

# Technical Informationen - Wood Construction

## SIHGA® - Feature

## YOUR- Benefit

bulk density with allocated designations

for a simple overview

eurocode 5 calculation

characteristic values in the SIHGA® tables have to be calculated further according to the following equation:

Raw density wood	Soft wood	Glue laminate timber	
290	C14		
330	C20		
350	C 24	GL24c	
370	C27		
380	C 30	GL24h	BS11h
410		GL28h	BS14h
450		GL36h	BS18h

$\rho_k$  = Weight (kg) : Volume  $m^3$   
 C = Coniferous tree  
 GL = Glue lam timber  
 BS = Glued laminated timber

The aim of the innovative SIHGA® developments is to increase the efficiency of building with wood through modern mechanical fastenings. The load-bearing capacity and deformation behaviour of the fastenings have a critical impact on building designs.

The unique quality of wood as a material requires the greatest attention to connections and fastenings. For an easy overview of the strength classes of the various woods, please see the above table of raw density  $\rho_k$  with the assigned designations.

Class of exposure time	Size characteristic load effect	Usage class 1-2	$k_{mod}$
Constant	Longer than 10 years	Surface loads	0,6
Long	6 months to 10 years	Factories	0,7
Medium	1 week to 6 months	Living rooms	0,8
Short	Shorter than 1 week	Stairs	0,9
Very short	Shorter than 1 minute	Impact loads	1,1

As a result of the new standard Eurocode 5 and the introduced evidence concept with help from partial safety factors, wood construction is confronted with various values and calculation formulas.

On one hand, the effects are increased with certain partial safety factors, and on the other hand the load-bearing capacity (or resistance) of the material and fastenings are reduced with other partial safety factors. For this, SIHGA® offers pre-calculation for the respective load in various raw densities and wood qualities.

The characteristic values shown in the SIHGA® tables have to be calculated using the following equation:

$R_d$  Calculation or design value  
 $k_{mod}$  Modification factor, influence of the load exposure period and usage class  
 $\gamma_M$  Partial safety factor for material property  

$$R_d = \frac{k_{mod} \cdot R_k}{\gamma_M}$$