Date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_\_ Group Circle 1 2 3 4

|  |
| --- |
| Students names |
|  |
|  |
|  |
|  |

**Test 1 Elasticity**

Sample the material sample to loading until it bends. Release the load & check to see if the sample returns to its original position or measure the distance from its original position (you will need a reference point to measure from)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Temperature  |  |  | Humidity |  |  |  |
| Timber  | Classification  | Force | Angle | Force | Angle | Spring back return |
| Pine  |  | 5 Kg |  | 8 Kg |  |  |
| Jarrah |  | 5 Kg |  | 10 Kg |  |  |
| Vic Ash |  | 5 Kg |  | 10 Kg |  |  |
|  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Sample  | Size in mm | Conclusions |
| Length  | 500 |  |
| Width | 10 |  |
| Thickness | 19 |  |
|  |  |  |

**Test 2 Strength & Durability**

Hang a load from the material sample, increasing the load until failure occurs. Measure the weight required to break the sample

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Temperature  |  | Humidity |  | 27 May 18  |  |
| Timber  | Classification  | Angle  | Weight | MAX Weight  | Time  |
| Pine  |  |  |  | 7. 40 KG |  |
| Jarrah |  |  |  | 11.00 KG |  |
| Vic Ash |  |  |  | 15.00 KG |  |
|  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Sample  | Size in mm | Conclusions |
| Length  | 500 |  |
| Width | 10 |  |
| Thickness | 19 |  |

**Test 3 Hardness**

Drop a punch from a specified height and compare the size of indentation and measure the height the punch rebounds. Harder surfaces will rebound further and not mark from impact (Punch weight 200 grams)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Temperature  |  | Humidity |  |  |  |
| Timber  | Classification  | Height  | Dent Dia / Depth  | Height | Dent Dia / Depth |
| Pine  |  | 250mm |  | 500mm |  |
| Jarrah |  | 250mm |  | 500mm |  |
| Vic Ash |  | 250mm |  | 500mm |  |

|  |  |  |
| --- | --- | --- |
| Sample  | Size in mm | Conclusions |
| Length  |  |  |
| Width |  |  |
| Thickness |  |  |

**Test 4 Moisture**

Research has shown that in-service moisture contents will vary seasonally and may differ from the target manufacturing range. In addition, other factors relating to house design, heating and cooling systems, and the micro-climate of the particular locality can have a significant influence on in-service moisture contents. Installation and finishing practices need to accommodate both the adjustment to climatic conditions associated with the in-service environment and the seasonal movement that will occur in that climate.

Relative humidity is the major influence determining whether seasoned products will absorb moisture from the air and swell or lose moisture to air and shrink. If the moisture content of timber products is close to the average in-service moisture content, seasonal changes in humidity will result in small dimensional changes. The average equilibrium moisture content (EMC) of timber used indoors is often 1% to 3% below that of timber articles, components and assemblies used in outdoor applications.

 <https://qtimber.daf.qld.gov.au/guides/seasoning-and-timber-moisture-content>

|  |
| --- |
| **Test moisture of timber**  |
| *Remove cap*  |
| *Turn meter on* |
| *Insert probes into timber*  |
| *Record moisture Percentage* |

|  |  |  |  |
| --- | --- | --- | --- |
| Temperature  |  | Humidity |  |
| Timber  | Classification  | Raw / machined | Percentage |
| Snow Gum |  |  |  |
| Plum tree  |  |  |  |
| Pine tree |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Sample  | Size in mm | Conclusions |
| Length  |  |  |
| Width |  |  |
| Thickness |  |  |

Conclusions

Compare test result with other groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Group  | **Test 1 Elasticity** | **Test 2 Strength & Durability**  | **Test 3 Hardness** | **Test 4 Moisture** |
| 1 |  |  |  |  |
| 2 |  |  |  |  |
| 3 |  |  |  |  |
| 4 |  |  |  |  |

|  |
| --- |
| How could you apply the Data gathered to improve or enhance your product? |
| **Test 1 Elasticity****Test 2 Strength & Durability** **Test 3 Hardness****Test 4 Moisture** |

**Test 1 Elasticity**

**Test 2 Strength & Durability**

**Test 3 Hardness**

**Test 4 Moisture**