

**CMGT 235 – Electrical and Mechanical Systems**

**Homework #26**

Due: 11/29/2022

Points: 20

Show all work. Use NEC 2017 – Chapter 9 and Annex C

Name: Solution

1. What trade size PVC Schedule 40 raceway is required for 4 #4/0 and 1 #4 G THHN service entrance conductors?

QTY	Gage	Type	Cross-Section Area (E Wire)	Total Cross- Section Area
4	4/0	THHN	0.3237	$4 \times 0.3237 = 1.2948$
1	4	THHN	0.0824	$1 \times 0.0824 = 0.0824$
Total Cross-Section Area for all wires				1.3772
Required Trade Size PVC SCHED 40 Raceway				2 ½ "

2. What trade size EMT raceway is required for 3 #350 phase conductor, 1 #350 neutral conductor, and 1 #1 THHN equipment ground?

QTY	Gage	Type	Cross-Section Area (E Wire)	Total Cross- Section Area
4	350	THHN	0.5242	$4 \times 0.5242 = 2.0968$
1	1	THHN	0.1562	$1 \times 0.1562 = 0.1562$
Total Cross-Section Area for all wires				2.2530
Required Trade Size EMT Raceway				2 ½ "

3. What trade size PVC SCHEDULE 80 raceway is required for 3 #500 THHN phase conductors and 1 #500 neutral conductor?

Annex C Table C.10  
4 #500 THHN  
Trade Size 3 ½ "

Annex C Table C.10(A) (Compact Conductors)  
4 #500 THHN  
Trade Size 3"

4. How many #6 THHN conductors can be installed in a trade size 3/4 RMC?

Annex C Table C.9  
4 #6 conductors

Annex C Table C.9(A) (Compact Conductors)  
5 #6 Condcutors