

DUDEK I-BEAMS (DIB) SPAN TABLES



FLOOR APPLICATIONS

MAXIMUM SPAN IN METERS												
LOAD CAPACITY	2.0 kN/m ²						3.0 kN/m ²					
	SPACING OF JOISTS CENTRES [mm]						SPACING OF JOISTS CENTRES [mm]					
	300	400	600	300	400	600	300	400	600	300	400	600
DIB 47/200	3.86	3.47	3.01	4.5	4.38	3.45	3.49	3.13	2.67	4.06	3.64	2.7
DIB 47/220	4.2	3.78	3.24	4.87	4.7	3.65	3.8	3.41	2.92	4.42	3.97	2.7
DIB 47/240	4.53	4.07	3.5	5.15	5.02	3.65	4.09	3.68	3.15	4.75	3.97	2.7
DIB 47/250	4.68	4.23	3.62	5.28	5.2	3.65	4.24	3.81	3.26	4.9	3.97	2.7
DIB 47/300	5.45	4.88	4.23	5.9	5.45	3.65	4.93	4.44	3.81	5.3	3.97	2.7
DIB 47/350	6.18	5.57	4.8	6.47	5.45	3.65	5.6	5.04	3.81	5.3	3.97	2.7
DIB 47/360	6.31	5.7	4.91	6.58	5.45	3.65	5.72	5.16	3.81	5.3	3.97	2.7
DIB 47/400	6.88	6.2	4.95	7.01	5.45	3.65	6.23	5.4	3.81	5.3	3.97	2.7
DIB 47/450	7.55	6.81	4.95	7.27	5.45	3.65	6.84	5.4	3.81	5.3	3.97	2.7
DIB 47/500	8.2	7.45	4.95	7.27	5.45	3.65	7.2	5.4	3.81	5.3	3.97	2.7
DIB 72/200	4.43	4	3.4	5.06	4.61	3.71	4	3.58	3.04	4.65	4.07	2.72
DIB 72/220	4.82	4.33	3.7	5.38	4.98	4.23	4.35	3.9	3.32	4.95	4.52	3.07
DIB 72/240	5.19	4.67	4	5.69	5.26	4.65	4.69	4.21	3.59	5.23	4.83	3.43
DIB 72/250	5.38	4.83	4.14	5.84	5.39	4.8	4.86	4.36	3.72	5.37	4.96	3.6
DIB 72/300	6.26	5.63	4.83	6.52	6.03	5.56	5.66	5.08	4.35	6	5.54	4.05
DIB 72/350	7.09	6.38	5.49	7.15	6.61	5.56	6.41	5.77	4.94	6.58	6.06	4.05
DIB 72/360	7.25	6.53	5.62	7.27	6.72	5.56	6.56	5.9	5.06	6.69	6.07	4.05
DIB 72/400	7.88	7.1	6.11	7.73	7.15	5.56	7.13	6.42	5.51	7.11	6.07	4.05
DIB 72/450	8.65	7.79	6.71	8.27	7.65	5.56	7.82	7.05	5.51	7.61	6.07	4.05
DIB 72/500	9.4	8.45	7.29	8.79	8.12	5.56	8.5	7.55	5.51	8.1	6.07	4.05

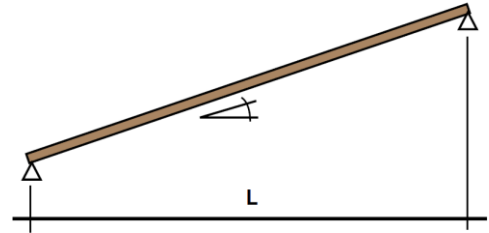
Span table notes:

1. All loads are assumed to be uniformly distributed.
2. Spans are clear spans i.e. between supports. Minimum end Bearing length required is 45mm.
3. 0.8 kN/m² dead load allowance
4. The applied live load is 2.0 or 3.0 kN/m²
5. Span tables are calculated in accordance with EC5.
6. Max. deflection 12 mm or L/300

General notes:

1. Please pay special attention to the bearing conditions.
2. Do not use these tables to calculate point or irregular loads.
3. Span table is for floor joists under service class 1 conditions only.
4. The beams are prevented from lateral torsional buckling.

