9

Department of Education
National Capital Region
SCHOOLS DIVISION OFFICE
MARIKINA CITY

TLE-Industrial Arts

Electrical Installation and Maintenance

First Quarter-Module 1 Part 1
Rigid Nonmetallic Conduit

Writers: Jeramil G. Moreno (SST I, PHS)
Rogerson J. Pulido (SST II, MNHS)

Cover Illustrator: Christopher E. Mercado

Mayroong pag-asa dahil sa iyo, dahil sa inyong mga kabataan. Ang iyong mga ngiti, tawa, sigla, at likas na kabutihan ang inspirasyon naming mga magulang at guro upang pagbutihin ang pag-aalaga sa iyo, nang maipagpatuloy mo ang iyong pag-aaral at mga libangan.

Lagi ka sanang maging malusog, masayahin, masipag, at mapagmahal.

Ako ay sabik na maghihintay sa iyong pagbabalik sa paaralan sa hinaharap.

- Mayor Marcy

Paano iniiwasan ng ating pamilya ang COVID-19?

Inaalagaan ba natin ang ating kalusugan sa pamamagitan ng **sapat na tulog, ehersisyo, at masustansyang pagkain**?

Lagi ba tayong **naghuhugas ng kamay** gamit ang sabon at tubig o mga alcohol-based na produkto?

Pinapanatili ba natin ang kalinisan sa pamamagitan ng **palagiang pagdi-disinfect ng bahay**?

Binubuksan ba natin ang mga bintana para **makadaloy ang hangin** (natural ventilation)?

Iniiwasan ba natin ang **paglabas ng bahay at pagpapapasok ng bisita** kung hindi naman kailangan? Kung may lalabas man, tayo ba ay nagsusuot ng **face mask at face shield**?

Nagbabasa o nakikinig ba tayo sa mga **balita at bagong impormasyon** tungkol sa COVID-19?

Tinatandaan ba natin ang mga **karaniwang sintomas** ng COVID-19? At alam ba natin kung saan tatawag kung sakaling mayroong may sintomas sa pamilya?

Tinuturuan ba tayo ng ating mga magulang at nagiging mabuti ba silang modelo ng mga nabanggit na health at safety protocols?

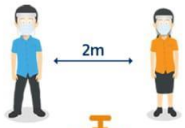
I Love Marikina

Make Marikina COVID-19 Free

Stay safe, stay healthy!

MGA PAALALA UPANG MAIWASAN ANG COVID-19

Laging magsuot ng face mask at face shield.



Practice Social Distancing
(Dumistansya ng 2 metro kapag nakikipag-usap)

Laging maghugas ng kamay at gumamit ng alcohol.

Kumain ng masustansyang pagkain at uminom ng maraming tubig.

Uminom ng bitamina.

Panatilihing malinis ang kapaligiran.

Manatili lamang sa bahay kung walang mahalagang aasikasuhin at panatilihing ligtas ang tahanan sa COVID-19.

Agad sumangguni sa inyong doktor o pinakamalapit na health center kapag nakaramdam ng mga palatandaan ng COVID-19.

Marikina COVID-19 Hotlines:

0926 626 3695
0927 456 6682
0961 470 3326
0961 470 3327

Make Marikina COVID-19 Free
Stay safe, stay healthy!

HiNDi PA TAPOS ANG LABAN SA COViD-19:
MGA PAALALA LABAN SA FAMiLY CLUSTER iNFECTiON

Iwasan ang hawaan sa pamilya, gawing ligtas ang tahanan. TANDAAN:

MARIKINA COVID-19 CALL CENTER
HOTLINE:
0926-626-3695
0927-456-6682
0961-470-3326
0961-470-3327

SWAB TEST

GAWiNG LiGTAS ANG TAHANAN.

- Huwag balewalain ang sintomas ng COVID-19
- Sundin ang quarantine protocols
- Huwag munang mag-dine in sa mga kainan/café
- Iwasan ang selebrasyon, inuman, at pagtambay
- Iwasan ang pulutong ng mga tao
- Huwag huhubarin ang face mask kapag nakikipagusap at panatilihin ang 2 meters na distansya
- Iwasan magpapasok ng mga bisita na hindi essential sa loob ng bahay
- Palaging maghugas ng kamay

i ♥ marikina

Hindi kaya ng pamahalaan lamang.
Magkakasama nating talunin ang COVID-19 sa Marikina.
PARA SA LiGTAS NA MARiKiNA

What I Know

Choose the letter of the correct answer and write the letter on the space provided before the number.

