COOLING TOWERS PROFILE

- Description.
- Handling.
- Installation Guide.

MB-KAR (2500) SERIES

About MB Group

MB experience is needed to tackle the project of a large-size industrial cooling tower. Such experience is the sum of theoretical know-how, based on the thorough knowledge of thermodynamics and the technical solutions available, and installation practice

MB usually offers arrangements providing for counter and cross flow operation, typical of the European school. Supporting structures are made of reinforced concrete, either in place or prefabricated, or in special treated stainless steel material or galvanized steel. The filling system is made from plastic material, either PVC or polypropylene, water to be cooled-to-air contact system is film-type, splash-type or a combination of the two. Fan units operate under forced draft conditions, with blower fans installed at the bottom of the tower, or under induced draft conditions with suction fans installed at the top of the tower.

MB - Kar series (from 150 to 2500 RT)

- Offers arrangements providing for counter flow operation, typical of the European school.
- The structures are made of stainless steel or galvanized steel.
- The filling system is made from plastic material, either PVC or polypropylene.
- Water to be cooled-to-air contact system is film-type.
- Fan units operate under forced induced draft conditions, with blower fans installed at the top of the tower.

بطاقة قيد في سجل المستوردين (٤ س)

TRANSPACIFIC CERTIFICATIONS LIMITED

Certificate of Registration

This is certify that

Quality Management System

Of

MB GROUP

44 El Batrawy St., Nasr City, Cairo, Egypt.

Complies with the requirements of

ISO 9001:2008

This certificate is valid concerning all activities related to:

Manufacturing and Installation of Cooling Towers and ventilation Systems.

ANZSIC Code: 2867, 4233

11512	July. 15, 2016	July. 16, 2017
Certificate No.	Date of This Certificate	Certificate Expiry Date

July. 17, 2015	July. 16, 2018	
Date of Initial Registration	*Recertification Due Date	Managing Director/Director

TRANSPACIFIC CERTIFICATIONS LIMITED

Website : www.tclcertifications.com E-mail : info@tclcertifications.com
Accreditation by Joint Accreditation System of Australia and New Zealand (Accreditation No. S2640303IN)
4 Phipps Close, DEAKIN, ACT 2600, AUSTRALIA
www.jas-anz.com/register
This certificate is only valid if it is available/valid on TCL website at http://tclcertifications.com/new/client-register/.

COOLING TECHNOLOG

PO Box 681807, Houston, TX 77268 / 3845 Cypress Creek
Phone: 281.583.4087 / Fax: 281.537.1721 / email: vman

March 26, 2015

Mr. Yasser Abdallah
MB Group Company
44 AlBatrawi St
Nasr City, Cairo, EGYPT 11759

Dear Mr. Abdallah:

It is indeed a pleasure to inform you that your application for Corporate Membership in the **Cooling Technology Institute** has been acknowledged and approved by the **Cooling Technology Institute**. We received your payment for 800.00 to cover the 2015 member dues

A complimentary set of **CTI** Standard Specifications and Research Reports, a membership directory, and the Bylaws are enclosed all of them on a Flash Drive. You are now eligible to receive the updated pages of the directory once a year. Your firm will be listed in the supplier section of the directory with you as the voting delegate.

All employees of your firm will receive member discounts on publications and meeting fees. We encourage you to use the **CTI** logo on your letterhead, business cards and sales brochures. A copy is enclosed. The word "member" must accompany the logo.

An attractive walnut membership plaque engraved with your company name is available for $70.00. Please place your order with the **CTI** office.

We look forward to your active participation in the meetings and committees. The next CTI 2015 Committee Workshop is scheduled for July 12-15, 2015 at the Trade Winds Island Hotel, St. Pete Beach, Florida. Information will come out soon. We hope that you will find it convenient to attend. Please call me if you have any questions, or if we may be of service to you.

Sincerely,

Virginia A. Manser
CTI Administrator

VAM/
Enclosures

cc: w/o enclosures
Frank Michell, President
Anthony DePalma, Vice President
Billy Childress, Director
Frank Foster, Board Member, Mbr Chair
File

Agents Register Card

بطاقة قيد في سجل الوكلاء (١٤ س)

Donor: ICEA S.RL - ITALY
Authorized agent: MB Group
Specialization: Cooling Towers

MAIN COMPONENTS

NOZZLE

180 Degree Spray Pattern nozzle. Maximum operating temperature from (-20°C) up to (90°C).

Provides homogeneous fluid mix without the use of air agitation precluding oxidative decomposition of air agitation of the solutions. Improves circulation of the turbulent flow and optimizes mixture of the solutions. Assures uniform mixture of solutions and improve product quality.

Constructed of carbon fiber-glass-reinforced polypropylene or stainless steel.

