Abhay Kumar  
Director/B&S/CB-II  

Principal Chief Engineer:

1. Central Railway, Mumbai CST - 400 001  
2. Eastern Railway, Fairlie Place, Kolkata - 700 001  
3. East Central Railway, Hazipur - 844 101  
4. East Coast Railway, Bhubaneswar - 751 016  
5. Northern Railway, Baroda House, New Delhi - 110 001  
6. North Central Railway, Allahabad - 211 001  
7. North Eastern Railway, Gorakhpur - 273 001  
8. Northeast Frontier Railway, Maligaon, Guwahati - 781 061  
9. North Western Railway, Jaipur - 302 001  
10. Southern Railway, Park Town, Chennai - 600 003  
11. South Central Railway, Rail Nilayam, Secunderabad - 500 371  
12. South East Central Railway, Bilaspur - 495 004  
13. South Eastern Railway, Garden Reach, Kolkata - 700 043  
14. South West Railway, Hubli - 580 023  
15. Western Railway, Mumbai - 400 020  
16. West Central Railway, Jabalpur - 482 001  

Sub : A&C Slip no. 5 to IRS Bridge Sub-Structures & Foundation Code.


In terms of reference 1 above an Addendum & Corrigendum Slip No: 5 to IRS : CODE OF PRACTICE FOR THE DESIGN OF SUB-STRUCTURES & FOUNDATIONS OF BRIDGES (Revision - 2013) regarding “Permissible Stresses in Masonry Arches” is enclosed for information and necessary action please.

DA: - As above. (1 page)
Copy to:
(A)
1. OSD/ME for kind information of Member Engineering, Railway Board, Rail Bhawan, New Delhi - 110001
3. Additional Member (Civil Enng.) Railway Board, Rail Bhawan, New Delhi - 110001
4. Additional Member (Works) Railway Board, Rail Bhawan, New Delhi - 110001
5. Advisor (Bridges) Railway Board, Rail Bhawan, New Delhi -110001
6. Director, Indian Railway Institute of Civil Engg., Pune - 411 001
7. Executive Director Civil Enng./B&S, Railway Board, Rail Bhawan, Room No.140A, New Delhi - 110001
8. General Manager (C), N. F. Railway, Maligaon, Guwahati - 781001
9. The Director General, National Academy of Indian Railways, Vadodara - 390004
10. Chief Engineer, Metro Railway, Jawaharial Nehru Road, Kolkata - 700071
11. ED/B&S/RDSO, B&S Directorate, RDSO, 2nd Floor, Annex, II Building, Manak Nagar, Lucknow, Pin - 226011 (UP)

(B)
The Chief Administrative Officer (Construction):
1. Central Railway, Mumbai CST - 400 001
2. Eastern Railway, Fairlie Place, Kolkata - 700 001
3. East Central Railway, Mahendrughat, Patna (Bihar) - 800 004
4. East Coast Railway, Bhubaneswar, (Orissa) - 751 016
5. Northern Railway, Kashmere Gate, Delhi - 110 006
6. USBRL Project, Northern Railway, Satyam Complex, Trikuta Nagar Extn., Jammu - 180 020
7. North Central Railway, Allahabad, (U.P.) - 211 001
8. North Eastern Railway, Gorakhpur - 273 001
9. North Western Railway, Jaipur, (Rajasthan) - 302 001
10. Southern Railway, Egmore, Chennai - 600008
11. South Central Railway, DRM/Secunderabad Office Compound, Secunderabad -500 371
12. South Eastern Railway, Garden Reach, Kolkata - 700043
13. South East Central Railway, Bilaspur - 495 004
14. South Western Railway, No. 18 Miller Road, Bangalore, (Karnataka) - 560046
15. Western Railway, Mumbai - 400 020
16. West Central Railway, Jabalpur (M.P.) - 482 001
17. CAO/ERS, Southern Railway, Ernakulam, Kerala - 682506

(C)
Chief Bridge Engineers:
1. Central Railway, Mumbai CST - 400 001
2. Eastern Railway, Fairlie Place, Kolkata - 700 001
3. East Central Railway, Hazipur - 844 101
4. East Coast Railway, Bhubaneswar - 751 016
5. Northern Railway, Baroda House, New Delhi - 110 001
6. North Central Railway, Allahabad - 211 001
7. North Eastern Railway, Gorakhpur - 273 001
8. Northeast Frontier Railway, Maligaon, Guwahati - 781 061
9. North Western Railway, Jaipur - 302 001
10. Southern Railway, Park Town, Chennai - 600 003
11. South Central Railway, Rail Nilayam, Secunderabad - 500 371
12. South East Central Railway, Bilaspur - 495 004
13. South Eastern Railway, Garden Reach, Kolkata-700 043
14. South West Railway, Hubli - 580 023
15. Western Railway, Mumbai - 400 020
16. West Central Railway, Jabalpur - 482 001

