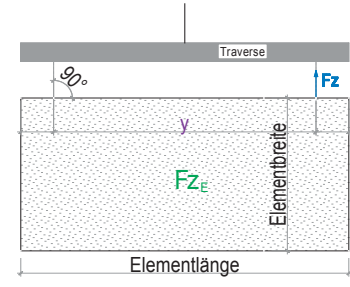
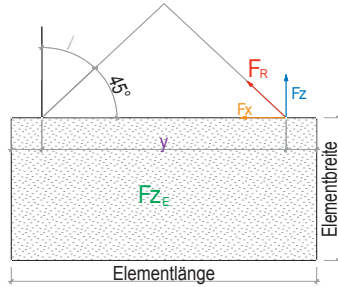


Hebelasten von Aussenwandelementen

Charakteristischer Wert der Elementlast Fz-E [kN]

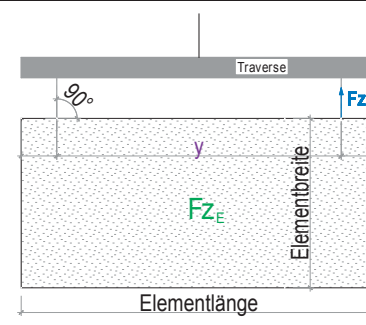
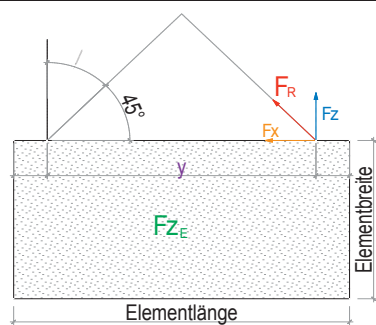


Material: Rahmenholz 500 kg/m³ (Anteil 15%), Hohlraumdämmung Zellulose 60 kg/m³, Zusatzdämmung Holzfaser 180 kg/m³, Beplankung OSB/3 oder MDF-Holzfasersplatte 10 kg/m², Fassade inkl. Lattung 16 kg/m², Innenbekleidung Gipsfaser inkl. Lattung 20 kg/m², Luft- und Winddichtung je 0.2 kg/m² (mit Folie oder Stösse abgeklebt).

