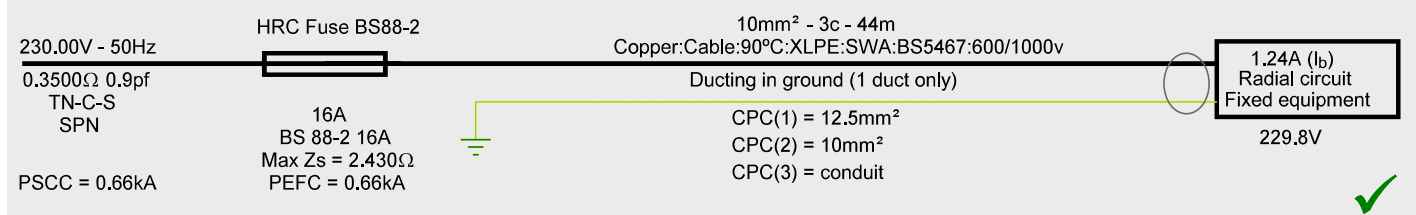


22475

feeder Pillar 1 - 02



Cable Data

10mm² - 3c - 44m

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

Cable Rating I _t (tabulated)	Table 4E4A Col-6	71A		
Cable Rating I _z (effective)		71A	I _z ≥ I _b	PASS
mV/A/mtr (tabulated)	Table 4E4B Col-3	4.7mV/A/m (r)		
mV/A/mtr (temperature corrected)	operating 20.02°C	3.672mV/A/m (r)		
Voltage drop permitted (per phase)	3.00% (6.90V)			
Voltage drop Calculated (per phase)	0.08%	Circuit voltage drop = 0.18V		PASS

Correction Factors

C (total) = 1.000

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	0.7m	C _d = 1	Table 4B4	

Circuit Protective conductors (cpc)

Total cpc value = 0.0460Ω

Minimum copper cpc required (S = √I ² t/k)	1.07mm ²	k = 143	0.056 sec	I = 482.65 A
Cable sheath (copper equivalent)	12.5mm ²	12.5mm ²		
Internal core	10mm ²	10mm ²		
Conduit	16mm light duty	16mm light duty	CPC ≥ √I ² t/k	PASS

Protective Device Details

BS 88-2 16A

BS 88-2

Selected for	Overload and short-circuit protection			
Rating (I _n) ≥ load (I _b)	16	16 ≥ 1.24	I _n ≥ I _b	PASS
Rating (I _n) ≤ cable rating (I _z)	16	16 ≤ 71	I _n ≤ I _z	PASS
Breaking capacity (I _{cn})	16.5kA	16.5 ≥ 0.66	I _{cn} ≥ I _{sc}	PASS
Operating current (I ₂)	25.6A			
Calculated disconnection time	0.056 sec			PASS
Maximum permitted disconnection time	0.4 sec	Table 41.1		
Impedance of device (Z)	2.430Ω	2.430 ≥ 0.4765	Z ≥ Z _s	PASS

Earth Fault Data

Earth fault loop impedance (Z _e)	0.3500Ω			
Circuit R1 value	0.0805Ω			
Circuit R2 value	0.0460Ω			
Circuit R1+R2 value	0.1265Ω			
Earth loop impedance (Z _s =Z _e +R1+R2)	0.4765Ω	2.43 ≥ 0.4765	Z ≥ Z _s	PASS
Earth fault current (I _a =U ₀ /Z _s)	482.65A	U ₀ = 230.00V	Z _s = 0.4765Ω	

Short Circuit Data

Prospective short circuit current	0.66 kA			
Short circuit withstand time (t = k ² S ² /I ²)	8.778 sec	k = 143	S = 10mm ²	I = 482.65 A