

# Hangzhou Hanchuang Electronics Material Co.,LTD

杭州韩创电子材料有限公司

## Test report and certificate for CCL

| Type:  | FR-1                      |                     |                                  |                    |                       |           |
|--|---------------------------|---------------------|----------------------------------|--------------------|-----------------------|-----------|
| Specification:   | 1.60mm 35μm/0             |                     |                                  |                    |                       |           |
|  |                           |                     |                                  |                    |                       |           |
| No   | Item                      | Unit                | Test condition                   | JIS Standard Value | Test value            | Judgement |
| 1  | Surface                   | Grade               | A                                | Grade A            | A                     | ACC       |
| 2  | Edges                     | Grade               | A                                | Grade A            | A                     | ACC       |
| 3  | Panel Size                | mm                  | Length                           | 3                  | 1230                  | ACC       |
|  |                           |                     | Width                            | 3                  | 1031                  |           |
| 4  | Squareness                | mm                  | Diagonals                        | ≤3                 | ≤0.5                  | ACC       |
| 5  | Thickenss                 | mm                  | A                                | ±0.14              | 1.54%                 | ACC       |
| 6  | Twist and wrap            | %                   | A                                | ≤1                 | 0.62%                 | ACC       |
| 7  | CTI Value                 | V                   | 0.1%NH <sub>4</sub> CL           | 175-200            | pass                  | ACC       |
| 8  | Water absorption          | %                   | E-24+D-24/23                     | ≤2.0               | 0.78%                 | ACC       |
| 9  | Alkaline Resintance       | —                   | 3%NaOH<br>40°C 3min              | NO CHANGE          | NO CHANGE             | ACC       |
| 10   | Flammability              | Sec                 | UL94                             | V-0                | V-0                   | ACC       |
| 11   | Solder Blister Resistance | Sec                 | Float260°C                       | ≥10                | 17-18                 | ACC       |
| 12   | Insulation Resistance     | Ω                   | C-96/20/65                       | ≥10 <sup>9</sup>   | 4.71X10 <sup>12</sup> | ACC       |
| 13   | Peel Strength             | kgf/cm              | A                                | ≥1.2               | 1.61-1.64             | ACC       |
| 14   | Balling Impact Test       | cm                  | A                                | >40                | pass                  | ACC       |
| 15   | Flexural Strength         | Kgf/mm <sup>2</sup> | A                                | ≥8.2               | 15                    | ACC       |
| 16   | Punchability              | —                   | 50-70°C                          | NO CRACK           | pass                  | ACC       |
|  |                           |                     |                                  |                    |                       |           |
| FINAL TESTING RESULT <input checked="" type="checkbox"/> ACC <input type="checkbox"/> NG |                           |                     | INSPECTOR: _____ APPROVED: _____ |                    |                       |           |