What are the Adjustment Factors to be done in Design Values?

Their is always some variation in the design values calculated in timber. Therefore we need to apply the required adjustment to them.

Case- Extreme Fiber Bending

$F_b`=F_bC_DC_MC_tC_LC_FC_VC_{fu}C_rC_cC_f$

where

$F_b`$ – Adjusted design value

F_b= design value for extreme fiber bending

C_D= load duration factor

C_M =wet service factor

CC_t =temperature factor

C_L =beam stability factor

C_F =size factor applicable only to visually graded, sawn lumber and round timber flexural members

C_v =volume factor applicable only when beams are glued or laminated

C_{fu}= flat use factor applicable only to dimension- lumber beams 2 to 4 in (50.8 to 101.6 mm) thick and glued-laminated beams

C_r= repetitive-member factor—applicable only to dimension-lumber beams 2 to 4 in (50.8 to101.6 mm) thick

C_c =curvature factor—applicable only to curved portions of glued-laminated beams

C_f =form factor

When the beams are glued, laminated we have to use the smallest of the two C_L or C_c

Design value for Tension

$F_t`= F_tC_DC_MC_tC_F$

where

$F_t`$ – Adjusted design value

F_t – Design value for tension.

Adjustment For shear

$F_v`=F_vC_DC_MC_tC_H$

where

$F_v`$ – Adjusted design value

F_v- design value for shear and C_H is the shear stress factor >=1 permitted for $F_v$parallel to the grain for sawn lumber members.

Adjustment for compression perpendicular to the grain

design value F_{c1}`is obtained from

$F_{c1}`=F_{c1}C_DC_tC_b$

where

$F_{c1}$is the design value for compression perpendicular to the grain

C_b is the bearing area factor.

Adjusted design value for compression parallel to the grain

$F_c`=F_cC_DC_MC_tC_FC_p$

where

F_c is the design value for compression parallel to grain

C_p is the column stability factor.

Adjusted design value for end grain in bearing parallel to the grain

$F_g`= F_gC_DC_t$

where

F_g is the design value for end grain in bearing parallel to the grain.

The adjusted design value for modulus of elasticity, E'

$E'= EC_MC_TC$

where E= design value for modulus of elasticity

C_T= buckling stiffness factor

C=other appropriate adjustment factors

Source: http://www.engineeringcivil.com/what-are-the-adjustment-factors-to-be-done-in-design-values.html