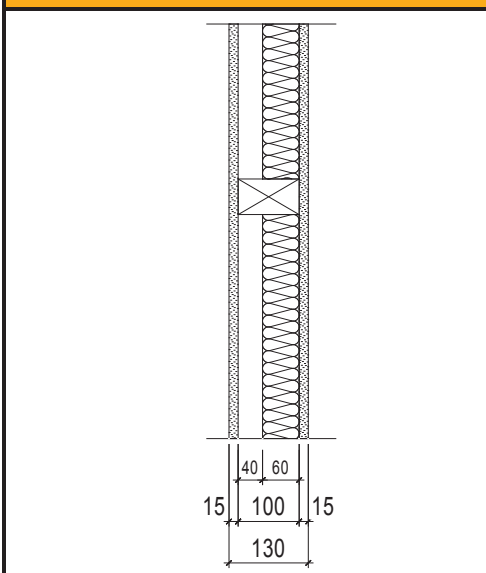
Dämmstandard U-Wert ≈ 0.19 W/m ² K (15% Holzanteil)	0.50 kN/m ²		0.43 kN/m ²		max. y [m] ¹	Elementlänge [m]																			
			7.0							6.0							9.0								
			Fz-E	Fz		Fx	FR	Fz-E	Fz	Fx	FR	Fz-E	Fz	Fx	FR	Fz-E	Fz	Fx	FR						
Dämmstandard U-Wert ≈ 0.19 W/m ² K (15% Holzanteil)	0.50 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	2.6	6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	16.9	18.2	6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	16.9	18.2
						3.3	3.9	4.6	5.2	5.9	6.5	7.2	7.8	8.5	9.1	3.3	3.9	4.6	5.2	5.9	6.5	7.2	7.8	8.5	9.1
						4.7	5.6	6.6	6.1	8.4	9.2	10.2	11.1	12.1	12.9	4.7	5.6	6.6	6.1	8.4	9.2	10.2	11.1	12.1	12.9
						7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6	7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6
						3.5	4.2	4.9	5.6	6.3	7.0	7.7	8.4	9.1	9.8	3.5	4.2	4.9	5.6	6.3	7.0	7.7	8.4	9.1	9.8
						5.0	6.0	7.0	6.5	9.0	9.9	10.9	11.9	12.9	13.9	5.0	6.0	7.0	6.5	9.0	9.9	10.9	11.9	12.9	13.9
	0.43 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	3	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0
						3.8	4.5	5.3	6.0	6.8	7.5	8.3	9.0	9.8	10.5	3.8	4.5	5.3	6.0	6.8	7.5	8.3	9.0	9.8	10.5
						5.4	6.4	7.5	7.0	9.7	10.7	11.8	12.8	13.9	14.9	5.4	6.4	7.5	7.0	9.7	10.7	11.8	12.8	13.9	14.9
						8.0	9.6	11.2	12.8	14.4	16.0	17.6	19.2	20.8	22.4	8.0	9.6	11.2	12.8	14.4	16.0	17.6	19.2	20.8	22.4
						4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	10.4	11.2	4.0	4.8	5.6	6.4	7.2	8.0	8.8	9.6	10.4	11.2
						5.7	6.8	8.0	7.4	10.2	11.4	12.5	13.6	14.8	15.9	5.7	6.8	8.0	7.4	10.2	11.4	12.5	13.6	14.8	15.9
Dämmstandard U-Wert ≈ 0.19 W/m ² K (15% Holzanteil)	0.86 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	2.6	11.2	13.5	15.7	17.9	20.2	22.4	24.6	26.9	29.1	31.4	11.2	13.5	15.7	17.9	20.2	22.4	24.6	26.9	29.1	31.4
						5.6	6.8	7.9	9.0	10.1	11.2	12.3	13.5	14.6	15.7	5.6	6.8	7.9	9.0	10.1	11.2	12.3	13.5	14.6	15.7
						8.0	9.7	11.2	10.4	14.3	15.9	17.4	19.1	20.7	22.3	8.0	9.7	11.2	10.4	14.3	15.9	17.4	19.1	20.7	22.3
						12.1	14.5	16.9	19.3	21.7	24.1	26.5	28.9	31.4	33.8	12.1	14.5	16.9	19.3	21.7	24.1	26.5	28.9	31.4	33.8
						6.1	7.3	8.5	9.7	10.9	12.1	13.3	14.5	15.7	16.9	6.1	7.3	8.5	9.7	10.9	12.1	13.3	14.5	15.7	16.9
						8.7	10.4	12.1	11.3	15.5	17.2	18.9	20.6	22.3	24.0	8.7	10.4	12.1	11.3	15.5	17.2	18.9	20.6	22.3	24.0
