

Unit 13 - Week 12

Course outline

How does an NPTEL online course work?

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Week 12

Identification of Genesis of Quality Problems Through Metallographic Investigation : Part I

Identification of Genesis of Quality Problems Through Metallographic Investigation : Part II

Identification of Genesis of Quality Problems Through Metallographic Investigation : Part III

Some Examples of Quality Problems

Quiz : Assignment 12

Week 12 Feedback :Steel Quality: Role of Secondary Refining and Continuous Casting

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Assignment 12

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-22, 23:59 IST.

Either One or Two Solutions are Correct for Each Question .

When One Solution is Correct , choice of only the Correct One will give ONE mark. Choice of more than One will result in ZERO mark .

When Two Solutions are Correct , choice of only the TWO CORRECT will give ONE mark . Choice of more than Two will result in ZERO mark . One Correct Solution will give 0.5 mark

1) **Metallographic investigation** on defect is necessary to identify the following :

1 point

- Steel chemistry
- Steel properties
- Origin of defect

No, the answer is incorrect.

Score: 0

Accepted Answers:

Origin of defect

2) It is necessary to specifically study the following feature of defect :

1 point

- Size and shape
- Location
- None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

Size and shape

Location

Location

3) Though a **post-mortem** , metallographic study is useful for the following :

1 point

- Generating knowledge
- Preventing future recurrence
- None

No, the answer is incorrect.

Score: 0

Accepted Answers:

Generating knowledge

Preventing future recurrence

4) Undesirable quality of continuously cast steel slab may be traced to :

1 point

- Poor cleanliness
- Process variation
- Strength of steel

No, the answer is incorrect.

Score: 0

Accepted Answers:

Poor cleanliness

Process variation

Process variation

5) For **more correct analysis** , metallographic study has to be supplemented with :

1 point

- Nothing
- Process analysis
- Prior knowledge

No, the answer is incorrect.

Score: 0

Accepted Answers:

Process analysis

Prior knowledge

6) A **material defect** in a hot rolled steel plate may have its origin in :

1 point

- Exogenous entrapment
- Reheating furnace
- Hot rolling temperature
- Sub-surface crack in cast slab
- Hot deformation per pass

No, the answer is incorrect.

Score: 0

Accepted Answers:

Exogenous entrapment

Sub-surface crack in cast slab

Sub-surface crack in cast slab

7) The **genesis of entrapment** in defect can be specifically found out by :

1 point

- Optical microscope
- SEM with WDX / EDX
- Ultrasonic test

No, the answer is incorrect.

Score: 0

Accepted Answers:

SEM with WDX / EDX

8) The following feature adjacent to a crack in final product can ascertain whether crack was **pre-existing in cast stage** , or got **generated during final** processing :

1 point

- Decarburisation
- Deoxidation
- Coarse grains

No, the answer is incorrect.

Score: 0

Accepted Answers:

Decarburisation

Coarse grains

Coarse grains

9) Possible solution for edge crack in AISI – 304 stainless steel is :

1 point

- Low δ - ferrite
- Low finishing temperature
- High δ - ferrite

No, the answer is incorrect.

Score: 0

Accepted Answers:

Low δ - ferrite

Low δ - ferrite

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