

**TYPE 160 LINTEL**

**APPENDIX 29 TYPE 1645**

JOB INPUT INFORMATION

VARIABLES

SPAN	3.0 m	BEAM DEPTH	160 mm
		SCREED	0 mm
		BOTTOM DIA	5 mm
JACK LOSS	70 % (70 TO 80%)	MIDDLE DIA	5 mm
CREEP ETC LOSS	30 % (10 TO 30 %)	TOP DIA	0 mm
CRACK WIDTH	0.2 (0.1 OR 0.2)	DESIGN CLAS	3 (1,2,3)
UDL kN/sq m		UDL kN/m i.e. per beam	
	0.00 kN/m	BEAM SW	0.36 kN/m
			TOPPING
FINISHES	0.0 kN/sq m	FINISHES	0.00 kN/m
LIVE	0.0 kN/sq m	LIVE	0.00 kN/m
		TOTAL	0.36 kN/m

DESIGN OF BASS BEAMS AT TRANSFER

BEAM LENGTH 3.0 m

SUMMARY OF LOADS AND FORCES

TOTAL SW 1.1 kN

LEFT SUPPORT 0.5 kN

RIGHT SUPPORT 0.5 kN

Allowable comp stress % -17.5 N/sq mm

Allowable tensile stress 3.5 N/sq mm

After losses

MAIN TOP 4.0 N/sq mm 2.8  
SPAN BOTTOM -15.5 N/sq mm -10.9

SPAN	Pi/A	PIE/Zit	Pie/Zib	SF*X	M SW	MOMENT
0.0	-5.6	9.6	-9.9	0.0	0.0	0.0
0.2	-5.6	9.6	-9.9	0.1	-0.0	0.1
0.3	-5.6	9.6	-9.9	0.2	-0.0	0.1
0.5	-5.6	9.6	-9.9	0.2	-0.0	0.2
0.6	-5.6	9.6	-9.9	0.3	-0.1	0.3
0.8	-5.6	9.6	-9.9	0.4	-0.1	0.3
0.9	-5.6	9.6	-9.9	0.5	-0.1	0.3
1.1	-5.6	9.6	-9.9	0.6	-0.2	0.4
1.2	-5.6	9.6	-9.9	0.7	-0.3	0.4
1.3	-5.6	9.6	-9.9	0.7	-0.3	0.4
1.5	-5.6	9.6	-9.9	0.8	-0.4	0.4
1.6	-5.6	9.6	-9.9	0.9	-0.5	0.4
1.8	-5.6	9.6	-9.9	1.0	-0.6	0.4
1.9	-5.6	9.6	-9.9	1.1	-0.7	0.4
2.1	-5.6	9.6	-9.9	1.1	-0.8	0.3
2.2	-5.6	9.6	-9.9	1.2	-0.9	0.3
2.4	-5.6	9.6	-9.9	1.3	-1.1	0.3
2.5	-5.6	9.6	-9.9	1.4	-1.2	0.2
2.7	-5.6	9.6	-9.9	1.5	-1.3	0.1
2.8	-5.6	9.6	-9.9	1.6	-1.5	0.1
3.0	-5.6	9.6	-9.9	1.6	-1.6	0.0

AFTER LOSSES

	M/zit	M/zib	Top	Bott	Top	Bott
	0.0	0.0	4.0	-15.5	2.8	-10.9
	-0.2	0.2	3.8	-15.3	2.6	-10.7
	-0.4	0.4	3.6	-15.2	2.4	-10.5
	-0.5	0.5	3.5	-15.0	2.3	-10.4
	-0.6	0.7	3.3	-14.9	2.2	-10.2
	-0.7	0.8	3.2	-14.8	2.0	-10.1
	-0.8	0.9	3.2	-14.7	2.0	-10.0
	-0.9	0.9	3.1	-14.6	1.9	-9.9
	-1.0	1.0	3.0	-14.6	1.8	-9.9
	-1.0	1.0	3.0	-14.5	1.8	-9.9
	-1.0	1.0	3.0	-14.5	1.8	-9.8
	-1.0	1.0	3.0	-14.5	1.8	-9.9
	-1.0	1.0	3.0	-14.6	1.8	-9.9
	-0.9	0.9	3.1	-14.6	1.9	-9.9
	-0.8	0.9	3.2	-14.7	2.0	-10.0
	-0.7	0.8	3.2	-14.8	2.0	-10.1
	-0.6	0.7	3.3	-14.9	2.2	-10.2
	-0.5	0.5	3.5	-15.0	2.3	-10.4
	-0.4	0.4	3.6	-15.2	2.4	-10.5
	-0.2	0.2	3.8	-15.3	2.6	-10.7
	-0.0	0.0	4.0	-15.5	2.8	-10.9

