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**Department of Education**  
National Capital Region  
Schools Division Office – Muntinlupa City

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**SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)**  
**SHIELDED METAL ARC WELDING 10 / Quarter 3: Week 4 Module**

- I. Topic: Perform lap joint in horizontal position (2F)
- II. Objectives:
  - 1. enumerate the procedures in welding lap joint in horizontal position (2F);
  - 2. draw the working drawing of welding lap joint in horizontal position (2F);
  - 3. value the importance of procedures in welding lap joint in 2F.

III. Introduction

A lap joint or overlap joint is a joint in which the members overlap. Lap joints can be used to join wood, plastic, or metal. A lap joint can be used in woodworking for joining wood together.

A lap joint may be a full lap or half lap. In a full lap, no material is removed from either of the members that will be joined, resulting in a joint which is the combined thickness of the two members. In a half lap joint or halving joint, material is removed from both of the members so that the resulting joint is the thickness of the thickest member. Most commonly in half lap joints, the members are of the same thickness and half the thickness of each is removed.

With respect to wood joinery, this joint, where two long-grain wood faces are joined with glue, is among the strongest in ability to resist shear forces, exceeding even mortise and tenon and other commonly-known "strong" joints. <sup>[1]</sup>

With respect to metal welding, this joint, made by overlapping the edges of the plate, is not recommended for most work. The single lap has very little resistance to bending. It can be used satisfactorily for joining two cylinders that fit inside one another.

Activities:

Activity 1.

Directions: Arrange the procedures into the correct order performing lap joint in horizontal position (2F)

- A. \_\_\_\_\_ Deposit root pass. Make sure that penetration of beads obtained.
- B. \_\_\_\_\_ Tack weld two plates following procedure in tacking.
- C. \_\_\_\_\_ Wear appropriate Personal Protective Equipment (PPE).
- D. \_\_\_\_\_ Check appearance of weld after the activity.
- E. \_\_\_\_\_ Fasten the tacked plates in a bench vise.
- F. \_\_\_\_\_ Prepare materials and tools needed.





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G. \_\_\_\_\_ Deposit second and third layer of beads by holding electrode closer to first layer.

**Activity 2**

Directions: Express what you have learned in this lesson by completing the sentences below.

1. The procedures of on how to weld lap joint in horizontal position are the following:

- 1) \_\_\_\_\_
- 2) \_\_\_\_\_
- 3) \_\_\_\_\_
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_
- 6) \_\_\_\_\_
- 7) \_\_\_\_\_

**Activity 3**

Directions: Draw the illustration/working drawing of lap joint in horizontal position (2F). See figure 21. (draw plates or base metal)





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IV. Assessment: (5 items only)

Directions: Fill in the blanks with the best answer. Perform Lap Joint in Horizontal Position (2F)

1. Wear \_\_\_\_\_ Personal Protective Equipment (PPE).  
1
2. Prepare \_\_\_\_\_ and \_\_\_\_\_ needed.  
2 3
3. \_\_\_\_\_ two plates following procedure in tacking.  
4
4. \_\_\_\_\_ the tacked plates in a \_\_\_\_\_.  
5 6
5. Deposit \_\_\_\_\_. Make sure that penetration of beads obtained.  
7
6. Deposit \_\_\_\_\_ and \_\_\_\_\_ layer of beads by holding  
8 9  
electrode closer to the first layer.
1. Check \_\_\_\_\_ of weld after the activity.  
10

VI. Reflection:

Direction: Answer the following questions.

1. When making a horizontal fillet weld in a lap joint the electrode should be positioned with a

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References:

- *K12 Basic Education Curriculum, Grade 10 SMAW LM Final Check and verified page 49-50*
- Public Technical Vocational High Schools, Competency-Based Learning material, SMAW NCI, (Department of Education 2008)

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