_____1. Which of the following is a nonmetallic raceway of circular cross section, with associated couplings, connectors, and fittings for installation of electrical conductors and cables?
a. flexible nonmetallic conduit
b. rigid nonmetallic conduit
c. surface raceway
d. rigid metallic conduit

_____2. Which of the following tools can be used to effectively bend a rigid nonmetallic conduit?
a. manual pipe bender
b. heat gun
c. hickey
d. pipe vise

_____3. Philippine Electrical Code permits the use of RNC on the following conditions EXCEPT:
a. Concealed in walls, floors, and ceilings
b. In locations subject to severe corrosive influences
c. For underground installation
d. Support of fixtures

_____4. Which of the following is the Maximum number of 2.0 mm^2 TW conductor into a 20 mm thick wall raceway?
a. 5 wires
b. 6 wires
b. 9 wires
c. 11 wires

_____5. Which of the following materials is used to make Rigid Nonmetallic Conduit?
a. polyvinyl Chloride
b. asbestos
c. cement
d. common plastic

Lesson 1 PEC Provisions on Installing Rigid Nonmetallic Conduit

As a future electrical practitioner, it is imperative that you have knowledge and skills in installing different wiring methods approved by the Philippine Electrical Code. This lesson introduces you the basics of installing rigid nonmetallic conduit that will help you achieve your goal to become a successful electrician.

What's In

Look for words from the given word hunt puzzle. You may encircle the words that you found on the table. These words are relevant to the topic that will be discussed in this lesson.

S	A	L	L	R	F	J	F	I	K
I	J	R	M	I	L	C	I	C	P
R	C	O	N	N	E	C	T	O	R
H	I	P	O	R	X	J	T	D	I
H	R	G	E	R	I	N	I	U	C
T	O	R	I	S	B	N	N	I	M
O	B	E	S	D	L	L	G	T	X
I	E	T	S	R	E	Y	S	T	W
P	N	R	O	G	R	S	N	P	U
W	D	O	P	N	C	L	O	S	R

What's New

Have you ever experienced installing an electrical system? One of the most common wiring methods in installing electrical systems is used on the pictures below. Observe the pictures below. What wiring method did they use?

The pictures above show the final preparation before Pouring the 2nd floor and roof beams. It also shows the prepared electrical system prior to pouring of cement on the slab. Pictures retrieved from **Pouring the 2nd floor and roof beams. (2011, November 30)**

What Is It

Rigid Nonmetallic Conduit

There are different types of approved wiring methods that we can use in installing our electrical system. One of which is the rigid nonmetallic conduit. Rigid nonmetallic conduits (RNCs) are commonly used wiring methods in our electrical system because these are lightweight and are significantly cheaper than metallic conduits.

RNC is a nonmetallic raceway of circular cross section which are manufactured to be resistant to moisture and chemical atmosphere. They are flame retardant or not easily burned and are resistant to impact and crushing. They do not easily get out of shape by the heat. It is an approved wiring method if installed properly with associated couplings, connectors, and fittings for installation of electrical conductors and cables.

RNC is popularly known as rigid PVC or sometimes PVC pipe since it is made of polyvinyl chloride or PVC. Its trade sizes range from 15 mm to 150 mm. It comes in two wall thickness, usually marked as thin wall (Schedule 40) and thick wall (Schedule 80). The thick wall RNC is easier to bend than the thin wall.

("Rigid Polyvinyl Chloride." n.d.)

The two common wall thickness of RNC are as follows:

Schedule 40: Marked as thin wall. It is permitted underground (direct burial or encased in concrete) and aboveground (indoors and outdoors exposed to sunlight) where not subject to physical damage. Some schedule 40 is marked for underground use only. Schedule 40 has a thinner wall than schedule 80.

Schedule 80: Permitted underground (direct burial or encased in concrete) and above ground (indoors and outdoors in sunlight) where subject to physical damage. Schedule 80 has a thicker wall than schedule 40.

