

**Department of Education**  
**SPTVE**  
**SHIELDED METAL ARC**  
**WELDING (SMAW) 10**  
**Fillet Weld Symbol**  
**Quarter 2: Week 1 Module**



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1. identify fillet weld symbols for contour and weld finish, and
2. interpret welding fillet symbols



1. It is the type of weld in a cross-sectional shape of a triangle.  
A. Butt weld  
B. Corner joint  
C. Fillet weld  
D. Lap joint
2. It is the weld-all-around symbol is a supplementary symbol indicated by a(n)\_\_\_\_\_at the intersection of the arrow and reference line.  
A. Circle  
B. Oval  
C. Rectangle  
D. Triangle
3. What is the short section of fillet welds applied at specified intervals on the weld parts it also indicated on the welding symbol by length and pitch?  
A. Intermittent fillet welds  
B. Chain intermittent fillet welds  
C. Staggered intermittent fillet welds  
D. The weld all around symbol
4. Arrow is a supplementary symbol indicated by a *circle* at the intersection of and reference line,  
A. Intermittent fillet welds  
B. Chain intermittent fillet welds  
C. Staggered intermittent fillet welds  
D. The weld all around symbol
5. Which of the following intermittent fillet welds that have the same specified length and pitch and are applied to both sides of the weld joint?  
A. Intermittent fillet welds  
B. Chain intermittent fillet welds  
C. Staggered intermittent fillet welds  
D. The weld all around symbol
6. Intermittent fillet welds that have a staggered pitch and are applied to both sides of the weld joint  
A. Intermittent fillet welds  
B. Chain intermittent fillet welds  
C. Staggered intermittent fillet welds  
D. The weld all around symbol
7. Applied on the same side of the weld part require separate welding symbols.  
A. Chain intermittent fillet welds  
B. Intermittent and continuous fillet welds  
C. Weld contour  
D. Weld finish
8. What is the cross-sectional shape of the completed weld face?  
A. Chain intermittent fillet welds  
B. Intermittent and continuous fillet welds  
C. Weld contour  
D. Weld finish
9. Which method used to achieve the surface finish? For example a flat contour is obtained by *grinding* the weld?  
A. Chain intermittent fillet welds  
B. Intermittent and continuous fillet welds  
C. Weld contour  
D. Weld finish

10. Intermittent fillet welds are indicated on the welding symbol by length and

- \_\_\_\_\_.
- A. Circle
  - B. Concave

- C. Convex
- D. Pitch



## LOOKING BACK

Before you start with the new lesson, let us find out if you still remember the previous lesson on essentials of welding.

**Directions:** Write the essentials of welding on the blank provided after the number.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_



## BRIEF INTRODUCTION

A *fillet weld* is a type of weld in the cross-sectional shape of a triangle. The fillet weld is indicated by a triangle placed on the reference line of the welding symbol. The vertical member of the fillet weld is always placed to the left. Fillet weld specification may require welding symbols with dimension, notes in prints, and graphic representation. See Figure 11.

