Sub : Regular adoption of Composite sleepers on Indian Railways  
Ref : Railway Board’s letter no. 2013/TK-II/22//19/I (Specification) dated 23.05.2016

1.0 Railway Board vide letter under reference has issued guidelines regarding regular adoption of Composite sleepers on Indian Railways. Railway Board has advised RDSO to issue/ publish the list of “Provisionally Approved” designs/makes and update the same from time to time. Railway Board has further stated that the designs/makes already approved for field trial by RDSO/Board, may be placed in the list of “Provisionally Approved” category, as their samples/prototype have already been tested/passed by RDSO.

2.0 In accordance with Railway Board’s above directives, the list of design/make(OEM) of Composite Sleepers in the “Provisionally Approved” category, is given below:

<table>
<thead>
<tr>
<th>SN.</th>
<th>Design/Make (OEM)</th>
<th>Name &amp; Address of Indian representative for OEM as per records of RDSO</th>
</tr>
</thead>
</table>
| 1.  | M/s Tietek, USA   | M/s Patil Rail Infrastructure Pvt. Ltd.  
The safe legend, 6-3-1239/B/111, Renuka Enclave, Raj Bhavan Road, Somajiguda, Hyderabad-500082 (Telangana). |
C-14 A&B Sector-1  
Noida, Gautam Budh Nagar-201301 |
| 3.  | M/s Integrico Composite Inc., USA | M/s Avadh Rubber (Prop. Madras Elastomer Ltd.), B-12, Industrial Area,  
opp. Amausi Aerodrome, Lucknow-226008 (UP) |
| 4.  | M/s Recycle Technologies International Inc., USA | M/s Nandi Track Engineering (P) Ltd  
306, South Extension Plaza-II  
Masjid Moth, South Extension Part-II  
New Delhi-110049 |
3.0 It is worth mentioning that M/s Tietek has informed that their sleepers are not suitable for girder bridges where rail is placed away from centre line of girder. It is advised not to plan installation of composite sleepers on such bridges in the beginning. Composite sleeper of particular make/design may be considered for use on such girder bridges only after confirmation of their suitability from OEM and validation of the same in field. It is necessary that details of girder bridges including availability of rivets and additional plates on girders etc. be incorporated in the document for procurement of sleepers for the information of supplier.

4.0 It is desirable that composite sleepers should be installed by OEMs or their authorized representative supplying the sleeper so that field engineers get acquainted with the procedure and precautions required for laying of these sleepers on girder bridges for desired service life. A list of fittings recommended for use with Composite Sleepers is attached as Annexure-I.

5.0 Railway Board in the referred letter has stated that all Zonal Railways shall closely monitor the performance of composite sleepers and report the problems, if any, to RDSO. Further, RDSO in association with CTEs of user railways has to review field performance of composite sleepers after 02 years and submit the report and recommendations to Board. Therefore, it is requested to submit performance of composite sleepers to RDSO quarterly in the proforma enclosed as Annexure-II.

DA: As above (Annexure-I & II)

(Sandeep Sharma)
Executive Director/Track-II

Copy to:

✓ Executive Director, Track (Mod), Railway Board, Rail Bhawan, New Delhi-110 001 for kind information please
MAILING LIST

The Principal Chief Engineer

1. Central Railway, Mumbai CST - 400 001
2. Eastern Railway, Fairlie Place, Kolkata-700 001
3. Northern Railway, Baroda House, New Delhi-110 001
4. N.E.Railway, Gorakhpur-273 012
5. Southern Railway, Park Town, Chennai-600 003
6. S.C.Railway, Rail Nilayam, Secunderabad-500 371
7. Western Railway, Churchgate, Mumbai-400 020
8. South Eastern Railway, Garden Reach, Kolkata-700 043
9. N.F.Railway, Maligaon, Guwahati – 781 011
10. East Central Railway, Hajipur – 844 101
11. East Coast Railway, Bhubaneswar – 364 001
12. North Central Railway, Allahabad – 211 001
13. North Western Railway, Jaipur – 755 001
14. South East Central Railway, Bilaspur-495 004
15. South Western Railway, Hubli – 580 023
16. West Central Railway, Jabalpur – 482 001

The Chief Administrative Officer (Const.)