Mogado (2015) discuss provisions on the use and installation of RNC as lifted from the Philippine Electrical Code

1. RNC is permitted to be used in the following:

a. Concealed in walls, floors, and ceilings
b. In locations subject to severe corrosive influences – presence of moisture promotes corrosion, RNC is allowed to be used even in these areas.
c. In cinder fills – Cinder is partially or mostly burned coal or piece of wood or more likely it is ashes of coal. Cinder fills are a combination of cement, sand and cinder. The beams and slabs were topped with a layer of loose cinder fill which provides fireproofing.
d. In wet locations, provided that the entire conduit system including boxes and fittings used are installed and equipped so as to prevent water from entering the conduit and that all supports, bolts, straps, and screws shall be of corrosive-resistant material
e. In dry and damp locations – RNC is a nonmetallic conduit, it will not corrode even with the presence of moisture.

f. In exposed work not subject to physical damage – Conduit systems using RNC can be installed visibly but should avoid or protected from physical damage to protect the conductors inside.
g. For underground installation – RNC can be buried directly on the ground if it follows other PEC provisions.

2. RNC shall not be used under the following conditions.

a. Classified hazardous locations
b. Support of fixtures – RNC cannot be used to support fixtures unlike RMC and IMC.
c. Where subject to physical damage – RNC cannot be used in areas that may cause damage to the conduit itself and the conductors in it.
d. Where subject to ambient temperature higher than 50°C
e. For conductors or cables operating at a temperature higher than the RNC operating temperature rating – Manufacturers specify the range of temperature where RNC can safely use. If the expected temperature of the conductor during operation is higher than the temperature rating of the RNC, it should not be used as raceway. Metallic conduits or cable trays should be used instead.
f. In theaters and similar locations

3. Grounding

In a system that requires equipment grounding, a separate conductor should be installed to be used as equipment grounding. RNC cannot be used as equipment grounding since it is nonmetallic.

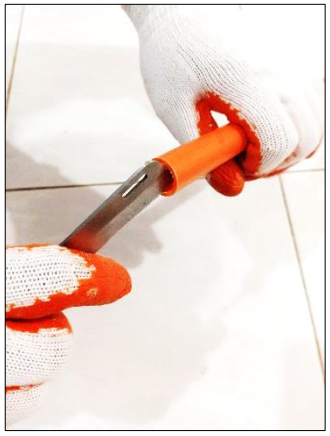
PEC also provides a table to determine the maximum number of conductors in RNC. For example, based on the table below, the maximum number of 3.5 mm^2, THW wire, in a 15 mm RNC is 3.

Maximum Number of Conductors and Fixture Wires in Rigid Nonmetallic Conduit (PVC Schedule 80 or Thick Wall)

Type	Conductor Size (mm^2)	Raceway Size (mm)											
		15	20	25	32	40	50	65	80	90	100	125	150
TW	2.0 (1.6)	6	11	20	35	49	82	118	185	250	324	514	736
	3.5	5	9	15	27	38	63	91	142	192	248	394	565
	5.5	3	6	11	20	28	47	67	106	143	185	294	421
	8.0	1	3	6	11	15	26	37	59	79	103	163	234
RHH, RHW, THW, THHW	2.0 (1.6)	4	8	13	23	32	55	79	123	166	215	341	490
	3.5	3	6	10	19	26	44	63	99	133	173	274	394
	5.5	2	5	8	15	20	34	49	77	104	135	214	307
	8.0	1	3	5	9	12	20	29	46	62	81	128	184
	14	1	1	3	7	9	16	22	35	48	62	98	141
	22	1	1	3	5	7	12	17	26	35	46	73	105
	30	1	1	1	3	5	8	12	19	26	33	53	77
	38	0	1	1	2	3	6	8	13	18	23	37	54
	50	0	1	1	1	3	5	7	11	15	20	32	46
	60	0	1	1	1	2	4	6	10	13	17	27	39
	80	0	0	1	1	1	3	5	8	11	14	23	33
	100	0	0	1	1	1	3	4	7	9	12	19	27

4. Cutting PVC conduits

Any fine-tooth saw can be used to easily cut RNC. The hacksaw is the most convenient tool used to cut the conduit because of its flexibility but it can be a little messy. For finer and cleaner cut, the use of PVC pipe cutter is the better tool to do the job but can only be used for smaller size of conduit.



There are situations where RNC are installed in tight places (example, excess conduit in a box) where cutting it using hacksaw or PVC pipe cutter is impossible, the use of cotton string or tie wire can be used instead.