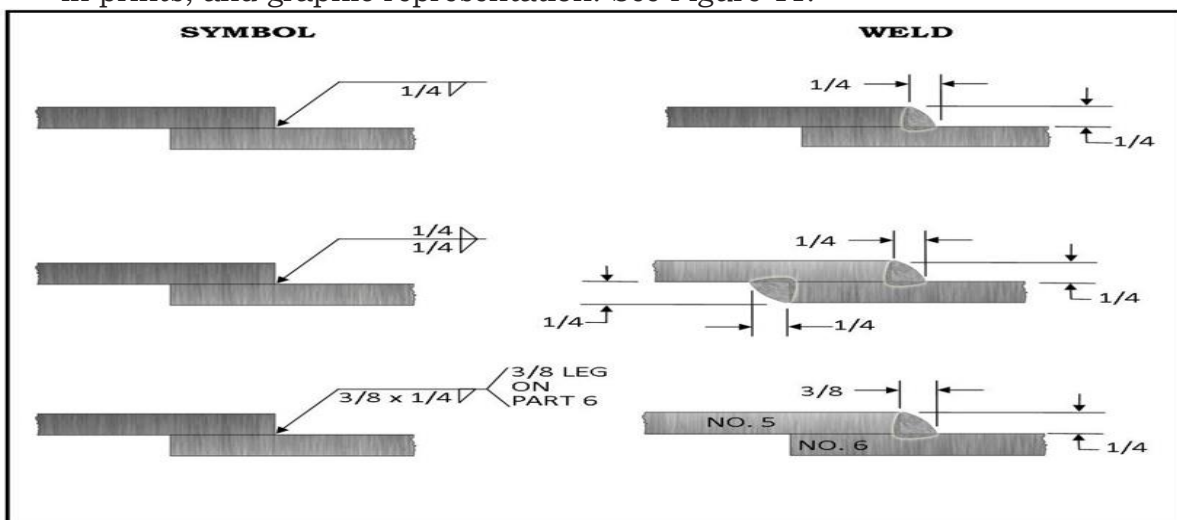


Figure 11. Fillet Weld Symbols

**The weld-all-around symbol** - is a supplementary symbol indicated by a *circle* at the intersection of the arrow and reference line, which specifies that the weld extends completely around the joint. Changes in direction of the weld require multiple arrows on the welding symbol to indicate the location of the weld. Multiple arrow on the welding symbols are not required if the weld-all-around symbol can be used. See Figure 12, which shows a sample of weld all around welds.

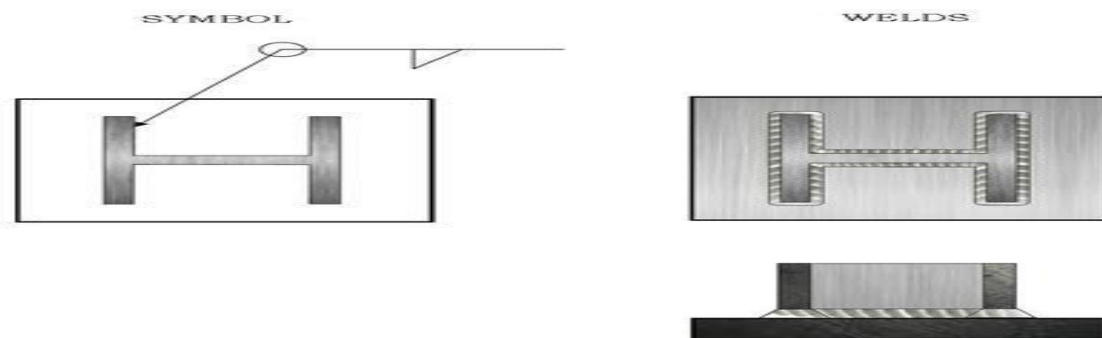
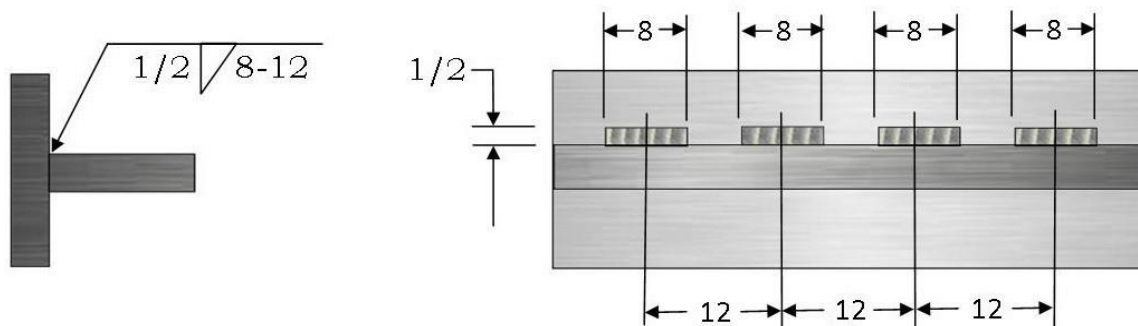