	0.86 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	3	12.9	15.5	18.1	20.7	23.3	25.8	28.4	31.0	33.6	36.2	12.9	15.5	18.1	20.7	23.3	25.8	28.4	31.0	33.6	36.2
						6.5	7.8	9.1	10.4	11.7	12.9	14.2	15.5	16.8	18.1	6.5	7.8	9.1	10.4	11.7	12.9	14.2	15.5	16.8	18.1
						9.2	11.1	12.9	12.1	16.6	18.3	20.1	22.0	23.8	25.6	9.2	11.1	12.9	12.1	16.6	18.3	20.1	22.0	23.8	25.6
						13.8	16.6	19.3	22.1	24.8	27.6	30.3	33.1	35.8	38.6	13.8	16.6	19.3	22.1	24.8	27.6	30.3	33.1	35.8	38.6
						6.9	8.3	9.7	11.1	12.4	13.8	15.2	16.6	17.9	19.3	6.9	8.3	9.7	11.1	12.4	13.8	15.2	16.6	17.9	19.3
						9.8	11.8	13.8	12.9	17.6	19.6	21.5	23.5	25.4	27.3	9.8	11.8	13.8	12.9	17.6	19.6	21.5	23.5	25.4	27.3
Dämmstandard U-Wert ≈ 0.11 W/m ² K (15% Holzanteil)	0.73 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	2.6	9.5	11.4	13.3	15.2	17.1	19.0	20.9	22.8	24.7	26.6	9.5	11.4	13.3	15.2	17.1	19.0	20.9	22.8	24.7	26.6
						4.8	5.7	6.7	7.6	8.6	9.5	10.5	11.4	12.4	13.3	4.8	5.7	6.7	7.6	8.6	9.5	10.5	11.4	12.4	13.3
						6.8	8.1	9.5	8.8	12.2	13.5	14.9	16.2	17.6	18.9	6.8	8.1	9.5	8.8	12.2	13.5	14.9	16.2	17.6	18.9
						10.3	12.3	14.4	16.4	18.4	20.5	22.5	24.6	26.6	28.7	10.3	12.3	14.4	16.4	18.4	20.5	22.5	24.6	26.6	28.7
						5.2	6.2	7.2	8.2	9.2	10.3	11.3	12.3	13.3	14.4	5.2	6.2	7.2	8.2	9.2	10.3	11.3	12.3	13.3	14.4
						7.4	8.8	10.2	9.5	13.1	14.6	16.0	17.4	18.9	20.4	7.4	8.8	10.2	9.5	13.1	14.6	16.0	17.4	18.9	20.4
	0.73 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	3	11.0	13.2	15.4	17.6	19.8	21.9	24.1	26.3	28.5	30.7	11.0	13.2	15.4	17.6	19.8	21.9	24.1	26.3	28.5	30.7
						5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.3	15.4	5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.3	15.4
						7.8	9.4	10.9	10.2	14.1	15.6	17.2	18.7	20.3	21.8	7.8	9.4	10.9	10.2	14.1	15.6	17.2	18.7	20.3	21.8
						11.7	14.1	16.4	18.7	21.1	23.4	25.7	28.1	30.4	32.8	11.7	14.1	16.4	18.7	21.1	23.4	25.7	28.1	30.4	32.8
						5.9	7.1	8.2	9.4	10.6	11.7	12.9	14.1	15.2	16.4	5.9	7.1	8.2	9.4	10.6	11.7	12.9	14.1	15.2	16.4
						8.4	10.1	11.6	10.9	15.0	16.6	18.3	20.0	21.5	23.2	8.4	10.1	11.6	10.9	15.0	16.6	18.3	20.0	21.5	23.2
Dämmstandard U-Wert ≈ 0.11 W/m ² K (15% Holzanteil)	1.09 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	2.6	14.2	17.1	19.9	22.7	25.6	28.4	31.2	34.1	36.9	39.7	14.2	17.1	19.9	22.7	25.6	28.4	31.2	34.1	36.9	39.7