Trimming inside and outside the cut edges of the conduit should be done to remove rough edges. Trimming the RNC can be done using an electrician's knife, as shown on the figure on the right.

How to cut PVC conduit with a cotton string or a tie wire

Wrap the string or wire halfway around the conduit and pull the ends of the string or wire alternately, as in a seesaw movement. Since friction produces heat, the wire or the string will get hot and will cut the RNC even more accurately than using a hacksaw blade.

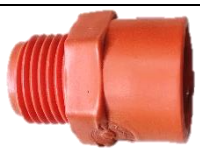
5. Joining PVC conduits

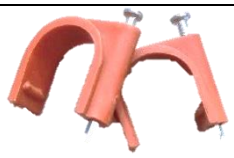
PVC pipe cement/solvent is necessary to join lengths of RNC. The solvent is applied between the ends of the conduits to be joined to make a strong and watertight joint. The solvent softens the PVC and allows the softened areas to form a weld, making a strong and watertight joint. RNC are manufactured with an integral coupling in one of its ends called hub where pipe cement/solvent is applied. The picture on the right is a manufactured coupling of an RNC.

6. Securing and Supporting PVC Conduits

When installing RNC, it is imperative that it is securely supported by approved fittings such as conduit strap or clamps. RNC shall be supported within 900mm or 3ft between electrical boxes. The space between supports should not exceed 900mm or 3ft. If the RNC is installed horizontally, it can be supported by framing members as long as the space between the frames does not exceed 900mm or 3ft.

The use of PVC fittings and accessories is needed to properly secure the pipe in electrical boxes. Some of the PVC fittings and accessories commonly used are the following:

	**Male Threaded Adapter** Also known as PVC connector or box connector, this is used to mechanically secure RNC to a box or enclosure. This is associated with locknut.

	**PVC Clamp with Clip Nail** The plastic saddle clip comes to suit poly pipe irrigation. This is used to support or securely fasten RNC to a supporting surface
	**Conduit Locknut** Its main function is to connect the box connector to a thread less opening in a box or enclosure. This PVC version of locknut is used for RNC and FNMC box connectors. The metallic version of locknut is used for RMC, IMC, EMT connectors.
	**Conduit Elbow – Long Radius** Long radius elbow is a factory made 90-degree elbow. Its trade size is up to 14″ and centerline radius thru 48″. It is used for rerouting the conduit system to 90 degrees with wider radius.

7. Bending PVC conduits

RNC can be bent to a desired shape by applying enough heat from any safe source. Heat box is the most convenient tool since it is specifically made for bending PVC. When electricity is not available a blowtorch can be used but if there is a supply of power, a heat gun is more convenient than a blowtorch.

Bending RNC requires patience as in any other type of conduit. It is first pre-heated until the desired softness is obtained. Little by little, it is bent to its desired angle. When such is attained, it is then hardened by soaking it to cold or lukewarm water or dampened with a wet rag.

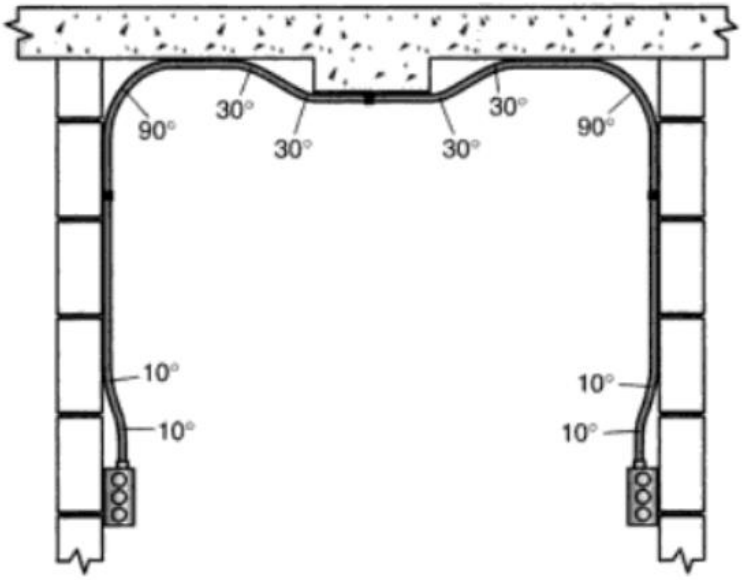
When bending RNC, the table below is used to determine the minimum radius of a 90-degree bend.