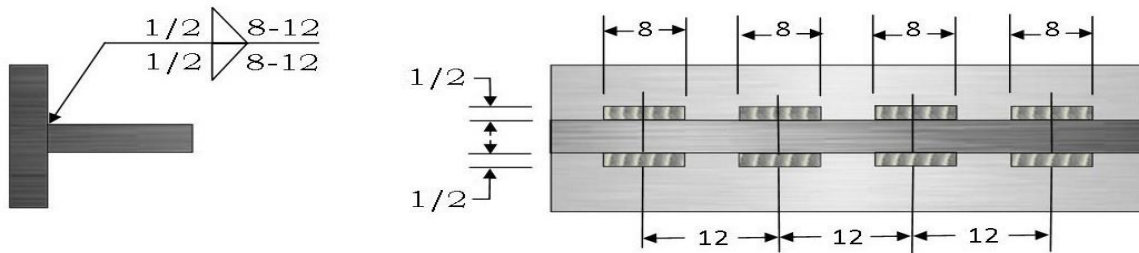
Figure.12 Weld all around symbols

**Intermittent fillet welds** - are short section of fillet welds applied at specified intervals on the weld parts. Intermittent fillet welds are indicated on the welding symbol by length and pitch. The length specified is the length of each weld section applied. The pitch specified is the center of each weld section. For example , an intermittent fillet weld with the dimension 8-12 specifies that 8" weld section are to be centered on 12" intervals. The figure below shows sample of intermittent welds.

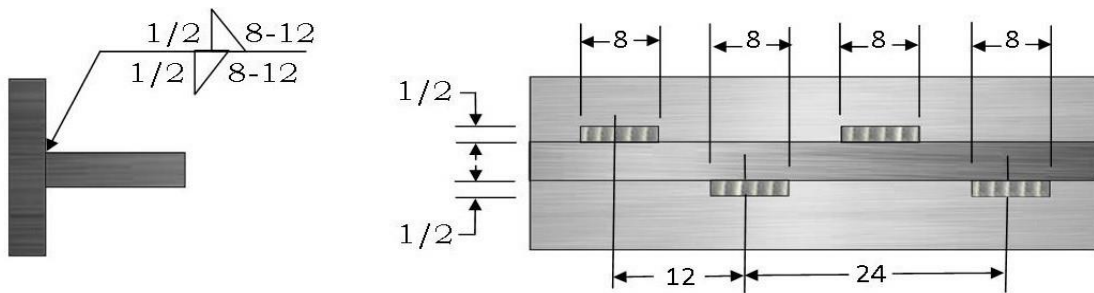


**Chain intermittent fillet welds** - are intermittent fillet welds that have the same specified length and pitch and are applied to both sides of the weld joint.

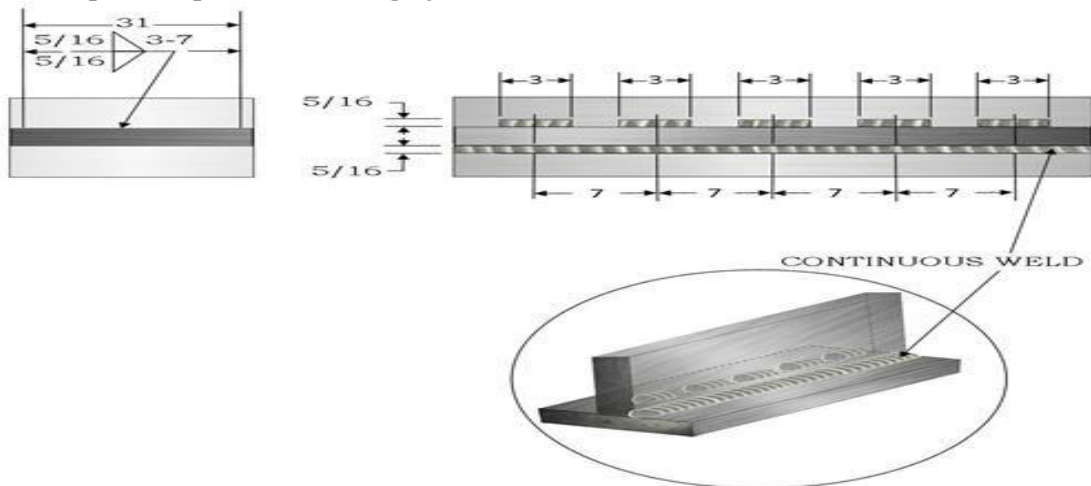
Chain intermittent fillet welds are spaced symmetrically unless otherwise noted on print.



**Staggered Intermittent fillet welds** - are intermittent fillet welds that have a staggered pitch and are applied to both sides of the weld joint. Staggered intermittent fillet welds are indicated on the welding symbol by a double-fillet weld symbol placed out of alignment on the reference line of the welding symbol. The leg and pitch for staggered intermittent fillet weld are indicated in the same way as intermittent fillet welds.



