



The single most important component of a cooling tower is the fill. The efficiency of a cooling tower depends upon the fill's ability to promote both the maximum contact surface, and the maximum contact time between air and water. And it must promote this air-water contact while imposing the least possible restriction to air flow.

MX75 is a hanging film type cooling tower fill which spreads the water into a thin film, flowing over large vertical surfaces, promoting maximum exposure to air flow. This type of fill provides much more water surface exposure per cubic foot than splash type fill.

Film fill offers greater cooling efficiency, so you can get colder water from your present splash-fill cooling tower without increasing fan horsepower. Or, if you choose, you can apply this improved efficiency to save horsepower producing the same cold water temperature.

MX75 incorporates highly efficient cellular drift eliminators, integrally molded within the fill sheets. Compared with previous designs, these eliminators reduce drift emissions from the tower by a factor of ten or more! Less drift means you save on your water bills and water treatment chemical expenses. And, you'll virtually eliminate the nuisance caused by drift spotting on adjacent buildings and property. To save you even more, the drift eliminators discharge air directly toward the fan. Since the air is traveling in the right direction when it leaves the eliminators, you'll save on fan horsepower.

Louvers are also integrally molded within the fill sheets preventing water from escaping and assuring precise air distribution throughout wide variations in airflow. Unlike towers equipped with separate external louvers, this fill operates virtually ice-free even in extremely cold weather.

MX75 is thermoformed from PVC with a flame spread rating less than 25 per ASTM E-84 and is considered self-extinguishing. Therefore, your risk of fire damage is minimal.

MX75 film fill complies with Cooling Technology Institute (CTI) Standard 136.

You'll enjoy long service life with minimal maintenance because MX75 fill won't rot, is impervious to corrosion and decay, and its wide sheet spacing prevents clogging.

Since MX75 has integral louvers and drift eliminators, extra support framing and retainers are not required. MX75 fill is available in air travels from 18" to 60" and can be installed in almost all crossflow cooling towers regardless of a cooling tower's age or manufacturer.

PROPERTIES

Base Material—polyvinyl chloride (PVC) sheets

Material Properties:

Tensile Strength—6,300 psi (at room temperature)

Tensile Modulus—325,000 psi

Specific Gravity—1.50

Drift Eliminator Configuration—3 pass

Typical Drift Rate _____ % of circulating gpm at _____ FPM fill velocity at _____ L/G

Maximum Continuous Hot Water Temperature—125°F

PVC Sheet Thickness—15 mils (.015")

Sheet Spacing—0.75"

Weight per Cubic Foot of Completed Fill Packs—1.93 lb/ft³ @ 15 mil

Heat Transfer Area (Wetted Surface)—51.2 ft²/ft³

SUGGESTED SPECIFICATION

The fill material will be installed in a crossflow cooling tower.

Construction and Materials

The fill will be film type, Marley MX75 or approved equal. Integral louvers and eliminators shall be thermoformed integrally with each fill sheet. The fill will consist of _____ mil (_____") thick polyvinyl chloride sheets. Flame spread rating of the material must not exceed 25 per ASTM E-84. The fill must comply with CTI Standard 136. The fill sheets must be self-spacing on a minimum 0.75" centers.

Configuration

The fill must be designed specifically for crossflow cooling tower applications. It must contain a minimum of 51 square feet of wetted heat transfer surface per cubic foot of fill material.

The fill supplier will determine the total volume of fill required to achieve the specified thermal performance.

Fill shall be suspended from structural tubing supported from the upper tower structure, and shall be elevated at least 2" above the floor of the cold water basin to facilitate cleaning. Structural tubing material shall be appropriate for the application. Air inlet faces of the tower shall be free of water splash-out. Drift eliminators shall be triple-pass, and shall limit drift losses to no more than .005% of the design gpm flow rate. Air from the drift eliminators will discharge at a minimum angle of 45° from the horizontal.

Supports

The fill supplier will review the details of the existing tower structure, either by review of detailed dimensional tower drawings or by physical inspection. Based on this review, the fill supplier will provide fill support and sealing design details appropriate for the existing tower structure.

Hot Water Distribution

The fill supplier will define any necessary changes to assure uniform water distribution to all areas of the fill section.

Fill Depth (air travel)

The fill depth will be chosen to provide the proper thermal performance. If a fill height greater than the maximum height of available fill packs is required, a second layer of fill packs may be added, but no more.

Performance

The vendor will supply a fill characteristic line based on the CTI method of analysis to demonstrate the fill capability at the required design conditions. The vendor will guarantee fill performance as installed.

SPX COOLING TECHNOLOGIES, INC.

7401 WEST 129 STREET
OVERLAND PARK, KS 66213 USA
913 664 7400 | spxcooling@spx.com
spxcooling.com

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