UNIT 5 – ACTIVITY 1 - QUIZ

What can be the cause of serious porosity in metal arc welds when working on an open site?
A. Electrode type
B. Power plant type
C. Electrode storage
D. Day temperature
ANSWER: C

When TIG welding austenitic stainless steel pipe, what is argon gas backing used for?
A. Prevent oxidation
B. Prevent underbead cracking
C. Prevent porosity
D. Control the penetration bead shape
ANSWER: A

Pre-heating a carbon steel manual metal arc welding is carried out to minimise the risk of?
A. Scattered porosity
B. Worm hole porosity
C. Parent metal cracking
D. Lack of penetration
ANSWER: C

The purpose of pre-heating low alloy steel before electric arc welding is to?
A. Refine grain structure.
B. Relieve internal stress.
C. Retard rapid cooling.
D. Regulate excessive expansion.
ANSWER: C

One of the reasons for excluding hydrogen from the weld metal is to prevent the weld from?
A. Cracking
B. Cooling slowly
C. Cooling quickly
D. Expanding
ANSWER: A

Which of the following tests would indicate the toughness of THE HAZ?
A. Indentation
B. Nick break
C. Hardness
D. Charpy vee notch
ANSWER: D

In submerged arc welding excessive arc voltage may cause?
A. Excessive penetration
B. Change in weld metal composition
C. Narrow weld width

D. Excessive bead profile
ANSWER: B

Welds made with high heat inputs show a reduction in which of the following properties?
A. Ductility
B. Toughness
C. Fatigue strength
D. Mechanical strength
ANSWER: B

Welding a steel plate with a CE of 0.45 would require preheating in order to?
A. Prevent the formation of sulphides
B. Prevent hardening in the HAZ
C. Prevent the formation of carbides
D. To improve mechanical properties in the weld
ANSWER: B

During welding heat input should be done at a controlled rate, relatively high heat inputs would?
A. Have poor profile
B. Have larger grain size
C. Have high hardness in the HAZ
D. Have low elongation properties
ANSWER: B

Stray arc strikes are undesirable since they?
A. Leave a poor surface finish.
B. Cause weld metal cracking.
C. Reduce corrosion resistance.
D. Cause local hardening and cracking in the parent material.
ANSWER: D

What should a code of practice for visual inspection of welds include?
A. Before, during and after welding activities
B. Before welding activities only
C. After welding activities only
D. None of the above
ANSWER: A

Slag inclusions during welding can would occur with?
A. Manual metal arc
B. Metal inert gas
C. Submerged arc welding
D. Both A and C
ANSWER: D

Undercut defect is principally caused by?
A. Excessive amps
B. Excessive volts

C. Excessive travel speed
D. All the above
ANSWER: D

A welding procedure is useful for which of the following?
A. Give information to the welder
B. Give information to the inspector
C. Give confidence to a product
D. All the above
ANSWER: D

The main cause of porosity in welded joints can be?
A. Poor access
B. Loss of gas shield
C. 'Dirty' materials
D. All the above
ANSWER: D

Cracks in welds can occur due to?
A. Solidification problems
B. Hydrogen gas presence
C. Excessive stresses
D. All the above
ANSWER: D

Which of the following may be classified as a more serious defect?
A. Slag inclusions
B. Fusion defects (inter-run)
C. Fusion defects (surface)
D. Porosity
ANSWER: C

What metallurgical problem is most associated with submerged arc welding?
A. Hydrogen cracking in the HAZ
B. Solidification cracking in the weld metal
C. Hydrogen cracking in the weld metal
D. Lamellar tearing in the weld metal
ANSWER: B

A large grain structure in steels is said to produce?
A. Low ductility
B. Low fracture toughness
C. High fracture strength
D. High tensile strength
ANSWER: B

The likelihood of brittle fracture in steels will increase with?
A. Large grain formation

B. A reduction of in-service temperature to sub-zero temperatures
C. Ferritic rather than austenitic steels
D. All the above
ANSWER: D

Hydrogen cracking in the weld metal is likely when welding?
A. Carbon manganese steels
B. Stainless steels
C. Micro alloyed steels (HSLA)
D. Low carbon steels
ANSWER: C

Porosity in welds can be caused by?
A. Entrapped slag in the solidifying weld
B. Entrapped gas in the solidifying weld
C. Entrapped metallic inclusions in the solidifying weld
D. None of the above
ANSWER: B

If iron sulphide is present in the weld metal, what is very likely to occur upon contraction of the weld?
A. Solidification cracking
B. Hydrogen cracking
C. Intergranular corrosion
D. Stress corrosion cracking
ANSWER: A

Hydrogen controlled electrodes were developed principally for?
A. The prevention of porosity
B. The prevention of cracking
C. The enhancement of arc voltage
D. Their ease of arc starting
ANSWER: B

An austenitic stainless steel may suffer?
A. Weld decay.
B. Sensitisation.
C. Solidification cracking.
D. All the above.
ANSWER: D

Carbon equivalent values are useful to determine?
A. Weldability aspects.
B. Crack sensitivity aspects.
C. Typical mechanical properties.
D. All the above.
ANSWER: C