

Statik - Beispiel WAND

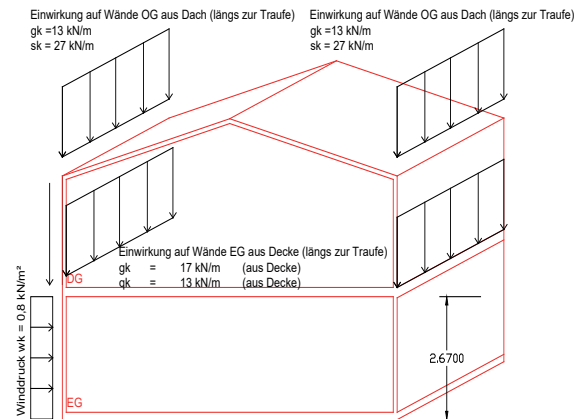
1

Einwirkungen auf die Außenwand ermitteln

Hierfür sind Kenntnisse über den Standort des Gebäudes nötig (Höhenlage, Schneezone, Windzone...)

Da die Außenwand meistens das Dach trägt, sind zudem Informationen über den Dachaufbau nötig.

Für die Anwendung der Tabellen genügt die Ermittlung der charakteristischen Werte. Die Design-Werte werden in der Tabelle automatisch berücksichtigt.



Einwirkung auf Wände EG (längs zur Traufe)
 $g_k = 13 \text{ kN/m (aus Dach)} + 17 \text{ kN/m (aus Decke)} = 30 \text{ kN/m}$
 $s_k = 27 \text{ kN/m (aus Dach)}$
 $q_k = 13 \text{ kN/m (aus Decke)} \quad s_k + q_k = 40 \text{ kN/m}$
 $w_k = 0,8 \text{ kN/m (aus Winddruck)}$

2

Knicklänge der Wand ermitteln.

In diesem Fall entspricht die Knicklänge der Wandhöhe = 2,90 m ~ 3,00 m

3

Kriterien für die Brandbeanspruchung bestimmen.
 „feuerhemmend“ = R 30

4

Vorbemessungstabelle anwenden.

Außenwände ($w = 1,00 \text{ kN/m}^2$)

nach Zulassung Z 9.1-559
 DIN 1052 (2008) bzw. EN 1995-1-1 (2006)

Eigen- gewicht $g_k^*)$	Nutzlast n_k	Höhe (Knicklänge)											
		2,50 m				3,00 m				4,00 m			
		R 0	R 30	R 60	R 90	R 0	R 30	R 60	R 90	R 0	R 30	R 60	R 90
10,00	10,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
20,00	10,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
30,00	10,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
40,00	10,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
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	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
60,00	10,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	20,00	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	30,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	40,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s
	50,00			80 C3s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s	60 C3s	80 C3s	100 C5s	120 C3s

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Es wird eine CLT 90 C3s vorgeschlagen