Kingspan Steel Building Solutions	CUSTOMER	G Parry Consulting		
Manor Works,	Title	Clty College - Plymouth		
Pleck Road, Walsall	Job Number	19827		
West Midlands, WS2 9ES	Made by	PP	Date	18-08-20
Tel: 01944-712000 Fax: 01922-644460	Checked		Date	

Single Secondary Beam Design

Floor System Data

Main Span (m)	N/A				
Second. Span (m)	5.205	Centres (m)	0.6	Deflection Ratio	360

Floor Loading (UDL) Point Load (Imposed) Design Code BS5950:5

Load Type	Load (kN/m^2)	Dis from Left End (m)		Load (kN)	Load Factors	
Dead Load	0.6	P1	0	0	Dead	1.4
Imposed Load	5	P2	0	0	Imposed	1.6
		P3	0	0		

Design Forces on Single Beam

Unfactored Load			Factored Load	
Dead Load	Imp. Load	Total Load	Max Shear	Max Moment
W_D	W_{Imp}	W_{total}	F_V	M_{max}
kN	kN	kN	kN	kNm
1.87	15.62	17.49	13.80	17.55

Section Properties of Single Beam

Section Ref	Unit	Full	Full Area Moment		Full Area Modulus	
1 Off	Weight	Area	Major	Minor	Major	Minor
KS30010014	W	A	Ixx	Iyy	Zxx	Zyy
With 1 Off	kg/m	mm^2	cm^4	cm^4	cm^3	cm^3
Standard Cleat	6.10	781.97	1079.81	88.29	72.32	12.97
At Each End						

Results

Deflection	Max. Deflection (mm)		Deflection Ratio		Def. Limit	Allowable
	Imposed	Total	Imposed	Total	Ratio	Def. (mm)
	12.59	14.10	413.31	369.03	360	14.46

Moment Capacity	Position From Left (m)	Maximum Moment Mmax (kNm)	Bending Strength Mcx(kNm)	Capacity Ratio
	2.60	17.55	24.99	0.70

Design Status		Capacity Ratio
Moment	PASS	0.70
Deflection	PASS	0.87

Adequate Beam Designed Based on Bending Moment and Deflection

Single Secondary Beam	KS30010014	Web Cleat	PC300W3B

Note:
1. Beam design to BS5950:5 :1998 or BS EN 1993-1-3:2006 and SCI Design Guide P-150 supported by test programs supervised and authenticated by the SCI.
2. S390GD+Z275 pre galvanized steel with yielding stress 390 N/mm^2 for the beam
3. Bending moment and deflection calculated on UDL and 3 point loads (imposed)
4. Single span with fully lateral restraints and flat/profiled cleats with S390GD+Z275
5. The secondry span is the distance from hole to hole of the cleats of secondary beam.
6. The calculation is only valid by using the beam and cleat specified in this calcualtion sheet.
7. The program must be used together with the company catalogue in design details.

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