SECTION 465324 - TRICKLING FILTER MEDIA

Note that this section has only been edited for NYSOGS standardization and has not been technically edited. The designer shall make all technical edits specific to the project for this section.

This Section includes trickling filter media for wastewater treatment facilities. Both stone and plastic media are specified.

Trickling filter rotary distributor equipment is specified in Section 465323.

1. GENERAL
	* + 1. SUMMARY
				1. Section Includes:

[**Stone**] [**Slag**] trickling filter media.

Plastic trickling filter media.

* + - * 1. Related Requirements:

List other Sections directly related to or affecting Work of this Section. Include Sections specifying information expected to be found in this Section as well as Sections required to describe complete system or assembly requirements.

Section 465323 - Trickling Filter Rotary Distributor Equipment: Trickling filter rotary distributor arms and accessories.

* + - 1. COORDINATION
				1. Coordinate Work of this Section with installation of trickling filter rotary distributor equipment.
			2. PREINSTALLATION MEETINGS
				1. Convene minimum [**one week**] [**<\_\_\_\_\_\_\_\_> weeks**] prior to commencing Work of this Section.
			3. SUBMITTALS

Only request submittals needed to verify compliance with Project requirements.

* + - * 1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
				2. Manufacturer’s installation instructions shall be provided along with product data.
				3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
				4. Product Data: Submit manufacturer's product information for system materials and component equipment.
				5. Shop Drawings:

Indicate system materials and component equipment.

Submit installation and anchoring requirements, fasteners, and other details.

* + - * 1. Manufacturer's Certificate: Certify that [**products**] <**\_\_\_\_\_\_\_\_**> meet or exceed [**specified requirements**] <**\_\_\_\_\_\_\_\_**>.

Certify that installation is completed according to manufacturer's instructions.

Include separate Paragraphs for additional certifications.

* + - * 1. Manufacturer's Instructions: Submit detailed instructions on installation requirements, including storage and handling procedures.
				2. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.
				3. Manufacturer Reports: Certify that equipment has been installed according to manufacturer's instructions.
				4. Qualifications Statements:

Coordinate following Subparagraphs with requirements specified in QUALIFICATIONS Article.

Submit qualifications for manufacturer and installer.

Submit manufacturer's approval of installer.

* + - 1. MAINTENANCE MATERIAL SUBMITTALS
				1. Extra Stock Materials:

Furnish <**\_\_\_\_\_\_\_\_**> cu. ft. of media.

* + - 1. QUALITY ASSURANCE

Include this Article to specify compliance with overall reference standards affecting products and installation included in this Section.

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Perform Work according to <**\_\_\_\_\_\_\_\_**> standards.

Include following Paragraph only when cost of acquiring specified standards is justified.

* + - * 1. Maintain <**\_\_\_\_\_\_\_\_**> [**copy**] [**copies**] of each standard affecting the Work of this Section on Site.
			1. QUALIFICATIONS

Coordinate following Paragraphs with requirements specified in SUBMITTALS Article.

* + - * 1. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience.
				2. Installer: Company specializing in performing Work of this Section with minimum [**three**] <**\_\_\_\_\_\_\_\_**> years' [**documented**] experience [**and approved by manufacturer**].
			1. DELIVERY, STORAGE, AND HANDLING
				1. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.
				2. Storage:

Store materials according to manufacturer's instructions.

[**Store stone or slag media on wood planks or other hard surface.**]

* + - 1. EXISTING CONDITIONS
				1. Field Measurements:

Verify field measurements prior to fabrication.

Indicate field measurements on Shop Drawings.

* + - 1. WARRANTY

This Article extends warranty period beyond one year. Extended warranties may increase construction costs and Owner enforcement responsibilities. Specify warranties with caution.

* + - * 1. Furnish [**10**] <**\_\_\_\_\_\_\_\_**>-year manufacturer's warranty for trickling filter media.
1. PRODUCTS
	* + 1. TRICKLING FILTER MEDIA
				1. [Manufacturers](http://www.specagent.com/LookUp/?ulid=11978&mf=04&src=wd):

DESIGNER TO PROVIDE TWO MANUFACTURERS AND APPROVED EQUIVALENT FOR ALL LISTED PRODUCTS.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Subparagraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

Furnish materials according to <**\_\_\_\_\_\_\_\_**> standards.

Insert descriptive specifications below to identify Project requirements and to eliminate conflicts with products specified above.