FAN IMPELLER

The innovative aerodynamic features of IVI ILMED Italy profiles provide superior performance combined with reduced power consumption and lower sound emission. The blades are characterized by constant geometry and are not twisted. This features have been especially studied to optimize the downstream pressure distribution in order to provide an extra power saving. The hub consists of a hub boss and two steel disks. The hub boss is bolted to either the bottom disk or to both disks depending on the fan series and diameter.

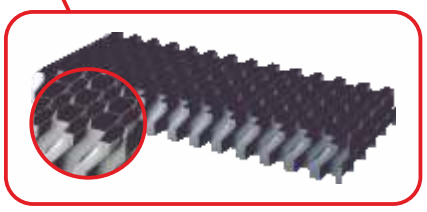
DRIFT ELIMINATOR

With a sinusoidal geometry based upon a 3 changes in the discharge airflow direction, is applied principally in situations of vertical airflow but can also be used for cross-flow applications.

It is constructed from preformed PVC sheets, subsequently made up into panels. The PVC raw material used in its manufacture is both of high quality and suitably colored to ensure an excellent resistance to environmental effects (e.g. UV radiation) and to inorganic chemicals.

FILL MEDIA

MB is the exclusive agent for ICEA Italy, the master of PVC fill in Europe and all over the world. HX surface for heat and mass transfer; support surface is composed of a series of corrugated sheets of high quality PVC, which are assembled with the direction of the corrugations inverted every other sheet and glued together to form modules of the dimensions listed in the technical data.



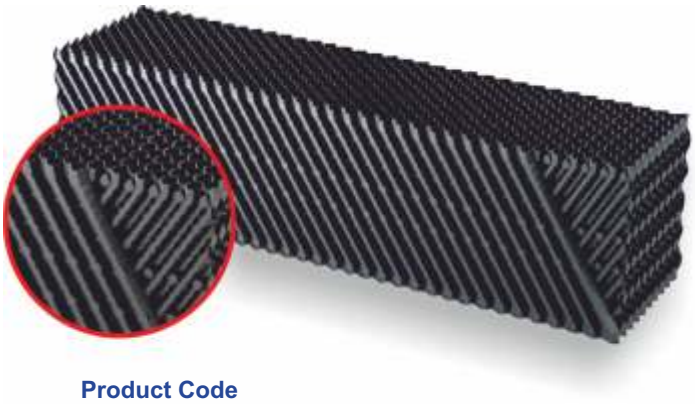
Louver

The inlet louvers are made of solvent-bonded sheets of selfextinguishing, thermoformed PVC. When used in cooling towers they prevent water droplets from leaving the unit and block the entrance of unwanted material.

Inlet louvers play an essential role in reducing sound and in keeping sunlight out, thus inhibiting algae growth in the cooling system.

FILL MEDIA

Onda 12



Product Code
- CTPAK 12
- Sheet spacing 12 mm

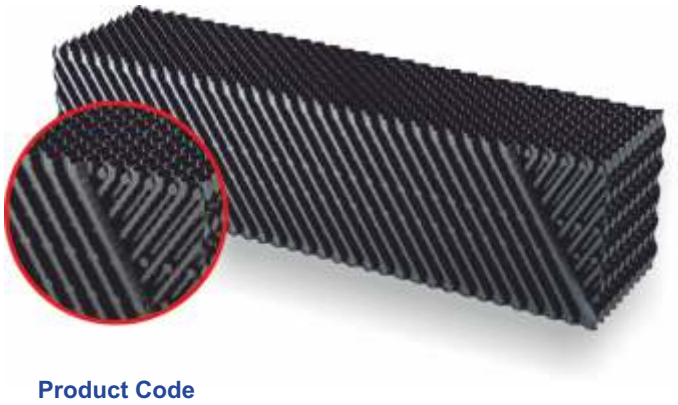
Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature

• Standard	-5°	+60°
• High temperature	-5°	+75°
• Low temperature	-40°	+60°

Size
- Length: from 900 mm to 2750 mm
- Width: up to 600 mm
- Depth: up to 600 mm

Onda 15



Product Code
- CTPAK 15
- Sheet spacing 15 mm

Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature

• Standard	-5°	+60°
• High temperature	-5°	+75°
• Low temperature	-40°	+60°

Size
- Length: from 900 mm to 2750 mm
- Width: up to 600 mm
- Depth: up to 600 mm

Onda 19

Product Code
- CTPAK 19
- Sheet spacing 19 mm

Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature

• Standard	-5°	+60°
• High temperature	-5°	+75°
• Low temperature	-40°	+60°

Size
- Length: from 900 mm to 2750 mm
- Width: up to 600 mm
- Depth: up to 600 mm