ROOF APPLICATIONS



Snow load	1.5 kN/m ²			2.0 kN/m ²			2.5 kN/m ²			3.0 kN/m ²			3.5 kN/m ²			4.0 kN/m ²			4.5 kN/m ²			5.0 kN/m ²		
	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38	0-15	15-38	>38
DIB 47/200	4.00	3.37	3.07	3.80	3.21	2.93	3.64	3.08	2.82	3.48	2.97	2.72	3.36	2.87	2.64	3.25	2.79	2.56	3.15	2.71	2.49	3.07	2.64	2.43
DIB 47/220	4.30	3.66	3.33	4.13	3.50	3.19	3.95	3.35	3.07	3.79	3.23	2.96	3.66	3.13	2.87	3.54	3.03	2.79	3.43	2.95	2.72	3.34	2.87	2.65
DIB 47/240	4.58	3.94	3.59	4.46	3.77	3.43	4.26	3.61	3.31	4.09	3.49	3.2	3.95	3.37	3.1	3.82	3.27	3.01	3.71	3.18	2.93	3.6	3.1	2.86
DIB 47/250	4.72	4.08	3.72	4.61	3.90	3.56	4.41	3.74	3.42	4.23	3.61	3.31	4.09	3.49	3.21	3.95	3.39	3.12	3.84	3.29	3.03	3.73	3.21	2.96
DIB 47/300	5.38	4.75	4.33	5.37	4.54	4.14	5.14	4.36	3.99	4.93	4.2	3.85	4.76	4.07	3.74	4.61	3.95	3.63	4.48	3.84	3.54	4.35	3.74	3.45
DIB 47/350	5.97	5.38	4.90	6.09	5.15	4.69	5.83	4.94	4.52	5.6	4.77	4.37	5.4	4.62	4.24	5.23	4.48	4.12	5.08	4.36	4.01	4.94	4.25	3.91
DIB 47/360	6.09	5.51	5.02	6.23	5.27	4.8	5.97	5.06	4.63	5.73	4.88	4.47	5.53	4.72	4.34	5.35	4.58	4.21	5.2	4.46	4.1	5.06	4.35	4
DIB 47/400	6.54	6.00	5.45	6.78	5.73	5.22	6.49	5.5	5.03	6.23	5.31	4.87	6.02	5.14	4.72	5.83	4.99	4.59	5.66	4.85	4.47	5.5	4.73	4.36
DIB 47/450	7.07	6.57	6.00	7.44	6.30	5.74	7.12	6.04	5.53	6.85	5.83	5.34	6.61	5.64	5.18	6.4	5.48	5.04	6.22	5.33	4.91	6.05	5.2	4.79
DIB 47/500	7.32	7.14	6.50	8.08	6.84	6.23	7.74	6.56	6.01	7.44	6.33	5.81	7.18	6.13	5.63	6.96	5.96	5.47	6.76	5.79	5.33	6.58	5.65	5.2
DIB 72/200	4.58	3.86	3.52	4.36	3.69	3.36	4.15	3.53	3.23	3.99	3.4	3.12	3.85	3.29	3.02	3.72	3.19	2.94	3.61	3.1	2.86	3.5	3.02	2.78
DIB 72/220	4.98	4.20	3.82	4.74	4.01	3.66	4.53	3.84	3.52	4.34	3.71	3.4	4.19	3.58	3.29	4.05	3.47	3.2	3.93	3.38	3.11	3.82	3.29	3.03
DIB 72/240	5.37	4.52	4.12	5.11	4.32	3.94	4.89	4.14	3.79	4.69	4	3.66	4.52	3.87	3.55	4.37	3.75	3.45	4.24	3.64	3.36	4.12	3.55	3.27
DIB 72/250	5.56	4.68	4.26	5.29	4.48	4.08	5.06	4.29	3.93	4.85	4.14	3.8	4.68	4	3.68	4.53	3.88	3.57	4.39	3.77	3.48	4.27	3.68	3.39
DIB 72/300	6.47	5.45	4.97	6.16	5.21	4.75	5.89	5	4.57	5.66	4.82	4.42	5.46	4.66	4.28	5.28	4.52	4.16	5.12	4.4	4.05	4.98	4.29	3.95
DIB 72/350	7.33	6.17	5.62	6.98	5.90	5.38	6.68	5.66	5.18	6.41	5.46	5.01	6.19	5.29	4.86	5.99	5.13	7.94	5.81	4.99	4.59	5.65	4.86	4.48
DIB 72/360	7.50	6.31	5.75	7.14	6.04	5.5	6.83	5.79	5.3	6.56	5.59	5.12	6.33	5.41	4.97	6.13	5.25	4.83	5.95	5.1	4.7	5.78	4.97	4.58
DIB 72/400	8.09	6.86	6.25	7.76	6.57	5.99	7.43	6.3	5.77	7.13	6.08	5.57	6.89	5.88	5.4	6.67	5.71	5.25	6.47	5.55	5.11	6.29	5.41	4.99
DIB 72/450	8.73	7.52	6.85	8.51	7.20	6.57	8.15	6.91	6.32	7.83	6.67	6.11	7.56	6.46	5.93	7.32	6.27	5.76	7.1	6.09	5.61	6.91	5.94	5.47
DIB 72/500	9.33	8.17	7.44	9.24	7.81	7.13	8.85	7.5	6.86	8.5	7.24	6.64	8.2	7.01	6.43	7.94	6.8	6.25	7.71	6.62	6.09	7.5	6.45	5.94