Radius of Conduits and Tubing Bends

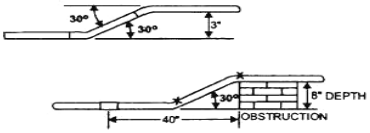
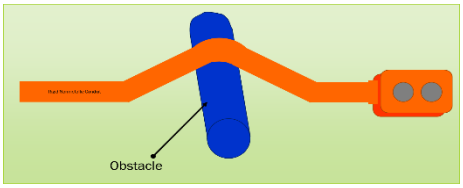
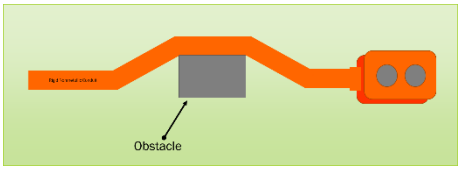
Size of Conduit (mm)	Radius of Bend (mm)
15	100
20	115
25	145
32	180
40	210
50	240
65	265
80	325
90	375
100	400

Different Types of PVC Bend

During the installation of RNC, field bends could be done by the electrician. Field bends are bends that are made to fit the needed angle of the actual installation such as to avoid obstacles. In making bends, we shall consider that the total bends along the conduit run shall not be more than the equivalent of four quarter bends (360° total) between pull points.



Since the total bends on the illustration above is only 340 degrees, this application is permissible. It meets the requirements of the PEC that no more than 360^0 of bends are allowed in a conduit run. (Residential Construction Academy House Wiring. n.d.)

1. Elbow	
2. Offset bend is less than 90^o bend, it is used when the conduit crosses an obstacle or enters an electrical box.	
3. Round saddle bend is used when the conduit runs across circular objects like pipes.	
4. Square saddle bend is similar to round saddle; it is used when the conduit runs across rectangular obstacles. Square saddle is just a combination of two offset bends.	

What's More

Read and answer the questions carefully. Rearrange the jumbled letters written at the end of each item to come up with the correct answer. Write your answer on the space provided before the number.

_____1. It is a nonmetallic raceway of circular cross section which are manufactured to be resistant to moisture and chemical atmosphere.
DRGII NNOMTEALLCI CNDUOIT

_____2. It is one of the wall thickness available for RNC that is easier to bend.
THCKI AWLL

_____3. RNC is popularly known as rigid PVC or sometimes PVC pipe since it is made of _____.
PLVNLOYYI CHLRDOIE

_____4. It is an accessory necessary for securing and supporting RNC.
CNDTOUI APSTR

_____5. Bends that are made to fit the needed angle of the actual installation such as to avoid obstacles.
FLDIE BDSNE

What I Have Learned

Fill in the blanks with the correct word/s to complete the paragraphs. Write your answer on the space provided after the number.

(1) _____ is a nonmetallic raceway of circular cross section which are manufactured to be (2) _____to moisture and chemical atmosphere. They are (3) _____retardant or not easily burned and are resistant to impact and crushing. They do not easily get out shape by the heat.

RNC is popularly known as rigid PVC or sometimes PVC pipe since it is made of (4) _____. It cannot be used as (5) _____ of fixtures but can be installed on (6) _____ walls, floors or ceilings.

In case an equipment grounding is required, a separate (7) _____ shall be installed in a nonmetallic raceway.

(8) _____is necessary to join lengths of PVC Conduits. It is applied between the ends of the conduits to be joined to make a strong and watertight joint.

What I Can Do

OFFLINE ACTIVITY

Observe how rigid nonmetallic conduit are used and installed in your home, in your neighborhood or in any commercial establishment. Make a narrative report on what you observed and learned. On your narrative, make comments on how they are installed or used. Cite any violations on the PEC provisions, if there is any. Your report may include pictures but make sure that you ask permission first with the owner of the establishment and take photos of the installation only if you are permitted.

Evaluation Rubric

Criteria	Excellent (5)	Good (4)	Needs Some Improvement (3)	Needs Much Improvement (2)	Not Applicable (1)
Provides brief summary of the report					
Discusses significant issues in electrical installation using rigid nonmetallic conduit					
Prepares an organized report					
Total					

ONLINE ACTIVITY

Search the internet for pictures of installation of rigid nonmetallic conduit. Take two pictures for the RNC installation that follows the PEC and another two pictures not following the PEC. Explain why the given picture falls on each column and what PEC requirement/s they violate.