Onda 27

Product Code
- CTPAK 27
- Sheet spacing 27 mm

Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature

• Standard	-5°	+60°
• High temperature	-5°	+75°
• Low temperature	-40°	+60°

Size
- Length: from 900 mm to 2400 mm
- Width: up to 600 mm
- Depth: up to 600 mm

FILL MEDIA

SF 20 (Best Mechanical Assemble)

Technical data (SF20):

Effective surface	[m^2/m^3]	~125
Width of channel	[mm]	2 × 20
Material (UV-stabilized)		PP
Standard dimensions	[mm]	910 × 600 × H:450
Void	[%]	> 97
Weight of new fill	[kg/m^3]	20 – 50
Density	[g/cm^3]	0.95 – 1.1
Thickness of plastic	[mm]	1.5 – 2 mm
Temperature of operations	[°C]	-20 to 75 further on request

SF 25 (Lowest drop pressure)

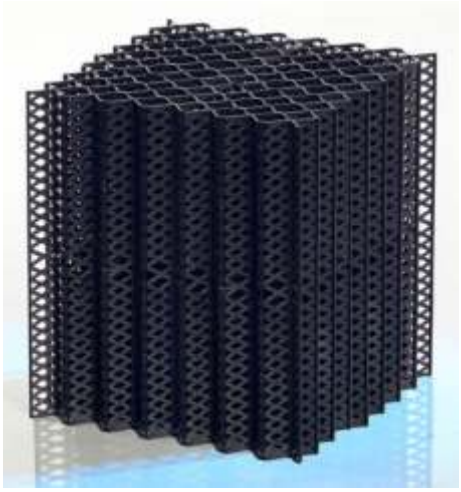
Technical data (SF25):

Effective surface	[m^2/m^3]	~100
Width of channel	[mm]	2 × 25
Material (UV-stabilized)		PP
Standard dimensions	[mm]	910 × 610 × H:450
Void	[%]	> 97
Weight of new fill	[kg/m^3]	~ 25 – 30
Density	[g/cm^3]	0.95 – 1.1
Thickness of plastic	[mm]	~ 2 mm
Temperature of operations	[°C]	-20 to 75 further on request

TF 25 (Lowest drop pressure)

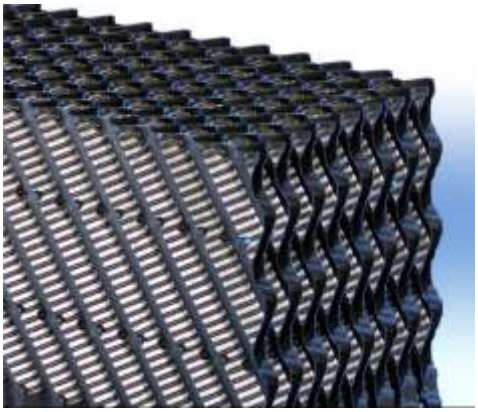
Technical data (TF25):

Effective surface	[m2/m3]	~100
Width of channel	[mm]	50
Material (UV-stabilized)		PP
Standard dimensions	[mm]	450 × 450 × H:450
Void	[%]	> 97
Weight of new fill	[kg/m3]	~ 25 – 30
Density	[g/cm3]	0.95 – 1.1
Thickness of plastic	[mm]	~ 2 mm
Temperature of operations	[oC]	-20 to 75 further on request



V12, V15, V19, V27 (in PP and PVC)

Technical data:		V12	V15	V19	V27
Effective surface	[m^2/m^3]	240	190	150	125
Width of channel	[mm]	2 × 12	2 × 15	2 × 19	2 × 27
Material (UV-stabilized)		PP / PVC			
Standard dimensions	[mm]	2400 × 300 × H: 600 / 300 / 150			
Void	[%]	> 97			
Weight of new Plastic	[kg/m^3]	20 – 60			
Density of plastic	[g/cm^3]	**PP:** 0.95 – 1.1		**PVC:** 1.4 – 1.6	
Thickness of foil	[mm]	< 1.5 mm			
Temp. of operations	[°C]	**PP:** -20 to 75		**PVC:** 0 to 55	



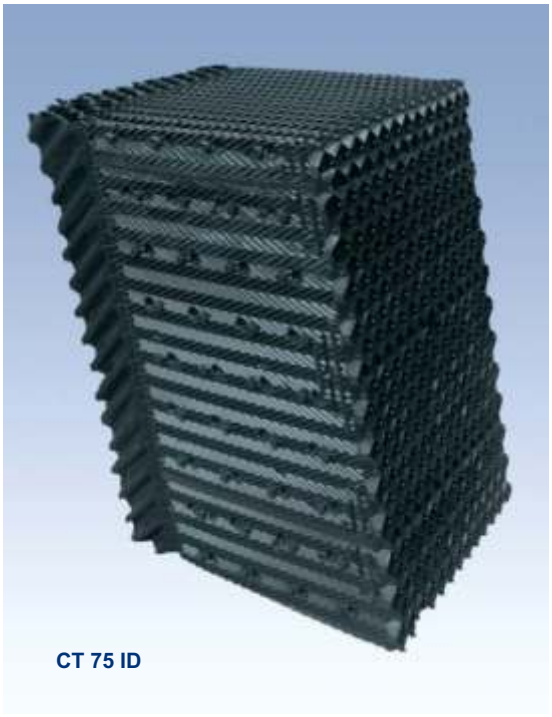
FILL MEDIA

STRUCTURED FILLS (in PP+PVC+PVDF)

