Reference design values are for normal load duration under the moisture service conditions specified. Because the strength of wood varies with conditions under which it is used, reference design values should only be applied in conjunction with appropriate design and service recommendations from the National Design Specification® (NDS®) for Wood Construction published by the American Wood Council. The latest connection design information is also provided in the NDS.

Reference design values \((F_b, F_t, F_v, F_{cL}, F_c, E, E_{min})\) in Tables 1 thru 3 shall be multiplied by all applicable adjustment factors to determine adjusted design values \((\alpha F_b, \alpha F_t, \alpha F_v, \alpha F_{cL}, \alpha F_c, \alpha E, \alpha E_{min})\).

Table A-1 is excerpted from the NDS and summarizes the applicability of adjustment factors for solid-sawn lumber.

### Table A-1 Applicability of Adjustment Factors for Sawn Lumber

<table>
<thead>
<tr>
<th>Adjusting Factor</th>
<th>ASD only</th>
<th>ASD and LRFD</th>
<th>LRFD only</th>
</tr>
</thead>
<tbody>
<tr>
<td>(F_b) (= F_b \times C_D \times C_I \times C_T)</td>
<td>2.54 \times 0.85</td>
<td>(\lambda)</td>
<td></td>
</tr>
<tr>
<td>(F_t) (= F_t \times C_D \times C_I \times C_T)</td>
<td>2.70 \times 0.80</td>
<td>(\lambda)</td>
<td></td>
</tr>
<tr>
<td>(F_v) (= F_v \times C_D \times C_I \times C_T)</td>
<td>2.88 \times 0.75</td>
<td>(\lambda)</td>
<td></td>
</tr>
<tr>
<td>(F_{cL}) (= F_{cL} \times C_D \times C_I \times C_T)</td>
<td>2.40 \times 0.90</td>
<td>(\lambda)</td>
<td></td>
</tr>
<tr>
<td>(E) (= E \times C_D \times C_I \times C_T)</td>
<td>1.67 \times 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(E_{min}) (= E_{min} \times C_D \times C_I \times C_T)</td>
<td>1.76 \times 0.85</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ASD** – Allowable Stress Design; **LRFD** – Load and Resistance Factor Design

### Table A-2 Wet Service Factor, \(C_M\)

**Applications to all values**

When dimension lumber is used under conditions where the moisture content of the wood in service will exceed 19% for an extended time period, reference design values shall be multiplied by the appropriate wet service factors to the right.

\[
\begin{align*}
F_b & = 0.85 \quad F_t = 1.0 \quad F_v = 0.97 \\
F_{cL} & = 0.67 \quad F_c = 0.80 \quad E = 0.9 \quad E_{min} = 0.9
\end{align*}
\]

(1) When \(F_b \leq 1150\ psi, C_M = 1.0\)

(2) When \(F_c \leq 750\ psi, C_M = 1.0\)

### Table A-3 Load Duration Factor, \(C_D\)

**Applicable to all values**

Wood has the property of carrying substantially greater maximum loads for short durations than for long durations of loading. Reference design values apply to normal load duration, meaning a load that fully stresses a member to its allowable design value by the application of the full design load for a cumulative duration of approximately ten years. When the cumulative duration of the full maximum load does not exceed the specified time period, all reference design values (except \(F_{cL}, E,\) and \(E_{min}\)) shall be multiplied by the appropriate load duration factor. Frequently used load duration factors are provided to the right.

### Table A-4 Flat Use Factor, \(C_{fu}\)

**Applicable to \(F_b\) values only**

Reference bending design values, \(F_b\), are based on edgewise use (load applied to narrow face). When dimension lumber is used flatwise (load applied to wide face), \(F_b\) shall also be multiplied by the flat use factors to the right.