**APPENDIX 30 TYPE 1647**

JOB INPUT INFORMATION

VARIABLES

SPAN	3.0 m	BEAM DEPTH	160 mm
		SCREED	0 mm
		BOTTOM DIA	7 mm
JACK LOSS	70 % (70 TO 80%)	MIDDLE DIA	7 mm
CREEP ETC LOSS	30 % (10 TO 30 %)	TOP DIA	0 mm
CRACK WIDTH	0.2 (0.1 OR 0.2)	DESIGN CLAS	3 (1,2,3)
UDL kN/sq m		UDL kN/m i.e. per beam	
		BEAM SW	0.36 kN/m
		TOPPING	0.00 kN/m

FINISHES	0.0 kN/sq m	:	FINISHES	0.00 kN/m
		:		
LIVE	0.0 kN/sq m	:	LIVE	0.00 kN/m
		:	TOTAL	0.36 kN/m

DESIGN OF BASS BEAMS AT TRANSFER

BEAM LENGTH 3.0 m

SUMMARY OF LOADS AND FORCES

TOTAL SW	1.1 kN
LEFT SUPPORT	0.5 kN
RIGHT SUPPORT	0.5 kN

Allowable comp stress % -17.5 N/sq mm

Allowable tensile stress 3.5 N/sq mm

After losses

MAIN	TOP	7.0 N/sq mm	4.9
SPAN	BOTTOM	-29.6 N/sq mm	-20.7

SPAN Pi/A PIE/Zit Pie/Zib SF\*X M SW MOMENT

0.0	-11.0	18.0	-18.6	0.0	0.0	0.0
0.2	-11.0	18.0	-18.6	0.1	-0.0	0.1
0.3	-11.0	18.0	-18.6	0.2	-0.0	0.1
0.5	-11.0	18.0	-18.6	0.2	-0.0	0.2
0.6	-11.0	18.0	-18.6	0.3	-0.1	0.3
0.8	-11.0	18.0	-18.6	0.4	-0.1	0.3
0.9	-11.0	18.0	-18.6	0.5	-0.1	0.3
1.1	-11.0	18.0	-18.6	0.6	-0.2	0.4
1.2	-11.0	18.0	-18.6	0.7	-0.3	0.4
1.3	-11.0	18.0	-18.6	0.7	-0.3	0.4
1.5	-11.0	18.0	-18.6	0.8	-0.4	0.4
1.6	-11.0	18.0	-18.6	0.9	-0.5	0.4
1.8	-11.0	18.0	-18.6	1.0	-0.6	0.4
1.9	-11.0	18.0	-18.6	1.1	-0.7	0.4
2.1	-11.0	18.0	-18.6	1.1	-0.8	0.3
2.2	-11.0	18.0	-18.6	1.2	-0.9	0.3
2.4	-11.0	18.0	-18.6	1.3	-1.1	0.3
2.5	-11.0	18.0	-18.6	1.4	-1.2	0.2
2.7	-11.0	18.0	-18.6	1.5	-1.3	0.1
2.8	-11.0	18.0	-18.6	1.6	-1.5	0.1
3.0	-11.0	18.0	-18.6	1.6	-1.6	0.0

AFTER LOSSES

	M/zit	M/zib	Top	Bott	Top	Bott
	0.0	0.0	7.0	-29.6	4.9	-20.7
	-0.2	0.2	6.8	-29.4	4.7	-20.5
	-0.4	0.4	6.6	-29.3	4.5	-20.4
	-0.5	0.5	6.5	-29.1	4.4	-20.2
	-0.6	0.7	6.4	-29.0	4.3	-20.1
	-0.7	0.8	6.3	-28.9	4.2	-20.0
	-0.8	0.9	6.2	-28.8	4.1	-19.9
	-0.9	0.9	6.1	-28.7	4.0	-19.8
	-1.0	1.0	6.0	-28.6	3.9	-19.7
	-1.0	1.0	6.0	-28.6	3.9	-19.7
	-1.0	1.0	6.0	-28.6	3.9	-19.7
	-1.0	1.0	6.0	-28.6	3.9	-19.7
	-1.0	1.0	6.0	-28.6	3.9	-19.7
	-0.9	0.9	6.1	-28.7	4.0	-19.8
	-0.8	0.9	6.2	-28.8	4.1	-19.9
	-0.7	0.8	6.3	-28.9	4.2	-20.0
	-0.6	0.7	6.4	-29.0	4.3	-20.1
	-0.5	0.5	6.5	-29.1	4.4	-20.2
	-0.4	0.4	6.6	-29.3	4.5	-20.4
	-0.2	0.2	6.8	-29.4	4.7	-20.5
	-0.0	0.0	7.0	-29.6	4.9	-20.7

