TABLE I. THE CHEMICAL COMPOSITION RESULT

OF COCNUT COIR FIBER

|  |  |  |
| --- | --- | --- |
| **Parameter** | **Coir Fibre** | **Coir Fibre Shell** |
| Ash | 4,49 | 5,62 |
| SiO | 0,74 | 0,57 |
| Extract | 6,62 | 6,7 |
| Lignin | 37,80 | 43,04 |
| C&B Cellulose | 49,62 | - |
| Alfa Cellulose | 33,74 | - |
| Pentosan | 15,63 | 11,51 |
| Dissolve in Warm Water | 12,51 | 22,16 |
| Dissolve in Cold Water | 10,29 | 17,22 |
| Dissolve in NaOH 1% | 34,78 | 45,57 |

TABLE II. COCONUT COIR FIBRE WATER CONTENT

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **No** | **Crucible Weight (gram)** | **Crucible Weight**  **+ Aggregate before ovened (gram)** | **Crucible Weight + Aggregate after ovened (gram)** | **Water Content (%)** | **Average of Water Content (%)** |
|  | (a) | (b) | (c) | (w) |  |
| I | 20 | 70 | 65 | 11 | 7 |
| II | 45 | 200 | 195 | 3 |

TABLE III. SLUDGE CONTENT OF FINE AGGREGATE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Sand Volume**  **(ml)** | **Sludge Volume**  **(ml)** | **Sludge Content**  **(%)** | **Average of Sludge Content (%)** |
|  | (V1) | (V2) |  |  |
| I | 350 | 10 | 2,7 | 2,8 |
| II | 500 | 15 | 2,9 |

TABLE IV. PAVING BLOCK COCONUT COIR FIBRE

AT THE AGE 7 DAYS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Parameter** | **Weight (kg)** | **Maximum Weight (kN)** | **Surface Area (mm²)** |
|
| 1 | CCF 0 % | 2,31 | 490 | 19.680 |
| 2 | CCF 0.1 % | 2,35 | 510 | 19.680 |
| 3 | CCF 0.2 % | 2,36 | 460 | 19.680 |
| 4 | CCF 0.3 % | 2,28 | 430 | 19.680 |

TABLE V. THE COMPRESSIVE STRENGTH TEST OF PAVING BLOCK AT THE AGE 7 DAYS

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Parameter** | **Compressive Strength** | |
|  |  | (MPa) | (kg/cm²) |
| 1 | CCF 0 % | 24,9 | 249 |
| 2 | CCF 0.1 % | 25,9 | 259 |
| 3 | CCF 0.2 % | 23,4 | 234 |
| 4 | CCF 0.3 % | 21,8 | 218 |

Fig. 4. The Compressive Strength Graph of Paving Block

Coir Fibre at The Age 7 Days

TABLE VI. PAVING BLOCK COCNUT COIR FIBRE

AT THE AGE 14 DAYS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Parameter** | **Weight (kg)** | **Maximum Weight (kN)** | **Surface Area (mm²)** |
|
| 1 | CCF 0 % | 2,41 | 620 | 19.680 |
| 2 | CCF 0.1 % | 2,44 | 650 | 19.680 |
| 3 | CCF 0.2 % | 2,4 | 620 | 19.680 |
| 4 | CCF 0.3 % | 2,38 | 540 | 19.680 |

TABLE VII. THE COMPRESSIVE STRENGTH TEST OF PAVING BLOCK AT THE AGE 14 DAYS

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Parameter** | **Compressive Strength** | |
|  |  | **(MPa)** | **(kg/cm²)** |
| 1 | CCF 0 % | 31,5 | 315 |
| 2 | CCF 0.1 % | 33,0 | 330 |
| 3 | CCF 0.2 % | 31,5 | 315 |
| 4 | CCF 0.3 % | 27,4 | 274 |

Fig. 5. The Compressive Strength Graph of Paving Block

Coir Fibre at The Age 14 Days

TABLE VIII. THE FLEXURAL STRENGTH TEST OF PAVING BLOCK AT THE AGE 7 DAYS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Parameter** | **Flexural Strength Result (P)** | **Flexural Strength** | |
|  |  | (KN) | (MPa) | (kg/cm²) |
| 1 | CCF 0 % | 5 | 2,78 | 27,8 |
| 2 | CCF 0.1 % | 5 | 2,78 | 27,8 |
| 3 | CCF 0.2 % | 7 | 3,89 | 38,9 |
| 4 | CCF 0.3 % | 6 | 3,33 | 33,3 |

Fig. 5. The Flexural Strength Strength Graph of Paving Block

Coir Fibre at The Age 7 Days

TABLE IX. THE FLEXURAL STRENGTH TEST OF PAVING BLOCK AT THE AGE 14 DAYS

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Parameter** | **Flexural Strength Result (P)** | **Flexural Strength** | |
|  |  | (KN) | (MPa) | (kg/cm²) |
| 1 | CCF 0 % | 6 | 3,33 | 33,3 |
| 2 | CCF 0.1 % | 6 | 3,33 | 33,3 |
| 3 | CCF 0.2 % | 7 | 3,89 | 38,9 |
| 4 | CCF 0.3 % | 8 | 4,44 | 44,4 |

Fig. 6. The Flexural Strength Graph of Paving Block

Coir Fibre at The Age 14 Days