

**Knowledge Domain: Electrical Simple**  
**Unit: Connections**  
**Skill: Proper Use of Electrical Tape**

**Tools and Parts Required:**

- 1) **Electrical Tape (multiple colors optional)**
- 2) **Knife or scissors**
- 3) **Multi-meter or Continuity tester**
- 4) **Cable with exposed wire**

*Note: Use with skill "Broken Wires inside Cable"*

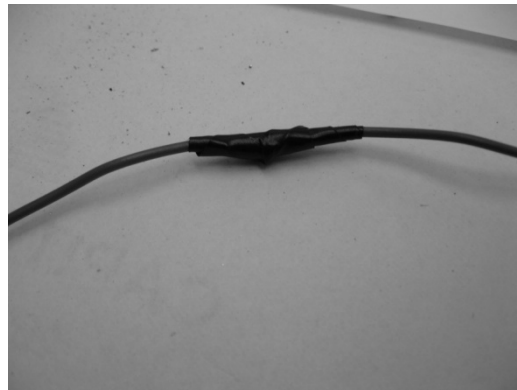
**Introduction**

Electrical tape is used to insulate electrical wires. It is also possible to use electrical tape to secure groups of wires together. Use electrical tape when heat shrink tubing is not available. Electrical tape is sometimes a substitute for other types of tape. Do not use electrical tape on surfaces that will come in contact with patients.

Electrical tape is usually black. It can also be found in different colors. You can use the different colors to indicate the voltage levels or grounding. ALWAYS disconnect the power source before touching the wires.

**Example**

Below is an example of an exposed electrical connection before and after being covered with electrical tape.



**Identification and Diagnosis**

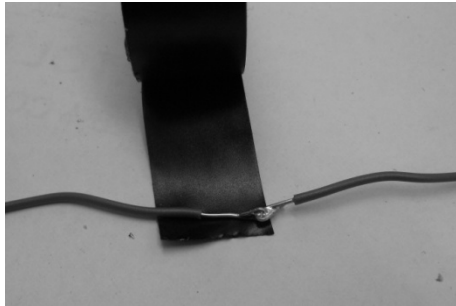
If there are broken wires, repair wires using skill "Broken Wires Inside Cable." Repair broken wires BEFORE using electrical tape.

Next, look for damage to the insulation. If the wires are intact, repair damaged insulation using electrical tape.

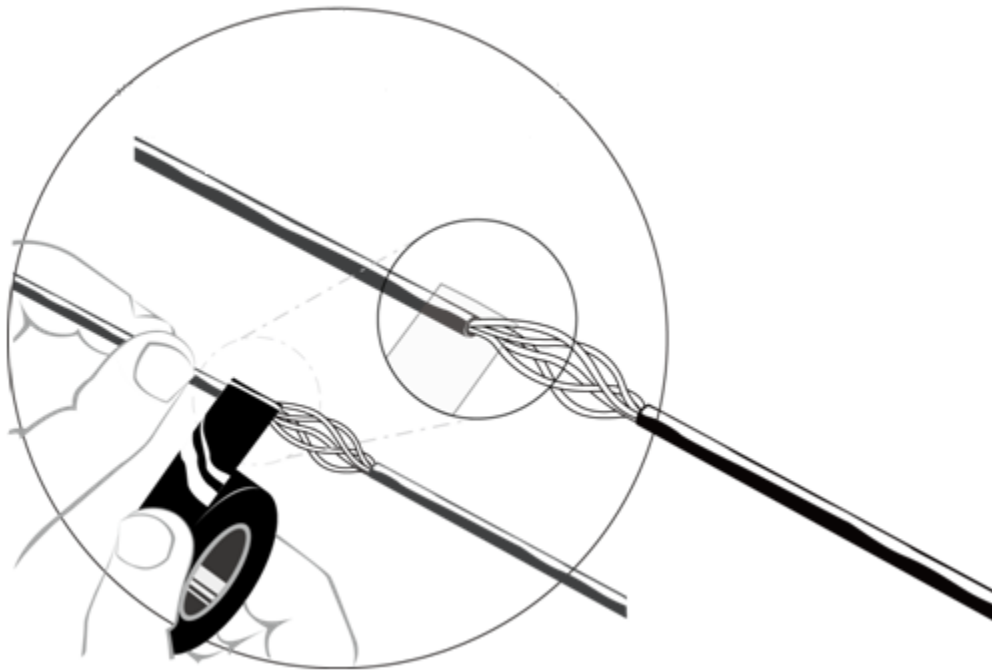
If possible, avoid using electrical tape for attachment.

