

Bridge Circular No.2R(1990)
Circular revised on 18/4/90

- The Divl. Railway Manager(Engg.),
N.E.Railway,
SPJ, SEE, BSB, LJN, IZN.
- The Chief Workshop Manager(Bridges),
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Reg : Distressed bridges -
Classification.

A Sub-Committee was appointed by the Board on the Rebuilding of Bridges. Based on the accepted recommendation of this Committee, received from the Board, following instructions are issued:

2.0 Definition of Distressed bridges:

- 2.1 Distressed bridge is one which shows any physical sign of deterioration, indicating the need for rehabilitation through special repairs, strengthening or rebuilding (including replacement of girders). This definition does not include those bridges considered vulnerable due to hydrological factors.

3.0 Categorisation of Distressed Bridges:

Distressed bridges are to be classified in two categories:

Category I : Those requiring rehabilitation to be done immediately, say within a year's time.

Category II : Those required to be kept under observation and to be rehabilitated on a programmed basis.

4.0 Speed Restriction:

- 4.1 Speed restrictions on distressed minor bridges will be decided by the sectional DEN and confirmed by the Territorial CE within 4 months. For major & important bridges, the speed restriction will be confirmed by CBE within 4 months.

4.2 For general guidance, speed restrictions upto 15 KMPH is suggested for distressed bridges in Group I and generally 25 KMPH to 50 KMPH for Group II.

5.0 For application of para 4.1 & 4.2 above, distressed bridges are to be divided in following two groups:

5.1 Group I - Where the signs of distress are any one or more:

- .1 Settlement of foundations.
- .2 Tilted piers & abutments (major).
- .3 Deep scour around piers/abutments.
- .4 Cracked & shaken bed blocks.
- .5 Cracks in bearings.
- .6 Cracks of serious nature in masonry below the bed blocks.
- .7 Diagonal cracks in arches.
- .8 Transvers cracks in arches.
- .9 Any observable of deformation of the arch ring.
- .10 Progressive loss in camber of girders.
- .11 Wide cracks in RCC/PSC members.
- .12 Cracks/heavy corrosion of load bearing members of steel girders, and
- .13 Snapping of rivets.

5.2 Group II - Where the signs of distress are:

- .1 Cracks in return walls & wing walls.
- .2 Slight tilting/slight bulging of abutments.
- .3 Bulging of return walls/wing walls.
- .4 Cracks in parapets of arch bridges.
- .5 Separation of spandrel from arch barrel.
- .6 Wide longitudinal cracks of arch barrel (across alignment).
- .7 Loose rivets above 20% at any joint.
- .8 Perceivable deterioration of stone/brick masonry.
- .9 Observation of any excessive vibration in any part of the bridge structure; and
- .10 Wide longitudinal cracks in abutments, piers.

6.0 This circular supersedes Bridge Circular No.2.

(Signature)
(RN Goil)
Chief Engineer.

Distribution:

- . CE(Con)/GKP for information.
- . CBE, CGE, CE/W, CE/E for information.
- . Dy.CE(Br.)/HQ, Dy.CE/FCW, Dy.CE/T-1,
- . CE(Station)/GKP for information.