						7.1	8.6	10.0	11.4	12.8	14.2	15.6	17.1	18.5	19.9	7.1	8.6	10.0	11.4	12.8	14.2	15.6	17.1	18.5	19.9
						10.1	12.2	14.2	13.2	18.2	20.1	22.1	24.2	26.2	28.2	10.1	12.2	14.2	13.2	18.2	20.1	22.1	24.2	26.2	28.2
						15.3	18.4	21.4	24.5	27.5	30.6	33.6	36.7	39.7	42.8	15.3	18.4	21.4	24.5	27.5	30.6	33.6	36.7	39.7	42.8
						7.7	9.2	10.7	12.3	13.8	15.3	16.8	18.4	19.9	21.4	7.7	9.2	10.7	12.3	13.8	15.3	16.8	18.4	19.9	21.4
						10.9	13.1	15.2	14.3	19.6	21.7	23.8	26.1	28.2	30.3	10.9	13.1	15.2	14.3	19.6	21.7	23.8	26.1	28.2	30.3
	1.09 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	3	16.4	19.7	22.9	26.2	29.5	32.7	36.0	39.3	42.6	45.8	16.4	19.7	22.9	26.2	29.5	32.7	36.0	39.3	42.6	45.8
						8.2	9.9	11.5	13.1	14.8	16.4	18.0	19.7	21.3	22.9	8.2	9.9	11.5	13.1	14.8	16.4	18.0	19.7	21.3	22.9
						11.6	14.1	16.3	15.2	21.0	23.2	25.5	27.9	30.2	32.4	11.6	14.1	16.3	15.2	21.0	23.2	25.5	27.9	30.2	32.4
						17.5	21.0	24.5	28.0	31.4	34.9	38.4	41.9	45.4	48.9	17.5	21.0	24.5	28.0	31.4	34.9	38.4	41.9	45.4	48.9
						8.8	10.5	12.3	14.0	15.7	17.5	19.2	21.0	22.7	24.5	8.8	10.5	12.3	14.0	15.7	17.5	19.2	21.0	22.7	24.5
						12.5	14.9	17.4	16.2	22.3	24.8	27.2	29.7	32.2	34.7	12.5	14.9	17.4	16.2	22.3	24.8	27.2	29.7	32.2	34.7
Referenz: Massivholz	1 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	2.6	13.0	15.6	18.2	20.8	23.4	26.0	28.6	31.2	33.8	36.4	13.0	15.6	18.2	20.8	23.4	26.0	28.6	31.2	33.8	36.4
						6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	16.9	18.2	6.5	7.8	9.1	10.4	11.7	13.0	14.3	15.6	16.9	18.2
						9.2	11.1	12.9	12.1	16.6	18.4	20.3	22.1	24.0	25.8	9.2	11.1	12.9	12.1	16.6	18.4	20.3	22.1	24.0	25.8
						14.0	16.8	19.6	22.4	25.2	28.0	30.8	33.6	36.4	39.2	14.0	16.8	19.6	22.4	25.2	28.0	30.8	33.6	36.4	39.2
						7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6	7.0	8.4	9.8	11.2	12.6	14.0	15.4	16.8	18.2	19.6
						9.9	11.9	13.9	13.0	17.9	19.8	21.8	23.8	25.8	27.8	9.9	11.9	13.9	13.0	17.9	19.8	21.8	23.8	25.8	27.8
	1 kN/m ²	Elementgewicht [kN/m ²]	Elementbreite [m]	max. y [m] ¹	3	15.0	18.0	21.0	24.0	27.0	30.0	33.0	36.0	39.0	42.0	15.0	18.0	21.0	24.0	27.0	30.0	33.0	36.0	39.0	42.0
						7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	7.5	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0
						10.7	12.8	14.9	13.9	19.1	21.3	23.4	25.5	27.6	29.7	10.7	12.8	14.9	13.9	19.1	21.3	23.4	25.5	27.6	29.7
						16.0	19.2	22.4	25.6	28.8	32.0														