APPENDIX 33 TYPE 1645

JOB INPUT INFORMATION

VARIABLES

SPAN	6.0 m	BEAM DEPTH	160 mm
		SCREED	0 mm
		BOTTOM DIA	5 mm
JACK LOSS	70 % (70 TO 80%)	MIDDLE DIA	5 mm
CREEP ETC LOSS	30 % (10 TO 30 %)	TOP DIA	0 mm
CRACK WIDTH	0.2 (0.1 OR 0.2)	DESIGN CLAS	3 (1,2,3)

UDL kN/sq m	:	UDL kN/m i.e. per beam	
	:	BEAM SW	0.36 kN/m
	:	TOPPING	0.00 kN/m
FINISHES	0.0 kN/sq m	FINISHES	0.00 kN/m
	:		
LIVE	1.0 kN/sq m	LIVE	1.00 kN/m
	:	TOTAL	1.36 kN/m

DESIGN OF BASS BEAMS PRIOR TO LOADING

SPAN 6.0 m BEAM LENGTH 6.0 m

CENTROID OF BEAM FROM L 3.00 RATIO L 0.50

CENTROID OF BEAM FROM R 3.00 RATIO R 0.50

TOTAL W 8.2 kN

LEFT SUPPORT 4.1 kN

RIGHT SUPPORT 4.1 kN

Allowable comp stress % -19.8 N/sq mm

Allowable tensile stress 6.9 N/sq mm Allow max 15

MAIN TOP 2.8 N/sq mm -12.1  
 SPAN BOTTOM -10.9 N/sq mm 4.6

SPAN	Pf/A	PfE/Zit	Pfe/Zib	SF*X	M MOMENT		
0.0	-3.9	6.7	-7.0		0.0	0.0	0.0
0.3	-3.9	6.7	-7.0		1.2	-0.1	1.2
0.6	-3.9	6.7	-7.0		2.5	-0.2	2.2
0.9	-3.9	6.7	-7.0		3.7	-0.6	3.1
1.2	-3.9	6.7	-7.0		4.9	-1.0	3.9
1.5	-3.9	6.7	-7.0		6.1	-1.5	4.6
1.8	-3.9	6.7	-7.0		7.4	-2.2	5.2
2.1	-3.9	6.7	-7.0		8.6	-3.0	5.6
2.4	-3.9	6.7	-7.0		9.8	-3.9	5.9
2.7	-3.9	6.7	-7.0		11.1	-5.0	6.1
3.0	-3.9	6.7	-7.0		12.3	-6.1	6.1
3.3	-3.9	6.7	-7.0		13.5	-7.4	6.1
3.6	-3.9	6.7	-7.0		14.7	-8.8	5.9
3.9	-3.9	6.7	-7.0		16.0	-10.4	5.6
4.2	-3.9	6.7	-7.0		17.2	-12.0	5.2
4.5	-3.9	6.7	-7.0		18.4	-13.8	4.6
4.8	-3.9	6.7	-7.0		19.7	-15.7	3.9
5.1	-3.9	6.7	-7.0		20.9	-17.7	3.1
5.4	-3.9	6.7	-7.0		22.1	-19.9	2.2
5.7	-3.9	6.7	-7.0		23.3	-22.2	1.2
6.0	-3.9	6.7	-7.0		24.6	-24.6	0.0

AFTER LOSSES

M/zit M/zib Top Bott

0.0	0.0	2.8	-10.9
-2.8	2.9	-0.0	-7.9
-5.4	5.6	-2.6	-5.3
-7.6	7.9	-4.8	-3.0
-9.5	9.9	-6.7	-1.0
-11.2	11.6	-8.4	0.7
-12.5	13.0	-9.7	2.1
-13.6	14.0	-10.8	3.2
-14.3	14.8	-11.5	3.9
-14.8	15.3	-12.0	4.4
-14.9	15.4	-12.1	4.6
-14.8	15.3	-12.0	4.4
-14.3	14.8	-11.5	3.9
-13.6	14.0	-10.8	3.2
-12.5	13.0	-9.7	2.1
-11.2	11.6	-8.4	0.7
-9.5	9.9	-6.7	-1.0
-7.6	7.9	-4.8	-3.0
-5.4	5.6	-2.6	-5.3
-2.8	2.9	-0.0	-7.9
-0.0	0.0	2.8	-10.9