Extract of applications:

- Cooling towers.
- Waste water (trickling filters, submerged beds, RBC's).
- Drinking water (DVGW 270-certificate,...)
- Cooling of greenhouses and buildings for livestock (30% energy saving by low drop pressure)
- Gas treatment.

CT75, CT75ID (Lowest drop pressure)



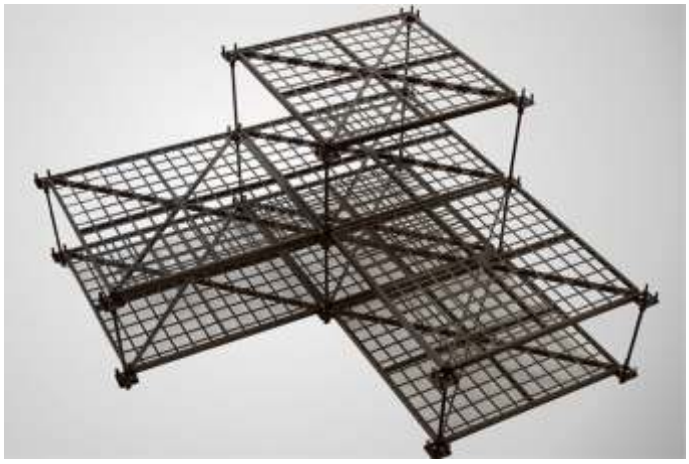
CT 75 ID

- Engineered herringbone surface for better water distribution and less clogging.
- Honeycomb bonded edges on the air inlets and outlets.
- Allowed perfect pack to pack registration for uniform and seamless installation.
- Overlapping packs possibility thanks to supporting structure and supporting grids in applications requiring fill height greater than 3 meters.
- Available both as fill pack (CT 75) and in the Version fill pack with droplet eliminator included (CT 75 ID).

RANDOM FILL

	Size		Pieces per cubic meter	Surface	Voidage	Spokes	kg/m³			
	inches	mm	Pce/m³	m²/m³	%	Num.	PP	PP/V	PVDF	PVC
ROLL	1	26	45.600	245	93	4 + 4	87.8	96.8	180	160
	1½	38	15.000	143	94	4 + 4	82	94.5	162	140
	2	50	6.400	114	94	4 + 4	60	71	119	130

SG45 (Splash grid fill)



Material	PP
Channel width	45 mm
Grid size	700 x 700 x 300
Vertical spacing of layers	200 – 600 mm
Max. solids content in the cooling water	unlimited
Max. operation temperature	80 °C

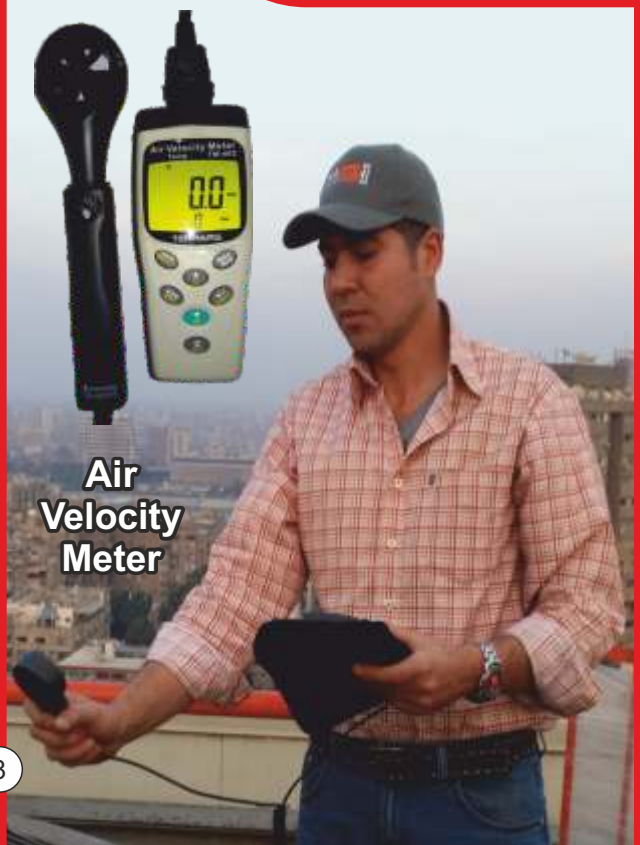

Turbidity Meter


Noise
Measure


RPM


MB Group Team


Vibration
Test


Air
Velocity
Meter


Water
Temperature
Meter


Manometer
(Static Pressure Measure)


