

Evapco Engineering Flash

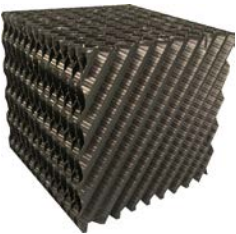


Cooling Tower Heat Transfer Media Options In Today's Marketplace

Cooling tower heat transfer media (i.e. fill) is an essential component in the evaporative heat rejection process. Variations in total surface area, pressure drop, and material of construction are readily available to consumers to optimize a cooling tower for a specific water quality and water temperature.

The use of alternate fill media should not be considered a substitute for a proper water treatment program or solids filtration (if required) that matches the required application. "Contamination" references in this document refer to suspended and dissolved solids, process particulates, oils, and grease, not bacteria or biological contamination.

This bulletin will serve to educate the reader on a few of the most common cooling tower fill media variations used in both commercial and industrial applications. The list begins with the highest efficiency per cubic foot of media (lowest fouling tolerance) and ends with the highest fouling tolerance (lowest efficiency per cubic foot of media).



Cross-Fluted High Efficiency Fill (Counterflow Heat Transfer)

- Highest Heat Transfer Efficiency per Cubic Foot
- Default Packaged Cooling Tower Fill for Counterflow Applications
- Approximately ½" Fill Sheet Spacing
- Requires Uncontaminated Make-Up Water and Minimal Airborne Contamination
- Typical Applications Include HVAC and Light Industrial
- Suggested TSS¹ < 25 PPM³ and TDS² < 1,000 PPM³ as Calcium Carbonate
- No Grease, Oil, or Fiber Contamination
- Available in PVC for Water Temperatures up to 130F
- Available in HPVC for Water Temperatures up to 150F
- Available in 304L Stainless Steel for Applications Requiring the Ultimate in Corrosion Protection or Non-Combustible Components (shown to the left)



Herring-Bone High Efficiency Fill (Crossflow Heat Transfer)

- High Efficiency Fill with Similar Properties of Cross-Fluted Fill
- Default Packaged Cooling Tower Fill for Crossflow Applications
- Approximately ¾" Fill Sheet Spacing
- Available with Integrated Inlet Louvers and/or Drift Eliminators
- Installed as Individual Hanging Sheets or Pre-Assembled Sections (shown to the left)



Cross-Fluted Wide Gap Fill (Counterflow Heat Transfer)

- Packaged or Field Erected Cooling Tower Fill Media for Low Water Contamination
- Approximately ¾” Fill Sheet Spacing
- Typical Applications Include Light to Moderate Industrial and Power Generation
- Suggested TSS¹ < 50 PPM³ and TDS² < 5,000 PPM³ as Calcium Carbonate



Vertical Fluted Wide Gap Fill (Counterflow Heat Transfer)

- Packaged or Field Erected Tower Fill Media for Moderate Water Contamination
- Approximately ¾” Fill Sheet Spacing
- Typical Applications Include Moderate to Heavy Industrial, Power Generation or Where Make-Up Water Quality Exceeds Cross-Fluted Recommendations
- Suggested TSS¹ < 150 PPM³ and TDS² < 5,000 PPM³ as Calcium Carbonate
- Oils or Greases up to 5 PPM³, No Fibers
- Some Variations Include Offset Vertical Flutes For Increased Thermal Performance (shown to the left) with a suggested TSS¹ < 100 PPM³



“Hybrid” Open Mesh Fill (Counterflow Heat Transfer)

- Field Erected or Packaged Tower Fill Media for Moderate to High Water Contamination
- Typical Applications Include Moderate to Heavy Industrial or Where Make-Up Water Quality Exceeds Vertical-Fluted Recommendations
- No TDS limits, May be Used for Sea Water Cooling Applications
- Ultra Low Fouling Rate



Splash Bar Fill (Crossflow Heat Transfer)

- Field Erected Tower Fill Media for Dirty Water Applications
- The Lowest Fouling Rate Available
- Supported by a Field Constructed Grid System

¹ TSS = Total Suspended Solids

² TDS = Total Dissolved Solids

³ PPM = Parts Per Million

By utilizing the appropriate heat transfer media in each evaporative cooling tower application, owners can receive a product designed to accommodate a project-specific water quality. In conjunction with a proper water treatment program, this will ensure reduced fill media fouling and clogging, providing consistent heat rejection over the life of the cooling tower.

For more information, please contact your local EVAPCO Sales Representative!

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