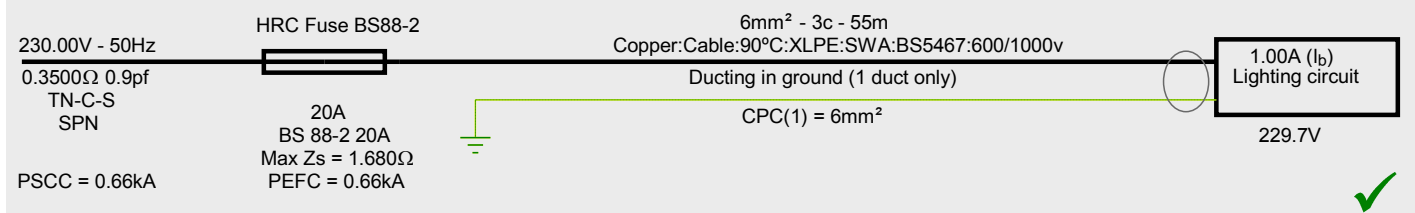


Car Park Lighting

FP01 - L1



Cable Data

6mm² - 3c - 55m

Copper: Cable: 90°C: XLPE: SWA: BS5467: 600/1000v: Table 4E4

Cable Rating I _t (tabulated)	Table 4E4A Col-6	53A		
Cable Rating I _z (effective)		53A	I _z ≥ I _b	PASS
mV/A/mtr (tabulated)	Table 4E4B Col-3	7.9mV/A/m (r)		
mV/A/mtr (temperature corrected)	operating 20.02°C	6.172mV/A/m (r)		
Voltage drop permitted (per phase)	3.00% (6.90V)			
Voltage drop Calculated (per phase)	0.13%	Circuit voltage drop = 0.31V		PASS

Correction Factors

C (total) = 1.020

Ambient temperature (C _a)	20°C	C _a = 1.000	Table 4B2	
Grouping (C _g)	1 ccts	C _g = 1.000	Table 4C3	
Soil thermal resistivity	2.5K.m/W	C _s = 1	Table 4B3	
Buried Cable Depth	0.5m	C _d = 1.02	Table 4B4	

Circuit Protective conductors (cpc)

Total cpc value = 0.1694Ω

Minimum copper cpc required (S = √I ² t/k)	0.74mm ²	k = 143	0.077 sec	I = 333.90 A
Internal core	6mm ²	6mm ²	CPC ≥ √I ² t/k)	PASS

Protective Device Details

BS 88-2 20A

BS 88-2

Selected for	Overload and short-circuit protection			
Rating (I _n) ≥ load (I _b)	20	20 ≥ 1	I _n ≥ I _b	PASS
Rating (I _n) ≤ cable rating (I _z)	20	20 ≤ 53	I _n ≤ I _z	PASS
Breaking capacity (I _{cn})	16.5kA	16.5 ≥ 0.66	I _{cn} ≥ I _{sc}	PASS
Operating current (I ₂)	32.0A			
Calculated disconnection time	0.077 sec			PASS
Maximum permitted disconnection time	5 sec	Table 41.1		
Impedance of device (Z)	1.680Ω	1.680 ≥ 0.6888	Z ≥ Z _s	PASS

Earth Fault Data

Earth fault loop impedance (Z _e)	0.3500Ω			
Circuit R1 value	0.1694Ω			
Circuit R2 value	0.1694Ω			
Circuit R1+R2 value	0.3388Ω			
Earth loop impedance (Z _s =Z _e +R1+R2)	0.6888Ω	1.68 ≥ 0.6888	Z ≥ Z _s	PASS
Earth fault current (I _a =U ₀ /Z _s)	333.90A	U ₀ = 230.00V	Z _s = 0.6888Ω	

Short Circuit Data

Prospective short circuit current	0.66 kA			
Short circuit withstand time (t = k ² S ² /I ²)	6.603 sec	k = 143	S = 6mm ²	I = 333.90 A

FP01

6mm² - 3c - 55m								
Section	Load	Load(t)	Distance	Voltdrop	R1+R2	Zs	Isc	Description
1	1	1	55	0.306	0.3388	0.68883	0.334	

Total	1.00A	55.00m	0.31V	0.339Ω	0.689Ω			
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