**Intermittent and continuous fillet welds** applied on the same side of the weld part require separate welding symbols.



## Weld Countour and Weld Finish

**Weld contour** - is the cross-sectional shape of the completed weld face.

**Weld finish** - is the method used to achieve the surface finish. For example a flat contour is obtained by *grinding* the weld. See Figure below.



## ACTIVITIES

**Directions:** Identify the fillet weld symbols in Column A by choosing the letter of the correct answer in Column B.

| COLUMN A                            | COLUMN B |
|-------------------------------------|----------|
| _____ 1) Concave;<br>grinding       |          |
| _____ 2) Staggered;<br>Intermittent |          |
| _____ 3) Flat<br>contour            |          |
| _____ 4) Chain<br>intermittent      |          |
| _____ 5) Convex;<br>Grinding        |          |



## REMEMBER

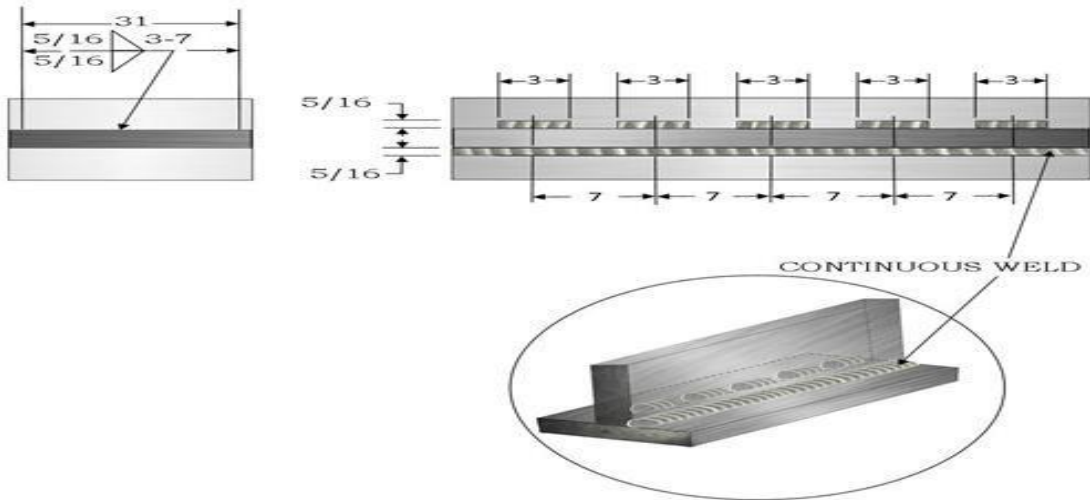
Fillet welds are one of the most common weld types in the industry. This weld is used when the joint has two members coming together to form an intersection of commonly 90 degrees. These welds can be applied on varying angles but this would be the most prominent.



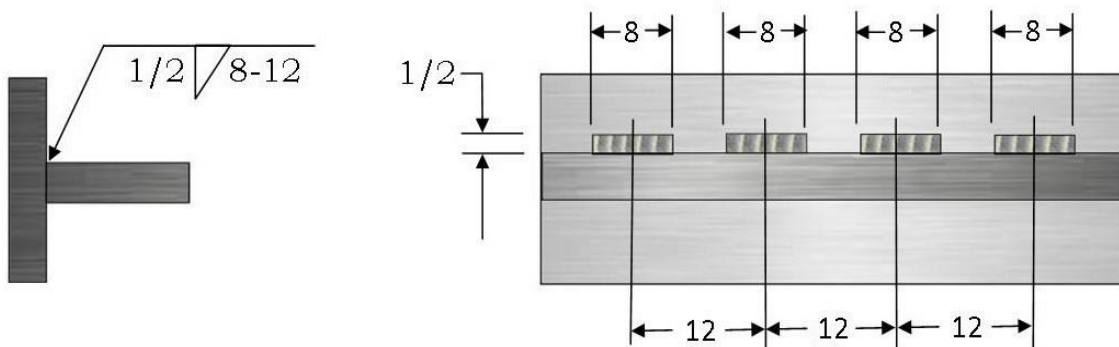
## CHECK YOUR UNDERSTANDING

**Directions:** Identify the fillet welds used in the illustration below. Write your answer on the blank space provided after each item.

