exclude the use of any electric pumps or other ancillary powered support equipment for operation in passive mode.
	4. COMPONENT
		1. GATES: 1/8" (dry side), ¼” (wet side) and 3/8” (wet side) aluminum smooth plate – Aluminum Grade 5052. Thickness to be determined by Engineer of Record based on water weight.

Minimum Yield (Fy) = 25.8 ksi.

Flat Bars, Structural Angles, Hinges - Aluminum Grade 6061-T6 - Minimum Yield (Fy) = 35 ksi.

* + 1. Gaskets: 3/16-inch (4.8mm) EPDM rubber.
		2. Hardware:
			1. Hinge Pins:

Material: 1/2-inch (13mm) diameter ASTM F593 Grade 304 Stainless Steel.

b. Minimum Yield (Fy): 50 ksi.

* + - 1. Bolts:
				1. Material: Countersunk ASTM F593 Grade 304 Stainless Steel. Bolt diameter as noted on the contract drawings.
				2. Minimum Yield (Fy): 50 ksi.
			2. Welding Wire: Aluminum Wire - ER 4043 AWS A5.10 3/32
		1. Gasket Flanges:
			1. Material: 1/4 inch (6mm) 6061-T6 aluminum.
			2. Minimum Yield (Fy): 35 ksi.
		2. Structural Angles:
			1. Material: 1/4 inch (6mm) structural 2 inch by 2 inch (51mm x 51mm) angles - 6061-T6 aluminum.
			2. Minimum Yield (Fy): 35 ksi
	1. FABRICATION
		1. General Requirements:
			1. Fabricate all components and elements following the standards, tolerances and guidelines noted in the contract drawings.
			2. All welding to be performed by a certified welder in accordance with AWS standards and guidelines.
			3. Tighten all bolts to torque specifications determined by the manufacturer and Engineer of record.
		2. Vent Gate:
			1. At panel joints, stitch weld every 5 inches (127mm) on center with a 3/16-inch fillet weld 3 inches (76mm) long. Contractor shall verify with Engineer of Record these weld requirements prior to start fabrication
			2. At panel splices, place splice flanges within 12 inches (305mm) of adjacent retention arms.
	2. DRAWING



**FLOOD CONTROL VENTILATION GATE**

PART 3 EXECUTION

* 1. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
	2. INSTALLATION
		1. Install in accordance with manufacturer's instructions.
	3. PROTECTION
		1. Protect installed products until completion of project.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION