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Question: calculate the tabulated current

A 5.5A load has a conductor protected by a 6A mcb and has the following correction factors applied to it:

Ca = 0.94 & Cg = 0.6

Calculate the “tabulated current” required.

When it says “tabulated current” it only wants you to calculate the up to the **It**

Question on Conduit calculations:

The following cables are to be drawn into a straight 2 metre length of conduit:

- 2 of solid core 1.5mm2
- 4 of solid core 2.5mm2
- 4 of stranded 4mm2

Calculate the conduit size required to accommodate these cables?

Workings out:

- The wires core. Which means the copper wires inside of the insulation can be solid or grouped together as strands. Stranded wires provide greater flexibility than solid ones.
- Sometimes the question will specify the length **E.g. 2 metres**. Otherwise it will specify **Short**.
- For cable factors in short straight runs use table E1.

Step one - use table E1 to get the cable factor

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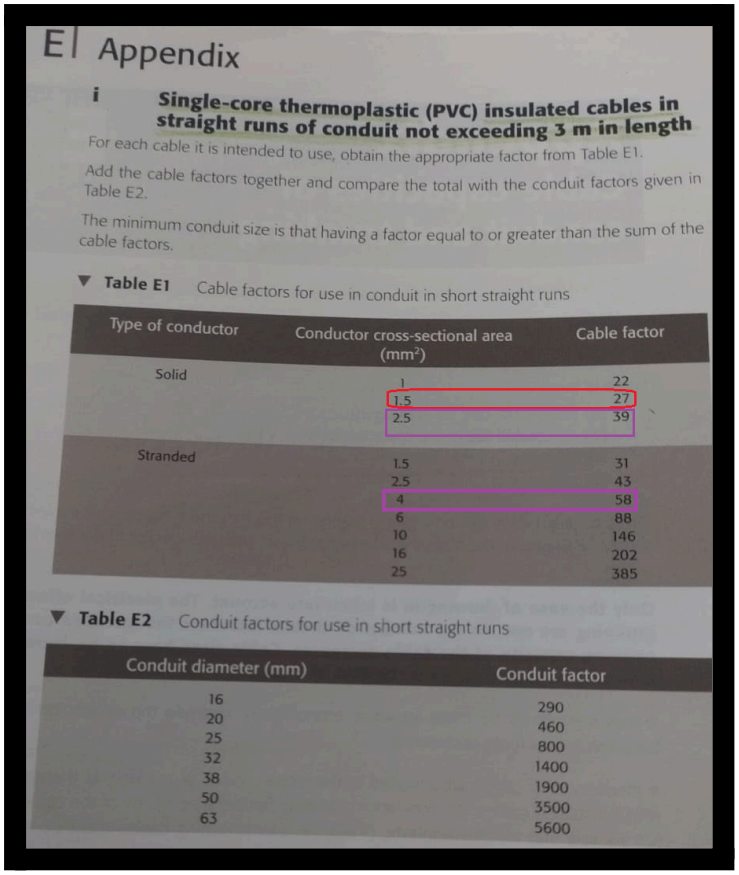

E Appendix

i **Single-core thermoplastic (PVC) insulated cables in straight runs of conduit not exceeding 3 m in length**

For each cable it is intended to use, obtain the appropriate factor from Table E1.

Add the cable factors together and compare the total with the conduit factors given in Table E2.

The minimum conduit size is that having a factor equal to or greater than the sum of the cable factors.

▼ **Table E1** Cable factors for use in conduit in short straight runs

Type of conductor	Conductor cross-sectional area (mm^2)	Cable factor
Solid	1	22
	1.5	27
	2.5	39
Stranded	1.5	31
	2.5	43
	4	58
	6	88
	10	146
	16	202
	25	385

▼ **Table E2** Conduit factors for use in short straight runs

Conduit diameter (mm)	Conduit factor
16	290
20	460
25	800
32	1400
38	1900
50	3500
63	5600

Step two - create a table to calculate the total cable factor

No. of cables	size	Cable factor	(No. of cables X Cable factor)
2	1.5	27	54
4	2.5	39	156
4	4	58	232
		Total Cable factor	**445**

Use the total cable factor to look-up the conduit factor.

Go to **Table E4**. As a side note I know that the question clearly states “Straight 2 metre length” which is a short straight run. Therefore, why would we use **Table E4** which is for long runs?

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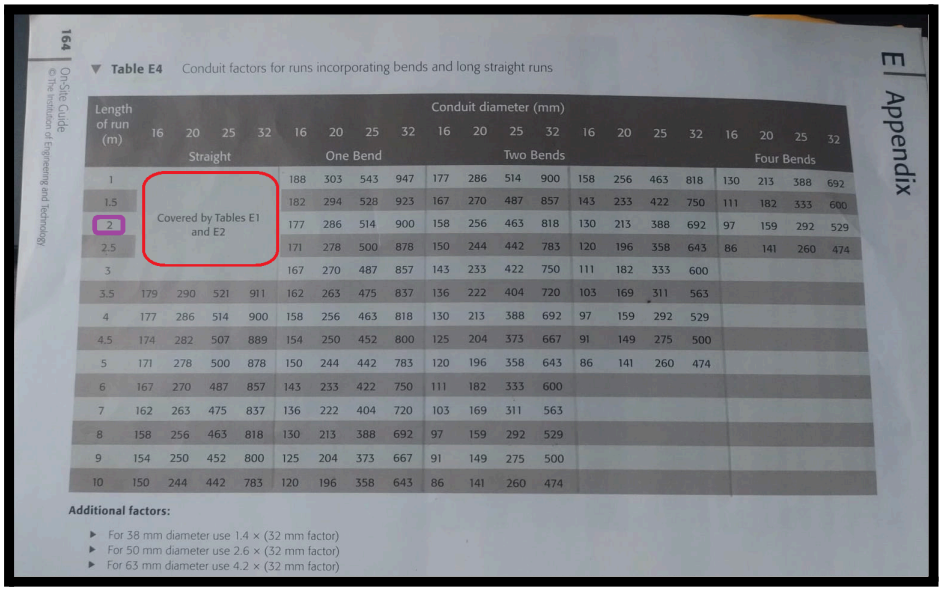
However, the left corner stipulates **“Covered by Tables E1 and E2”**.
But, it cannot be **Table E1** because we used it for the cable factor calculations hence it must be **Table E2**.
We use the total cable factor 445 and round it up to the nearest value in the Conduit factor column which is 460. We can look-up this value in the conduit diameter (mm) column so that value is 20(mm).

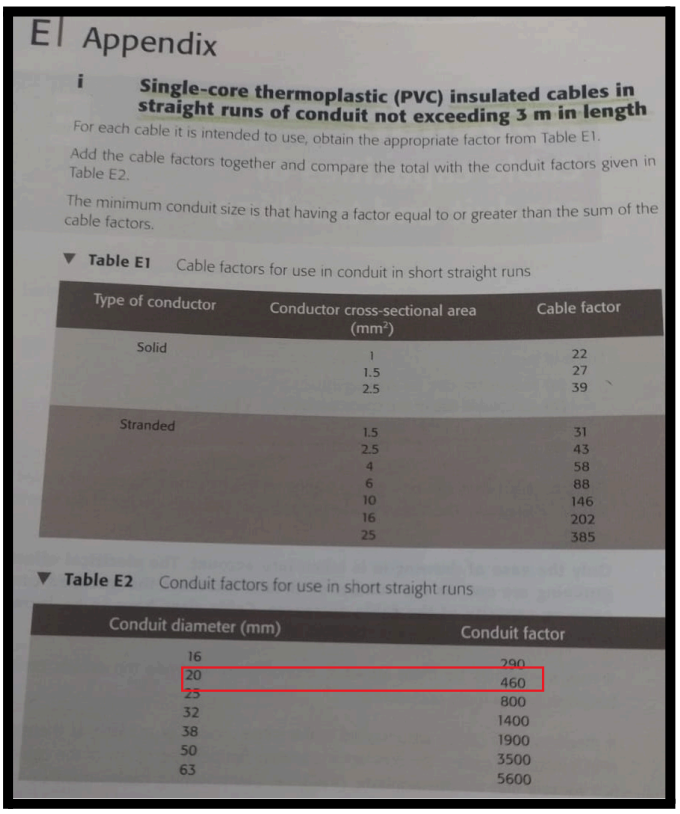


▼ **Table E4** Conduit factors for runs incorporating bends and long straight runs

Length of run (m)	Conduit diameter (mm)																			
	Straight				One Bend				Two Bends				Four Bends							
	16	20	25	32	16	20	25	32	16	20	25	32	16	20	25	32	16	20	25	32
1	Covered by Tables E1 and E2				188	303	543	947	177	286	514	900	158	256	463	818	130	213	388	692
1.5					182	294	528	923	167	270	487	857	143	233	422	750	111	182	333	600
2					177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529
2.5					171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474
3					167	270	487	857	143	233	422	750	111	182	333	600				
3.5	179	290	521	911	162	263	475	837	136	222	404	720	103	169	311	563				
4	177	286	514	900	158	256	463	818	130	213	388	692	97	159	292	529				
4.5	174	282	507	889	154	250	452	800	125	204	373	667	91	149	275	500				
5	171	278	500	878	150	244	442	783	120	196	358	643	86	141	260	474				
6	167	270	487	857	143	233	422	750	111	182	333	600								
7	162	263	475	837	136	222	404	720	103	169	311	563								
8	158	256	463	818	130	213	388	692	97	159	292	529								
9	154	250	452	800	125	204	373	667	91	149	275	500								
10	150	244	442	783	120	196	358	643	86	141	260	474								

Additional factors:

- For 38 mm diameter use 1.4 × (32 mm factor)
- For 50 mm diameter use 2.6 × (32 mm factor)
- For 63 mm diameter use 4.2 × (32 mm factor)



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