WELDING DEFECTS

20.1. Vocabulary

Ex. 1. *Match the words with their Russian equivalents.*

1. be covered with	a. сквозняк; воздушная тяга
2. cracking	b. растрескивание
3. air draft	c. мороз
4. frost	d. происходить
5. hole	e. трещина
6. concave	f. быть покрытым чем-либо
7. crack	g. отверстие
8. happen	h. сопротивление
9. impedance	i. впадина

Ex. 2. *Match the words with their definitions.*

1. nozzle 	a. the state of being porous or having small holes that allow liquids or gases to pass through.
2. plug up	b. the act of including or being included within a group or structure.
3. porosity 	c. relating to the side or sides; situated on one side.
4. insufficient	d. small particles or drops of a liquid that are scattered or splashed around.
5. spatter	e. to block or seal a hole or opening with something.
6. prevent	f. to stop something from happening or avoid it altogether.
7. inclusion	g. a narrow, tubular attachment used to control the flow of a liquid or gas.
8. lateral	h. not enough or inadequate in quantity or quality.

Ex. 3. *Complete the sentences with the given words.*

insufficient, nozzle, inclusion, lateral, crack, cracking, hole

The welder used a torch to _____(1) the metal into two pieces.

He heard the _____(2) sound as he welded the pieces together.

An _____(3) in the weld caused it to be weaker than expected.

There was _____(4) heat to properly melt the metal for welding.

She made a _____(5) movement with the welding tool.

The welder attached the _____(6) to the gas tank before starting.

Be sure to double-check the _____(7) size before welding it shut.

20.2. Reading

Ex. 1. *Read the text.*

Welding Defects

Welding defects can sometimes be a big problem in the manufacturing industry. These defects can impact the strength and durability of the welded structure. Common welding defects include porosity, cracks, and undercutting. Porosity happens when gas gets trapped in the weld, leading to small holes. Cracks are breaks that can occur in the weld or nearby areas and can compromise the structure's integrity. Undercutting is when the weld erodes the base metal, creating a groove that weakens the joint.

Each type of defect has different causes. For example, porosity often results from using contaminated materials or improper welding techniques. Cracks can be caused by fast cooling or high levels of stress.

Undercutting usually happens if the welder uses too much heat or moves too quickly.

It's crucial to inspect welds carefully to identify and correct these defects. Regular maintenance and proper training can help prevent welding defects, ensuring that the structures are safe and reliable. Experienced welders understand the importance of following proper procedures and using the right equipment to minimize the risk of defects.

Ex. 2. *Answer the questions.*

1. What are some common welding defects mentioned in the text?

2. How does porosity impact a weld?

3. What causes cracks to occur in a weld or nearby areas?

4. Why does undercutting weaken the joint in a weld?

5. How can porosity be prevented during welding?

6. What factors can cause cracks to form in a weld?

7. What measures can be taken to prevent welding defects and ensure safe structures?

20.3. Communication

Ex. 1. *Make sentences using the following words:*

1. Welding/defects/structural
2. Welding/defects/visible
3. Detecting/welding/early
4. Costly/repairs/down
5. Preventing/welding/place
6. Proper/training/equipment
7. Identifying/welding/attention
8. Noticeable/welding/immediately
9. Repaired/without/starting
10. Preventing/welding/safety