1. Central Railway, New Administrative Office Building, 6th Floor, D.N. Road, Mumbai CST- 400001
2. CAO(I), Eastern Railway, 4th Floor, New Kollaghat Building, Strand Road, Kolkata- 700001
3. CAO(II), Eastern Railway, 4th Floor, New Kollaghat Building, Strand Road, Kolkata- 700001
4. Northern Railway, Kashmere Gate, Delhi – 110 001
5. USBRL Project, Opp. R.R.B., Jammu Tawi - 180013
7. Southern Railway, Egmore, Chennai – 600 003
8. West Central Railway, Jabalpur- 482001
9. South Western Railway, 18, Millar Road, Bangalore – 560 046
10. South Central Railway, Rail Nilayam, Secunderabad – 500371
11. South Eastern Railway, Garden Reach, Kolkata – 700043.
12. East Coast Railway, Chandrashekharpur– 751023, Bhubaneswar,
13. Western Railway, Churchgate-400020
14. CAO(North), East Central Railway, Mahendrughat,Patna- 80004
15. CAO(South), East Central Railway, Mahendrughat, Patna - 800004
16. North Western Railway, Near Railway Station, Jaipur-302001
17. South East Central Railway, Bilaspur - 495004 (Chhattisgarh)
18. North Central Railway, Allahabad - 211001
19. CAO(I), N.F. Railway, Guwahati – 781001
20. CAO(II), N.F. Railway, Guwahati – 781001
## List of Fittings recommended for use with Composite Sleepers on BG Track

<table>
<thead>
<tr>
<th>SN</th>
<th>Fittings</th>
<th>Drawing/Part No. 60 Kg UIC Rail</th>
<th>Drawing/Part No. 52 Kg Rail</th>
<th>Drawing and Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mild Steel (MS) Bearing Plate</td>
<td>RDSO/T-1033</td>
<td>T 10671</td>
<td>Annexure-I/1</td>
</tr>
<tr>
<td>2</td>
<td>Rail Screw</td>
<td>RDSO/T-1035</td>
<td>T 10673</td>
<td>Annexure-I/2</td>
</tr>
<tr>
<td>3</td>
<td>Hook Bolts</td>
<td>B003/M</td>
<td>B003/M</td>
<td>Annexure-I/3</td>
</tr>
</tbody>
</table>
BEARING PLATES MILD STEEL
(SINGLE RAIL)

CANTED
(USING RAIL SCREWS)

PART NUMBERS AND DIMENSIONS

<table>
<thead>
<tr>
<th>RAIL SECTION</th>
<th>WEIGHT PER METRE OF RAIL</th>
<th>PART NUMBER</th>
<th>GAUGE</th>
<th>WEIGHT OF EACH IN KG</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIC 60kg</td>
<td>830/7.035</td>
<td>9383</td>
<td>8-12</td>
<td>254 220 450 180 60 26 21 11 11.5 62 32 60 16</td>
<td>A: 270 220 475 174 60 27 22 12 11.5 60 38 74 16</td>
</tr>
<tr>
<td>52kg/300</td>
<td>8902/2.25</td>
<td>71064</td>
<td>8-12</td>
<td>254 220 450 180 60 26 21 11 11.5 62 32 60 16</td>
<td>A: 270 220 475 174 60 27 22 12 11.5 60 38 74 16</td>
</tr>
<tr>
<td>90n</td>
<td>8922/2.25</td>
<td>71065</td>
<td>8-34</td>
<td>254 160 495 160 40 26 21 11 11.5 62 32 60 16</td>
<td>A: 270 220 475 174 60 27 22 12 11.5 60 38 74 16</td>
</tr>
<tr>
<td>75n</td>
<td>8922/2.25</td>
<td>71066</td>
<td>8-34</td>
<td>254 160 495 160 40 26 21 11 11.5 62 32 60 16</td>
<td>A: 270 220 475 174 60 27 22 12 11.5 60 38 74 16</td>
</tr>
<tr>
<td>60n</td>
<td>8922/2.25</td>
<td>71067</td>
<td>8-34</td>
<td>254 160 495 160 40 26 21 11 11.5 62 32 60 16</td>
<td>A: 270 220 475 174 60 27 22 12 11.5 60 38 74 16</td>
</tr>
</tbody>
</table>
# Annexure-1/2

## RAIL / PLATE SCREWS

![Diagram of rail screws and plate screws]

### RAIL SCREWS

<table>
<thead>
<tr>
<th>GAUGE</th>
<th>DESCRIPTION</th>
<th>DRAWING NUMBER</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>H (mm)</th>
<th>J (mm)</th>
<th>K (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.G.</td>
<td>FOR USE WITH CROSSING TIMBER SPECIAL.</td>
<td>10611</td>
<td>160</td>
<td>80</td>
<td>30</td>
<td>22</td>
<td>11</td>
<td>34</td>
<td>4</td>
<td>6</td>
<td>35</td>
<td>507</td>
</tr>
<tr>
<td>B.G.</td>
<td>FOR USE WITHOUT BEARING PLATES.</td>
<td>10677</td>
<td>160</td>
<td>80</td>
<td>30</td>
<td>22</td>
<td>11</td>
<td>34</td>
<td>4</td>
<td>6</td>
<td>35</td>
<td>507</td>
</tr>
<tr>
<td>M.G.</td>
<td>FOR USE WITH BEARING PLATES.</td>
<td>10676</td>
<td>160</td>
<td>80</td>
<td>30</td>
<td>22</td>
<td>11</td>
<td>34</td>
<td>4</td>
<td>6</td>
<td>35</td>
<td>507</td>
</tr>
</tbody>
</table>

