

PRODUCT SPECIFICATION

1. Scope:

ACCU-PAC[®] XF-75, XF75IL and XF-75ID modular film fill designed to replace OEM hanging crossflow fill sheets in crossflow cooling towers serving HVAC, light industrial and other process cooling requirements.

2. Material of Construction:

A. General

The fill shall be fabricated from rigid, thermoformed PVC sheets that are UV protected and meet the requirements of the CTI standard for rigid PVC, STD-136. The fill modules shall be resistant to rot, fungi, bacteria and inorganic/organic acids and alkalis as commonly found in cooling towers.

B. PVC SHEETS

The PVC sheet shall be prime, rigid PVC conforming to commercial standard ASTM D1784:12454B with the following properties:

PROPERTIES	ASTM TEST METHOD	UNIT		VALUE (min. unless otherwise noted)	
		IP	SI	IP	SI
Specific Gravity	D792	Dimensionless		1.45 max.	
Tensile Strength	D638/D882	psi	mPa	6,000	41.4
Flexural Modulus	D790	psi	mPa	425,000	2931
Flexural Strength	D790	psi	mPa	11,000	75.9
Elastic Modulus	D638/D882	psi	mPa	360,000	2,483
Izod Impact	D256	ft-lbs/in	j/cm	1.0	0.534
Impact Resistance	D4226	in-lbs/mil	j/mm	1.2	5.34
Heat Deflection	D648	°F	°C	160	71
Flame Spread Rating	E-84	Dimensionless		less than 20	
Flammability	D635			Self-extinguishing <5 sec.	

C. Chemical Resistance

Resistance to Grease Fats, & Oils	Excellent	ASTM D722-45
Resistance to Acids	Excellent	ASTM D543
Resistance to Alkalies	Excellent	ASTM D543

D. Temperature Resistance

Material of Construction	Max. Continuous Operating Temperature		Max. Peak Temp.*	
	F	C	F	C
PVC	120	49	125	52
HPVC	130	54	135	57

* Duration of peak temperatures not to exceed 1 hour

The PVC sheets shall be of uniform thickness and free from holes, air bubbles, foreign matter, undispersed raw material or other manufacturing defects, which may adversely affect its performance.

E. Fill Modules

The fill modules shall be fabricated from PVC sheets of quality stated above and have a herringbone-type microstructure designed to promote full wetting of the heat transfer surfaces in all air velocities & water loadings typically found in crossflow cooling towers. The sheet spacing shall be 0.75 inches (19 mm).

The fill shall be available in either 12 inch (305mm) or 24 inch (610mm) air travel depth, measure up to 12 inches (305mm) wide, and be available up to 12 feet (3660mm) long and provide a minimum surface area of 51 ft²/ft³ (167.3 m²/m³). Standard thickness shall be 10 mil (0.25mm) or 15 mil (0.38mm) nominal thickness after forming.

A variety of air travel depths can be arranged from 24 inch (610mm) to 72 inch (1830mm) using a combination of the louver, fill & drift eliminator packs.

The self-supporting fill modules shall be made from sheets having a specific number of stand-offs formed onto each sheet. These stand-offs shall be bonded together to provide a finite number of contact points to form strong fill modules and be fully edge bonded. Fill modules made using adhesives or solvent cements, which adversely affect the integrity of the sheet, should be limited to the application only on contact areas between sheets. Random or roll coating of adhesives shall not be allowed.

The integral drift eliminator pack shall have drift eliminators with three impact zones for efficient drift droplet removal, an upward discharge flute angle and integral drainage channels for efficient draining of the collected drift. The drift eliminator discharge angle shall not be less than 45° from the horizontal.

The integral louver pack shall have louvers with a minimum louver angle of 40° on a standard 5° bevel pack to prevent water leakage during low airflow conditions. Integral louver packs with louver angles less than 40° can contribute to icing during low temperature operation with fans off or set at low speed.

3. Installation:

The fill shall be installed per Brentwood guidelines as described in pertinent application notes and drawings. The following general guidelines shall also apply:

- A. The fill modules shall be carefully cut or trimmed to fit within 1/8 inch (or less) of any obstructions, partition walls or side walls to prevent air bypass.
- B. The fill shall be conveyed to the tower using careful handling procedures to not damage or crush the honeycomb edges.
- C. Cutting and trimming of the fill modules in the tower should be done in such a manner as to not allow any chips, broken pieces or debris from falling into the fill. All fill modules shall be cleared of any such material before a new layer of fill is added.
- D. Modules shall be packed tightly in the tower with the positioning tabs fully engaged from one module to another yielding a continuous honeycomb appearance to the completed installation.
- E. The fill supports must be positioned as indicated in drawing CTPGA-020 and suitable retainers must be used in the front and back of the packed section to prevent shifting of the modules during normal operation of the tower.