Use 8.5”x11” and follow the given template below in making your report. Send your soft copy to the link/email given by your teacher.

Following the PEC Standards	Explanation
1. Insert pictures here	*Explain why it falls under this column*
2. Insert pictures here	*Explain why it falls under this column*

NOT Following the PEC Standards	Explanation
1. Insert pictures here	*Explain why it falls under this column*
2. Insert pictures here	*Explain why it falls under this column*

Evaluation Rubric

Criteria	Excellent (5)	Good (4)	Needs Some Improvement (3)	Needs Much Improvement (2)	Not Applicable (1)
Provides clear picture intended for each column					
Discusses significant issues in electrical installation using rigid nonmetallic conduit					
Prepares and sent the report within the given period of time					
Total					

Assessment

Identify what is asked. Write your answers on the space provided before the number.

_____ 1. What is the minimum size of the RNC?
_____ 2. What is the maximum size of the RNC?
_____3. When using 25 mm PVC conduit, what is the maximum number of 5.5 mm^2 TW wire allowed to be inserted in the pipe?
_____ 4. What is the process of removing rough edges of the RNC?
_____ 5. What is the most convenient tool used in cutting the RNC?
_____ 6. What is the minimum radius of a 90° bend in a 25-mm PVC conduit?
_____ 7. What is an equipment in the form of a box designed and intended for PVC bending?
_____ 8. When the conduit needs to run across circular obstacles like pipes, what type of RNC bend should be used?
_____ 9–10. When cutting RNC in a tight area or location like excess pipe inside the box or enclosure, name two materials that can be used as alternative tools for cutting PVC conduit.

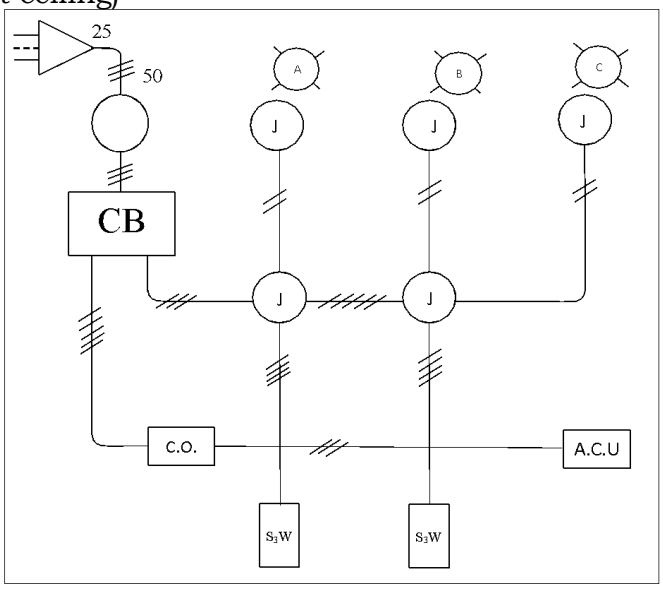
Write **TRUE** if the statement about RNC is correct. If it is incorrect, **change the underlined word or group of words** to make it correct. Write your answers on the space provided before the number.
_____1. The minimum radius of bend in a 20 mm RNC is **120** mm.
_____2. An RNC can be bent using a **manual pipe bender.**
_____3. A nylon string can be used to cut an RNC.

_____4. Trimming must be done after cutting RNC.
_____5. Field bends are bends that are made to fit the needed angle of the actual installation such as to avoid obstacles

Additional Activities

Interpret the given line diagram below. Answer the following questions based on your interpretation. Consider the information from the job order details below for your interpretation.

Job order details:
1. For service entrance down to Circuit Breaker Box (CB), use RMC
2. Branch Circuit no. 1 composed of 1 two gang convenience outlet and will use RNC
3. Branch Circuit no. 2 composed of 1 ACU outlet and will use RNC
4. Branch Circuit no. 3 composed of Lighting fixtures and their switches and will use RNC.
5. This line diagram will be installed in your training board (Flat plywood with stand, without ceiling)



Questions:

1. How many 90-degree elbow bends you should make to install branch circuit no. 1?

2. How many 90-degree elbow bends you should make to install branch circuit no. 3?

3. If the distance between the 3-way switches (S_3W) is 60 cm, what type and how many bends will you make to install the Air conditioning unit (ACU) outlet from the convenience outlet (CO)?