Paint
Thickness
Meter


Metal
Thickness
Meter


Pitch
Angle


Water Flow
Measure


Water Quality
Monitor

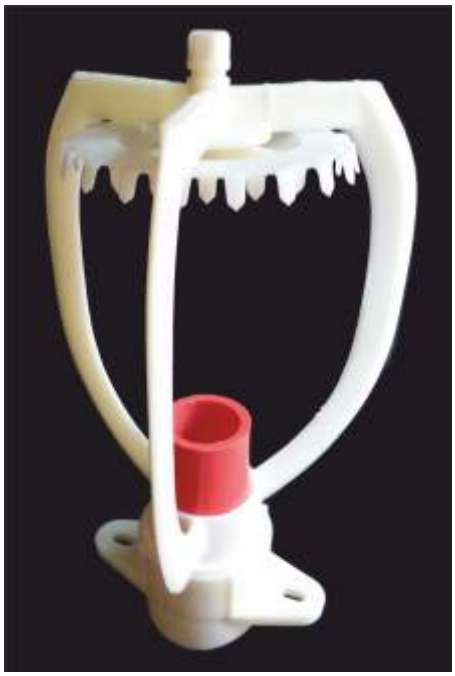
NOZZOLES

Long Splash Type

Technical data:

Thread size:	2	in
Outside diameter:	58	mm
Height:	360	mm
Working pressure:	0.01-0.03	Mpa
Flow rate:	11-12	M^3/H
Water turbidity condition:	200-400	Mg/L

Triple Yoke Type



Technical data:

Thread size:	2	in
Outside diameter:	58	mm
Height:	248	mm
Working pressure:	0.01-0.03	Mpa
Flow rate:	11-12	M^3/H
Water turbidity condition:	200-400	Mg/L

Generic Type

Technical data:

Thread size:	2	in
Outside diameter:	58	mm
Height:	168	mm
Working pressure:	0.01-0.03	Mpa
Flow rate:	11-12	M^3/H
Water turbidity condition:	200-400	Mg/L

ORIFICE

	ORIFICE LEGEND	
	Diameter	Color
	3/4"ø	ORANGE
	7/8" ø	PURPLE
	1" ø	YELLOW
	1 1/8" ø	RED
	1 1/4" ø	BLUE
	1 3/8" ø	GREEN
	1 1/2" ø	BLACK
	1 5/8" ø	BROWN
	1 3/4" ø	BODY

NOZZOLES

Cross Flow & Counter Flow Nozzles

Spiral Target nozzle

The Spiral Target nozzle is an injection molded polypropylene unit consisting of two parts—the main body with integral target diffuser and a snap-on insert or orifice cap.

The orifice cap is available in 13 diameters ranging from .362 through 1.099. This amount of flexibility allows for a wide range of adjustment in water flow rates and basin water levels.

The Spiral Target nozzle is available in three lengths.

1. The 2.625 nozzle is used on wood, steel, and fiberglass cooling towers where basin support structure does not obstruct the release of water.
2. The 4.875 nozzle is used on larger industrial wood and concrete cooling towers and on applications where clogging might be a concern.
3. The 6.875 nozzle is used on towers where the release of the water has to clear obstructions within the tower structure.

ZMII® Spray Nozzle

EVAPCO'S Zero Maintenance ZMII® Spray Nozzle remains clog-free while providing even and constant water distribution for reliable, scale-free evaporative cooling under all operating conditions. The heavy duty nylon ZMII® Spray nozzles have a 1-5/16" diameter opening and a 1-1/2" splash plate clearance. Furthermore, the fixed position ZMII® nozzles are mounted in corrosion-free PVC water distribution pipes that have threaded end caps. Together, these elements combine to provide unequaled coil coverage and scale prevention, making it the industry's best performing non-corrosive, maintenance-free water distribution system.

- Description: Evapco ZM-II zero maintenance nozzle
- Connection: 1½" MPT (BSP/NPT)
- Dimensions: 68mm (W) x 160mm (L) approx.
- Comments: Creates a two tier 360 degree fan of water distribution.

Cooling Tower 180 Degree Spray Pattern nozzle

- Maximum operating temperature from (- 20°C) up to (90°C).
- Provides homogeneous fluid mix without the use of air agitation precluding oxidative decomposition of air agitation of the solutions.
- Improves circulation of the turbulent flow and optimizes mixture of the solutions.
- Assures uniform mixture of solutions and improve product quality.
- Constructed of carbon fiber-glass-reinforced polypropylene or stainless steel.

