Overall Graded Results for Allowable Working Loads on a 1.5m X-Beam

For simply supported Apollo1.5m X-BEAM with a compression chord restraint at 1.0m intervals

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Test Results

	Span (m)			
	12	18	24	36
Allowable Moment	287.4	300.0	298.5	286.0
Allowable Shear (Load on Vertical)	97.0	79.5	74.5	67.0

Allowable loads for load distributions from results

Type of Load		Clear span (m)			
		12	18	24	36
Uniformly Distributed load	kN/m	16.0	7.4	4.1	1.8
Total UDL	kN	191.6	133.3	99.5	63.6
Single point load (mid Point)	kN	95.8	66.7	49.8	31.8
Two point loads (third points)	Each kN	71.9	50.0	37.3	23.8
Three point loads (quarter points)	Each kN	47.9	33.3	24.9	15.9

Extrapolated Allowable loads for load distributions

Type of Load		Clear span (m)																
		11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Uniformly Distributed load	kN/m	17.6	16.0	13.6	11.7	10.2	9.0	8.0	7.4	6.6	6.0	5.4	4.9	4.5	4.1	3.7	3.4	3.1
Total UDL	kN	194.0	191.6	176.9	164.2	153.3	143.8	135.3	133.3	125.7	119.4	113.7	108.5	103.8	99.5	91.5	88.0	84.7
Single point load (mid Point)	kN	104.5	95.8	88.5	82.1	76.7	71.9	67.6	66.7	62.8	59.7	56.9	54.3	51.9	49.8	45.8	44.0	42.4
Two point loads (third points)	Each kN	78.4	71.9	66.3	61.6	57.5	53.9	50.7	50.0	47.1	44.8	42.6	40.7	38.9	37.3	34.3	33	31.8
Three point loads (quarter points)	Each kN	52.3	47.9	44.2	41.1	38.3	35.9	33.8	33.3	31.4	29.9	28.4	27.1	26.0	24.9	22.9	22	21.2

Type of Load		Clear span (m)								
		28	29	30	31	32	33	34	35	36
Uniformly Distributed load	kN/m	2.9	2.7	2.5	2.4	2.2	2.1	2.0	1.9	2
Total UDL	kN	81.7	78.9	76.3	73.8	71.5	69.3	67.3	65.4	64
Single point load (mid Point)	kN	40.9	39.4	38.1	36.9	35.8	34.7	33.6	32.7	32
Two point loads (third points)	Each kN	30.6	29.6	28.6	37.7	26.8	26.0	25.2	24.5	24
Three point loads (quarter points)	Each kN	20.4	19.7	19.1	18.5	17.9	17.3	16.8	16.3	16

Notes:

1. This table is provided as a guide only and assume all loads are applied at nodes. All scaffolds and structures should be checked by a qualified structural engineer.
2. Maximum capacity of a point load mid way between nodes is 15kN but overall buckling of the top chord should be checked if loads are placed other than at restrained nodes. Compression chord restraint required at 1.0m c/c
3. Factor of Safety = 1.65 (= 1.5*1.1 (material factor))
4. Calculations as per BS EN 1999-1-1
5. For design purposes the allowable bending moment is 282.50kNm and the allowable shear is 66.50kN.

Graph Summary of Allowable Working Loads for a 1.5m X-Beam to BS EN 1999-1-1

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