Span table notes:

1. All loads are assumed to be uniformly distributed.
2. 0.95 kN/m² dead load allowance
3. The applied snow load from 1.5 to 5.0 kN/m²
4. Span tables are calculated in accordance with EC5.
5. Max. deflection L/200
6. Checked only deflection
7. Span table is for roof joists under service class 2

General notes:

1. Please pay special attention to the bearing conditions.
2. Do not use these tables to calculate point or irregular loads.
3. Span table is for roof joists under service class 1
4. The beams are prevented from lateral torsional buckling.

WALL APPLICATIONS

Characteristic axial forces for Dudek I-Beams



SYSTEM 1

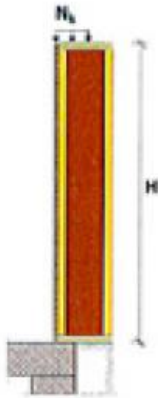
- Height of the wall according to table
- Both flanges are prevented against lateral buckling, table show the buckling in the main direction
- Axial forces carried by both flanges

Characteristic axial force per single the stud:

Max. characteristic stud resistance for compression with wall height: N_k [kN]						
Type	Height	Wall height [m]				
	H [mm]	2.5	3	4	5	6
DIB 47	200	82.1	78.4	67.5	53.1	40.4
	220	83.8	80.9	72.8	60.8	48.1
	240	84.9	82.6	76.4	66.9	55.3
	250	85.4	83.3	77.7	69.4	58.5
	300	87.1	85.6	82.0	77.2	70.4
	350	88.2	87.0	84.3	81.0	76.7
	360	88.3	87.2	84.7	81.6	77.5
	400	88.9	87.9	85.8	83.3	80.2
	450	89.5	88.6	86.8	84.8	82.4
	500	89.9	89.1	87.5	85.8	83.9
DIB 72	200	129.3	123.6	106.7	84.3	64.3
	220	131.9	127.5	115.1	96.7	76.8
	240	133.7	130.2	120.7	106.3	88.3
	250	134.5	131.3	122.8	110.1	93.4
	300	137.2	134.9	129.4	122.1	111.9
	350	138.8	137.0	133.0	128.0	121.6
	360	139.1	137.4	133.5	128.8	122.9
	400	140.0	138.5	135.2	131.5	126.9
	450	140.9	139.6	136.8	133.7	130.2
	500	141.5	140.4	138.0	135.4	132.5

General notes:

- Design value of axial resistance is calculating by: $N_d = N_k \times K_{mod} / \gamma_m$
- Deformations of sole and top plate are taken separately
- These tables serve as a guide only and do not replace independent structural calculations prepared by a qualified structural engineer.



SYSTEM 2

- Height of the wall according to table
- Only internal flange is prevented against lateral buckling, table show the buckling in the main direction
- Axial forces carried only by internal flange

Characteristic axial force per single the stud:

Max. characteristic stud resistance for compression with wall height: N_k [kN]						
Type	Height	Wall height [m]				
	H [mm]	2.5	3	4	5	6
DIB 47	200	41.1	39.2	33.7	26.5	20.2
	220	41.9	40.5	36.4	30.4	24.1
	240	42.5	41.3	38.2	33.5	27.6
	250	42.7	41.6	38.9	34.7	29.3
	300	43.6	42.8	41.0	38.6	35.2
	350	44.1	43.5	42.2	40.5	38.3
	360	44.2	43.6	42.3	40.8	38.8
	400	44.5	44.0	42.9	41.6	40.1
	450	44.7	44.3	43.4	42.4	41.2
	500	45.0	44.6	43.8	42.9	41.9
DIB 72	200	64.7	61.8	53.4	42.2	32.2
	220	66.0	63.8	57.5	48.4	38.4
	240	66.9	65.1	60.3	53.2	44.1
	250	67.2	65.6	61.4	55.1	46.7
	300	68.6	67.4	64.7	61.1	56.0
	350	69.4	68.5	66.5	64.0	60.8
	360	69.5	68.7	66.8	64.4	61.4
	400	70.0	69.2	67.6	65.7	63.4
	450	70.4	69.8	68.4	66.9	65.1
	500	70.8	70.2	69.0	67.7	66.2

General notes:

- Design value of axial resistance is calculating by: $N_d = N_k \times K_{mod} / \gamma_m$
- Deformations of sole and top plate are taken separately
- These tables serve as a guide only and do not replace independent structural calculations prepared by a qualified structural engineer.