Evapco 2A, 2AA and 2B

- Description: the Evapco 2A, 2AA and 2B spray nozzle
- Connection: 1" MPT (BSP/NPT)
- Dimensions: 35mm (W) x 67mm (L) approx.
- Comments: Normally positioned in pipework with exit orifices of two nozzles facing each other to create spray pattern.

180° push in nozzles

- Description: 180 degree push in nozzles with/without rubber nozzle grommet
- Connection: 1" push in nozzle for a 33mm grommet
- Dimensions: 28mm (W) x 44mm (L) approx.
- Comments: Normally positioned in pipework with orifices of two nozzles facing each other to create spray pattern

DRIFT ELIMINATOR

EFD 130

Product Code
- EFD 130
- Drift eliminator depth 130 mm

Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature
- Standard -5° +60°
- High temperature -5° +75°
- Low temperature -40° +60°

Size
- Length: from 900 mm to 1200 mm
- Width: from 300 to 600 mm
  in increments of 20 mm

This drift eliminator panel is designed for counterflow applications. It is made of solvent-bonded sheets of self-extinguishing, thermoformed PVC.

The cells' unique design forces drift droplets to make FOUR CHANGES IN DIRECTION, and the drift eliminator boasts high mechanical strength as a result. Furthermore, the properties of the material used offer the highest level of protection against chemical degradation and weather exposure.

EFDM 140

Product Code
- EFDM 140
- Drift eliminator depth 140 mm

Material
Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature
- Standard -5° +60°
- High temperature -5° +75°
- Low temperature -40° +60°

Size
- Length: from 900 mm to 3600 mm
- Width: from 300 to 600 mm
  in increments of 20 mm

This drift eliminator panel is made of solvent-bonded sheets of self-extinguishing, thermoformed PVC.

The drift eliminator's unique cellular design features over-lapping PVC sheets. The result is a curved shape with three impact zones that capture the water droplets in the air stream, thereby reducing drift loss to less than 0.001% of circulating water flow. Furthermore, the properties of the material used, together with the drift eliminator's high mechanical strength, offer the highest level of protection against chemical degradation and weather exposure.

T156 , T177 (Droplet Eliminator)

Our drop eliminator profiles have been developed for counterflow (natural draft and cells) and crossflow cooling towers.

Very low pressure loss with minimized droplet emission are the characteristics of the profiles and spacers.

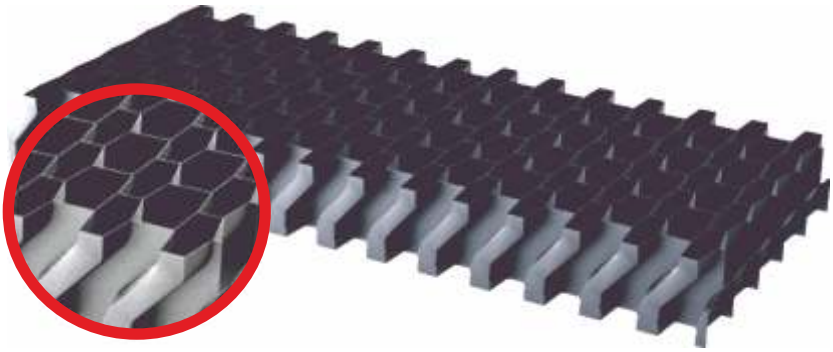
We produce numerous spacer geometries with different openings. The assembled modules are very light and yet high-strength. Customers span up to 2 meters.

Technical data:		T156	T177
Height of profile	[mm]	156	177
Thickness of profile	[mm]	1.5 – 2.0	~1.2
Material (UV-stabilized)		PP	PVC
Length of profile	[m]	< 6	
Spacers	[mm]	38 (single)	44 (single)
further spacers on request	[mm]	48 (multiple)	33 (multiple)
Density	[g/cm^3]	0.95 – 1.1	1.4 – 1.6
Temperature of operations	[°C]	– 20 to 75	0 to 55

Louver 65

INLET LOUVERS 65

Film fill media for heat transfer



Product Code

- CIL 25
- Inlet Louvers depth 65 mm

Material

Self-extinguishing PVC
that meets ASTM standard
E-84 and CTI standard 136

Operating Temperature

• Standard	-5°	+60°
• High temperature	-5°	+75°
• Low temperature	-40°	+60°

Size

- Length: from 700 mm to 2400 mm
- Width: from 300 to 600 mm, in increments of 25 mm.

The product can be reinforced by adding flat sheets

Thickness Before Forming

- 500 microns.

Main features

- Self-extinguishing.
- Lightweight and easy to move.
- High mechanical strength.
- Resistant to chemical degradation and biological attack.
- Keeps sunlight out.
- Low pressure drops.
- Maximized airflow.