4. If the distance between the CO and ACU is 110 cm, how many conduit straps will you use to support the conduit?

5. On branch circuit no. 3, before the RNC enters the Circuit breaker box, what type of bend should you make?

References

Books

Mogado, Jomar P. (2015). *Technology and Livelihood Education (TLE) 9 Electrical Installation & Maintenance (Specialization).* Philippines: Trinitas Publishing Inc.

Competency-Based Learning Material Third Year Building Wiring Installation NCII Module no. 3 Installing Electrical Protection. 2008. Philippines: Department of Education

Websites, Journals, Magazines and others

Pouring the 2nd floor and roof beams. (2011, November 30). Retrieved from https://etmassociates.wordpress.com/house-construction-tour/pouring-the-2nd-floor-and-roof-beams/

Rigid Polyvinyl Chloride Conduit (PVC) (NEC Article 352) Basics and Tutorials. (n.d.). Retrieved from http://www.transmission-line.net/2012/05/rigid-polyvinyl-chloride-conduit-pvc.html

Residential Construction Academy House Wiring. (n.d.). Retrieved from https://books.google.com.ph/books?id=xGtcfPzGWckC&pg=PA321&lpg=PA321&dq=RNC field bend &source=bl&ots=-BdCsUPedX&sig=ACfU3U1y__8ii0j9jJpwWkNl5XaKsZEesw&hl=en&sa=X&ved=2ahUKEwja4-vjhPrpAhUIA4gKHZSYDeMQ6AEwAHoECAgQAQ#v=onepage&q=RNC field bend&f=false

Electrical Installation and Maintenance NCII – Grade 9
Alternative Delivery Mode
Quarter 1 – Module 1 Part 1: Rigid Nonmetallic Conduit
Lesson 1: PEC Provisions on Installing Rigid Nonmetallic Conduit
First Edition, 2020

Answer Key

Lesson 1

What's In

RIGID
CONDUIT
FITTINGS
CONNECTOR
BEND

What I Know

1. B
2. B
3. D
4. C
5. A

What's More

1. Nonmetallic conduit
2. Thick wall
3. Polyvinyl chloride
4. Conduit strap
5. Field Bends

What I Have Learned

1. Rigid Nonmetallic conduit
2. Resistant
3. Flame
4. polyvinyl chloride
5. Support
6. Concealed
7. conductor
8. PVC pipe cement/solvent

What I Can Do

Answers may vary

Assessment

A.
1. 15mm
2. 150mm
3. 11 wires
4. trimming
5. hack saw
6. 145 mm
7. heat box
8. Round saddle bend
9. cotton string
10. tie wire

B.
1. 115
2. heat/heat gun
3. True
4. True
5. True

Additional Activities

1. One 90-degree elbow
2. Two 90-degree elbow
3. Two round saddle bend
4. One conduit strap.
5. Off-set bend

Development Team of the Module

Writers: JERAMIL G. MORENO (SST-I, PHS)
ROGERSON J. PULIDO (SST-II, MNHS)

Editors: Jose Ferdinand B. Nisperos (SST-II, MHS)
Joffre N. Albiento (Head Teacher-III, MNHS)
Lauro Z. De Guzman (PRINCIPAL-IV, MHS)

Internal Reviewer: Joseph T. Santos (EPS – EPP/TLE/TVL)
Cover Illustrator: Christopher E. Mercado

Management Team:

Sheryll T. Gayola
Assistant Schools Division Superintendent
OIC, Office of the Schools Division Superintendent

Elisa O. Cerveza
Chief, Curriculum Implementation Division
OIC, Office of the Assistant Schools Division Superintendent

Joseph T. Santos
Education Program Supervisor – EPP/TLE/TVL

Ivy Coney A. Gamatero
EPS – Learning Resource Management and Development System

For inquiries or feedback, please write or call:

Schools Division Office – Marikina City
Email Address: sdo.marikina@deped.gov.ph
191 Shoe Ave., Sta. Elena, Marikina City, 1800, Philippines
Telefax: (02) 682-2472 / 682-3989