APPENDIX 33 TYPE 1647

JOB INPUT INFORMATION

VARIABLES

SPAN	7.5 m	BEAM DEPTH	160 mm
		SCREED	0 mm
		BOTTOM DIA	7 mm
JACK LOSS	70 % (70 TO 80%)	MIDDLE DIA	7 mm
CREEP ETC LOSS	30 % (10 TO 30 %)	TOP DIA	0 mm
CRACK WIDTH	0.2 (0.1 OR 0.2)	DESIGN CLAS	3 (1,2,3)
UDL kN/sq m	:	UDL kN/m i.e. per beam	
	:	BEAM SW	0.36 kN/m
	:	TOPPING	0.00 kN/m
FINISHES	0.0 kN/sq m	FINISHES	0.00 kN/m
	:		
LIVE	1.00 kN/sq m	LIVE	1.00 kN/m
	:	TOTAL	1.36 kN/m

DESIGN OF BASS BEAMS PRIOR TO LOADING

SPAN 7.5 m BEAM LENGTH 7.5 m  
 CENTROID OF BEAM FROM L 3.75 RATIO L 0.50  
 CENTROID OF BEAM FROM R 3.75 RATIO R 0.50  
 TOTAL W 10.2 kN  
 LEFT SUPPORT 5.1 kN  
 RIGHT SUPPORT 5.1 kN  
 Allowable comp stress % -19.8 N/sq mm  
 Allowable tensile stress 6.9 N/sq mm Allow max 15

MAIN TOP 4.9 N/sq mm -18.4  
 SPAN BOTTOM -20.7 N/sq mm 3.4

SPAN	Pf/A	PfE/Zit	Pfe/Zib	SF*X	M MOMENT		
0.0	-7.7	12.6	-13.0		0.0	0.0	0.0
0.4	-7.7	12.6	-13.0		1.9	-0.1	1.8
0.8	-7.7	12.6	-13.0		3.8	-0.4	3.5
1.1	-7.7	12.6	-13.0		5.8	-0.9	4.9
1.5	-7.7	12.6	-13.0		7.7	-1.5	6.1
1.9	-7.7	12.6	-13.0		9.6	-2.4	7.2
2.3	-7.7	12.6	-13.0		11.5	-3.5	8.1
2.6	-7.7	12.6	-13.0		13.4	-4.7	8.7
3.0	-7.7	12.6	-13.0		15.4	-6.1	9.2
3.4	-7.7	12.6	-13.0		17.3	-7.8	9.5
3.8	-7.7	12.6	-13.0		19.2	-9.6	9.6

4.1	-7.7	12.6	-13.0	21.1	-11.6	9.5
4.5	-7.7	12.6	-13.0	23.0	-13.8	9.2
4.9	-7.7	12.6	-13.0	25.0	-16.2	8.7
5.3	-7.7	12.6	-13.0	26.9	-18.8	8.1
5.6	-7.7	12.6	-13.0	28.8	-21.6	7.2
6.0	-7.7	12.6	-13.0	30.7	-24.6	6.1
6.4	-7.7	12.6	-13.0	32.6	-27.7	4.9
6.8	-7.7	12.6	-13.0	34.5	-31.1	3.5
7.1	-7.7	12.6	-13.0	36.5	-34.6	1.8
7.5	-7.7	12.6	-13.0	38.4	-38.4	0.0

AFTER LOSSES

M/zit M/zib Top Bott			
0.0	0.0	4.9	20.7
-4.4	4.6	0.5	-16.2
-8.4	8.7	-3.5	-12.1
-11.9	12.3	-7.0	-8.4
-14.9	15.4	-10.0	-5.3
-17.5	18.1	-12.6	-2.7
-19.6	20.3	-14.7	-0.5
-21.2	21.9	-16.3	1.2
-22.3	23.1	-17.4	2.4
-23.0	23.9	-18.1	3.1
-23.3	24.1	-18.4	3.4
-23.0	23.9	-18.1	3.1
-22.3	23.1	-17.4	2.4
-21.2	21.9	-16.3	1.2
-19.6	20.3	-14.7	-0.5
-17.5	18.1	-12.6	-2.7
-14.9	15.4	-10.0	-5.3
-11.9	12.3	-7.0	-8.4
-8.4	8.7	-3.5	-12.1
-4.4	4.6	0.5	-16.2
-0.0	0.0	4.9	-20.7

