Assignment 8

The due date for submitting this assignment has passed.

Due on 2021-03-21, 23:59 IST.

1) Exposure of fibre-reinforced epoxy coated (FRBC) rebars to sunlight with high UV index (like in India) for about a month and in the absence of chlorine can result in microcracks of the epoxy coating. State true or false.
   - True
   - False
   No. the answer is incorrect. Score: 0
   Accepted Answers: True

2) What are the mechanisms of corrosion prevention in a good quality GRC coated steel rebars (i.e., when coating is applied on sand blasted steel). 2 points
   - Helps in the formation of passive film
   - Acts as a sacrificial layer for the steel
   - Helps in the reduction of oxygen supply
   - Eliminates direct physical contact between metal and concrete
   No. the answer is incorrect. Score: 0
   Accepted Answers: Helps in the formation of passive film
   Helps in the reduction of oxygen supply
   Eliminates direct physical contact between metal and concrete

3) Using FRBC steel rebars is one of the methods to prevent corrosion. If implemented adequately. Which of the following is the correct order - 2 points
   - i. Cutting and bending of FRBC rebars at the site and reapplying the epoxy coating, if needed
   - ii. Replacing the rebars with damaged/asbestos/holdfast, if any
   - iii. Fusion-bonded epoxy coating of steel rebars at the factory
   - iv. Cutting and bending of rebars at the factory
   - v. Transporting FRBC rebars to the site
   - vi. Holiday/vacation on the coating
   - (a) (b) (c) (d) (e) (f) (g)
   - (a) (b) (c) (d) (e) (f) (g)
   No. the answer is incorrect. Score: 0
   Accepted Answers: False

4) Aluminium and aluminium alloys have definite upper and lower yield points similar to the strain-stress behaviour of reinforcing steel. State true or false.
   - True
   - False
   No. the answer is incorrect. Score: 0
   Accepted Answers: False

5) It is recommended that all the aluminium fascades must be hard anodised before it is installed in a building. Which of the following circuit diagram is the correct one to achieve anodized aluminium - 2 points
   - (A)
   - (B)
   - (C)
   - (D)
   No. the answer is incorrect. Score: 0
   Accepted Answers: (D)

6) In most construction sites, FRBC steel rebars get abraded, scratched/damaged by the time they are emplaced in concrete. The following table 2 points shows the various types of rebars suggested to be used in the construction of a safety rail and the dates about their service life, obtained from similar projects in the past.

<table>
<thead>
<tr>
<th>Steel Rebar Type</th>
<th>Time for corrosion initiation (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncorroded steel (U)</td>
<td>25</td>
</tr>
<tr>
<td>Epoxy-coated steel (E)</td>
<td>35</td>
</tr>
<tr>
<td>Galvanized steel (G)</td>
<td>35</td>
</tr>
</tbody>
</table>

The steel rebars must be replaced with the same type when corrosion initiates to achieve a targeted service life. Which of the following is/are correct regarding the life-cycle cost (LCC) of the bridge pier? (Use typical cost comparison available from the lecture)
   - For a service life of 60 years, LCC_U > LCC_E > LCC_G
   - For a service life of 10 years, LCC_U > LCC_E > LCC_G
   - For a service life of 60 years, LCC_E > LCC_U > LCC_G
   - For a service life of 10 years, LCC_E > LCC_U > LCC_G
   No. the answer is incorrect. Score: 0
   Accepted Answers: True