Chinese Regulations:

Austenite: $R_{p0,2}$

Besonderheit: Bildung der zul. Spannungen:

Table 1. Design Safety Factor for Steels, Al, Cu, Ti, Ni and Their Alloys

Material \ Conditions			Tensile strength at design temp σ_b^t	Yield limit at design temp. σ_s^t	Average endurance strength at design temp. trupture strength at 10^5 hours σ_d^t	Average creep limit at design temp. (with creep rate of 0.01% per 1000 hours) σ_n^t
Carbon steels, low alloy steels			$n_b \geq 3.0$	$n_s \geq 1.6$	$n_d \geq 1.5$	$n_n \geq 1.0$
High alloy steels			$n_b \geq 3.0$	$n_s \geq 1.5$	$n_d \geq 1.5$	$n_n \geq 1.0$
Al, Cu, Ti, Ni and their alloys	Plate, forging, Pipe & bar	Ti	$n_b \geq 3.0$	$n_s \geq 1.5$	$n_d \geq 1.5$	$n_n \geq 1.0$
		Ni	$n_b \geq 3.0$	$n_s \geq 1.5$	$n_d \geq 1.5$	$n_n \geq 1.0$
		Al	$n_b \geq 4.0$	$n_s \geq 1.5$		
		Cu	$n_b \geq 4.0$	$n_s \geq 1.5$		
Cast irons	Grey cast iron		$n_b \geq 10.0$			
	Nodular or malleable cast iron		$n_b \geq 8.0$			
Cast steels	Design temp. $\geq 300°C$		$n_b \geq 4.0$ / casting factor			
	Design Temp $< 300°C$		$n_b \geq 1.5$ / casting factor			
Bolt	Carbon steel		$n_b \geq 5.0$	$n_s \geq 2.7$ (H.R)	$n_d \geq 1.5$	
	Low alloy steel High alloy steel			$n_s \geq 2.5$ (N)		
				$n_s \geq 3.5$ (Q&T)		
	Martensite steel Austenitic steel			$n_s \geq 2.7$ (Q&T)		
				$n_s \geq 3.0$ (Q&T)		
				$n_s \geq 1.6$ (S)		
	nonferrous metals		$n_b \geq 5.0$	$n_s \geq 4.0$		

Note:

a. When the yield strength (or conditional yield strength) at design temperature cannot be determined and the allowable stress is based on the tensile strength of material, the value n_s shall be raised appropriately

b. The casting factors of nonferrous metals shall be determined by the corresponding values for plate, forging, pipe or bar divided by 0.8.

c. The casting factor of cast steel shall not exceed 0.9

d. H.R—Hot Rolled, N—Normalized, Q&T—Quenched and Tempered, S—Solution heat- treated

Ferrite:

$\text{Min}\left(\frac{R_m}{3}; \frac{R_{p0,2}}{1,6}\right)$

Austenite:

$\text{Min}\left(\frac{R_m}{3}; \frac{R_{p0,2}}{1,5}\right)$

$\cdot 1,5 = K$ (AD2000)

Abgrenzung im Arbeitsblatt nach AD W/Kg:

Hinweise:

3. Eine Prüfung entsprechend den chinesischen Vorschriften erfolgte nicht. Für die festigkeitsmäßige Prüfung wurden jedoch die zulässigen Spannungen wie folgt gebildet:

zul. σ = K/S = min. {$R_{p0,2/TS}$ / 1,6 ; ($R_{m/RT}$ / 3,0} mit $R_{p0,2/TS}$ = 0,2%-Dehngrenze bei der max. Temperatur TS und $R_{m/RT}$ = Zugfestigkeit bei Raumtemperatur.

P265GH / $R_m \geq 410$ => 137 N/mm²

St 35.8 DIN 17175 => R_m

St 37.0 DIN 1629 => R_m

RSt 37-2 DIN 17100 => R_m