APPENDIX 35 TYPE 1645

JOB INPUT INFORMATION

VARIABLES

SPAN	6.0 m	BEAM DEPTH	160 mm
		SCREED	0 mm
		BOTTOM DIA	5 mm
JACK LOSS	70 % (70 TO 80%)	MIDDLE DIA	5 mm
CREEP ETC LOSS	30 % (10 TO 30 %)	TOP DIA	0 mm
CRACK WIDTH	0.2 (0.1 OR 0.2)	DESIGN CLAS	3 (1,2,3)
UDL kN/sq m	:	UDL kN/m i.e. per beam	
	:	BEAM SW	0.36 kN/m
	:	TOPPING	0.00 kN/m
FINISHES	0.0 kN/sq m	FINISHES	0.00 kN/m
	:		
LIVE	1.19 kN/sq m	LIVE	1.19 kN/m
	:	TOTAL	1.55 kN/m

DESIGN OF BASS BEAMS TO OBTAIN GUIDELINE MOM OF RESIST

SPAN 6.0 m BEAM LENGTH 6.0 m  
 CENTROID OF BEAM FROM L 3.00 RATIO L 0.50  
 CENTROID OF BEAM FROM R 3.00 RATIO R 0.50  
 TOTAL S.W 2.2 KN  
 TOTAL W 9.3 kN  
 TOTAL SCREED 0.0 kN  
 LEFT SUPPORT 4.7 kN  
 RIGHT SUPPORT 4.7 kN  
 Allowable comp stress % -19.8 N/sq mm  
 Allowable tensile stress 6.9 N/sq mm Allow max 15

MAIN TOP 2.8 N/sq mm -14.2  
 SPAN BOTTOM -10.9 N/sq mm 6.7

SPAN	Pf/A	PfE/Zit	Pfe/Zib	SF*X	M	MOMENT
0.0	-3.9	6.7	-7.0	0.0	0.0	0.0
0.3	-3.9	6.7	-7.0	1.4	-0.1	1.3
0.6	-3.9	6.7	-7.0	2.8	-0.3	2.5
0.9	-3.9	6.7	-7.0	4.2	-0.6	3.6
1.2	-3.9	6.7	-7.0	5.6	-1.1	4.5
1.5	-3.9	6.7	-7.0	7.0	-1.7	5.2
1.8	-3.9	6.7	-7.0	8.4	-2.5	5.9
2.1	-3.9	6.7	-7.0	9.8	-3.4	6.4
2.4	-3.9	6.7	-7.0	11.2	-4.5	6.7
2.7	-3.9	6.7	-7.0	12.6	-5.7	6.9
3.0	-3.9	6.7	-7.0	14.0	-7.0	7.0
3.3	-3.9	6.7	-7.0	15.4	-8.5	6.9
3.6	-3.9	6.7	-7.0	16.8	-10.1	6.7
3.9	-3.9	6.7	-7.0	18.2	-11.8	6.4
4.2	-3.9	6.7	-7.0	19.6	-13.7	5.9
4.5	-3.9	6.7	-7.0	21.0	-15.7	5.2
4.8	-3.9	6.7	-7.0	22.4	-17.9	4.5
5.1	-3.9	6.7	-7.0	23.8	-20.2	3.6
5.4	-3.9	6.7	-7.0	25.2	-22.7	2.5
5.7	-3.9	6.7	-7.0	26.6	-25.3	1.3
6.0	-3.9	6.7	-7.0	28.0	-28.0	0.0

AFTER LOSSES

M/zit M/zib Top Bott			
0.0	0.0	2.8	-10.9

-3.2	3.3	-0.4	-7.5
-6.1	6.3	-3.3	-4.6
-8.7	9.0	-5.9	-1.9
-10.9	11.3	-8.1	0.4
-12.7	13.2	-9.9	2.3
-14.3	14.8	-11.5	3.9
-15.4	16.0	-12.7	5.1
-16.3	16.9	-13.5	6.0
-16.8	17.4	-14.0	6.5
-17.0	17.6	-14.2	6.7
-16.8	17.4	-14.0	6.5
-16.3	16.9	-13.5	6.0
-15.4	16.0	-12.7	5.1
-14.3	14.8	-11.5	3.9
-12.7	13.2	-9.9	2.3
-10.9	11.3	-8.1	0.4
-8.7	9.0	-5.9	-1.9
-6.1	6.3	-3.3	-4.6
-3.2	3.3	-0.4	-7.5
-0.0	0.0	2.8	-10.9