Hebelarmen von Innenwandelementen

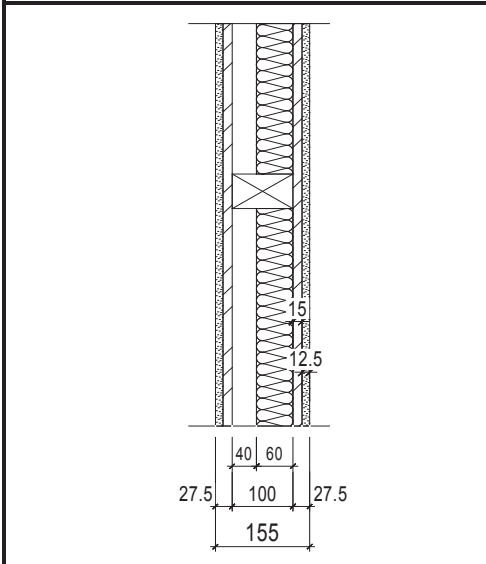
Charakteristischer Wert der Elementlast $Fz-E$ [kN]



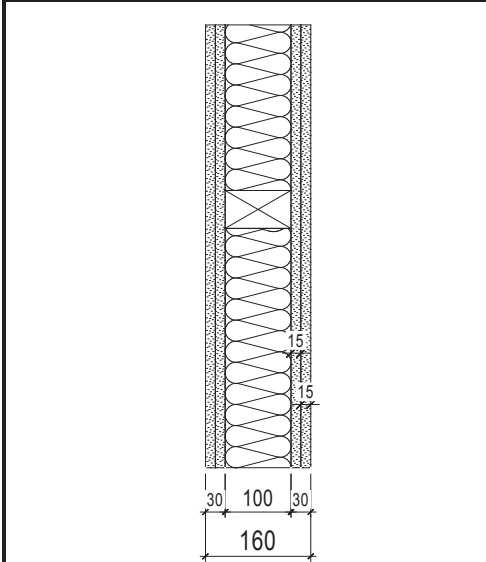
Material: Rahmenholz 500 kg/m³ (Anteil 14%), Hohlraumdämmung Mineralfaser 60 kg/m³, Beplankung OSB/3 oder MDF-Holzfaserverplatte 10 kg/m², Bekleidung Gipsfaser 15 kg/m² resp. 18 kg/m² (12.5 oder 15 mm).



		Elementlänge [m]																							
		5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0				
Elementgewicht [kN/m ²] 0.46	max. y [m] ¹	4.0				3.0						6.0						7.0							
		Elementbreite [m]	2.6	Fz-E	6.0	7.2	8.4	9.6	10.8	12.0	13.2	14.4	15.6	16.8	Fz-E	6.0	7.2	8.4	9.6	10.8	12.0	13.2	14.4	15.6	16.8
			Fz	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8	8.4	Fz	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8	8.4	
			Fx	3.0	3.6	4.2	4.8	5.4	6.0	6.6	7.2	7.8	8.4												
	2.8	Fz-E	6.5	7.8	9.1	10.4	11.6	12.9	14.2	15.5	16.8	18.1	Fz-E	6.5	7.8	9.1	10.4	11.6	12.9	14.2	15.5	16.8	18.1		
	Fz	3.3	3.9	4.6	5.2	5.8	6.5	7.1	7.8	8.4	9.1	Fz	3.3	3.9	4.6	5.2	5.8	6.5	7.1	7.8	8.4	9.1			
	Fx	3.3	3.9	4.6	5.2	5.8	6.5	7.1	7.8	8.4	9.1														
	3	Fz-E	6.9	8.3	9.7	11.1	12.5	13.8	15.2	16.6	18.0	19.4	Fz-E	6.9	8.3	9.7	11.1	12.5	13.8	15.2	16.6	18.0	19.4		
	Fz	3.5	4.2	4.9	5.6	6.3	6.9	7.6	8.3	9.0	9.7	Fz	3.5	4.2	4.9	5.6	6.3	6.9	7.6	8.3	9.0	9.7			
	Fx	3.5	4.2	4.9	5.6	6.3	6.9	7.6	8.3	9.0	9.7														
	3.2	Fz-E	7.4	8.9	10.4	11.8	13.3	14.8	16.2	17.7	19.2	20.7	Fz-E	7.4	8.9	10.4	11.8	13.3	14.8	16.2	17.7	19.2	20.7		
	Fz	3.7	4.5	5.2	5.9	6.7	7.4	8.1	8.9	9.6	10.4	Fz	3.7	4.5	5.2	5.9	6.7	7.4	8.1	8.9	9.6	10.4			
Fx	3.7	4.5	5.2	5.9	6.7	7.4	8.1	8.9	9.6	10.4															
FR	5.3	6.4	7.4	8.4	9.5	10.5	11.5	12.6	13.6	14.8															