* + - * 1. Crushed [**Stone**] [**Slag**] Media:

Minimum Size: 2-1/2 inches

Maximum Size: 4 inches

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Plastic Media:

Size: Manufacturer's standard.

Random Ring Type:

Material: [**Polypropylene (PP)**] <**\_\_\_\_\_\_\_\_**>.

Minimum Void Volume: [**90**] <**\_\_\_\_\_\_\_\_**> percent.

Minimum Surface Area per Volume: [**25**] <**\_\_\_\_\_\_\_\_**> sq. ft./cu. ft

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Stacked Modular Type:

Material: [**PVC**] [**Fiberglass-reinforced resin**] <**\_\_\_\_\_\_\_\_**>, non-toxic, and resistant to oxidation, ozone, and ultraviolet exposure.

Minimum Void Volume: <**\_\_\_\_\_\_\_\_**> percent.

Minimum Surface Area per Volume: <**\_\_\_\_\_\_\_\_**> sq. ft./cu. ft

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

* + - * 1. Structured Media:

Description: Modules placed in layers with each layer placed at a right angle to layer below.

Material: [**PVC**] <**\_\_\_\_\_\_\_\_**>, non-toxic, and resistant to oxidation, ozone, and ultraviolet exposure.

Module Size: [**2**] <**\_\_\_\_\_\_\_\_**> feet wide by [**2**] <**\_\_\_\_\_\_\_\_**> feet high by [**4**] [**6**] <**\_\_\_\_\_\_\_\_**> feet long.

Cross-flow configuration is typically used for low to medium biochemical oxygen demand (BOD) loadings.

Cross-Flow Media:

Description: Sheets formed with alternating corrugations at [**60**] <**\_\_\_\_\_\_\_\_**> degrees to vertical and [**solvent-welded**] [**bonded**] together to form modules.

Flow Redistribution Points: [**180**] <**\_\_\_\_\_\_\_\_**> per foot

Minimum Void Volume: <**\_\_\_\_\_\_\_\_**> percent.

Minimum Surface Area per Volume: <**\_\_\_\_\_\_\_\_**> sq. ft./cu. ft

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

Vertical-flow configuration is typically used for high BOD loadings.

Vertical-Flow Media:

Description: Media modules formed by alternating flat and corrugated sheets.

Contact Point Spacing: <**\_\_\_\_\_\_\_\_**> feet

* + - * 1. Media Supports: [**Manufacturer's standard design**] [**As indicated on Drawings**].
1. EXECUTION
	* + 1. EXAMINATION
				1. Verify that trickling filter tank is ready to receive media.
			2. INSTALLATION
				1. [**Stone**] [**Slag**]:

Rescreen on Site to remove fines before placement.

Placement:

Place media by hand to a depth of 12 inches

Place remainder of material by [**conveyor,**] [**wheelbarrow,**] [**or**] <**\_\_\_\_\_\_\_\_**>.

Place in layers to maximum depth of 18 inches

Do not drop media from height greater than 5 feet

* + - * 1. Plastic Media: Install according to media manufacturer's instructions.

\*\*\*\*\*\* [OR] \*\*\*\*\*\*

In following Paragraph insert "State of New York Department of Transportation," "Municipality of \_\_\_\_\_\_\_\_ Department of Public Works," or other agency as appropriate.

* + - * 1. Installation Standards: Install Work according to <**\_\_\_\_\_\_\_\_**> standards.
			1. FIELD QUALITY CONTROL
				1. Wet Startup: Run equipment with water and verify proper operation.
				2. Manufacturer Services: Furnish services of manufacturer's representative experienced in installation of products furnished under this Section for not less than <**\_\_\_\_\_\_\_\_**> days on Site for installation, inspection, startup, field testing, and instructing Director’s Representative in maintenance of equipment.
				3. Equipment Acceptance:

Adjust, repair, modify, or replace components failing to perform as specified and rerun tests.

Make final adjustments to equipment under direction of manufacturer's representative.

* + - * 1. Furnish installation certificate from equipment manufacturer's representative attesting that equipment has been properly installed and is ready for startup and testing.
			1. DEMONSTRATION
				1. Demonstrate routine maintenance and emergency repair procedures to Director’s Representative.
			2. PROTECTION
				1. Do not permit tractor or other heavy equipment traffic over installed media.

END OF SECTION 465324