Applications

- Cooling towers.
- Silencer systems.

The inlet louvers are made of solvent-bonded sheets of selfextinguishing, thermoformed PVC.

When used in cooling towers they prevent water droplets from leaving the unit and block the entrance of unwanted material. Inlet louvers play an essential role in reducing sound and in keeping sunlight out, thus inhibiting algae growth in the cooling system.

The unique design with TWO CHANGES IN DIRECTION offers a high mechanical strength and the properties of the material used offer the highest level of protection against chemical degradation and weather exposure.

Sealant Tape

ALSEAL Butyl Tape/ sealant is a butyl sealant for sealing most constructional surfaces such as steel, aluminum, concrete and glass in the automobile, refrigeration and building industries. A watertight seal can be obtained between these surfaces with maximum compressibility.

Width: 1 cm / 3.5 cm / 4.5 cm

INSTALLATION

- Correct installation of your cooling tower MB-KAR is vital for all Requirements for operation and maintenance of the tower.
- The towers MB-KAR are designed to minimize installation requirements specific site, and most units require little or no field-assembly.
- However, careful positioning of the towers by competent personnel is an important consideration.

(Contact MB GROUP for a complete set of installation instructions for your tower).

CLEARANCE & HANDLING

- When you receive the equipment, examine it carefully for damage during transportation and check that all the items indicated on the delivery note have been received.
- If you notice any damage or items missing inform the carrier and contact MB-group directly
- The equipment should always be handled carefully to prevent damage.
- Series CTK towers are typically delivered in one
- sections

On large towers, they may have the fan and some parts shipped separately.

Note:

- Make sure that all bolting to the basin and to the upper section are tight prior to lifting.
- Use the lifting points provided, which have been positioned to reduce the strain applied to the unit.

CAUTION:

- For stainless steel tower construction, it is essential that installers should not welded pipes or bruising components adjacent to the faces mild steel tower.
- Otherwise surface contamination will occur and corrosion of mild steel particles of the corrosion process is started and cause discoloration of stainless steel oxide.

  Surface contamination of the steel must be removed as soon as it is noticed to avoid stainless steel walls damages.

TOWER LOCATION

You can use these guidelines to select best location for tower:

- To get high air supply, install the cooling tower in an open area of the roof or the land far from any major obstacles that could reduce the efficiency of air intake.
- As ideal setting : the top of the cooling tower must be higher than any adjacent wall, buildings and other structures.
- When the top of the unit is lower than the surrounding structures, recirculation of warm, moist air can occur, resulting in a decrease in the overall performance of the tower.
- The tower must be located away from the wind direction and air intakes construction to further reduce the potential for aerosol to enter the buildings.
- In no circumstances should run a tower without mist eliminators in place and intact.

(Please consult MB-GROUP Technical DPT for other questions regarding proper tower position)

FOUNDATION

Concrete bases or structural steel is recommended as the basis of the cooling tower.

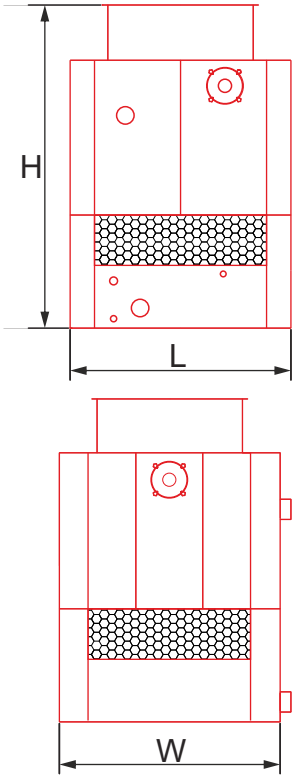
PIPES WORKS

- During the installation of piping connections to the tower, it is essential that no Speeds placed in the tower or the supplied tube.
- Carrier suitable piping and expansion Provisions to be considered by the customer engineer / entrepreneur assumes.
- It is always preferable to perform the power supply line to a lower level input and then vertically for the input.
- This prevents the return of large volumes of water piping to the tower after the arrest.
- If pipes of a high level is unavoidable seal drain cycle will be installed at the tube of the highest level.