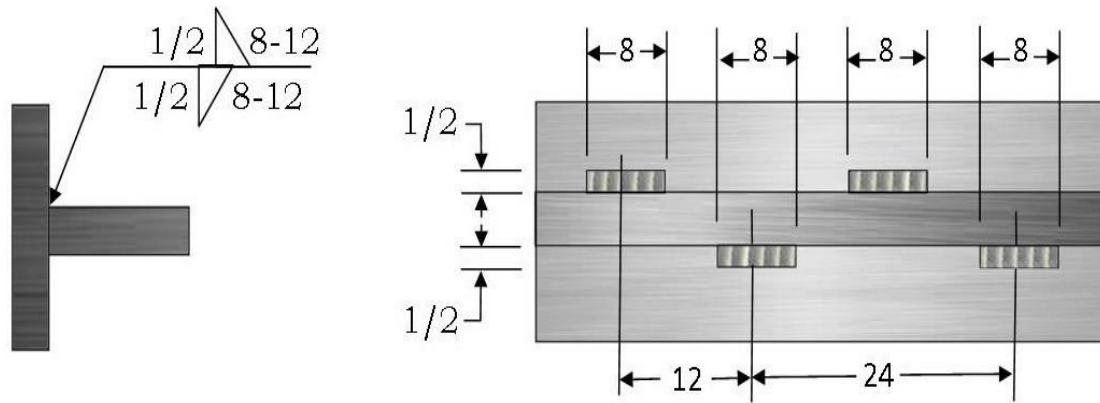
1. \_\_\_\_\_



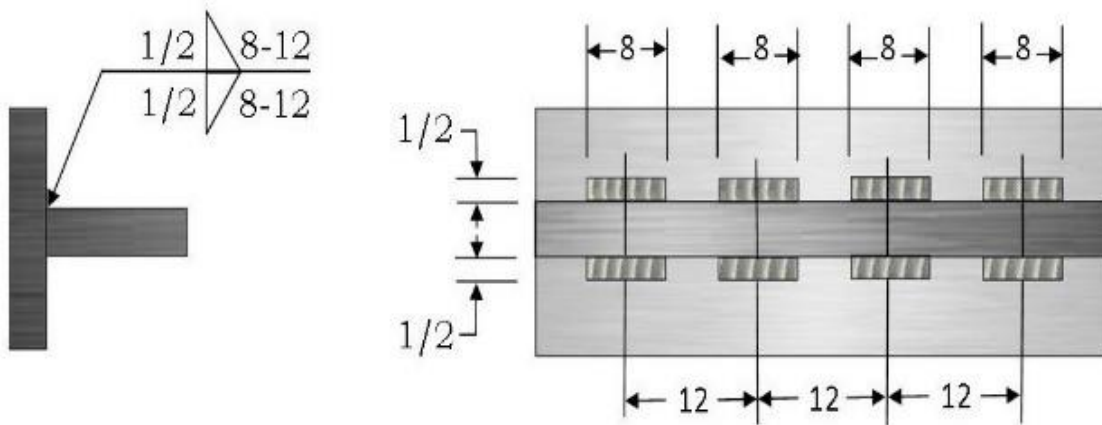
2. \_\_\_\_\_



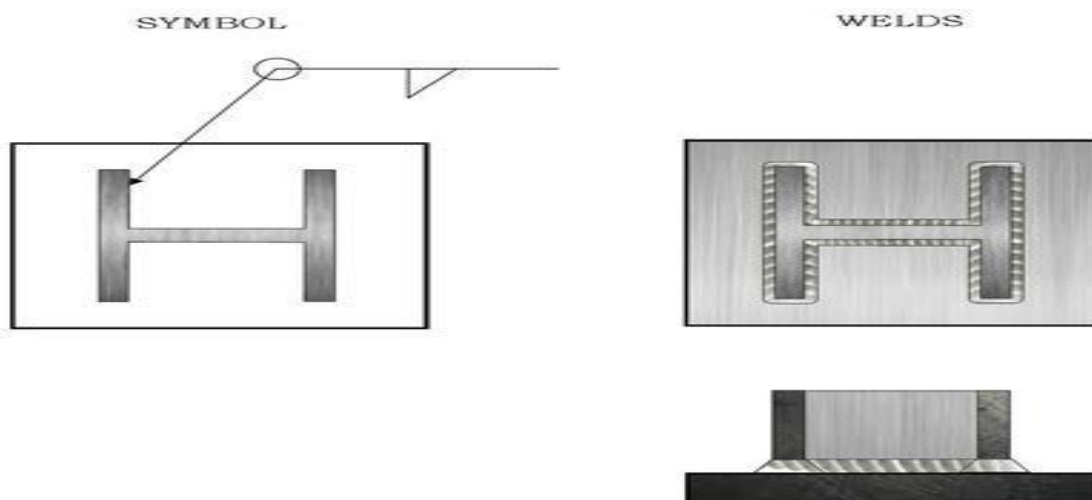
3. \_\_\_\_\_



4. \_\_\_\_\_



5. \_\_\_\_\_





## POST TEST

**Directions:** Encircle the letter of the correct answer.

1. Which of the following intermittent fillet welds that have the same specified length and pitch and are applied to both sides of the weld joint?  
A. Intermittent fillet welds                      C. Staggered intermittent fillet welds  
B. Chain intermittent fillet welds              D. The weld all around symbol
2. Which method used to achieve the surface finish? For example, a flat contour is obtained by *grinding* the weld.  
A. Chain intermittent fillet welds                      C. Weld contour  
B. Intermittent and continuous fillet welds      D. Weld finish
3. It is the weld-all-around symbol is a supplementary symbol indicated by a(n) \_\_\_\_\_ at the intersection of the arrow and reference line.  
A. Circle    C. Rectangle  
B. Oval    D. Triangle
4. Intermittent fillet welds that have a staggered pitch and are applied to both sides of the weld joint  
A. Intermittent fillet welds                      C. Staggered intermittent fillet welds  
B. Chain intermittent fillet welds              D. The weld all around symbol
5. It is the type of weld in a cross-sectional shape of a triangle.  
A. Butt weld    C. Fillet weld  
B. Corner joint     D. Lap joint
6. What is the short section of fillet welds applied at specified intervals on the weld parts it also indicated on the welding symbol by length and pitch?  
A. Intermittent fillet welds                      C. Staggered intermittent fillet welds  
B. Chain intermittent fillet welds              D. The weld all around symbol
