

## **MSR Coalescing Media Specifications:**

### Plate Module Type Coalescing Media

#### Part 1 – General

##### 1.01 Summary

- A. Polypropylene coalescing media specifically designed to meet the requirements of these specifications, material as noted on page 4 of this specification. Spacing and materials to be as per part 3.01-3.02.

##### 1.02 Submittals

- A. Vendor shall provide the following:
  - a. Material making up the media.
  - b. Dimensions of the molded media, including material thickness.
  - c. Description and details of method of joining the material together to form the media.
  - d. Prior to final inspection, submit a letter of certification by the representative of the media supplier stating that the media has been installed in accordance with the supplier's recommendations.
  - e. Submit a 1' x 1' x 1' or larger sample of the coalescing medium to the engineer for approval.
  - f. Written calculations or computer generated predictions of performance indicating that the media system as supplied meets the performance requirements of the system as shown in Section 4 of this specification.

#### Part 2 – Product

##### 2.01 Acceptable Suppliers

- A. Media shall be as provided in completed modules, nominal 300 mm x 600 mm as supplied by Mohr Separations Research, inc. or approved equal.

##### 2.02 Fabrication

- A. Media
  - a. Provide media of the modular plastic type, with modules fabricated of injection molded plastic sheets. The media

modules shall be of a "cross flow" design which allows for horizontal hydraulic redistribution within the module.

- b. Coalescing media shall consist of modules fabricated from rigid pure molded polypropylene plates. Plates shall be corrugated in both directions and pinned together with plastic retainer pins for strength. Plates shall be provided with oil removal holes at a spacing that allows no more than 2.5" (65 mm) of required travel before oil encounters a hole. Holes in plates shall be designed so that oil that ascends to a hole is directed in a vertical straight line along an unencumbered path to the surface. Minimum plate thickness 0.045 inches (1.15 mm). admixtures of calcium carbonate (talc) or other materials which can cause brittleness are not acceptable.
- c. Coalescing media shall have roughened bottom surface for increased coalescing.
- d. Fabricate modules of plates of uniform thickness that are free of holes, air bubbles, foreign matter, undispersed raw material, or other manufacturing defects that may affect their serviceability.
- e. Fabricate modules of a maximum size of approximately 2 cubic feet and maximum weight of 20 pounds. Modules shall be held together by plastic retainer pins with snap locks or non-corrosive nuts so that they may be easily be assembled in "brick laid" manner in the vault or vessel.
- f. Finished modules are chemically resistant to diesel fuel and motor oil, to the microorganisms that will be attached to the media when it is in service. and to mild concentrations of acids, alkalis, and organic solvents.
- g. Finished modules shall be capable of withstanding service under operating temperatures between 32 and 160 degrees F. (or higher based on differing materials) and a pH range of 2 to 12.
- h. Design plastic modules to be entirely self-supporting for the required media height. Completed assembled modules shall conform to the following structural requirements:

#### B. Module Strength

- a. Modules shall be designed to be self supporting for the entire media height. Completely assembled modules shall conform to the following structural requirements. Each module shall be capable of supporting a design load equivalent to 40 pounds per square foot per foot of media height above the module and at ambient air temperatures of 70 to 75 degrees F. Under the design load, compressive deflection and long-term creep shall be held to a minimum.

- b. Modules to be capable of withstanding a short-term test loading (across the supports) at the design bearing capacity with a maximum deflection of two (2) percent.
- c. Modules shall be designed to be handled easily by one man and to stack in an interlocking manner. Pins and sockets molded into the plates must be designed so that their placement provides additional strength.

### 3.01 Media Assembly:

The coalescing modules are assembled at the supplier's production plant. The installation contractor must not disassemble any media modules or damage them in any way during installation. The structural integrity of the media modules is intact when it leaves the supplier's facility and damage or disassembly may void the warranty.

### 3.02 Media Installation.

#### A. Installation Instructions

- a. The coalescing media specified in this Section shall be installed by the Contractor per the media supplier's instructions and drawings. The Contractor will, in general, install the media in accordance with the supplier's recommendations and the following procedures:
  - i. Installation shall be performed to the approved drawings.
  - ii. Perform work under the supervision of the media supplier or qualified consultant.
  - iii. Modules damaged during unloading and handling will be rejected and removed from the site for repair or replacement. Repaired modules may be used if repaired to as-new condition and so certified by the media supplier.
  - iv. During the installation of the media, take special care to avoid damage to the modules. Install sufficient plywood or other suitable temporary planking to prevent damage to the media edges.
  - v. Place modules in the oil/water separator to provide the closest possible fit inside the separator while avoiding damage to the media. Utilize module packing arrangement and edge sealing method recommended by the module manufacture and shown on the drawings to produce a flat plane for sealing. Material shall include a method of positive sealing such as elastomeric material or other method of "spring-loading" the seal.
- b. Completed installation shall be inspected and approved by supplier's representative or qualified consultant.



Appendix: Materials and requirements

4.01 Job Specific Material Requirements:

\_\_\_\_\_ Polypropylene

4.02 Configuration:

\_\_\_\_\_ Spacing shall be nominal 1/4 inches (8 mm)

\_\_\_\_\_ Spacing shall be nominal 1/2 inches (16 mm)

4.03 Process Design Criteria

No of Separators Required: \_\_\_\_\_

Flow rate per separator \_\_\_\_\_ US gpm \_\_\_\_\_ m<sup>3</sup> / hour

Influent oil content \_\_\_\_\_ mg/l

Inlet oil specific gravity \_\_\_\_\_

Minimum flowing water temperature \_\_\_\_\_ Deg. F \_\_\_\_\_ Deg. C.

Influent Mean Oil droplet size, micrometers (microns) \_\_\_\_\_

Effluent Quality required, maximum, \_\_\_\_\_ mg/l

4.04 Project Configuration:

Modules High \_\_\_\_\_

Modules Wide \_\_\_\_\_

Rows of Modules \_\_\_\_\_

4.05 Other Requirements / Comments

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