Visual inspection is the process of concrete surface examination to specify and illustrate various concrete conditions concrete might demonstrate during its life span. It helps to determine concrete deterioration at early stages which facilitates repair of concrete member before replacement is required.

### Table: Checklist for Visual Inspection of Concrete Structure

<table>
<thead>
<tr>
<th>Inspection Items</th>
<th>Description</th>
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</thead>
</table>
| Description of structure              | ☐ Name, location, type, and size  
☐ Owner, project engineer, contractor, date of construction  
☐ Photographs involve general view and a detailed close-up of the condition of an area  
☐ Draw map-orientation showing the sunny and shady areas and the well and poorly drained regions. |
| Nature of environmental and loading conditions | ☐ Arid, subtropical, marine, freshwater, industrial environment.  
☐ Freezing and thawing, wetting and drying under a dry atmosphere.  
☐ Chemical corrosion and attack: sulfates, acids, bases, chloride, gases  
☐ Abrasion, erosion, cavitation, impact  
☐ Electrical conductivity  
☐ Deicing chemicals that contain chloride ions  
☐ Heat from adjacent sources |
| Drainage                              | ☐ Flashing Joint, sealants, Weep holes, Contour Elevation of drains                                                                                                                                   |
| Loading conditions                    | ☐ Dead  
☐ Live  
☐ Impact  
☐ Vibration  
☐ Traffic  
☐ Seismic  
☐ Other types of loads |
| Soils (foundation conditions) | □ Expansive soil  
|                              | □ Compressible soil (settlement)  
|                              | □ Evidence of pumping  
| Distress indicators | □ Cracking  
|                       | □ Staining  
|                        | □ Surface deposits and exudations  
|                        | □ Leaking  
| Overall apparent alignment of structure | □ Settlement  
|                                  | □ Deflection  
|                               | □ Expansion and contraction.  
| General Condition of Concrete Surface | □ Good  
|                                     | □ Satisfactory  
|                                    | □ Poor  
| Formed and finished concrete surfaces | □ Smoothness  
|                                      | □ Bug-holes (surface air voids)  
|                                     | □ Sand streaks  
|                                   | □ Honeycomb  
|                                  | □ Soft areas  
|                                 | □ Cold joints  
|                                | □ Staining  
| Cracking | □ Location and frequency of cracks  
|          | □ Crack map  
|          | □ Crack width and pattern  
|          | □ Leaching  
| Scaling of concrete | □ Type  
|                      | □ Area  
|                     | □ Depth  
| Spalls and pop-outs | □ Number  
|                       | □ Size  
|                       | □ Depth  
|                      | □ Type  
| Stains, efflorescence |  
| Exposed reinforcement | □ Corrosion  
| Curling and warping | -  
| Erosion | □ Abrasion, Cavitation  

<table>
<thead>
<tr>
<th>Previous patching or other repair</th>
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<tbody>
<tr>
<td>Surface coatings/protective systems/linings/ toppings</td>
<td>□ Type and thickness</td>
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<tr>
<td></td>
<td>□ Bond to concrete</td>
</tr>
<tr>
<td></td>
<td>□ Condition</td>
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<tr>
<td>Penetrating sealers</td>
<td>□ Type</td>
</tr>
<tr>
<td></td>
<td>□ Effectiveness</td>
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<td>□ Discoloration</td>
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