DESCRIPTION										
P13162		**BEAM B**								
BEAM SPAN L (m)	.=	4.00	SPAN TO BRG CENTRES Le(m) =			4.20				
		Inertia	MASS	Shear A	Pxx	Ry	x	u	D	
		x10^6mm"	kg/m	mm2	cm3	cm			mm	
178x102x19		13.56	19.00	853.4	171.0	2.390	22.6	0.888	177.8	
YOUNGS MOD. E (N/mm2 x 1000)	.=	205.00								
					UDL	UD/PTL	PTL		total	
FACTORED DEAD LOAD KN	.=	9.32			9.32			.=	9.32	
FACTORED LIVE LOAD kN	.=	18.00			18.00			.=	18.00	
FACTORED SELF WEIGHT kN	.=	1.06			1.06	0.00	0.00	.=	1.06	
TOTAL DESIGN LOAD W kN	.=	28.38			28.38	0.00	0.00	.=	28.38	
LOAD TYPE (UDL, UD/PTL, PTL)										
BENDING MOMENT COEFFICIENT					0.1250	0.1667	0.2500			
BENDING MOMENT FOR EACH LOAD TYPE kNm	.=	W(kN) x Span x Bm coeff.			14.90	0.00	0.00	.=	14.90	
PLASTIC MODULUS FOR EACH LOAD TYPE cm3	.=	Bm / Sx			54.19	0.00	0.00	.=	54.19	
DESIGN DEFLECTION FOR LOAD TYPE										
constant x (WxL^3)/(E x I) (mm)					8.5	0.0	0.0	.=	8.50	
deflection using imposed (live) load					5.4	0.0	0.0		5.39	
allowable deflection with brittle finishes is L/360 and L/200 other finishes					ALLOWABLE DEF L / 360			.=	11.11	

SHEAR AREA SELECTED BEAM (mm2)	.=	853.4
PERM SHEAR STRENGTH = 0.6x275 (N/mm2)	.=	165.00
SHEAR FORCE = W/2 (kN)	.=	14.192
AVE. SHEAR STRESS (N/sqmm)	.=	16.630
BEAM RESTRAINT CHECK		
slenderness V from Table 19	.=	0.650
lamLT = U x V x lamda x Bw^-2	.=	124.511
Bending Strength from Table 16. Pb (N/mm2)	.=	90.0
Moment Capacity = Pb x Sx (kNm)	.=	15.39
Buckling Resistance = Mom.Cap. / mLT (kNm)	.=	**16.638**

Le = (1.2x span) + (2 x D)

lamda=Le/Ry	215.72	mLT =	0.925
lamda / x =	9.54	Bw =	1.00

more than design bending moment **14.90** kNm thus section OK