TECHNICAL DATA

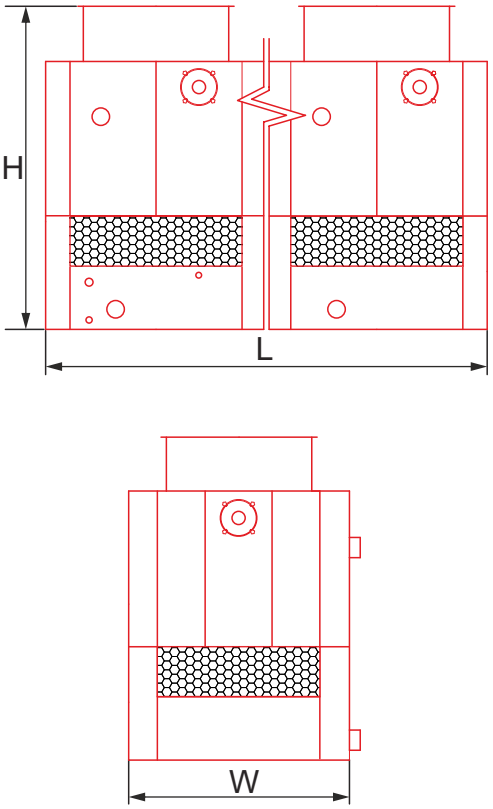
Model	Heat rejection RT	Air Flow m^3/h	Number of fans and motors T=transmission	Power of each motor kW	Dimensions L	W	H
150	153.16	38290	1	4.0	1870	1870	3265
150	162.40	40600	1	4.0	1870	1870	3265
150	188.44	47110	1	5.5	1870	1870	3265
200	211.68	52920	1	5.5	2470	1870	3315
200	235.20	58800	1	7.5	2470	1870	3315
200	251.16	62790	1	11.0	2470	1870	3315
200	267.40	66850	1	7.5	3070	1870	3715
300	290.08	72520	1	11.0	3070	1870	3715
300	305.76	76440	1	11.0	3070	1870	3715
300	366.52	91630	1	11.0	3670	2170	3715
400	406.00	101500	1	15.0	3670	2170	3715
400	428.12	107030	1	15.0	3670	2170	3715
400	405.44	101360	1T	11.0	3670	2470	4605
400	463.96	115990	1	15.0	3670	2470	3895
500	501.76	125440	1	18.5	3670	2470	3895
500	501.76	125440	1T	18.5	3670	2470	4605
500	546.28	136570	1	18.5	3670	2970	4605
500	591.36	147840	1	22.0	3670	2970	4605
500	591.36	147840	1T	18.5	3670	2970	4605
500	530.60	132650	1T	15.0	4870	2970	4605
700	696.64	174160	1T	22.0	4870	2970	4605
700	728.00	182000	1T	22.0	4870	2970	4605
800	808.64	202160	1T	30.0	4870	2970	4605
600	612.36	153090	1T	18.5	5470	2970	4605
700	735.00	183750	1T	22.0	5470	2970	4605
800	841.12	210280	1T	30.0	5470	2970	4605
900	886.76	221690	1T	30.0	5470	2970	4605

Diagrams



Model	Heat rejection RT	Air Flow m^3/h	Number of fans and motors T=transmission	Power of each motor kW	Dimensions L	W	H
500	534.80	133700	2	7.5	6150	1870	3715
500	580.16	145040	2	11.0	6150	1870	3715
600	611.52	152880	2	11.0	6150	1870	3715
700	733.04	183260	2	11.0	7350	2170	3715
700	773.36	193340	2	15.0	7350	2170	3715
800	815.36	203840	2	15.0	7350	2170	3715
800	810.88	202720	2T	11.0	7350	2470	4605
900	927.92	231980	2	15.0	7350	2470	3895
1000	1003.52	250880	2	18.5	7350	2470	3895
1000	1003.52	250880	2T	18.5	7350	2470	4605
1000	1092.56	273140	2	18.5	7350	2970	4605
1200	1182.72	295680	2	22.0	7350	2970	4605
1200	1182.72	295680	2T	18.5	7350	2970	4605
1400	1393.28	348320	2T	22.0	9750	2970	4605
1400	1456.00	364000	2T	22.0	9750	2970	4605
1600	1617.28	404320	2T	30.0	9750	2970	4605
1400	1470.00	367500	2T	22.0	10950	2970	4605
1600	1682.24	420560	2T	30.0	10950	2970	4605
1800	1773.52	443380	2T	30.0	10950	2970	4605
1000	1099.56	274890	3	11.0	11030	2170	3715
1200	1218.00	304500	3	15.0	11030	2170	3715
1200	1284.08	321020	3	15.0	11030	2170	3715
1200	1216.32	304080	3T	11.0	11030	2470	4605
1200	1391.88	347970	3	15.0	11030	2470	3895
1500	1505.28	376320	3	18.5	11030	2470	3895
1500	1505.28	376320	3T	18.5	11030	2470	4605
2000	2089.92	522480	3T	22.0	14630	2970	4605
2000	2184.00	546000	3T	30.0	14630	2970	4605
2400	2425.92	606480	3T	30.0	14630	2970	4605

Diagrams



- The maximum water temperature in standard towers is 80°C.
- Nominal heat rejection at W.b. 24°C.

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Cooling Towers

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