

# **SPECIFICATION FOR MLM-160 MEDIA**

## **I. PHYSICO-CHEMICAL PROPERTIES OF CHEMICAL PORCELAIN USED TO MANUFACTURE MLM**

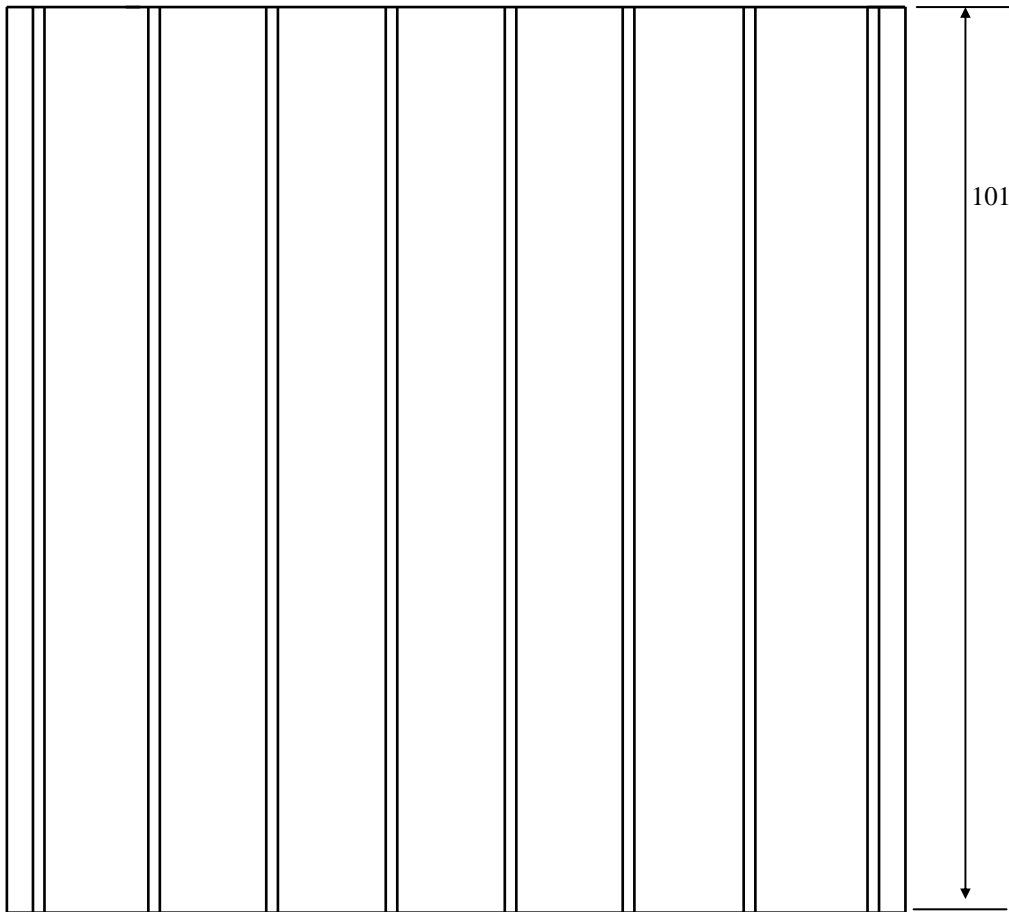
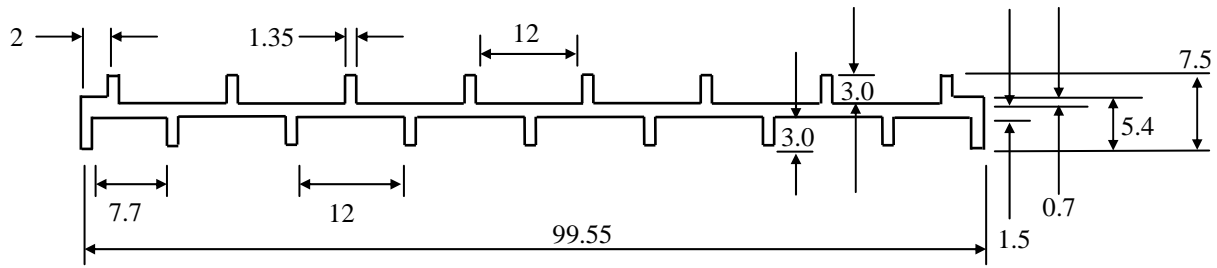
<b>IA.</b>	<b><u>Chemical Composition</u></b>	<b><u>% by Weight</u></b>
	SiO <sub>2</sub>	65 – 75
	Al <sub>2</sub> O <sub>3</sub>	20 – 23
	Fe <sub>2</sub> O <sub>3</sub>	< 1
	CaO	1 – 2
	K <sub>2</sub> O + Na <sub>2</sub> O	2 – 4
<b>IB.</b>	<b><u>Physical Properties</u></b>	
	Specific Gravity	2.15 – 2.35
	Water Absorption (ASTM C373)	< 0.5 %
	Acid Resistance Strength Wt. Loss (ASTM C279)	< 4 %
	Maximum Working Temperature	2,350 °F
	Heat Capacity	0.22 BTU/lb °F
	Cold Crushing Strength	12,000 lbs/ft <sup>2</sup>