		Elementlänge [m]																							
		5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0				
Elementgewicht [kN/m ²] 0.60	max. y [m] ¹	3.0						5.0				6.0				7.0									
		Elementbreite [m]	2.6	Fz-E	7.8	9.4	11.0	12.5	14.1	15.6	17.2	18.8	20.3	21.9	Fz-E	7.8	9.4	11.0	12.5	14.1	15.6	17.2	18.8	20.3	21.9
			Fz	3.9	4.7	5.5	6.3	7.1	7.8	8.6	9.4	10.2	11.0	Fz	3.9	4.7	5.5	6.3	7.1	7.8	8.6	9.4	10.2	11.0	
			Fx	3.9	4.7	5.5	6.3	7.1	7.8	8.6	9.4	10.2	11.0												
	2.8	Fz-E	8.4	10.1	11.8	13.5	15.2	16.8	18.5	20.2	21.9	23.6	Fz-E	8.4	10.1	11.8	13.5	15.2	16.8	18.5	20.2	21.9	23.6		
	Fz	4.2	5.1	5.9	6.8	7.6	8.4	9.3	10.1	11.0	11.8	Fz	4.2	5.1	5.9	6.8	7.6	8.4	9.3	10.1	11.0	11.8			
	Fx	4.2	5.1	5.9	6.8	7.6	8.4	9.3	10.1	11.0	11.8														
	3	Fz-E	9.0	10.8	12.6	14.4	16.2	18.0	19.8	21.6	23.4	25.2	Fz-E	9.0	10.8	12.6	14.4	16.2	18.0	19.8	21.6	23.4	25.2		
	Fz	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6	Fz	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6			
	Fx	4.5	5.4	6.3	7.2	8.1	9.0	9.9	10.8	11.7	12.6														
	3.2	Fz-E	9.6	11.6	13.5	15.4	17.3	19.2	21.2	23.1	25.0	26.9	Fz-E	9.6	11.6	13.5	15.4	17.3	19.2	21.2	23.1	25.0	26.9		
	Fz	4.8	5.8	6.8	7.7	8.7	9.6	10.6	11.6	12.5	13.5	Fz	4.8	5.8	6.8	7.7	8.7	9.6	10.6	11.6	12.5	13.5			
Fx	4.8	5.8	6.8	7.7	8.7	9.6	10.6	11.6	12.5	13.5															
FR	6.8	8.3	9.7	10.9	12.4	13.6	15.0	16.5	17.7	19.1															



		Elementlänge [m]																							
		5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0				
Elementgewicht [kN/m ²] 0.84	max. y [m] ¹	2.5				3.0						5.0				6.0				7.0					
		Elementbreite [m]	2.6	Fz-E	11.0	13.2	15.3	17.5	19.7	21.9	24.1	26.3	28.4	30.6	Fz-E	11.0	13.2	15.3	17.5	19.7	21.9	24.1	26.3	28.4	30.6
			Fz	5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.2	15.3	Fz	5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.2	15.3	
			Fx	5.5	6.6	7.7	8.8	9.9	11.0	12.1	13.2	14.2	15.3												
	2.8	Fz-E	11.8	14.2	16.5	18.9	21.2	23.6	25.9	28.3	30.6	33.0	Fz-E	11.8	14.2	16.5	18.9	21.2	23.6	25.9	28.3	30.6	33.0		
	Fz	5.9	7.1	8.3	9.5	10.6	11.8	13.0	14.2	15.3	16.5	Fz	5.9	7.1	8.3	9.5	10.6	11.8	13.0	14.2	15.3	16.5			
	Fx	5.9	7.1	8.3	9.5	10.6	11.8	13.0	14.2	15.3	16.5														
	3	Fz-E	12.6	15.2	17.7	20.2	22.7	25.2	27.8	30.3	32.8	35.3	Fz-E	12.6	15.2	17.7	20.2	22.7	25.2	27.8	30.3	32.8	35.3		
	Fz	6.3	7.6	8.9	10.1	11.4	12.6	13.9	15.2	16.4	17.7	Fz	6.3	7.6	8.9	10.1	11.4	12.6	13.9	15.2	16.4	17.7			
	Fx	6.3	7.6	8.9	10.1	11.4	12.6	13.9	15.2	16.4	17.7														
	3.2	Fz-E	13.5	16.2	18.9	21.6	24.2	26.9	29.6	32.3	35.0	37.7	Fz-E	13.5	16.2	18.9	21.6	24.2	26.9	29.6	32.3	35.0	37.7		
	Fz	6.8	8.1	9.5	10.8	12.1	13.5	14.8	16.2	17.5	18.9	Fz	6.8	8.1	9.5	10.8	12.1	13.5	14.8	16.2	17.5	18.9			
Fx	6.8	8.1	9.5	10.8	12.1	13.5	14.8	16.2	17.5	18.9															
FR	9.7	11.5	13.5	15.3	17.2	19.1	21.0	23.0	24.8	26.8															

¹ Wert gemäss Tragsicherheitsnachweis "Knicken" Obergurt (60/100 mm)