(D) Commissioner of Railway Safety:
1. Central Circle, 2nd Floor, Churchgate Station Building Mumbai - 400020
2. Eastern Circle, Multistoreyed Building of Eastern Railway, 12th Floor, Strand Road, Kolkata - 700001
3. Northern Circle, near Centre for Railway Information System, Safdarjung Railway Station, New Delhi - 110021
4. North Eastern Circle, DRM Compound, Northern Railway, Hazratganj, Lucknow - 226001
5. Northeast Frontier Circle, 12 Strand Road, Multistoreyed Building of Eastern Railway, Kolkata - 700001
6. Southern Circle, 7 Seshadri Road, Gandhi Nagar, Bangalore - 560009
7. South Central Circle, Opp. Rail Nilayam, Sarojini Devi Road, Secunderabad - 500 071
8. South Eastern Circle, 14 Strand Road, Multistoreyed Building of Eastern Railway, Kolkata-700001
9. Western Circle, 2nd Floor, Churchgate Station Building Annex, Maharishi Karve Road, Mumbai-400020.

(E) Railway PSUs & Others:
1. The Managing Director, RITES LTD, RITES Bhawan, Plot No.1, Sect.29, Gurgaon (Haryana) - 122001
2. The Managing Director, IRCON, Palika Bhawan, Sector-XIII, R.K. Puram, New Delhi - 110068
3. The Chairman & Managing Director, Konkan Railway Corporation Ltd., Belapur Bhavan, Plot No. 6, Sector-II CBD Belapur, Navi Mumbai - 400 614
4. The Managing Director, Rail Vikas Nigam Ltd., 1st floor, August Kranti Bhawan, Bhikaji Coma Place, Africa Road, R.K. Puram, New Delhi - 110 016
5. The Managing Director, DFCCIL, 5th Floor, Pragati Maidan, Metro Station Building Complex New Delhi - 110001
6. The General Manager, Delhi Metro Rail Corporation Ltd., NBCC Place, Bhishma Pitamah Marg, Pragati Vihar, New Delhi - 110003

(Abhay Kumar)
Director/B&S/CB-II
For ED/structures/RDSO
**GOVERNMENT OF INDIA**  
**MINISTRY OF RAILWAYS**  
**INDIAN RAILWAY STANDARD**  
**CODE OF PRACTICE FOR THE DESIGN OF SUB-STRUCTURES & FOUNDATIONS OF BRIDGES**  
*(Bridge Sub-Structures & Foundation Code)*  
**FIRST ADOPTED- 1936**  
**FIRST REVISION-1985**  
**SECOND REVISION-2013**  

**ADDENDUM & CORRIGENDUM SLIP No. 5 DATED 04.10.2019**

1. Add following at the end of the Clause 5.14.3:  
   *Note: These provisions are applicable for Masonry Arches also*.

2. Heading of Clause 5.16.2.2 to be modified as under:  
   Replace “Criteria for Masonry Abutments/Piers” by “Criteria for Masonry Abutments/Piers/Arches”.

3. Existing Note of Clause 5.16.2.2 to be modified as under:

<table>
<thead>
<tr>
<th>Existing</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: If maximum tensile stress exceeds by more than 100% of the values as contemplated in IRS Bridge Substructure Code vide clause 5.14.3 &amp; 5.14.4, tensile zone shall be neglected and equivalent compressive stress shall be worked out.</td>
<td>Note: If maximum tensile stress exceeds by more than 100% of the values as contemplated in IRS Bridge Substructure Code vide clause 5.14.3 &amp; 5.14.4, tensile zone shall be neglected and equivalent compressive stress shall be worked out. However, no overstress in tension shall be permitted in case of Arches.</td>
</tr>
</tbody>
</table>

4. Heading of Clause 5.16.2.3 to be modified as under:  
   Replace “Criteria for Mass Concrete Abutments/Piers” by “Criteria for Mass Concrete Abutments/Piers/Arches”.

5. Existing Note of Clause 5.16.2.3 to be modified as under:

<table>
<thead>
<tr>
<th>Existing</th>
<th>Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note: If maximum tensile stress exceeds by more than 100% of the values, as contemplated in IRS Concrete Bridge Code, tensile zone shall be neglected and equivalent compressive stress shall be worked out.</td>
<td>Note: If maximum tensile stress exceeds by more than 100% of the values, as contemplated in IRS Concrete Bridge Code, tensile zone shall be neglected and equivalent compressive stress shall be worked out. However, no overstress in tension shall be permitted in case of Arches.</td>
</tr>
</tbody>
</table>

**LUCKNOW**  
**Dated: 04.10.2019**

**BY ORDER:**

(V. K. Srivastava)  
Executive Director/Structures  
B&S Directorate  
R.D.S.O.