7. Intermittent fillet welds are indicated on the welding symbol by length and \_\_\_\_\_.  
A. Circle    C. Convex  
B. Concave     D. Pitch
8. Applied on the same side of the weld part require separate welding symbol.  
A. Chain intermittent fillet welds                      C. Weld contour  
B. Intermittent and continuous fillet welds      D. Weld finish
9. What is the cross-sectional shape of the completed weld face?  
A. Chain intermittent fillet welds                      C. Weld contour  
B. Intermittent and continuous fillet welds      D. Weld finish
10. Arrow is a supplementary symbol indicated by a *circle* at the intersection of and reference line,  
A. Intermittent fillet welds                      C. Staggered intermittent fillet welds  
B. Chain intermittent fillet welds              D. The weld all around symbol

|   |  |   |
|---|--|---|
| <p><b>Post-test</b></p> <p>1. B<br/>2. D<br/>3. A<br/>4. C<br/>5. C<br/>6. A<br/>7. D<br/>8. B<br/>9. C<br/>10. D</p> | <p><b>Activity</b></p> <p>1. C<br/>2. D<br/>3. A<br/>4. E<br/>5. B</p> <p><b>Check Your Understanding</b></p> <p>1. Intermittent continuous fillet weld<br/>2. Staggered intermittent fillet weld<br/>3. Intermittent fillet weld<br/>4. Chain intermittent weld<br/>5. Weld all around symbol</p> | <p><b>Key to Corrections:</b></p> <p><b>Pre-test</b></p> <p>1. C<br/>2. A<br/>3. A<br/>4. D<br/>5. B<br/>6. C<br/>7. B<br/>8. C<br/>9. D<br/>10. D</p> <p><b>Looking Back</b></p> <p>1. Choosing the right electrode<br/>2. Correct size of electrode<br/>3. Correct Current and Settings<br/>4. Arc Length<br/>5. Travel Speed<br/>6. Electrode Angle<br/>7. Work safety</p> |
|---|--|---|

### References:

- [www.openoregon.pressbooks.pub/weldsymbols/chapter-3/](http://www.openoregon.pressbooks.pub/weldsymbols/chapter-3/)
- K12 BASIC EDUCATION CURRICULUM, GRADE 10, SMAW LM Final Check and verified page 54-64