### Procedure

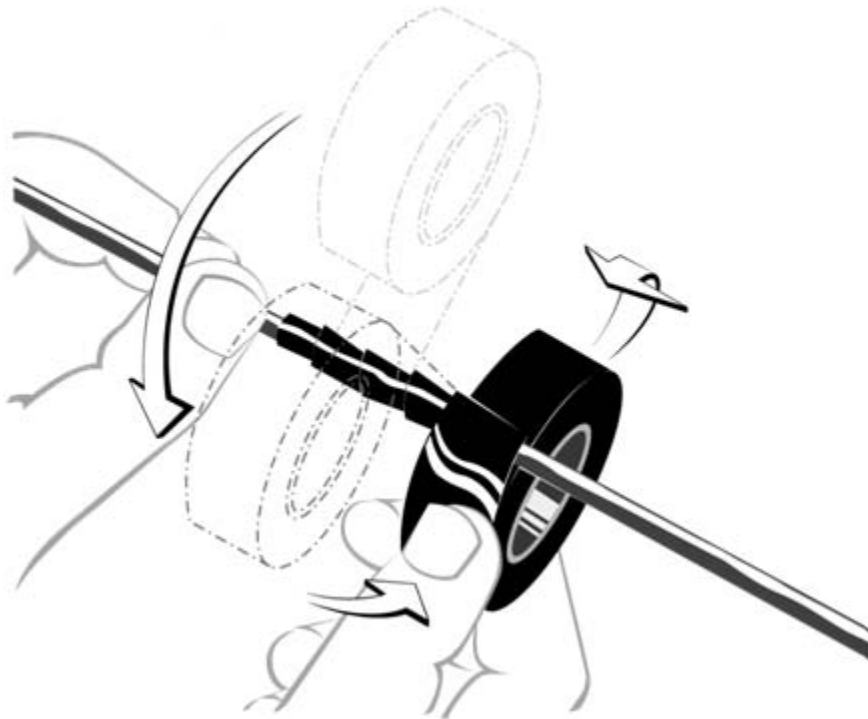
Apply electrical tape to clean, dry surfaces. Apply the tape at least 1cm on either side of the exposed wire.



The picture above shows initial placement of the electrical tape. Notice that the tape overlaps the insulation on the wire.



Hold the end of the tape securely in place while wrapping. Electrical tape will stretch as you pull. Pull gently to stretch the tape to create a tight connection. Wrap the tape so it overlaps itself on each turn. Do not wrap electrical tape more than 1-2 times. Electrical tape is rated 600 V. Typical wire insulation is only 300 V.



Cut the tape cleanly at the end. Secure the tape.

Look at the tape. Verify that no unwrapped wires are visible.

### **Exercise**

Obtain a wire that is exposed.

Use electrical tape to tightly wrap the wire so it is completely insulated. Look carefully at the tape. Verify that you cannot see any wire. Use a different color to insulate each wire (optional). After all the wires in the cable are insulated, use electrical tape to secure the bundle.

Your instructor must verify your work before you continue.

### **Preventative Maintenance and Calibration**

The electrical tape adhesive may begin to degrade. Inspect electrical tape for stickiness and stiffness. Replace sticky or stiff electrical tape.