### PLATE SCREWS

<table>
<thead>
<tr>
<th>GAUGE</th>
<th>DESCRIPTION</th>
<th>DRAWING NUMBER</th>
<th>A (mm)</th>
<th>B (mm)</th>
<th>C (mm)</th>
<th>D (mm)</th>
<th>E (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>H (mm)</th>
<th>J (mm)</th>
<th>K (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.G.</td>
<td>FOR USE WITH CROSSING TIMBER SPECIAL.</td>
<td>10612</td>
<td>60</td>
<td>30</td>
<td>20</td>
<td>7</td>
<td>30</td>
<td>1</td>
<td>25</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.G.</td>
<td>FOR USE WITH C. ANTI-CREEP BEARING PLATES.</td>
<td>10678</td>
<td>60</td>
<td>30</td>
<td>20</td>
<td>7</td>
<td>30</td>
<td>1</td>
<td>25</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.G.</td>
<td>FOR USE WITH CROSSING TIMBER SPECIAL.</td>
<td>10676</td>
<td>60</td>
<td>30</td>
<td>20</td>
<td>7</td>
<td>30</td>
<td>1</td>
<td>25</td>
<td>55</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE OF DIMENSIONS

These drawings are exclusively for use with RCC/GC RAILS/C. ANTI-CREEP BEARING PLATES FOR RCC/GC RAIL.

### Note

The relevant dimensions for 1605 & 1805 are 0415.8.26-06 for drawing 10611, 10677, 10678. 1065 & 1066.
HOOK BOLTS FOR BRIDGE SLEEPERS

SQUARE WASHER 70mm x 70mm WITH 24 DIM. HOLE.

TOP PLAN (WITHOUT NUT & WASHER)

TOP PLAN (WITHOUT NUT & WASHER)

HOLE DIM. M

ELEVATION SIDE ELEVATION

ELEVATION SIDE ELEVATION

SECTIONAL PLAN

SECTIONAL PLAN

DIMENSIONS

FOR BEAM G Type 600x400 6 8

FOR CHANNEL SBC 600x400 7 5

NOTE: Length A to be specified by the purchaser.

DETAIL WITH SLOPING LIP FOR I.R.S. JOISTS

DETAIL WITH STRAIGHT LIP FOR PLATE GIRDER SPANS

HOOK BOLTS FOR BRIDGE SLEEPERS

METHOD OF FASTENING WOODEN SLEEPERS ON JOIST SPANS

METHOD OF FASTENING WOODEN SLEEPERS ON PLATE GIRDER SPANS

DIMENSION

20 DIM.

80 DIM. 67

80 DIM.

HOLE BOLT 8.025MM

HOLE BOLT 8.025MM
# Proforma – I for Visual Inspection of Composite Sleeper

<table>
<thead>
<tr>
<th>Date of Inspection</th>
<th>Average ambient temperature</th>
<th>Sleeper No.</th>
<th>Condition of</th>
<th>Any visible cracks</th>
<th>Phenomena of warp, Sag, Hog</th>
<th>End splitting</th>
<th>Any other observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fittings-tightness retention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rail bearing area of sleeper</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Top</td>
<td>Bottom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sleeper surface</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signature of SSE/P.Way:

Countersigned by:
## Proforma – II for Performance of Composite Sleepers

<table>
<thead>
<tr>
<th>Bridge No.</th>
<th>Date of laying</th>
<th>Annual GMT</th>
<th>Section</th>
<th>Division/Rly.</th>
<th>No. of sleepers</th>
</tr>
</thead>
</table>

### Date of Inspection

<table>
<thead>
<tr>
<th>Date of Inspection</th>
<th>Average ambient temperature</th>
<th>Sleeper No.</th>
<th>Depth of Sleeper (exclusive of notching)</th>
<th>Gauge</th>
<th>X-level</th>
<th>Other observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Remarks:

1. Any problem experienced during laying & maintenance in field:
2. Gauge variation observed due to seasonal temperature variation:
3. Overall performance of the sleeper:

Signature of SSE/P.Way:

Countersigned by: