DESCRIPTION										
P13162		**BEAM A**								
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	
127x76x13		4.77	13.00	533.4	85.0	1.830	16.2	0.893	127	
YOUNGS MOD. E (N/mm2 x 1000)	.=	205.00								
					UDL	UD/PTL	PTL		total	
FACTORED DEAD LOAD KN	.=	4.00			4.00			.=	4.00	
FACTORED LIVE LOAD kN	.=	12.80			12.80			.=	12.80	
FACTORED SELF WEIGHT kN	.=	0.73			0.73	0.00	0.00	.=	0.73	
TOTAL DESIGN LOAD W kN	.=	17.53			17.53	0.00	0.00	.=	17.53	
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.			9.20	0.00	0.00	.=	9.20	
PLASTIC MODULUS FOR EACH LOAD TYPE cm3	.=	Bm / Sx			33.46	0.00	0.00	.=	33.46	
DESIGN DEFLECTION FOR LOAD TYPE										
constant x (WxL^3)/(E x I) (mm)					14.9	0.0	0.0	.=	14.91	
deflection using imposed (live) load					10.9	0.0	0.0		10.89	
allowable deflection with brittle finishes is L/360 and L/200 other finishes					ALLOWABLE DEF L / 360			.=	11.11	
SHEAR AREA SELECTED BEAM (mm2)	.=	533.4								
PERM SHEAR STRENGTH = 0.6x275 (N/mm2)	.=	165.00								
SHEAR FORCE = W/2 (kN)	.=	8.764								
AVE. SHEAR STRESS (N/sqmm)	.=	16.430								
BEAM RESTRAINT CHECK			Le = (1.2x span) + (2 x D)							
slenderness V from Table 19	.=	0.500	lamda=Le/Ry	276.17	mLT =	0.925				
lamLT = U x V x lamda x Bw^-2	.=	123.312	lamda / x =	17.05	Bw =	1.00				
Bending Strength from Table 16. Pb (N/mm2)	.=	92.0								
Moment Capacity = Pb x Sx (kNm)	.=	7.82								
Buckling Resistance = Mom.Cap. / mLT (kNm)	.=	**8.454**	more than design bending moment		**9.20** kNm		thus section OK			