## **II. DIMENSIONAL TOLERANCES OF INDIVIDUAL LAYERS**

### **IIA. Layer Dimensional Tolerances:**

Length x Width x Height = 101 ± 1.0 x 99.55 ± 1.0 + 7.5 ± 0.2 (mm)

**II.B.** Layer Dimensions (see diagram below)



**II.C.** Parallelism:\* < 2.0mm

**II.D.** Perpendicularity:  $90 \pm 1.5^\circ$

\*Deviation form being perfectly flat

### **III. DIMENSIONAL TOLERANCES OF ASSEMBLED MODULES**

**IIIA.** Over-all Dimensions: 12" x 12" x 4"

**IIIB.** Over-all Dimensional Tolerances:

Length x Width x Height =  $305 \pm 3.0$  x  $305 \pm 3.0$  x  $101 \pm 1.5$  (mm)

**IIIC.** Parallelism:

< 3.0 mm between two 12" x 12" surfaces

< 2mm between two 12" x 4" surfaces

**IIID.** Perpendicularity:

$90 \pm 1^\circ$  between any two adjacent surfaces perpendicular to each other

**IIIE.** Fin Height and Thickness  $2.7 \pm 0.15$  (mm) – Height

$1.35 \pm 0.15$  (mm) – Thickness

**IIIF.** Distance between Adjacent Layers ("Top Side" to "Top Side"), L L shall be

between 5.4 mm and 5.7 mm. Spacing between any two adjacent plates may be as much as 6.5 mm, as long as the average remains within the specified range.

The plate count shall be 52 to 57 plates per 305mm stack, or 156 to 171 plates per module.

### **IV. WEIGHT VARIATION**

17.4 lbs to 20.2 lbs per module

### **V. VOID FRACTION**

58 % to 61 %

### **VI. CRUSHING STRENGTH**

12,000 lbs/ft<sup>2</sup>

## **VII. VISUAL INSPECTION**

- ~ Cracks in layers: less than 5 per module
- ~ Cracked or missing fins: not to exceed three (3) per module
- ~ The adhesive will be applied evenly and completely without any cracks, crevices or gaps. Excessive application of adhesives must be avoided.

## **VIII. QUALITY ASSURANCE TESTING PROCEDURE**

- ~ All modules shall be visually inspected to ensure that the requirements as detailed above, are met.
- ~ Two (2) modules from each crate shall be tested for Dimensional Tolerance, Weight Variation and Plate Count.

## **XI. RAMIFICATIONS**

- ~ If both of the two (2) modules tested fail any or all of the tests outlined, then the entire crate of material will be rejected. All costs associated with the disposal of the rejected load will be the supplier's responsibility.