0. FOREWORD

0.1 This Interplant Standard has been prepared by the Standards Committee on Lifting and Hoisting Equipment, IPSS 1:8 with the active participation of the representatives of all the steel plants, established manufacturers of crane hooks and leading consultants and was first adopted in March, 1997 and revised in January 2014.

0.2 Interplant Standards for steel industry primarily aim at achieving rationalization and unification of parts and assemblies used in steel plant equipment and provide guidance in indenting stores for existing equipment (or while placing orders for additional requirements) by individual steel plants. For exercising effective control on inventories, it is advisable to select a fewer number of sizes/types from those mentioned in this standard. These limited sizes/types can be adopted as Plant Standards for an individual steel plant. It is not desirable to make deviations in technical requirements.

1. SCOPE

1.1 This Interplant Standard covers procedures for the clamping of crane rails.

2. DIMENSIONS

2.1 Dimensions of rail clamping assembly are shown in Table-1 to be read with Fig-1. Details of components are given in Fig-2 & 3.

3. MATERIALS OF CONSTRUCTION

3.1 The materials of construction for the various components required for rail clamping as shown in Fig.1 shall be as follows:

Item 1 CLIP (ISA) IS 2062:2011 Steel for General Structural Purposes (fourth revision) (Amendment 1)

Item 2 BLOCK - IS 2062:2011


Item 4 TAPER WASHER - IS 2062:2011
Item 5  SPRING WASHER - IS 4072:1975, Steel for Spring Washer (first revision) (Amendment 2) Grade 1

FIG-1: RAIL CLAMPING ARRANGEMENT
<table>
<thead>
<tr>
<th>Rail Size</th>
<th>Slope</th>
<th>Dimn. “X” in mm</th>
<th>Dimn. “Y” in mm</th>
<th>Dimn. “Z” in mm</th>
<th>Clip ISA (1)</th>
<th>Block (2)</th>
<th>Bolt (3)</th>
<th>Taper Washer (4)</th>
<th>Taper Washer (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR-5C</td>
<td>1:4</td>
<td>22.50</td>
<td>70.00</td>
<td>26.00</td>
<td>65X65X8</td>
<td>50X26X15 0 LG</td>
<td>HEX.HD.Bolt</td>
<td>Size 18 IS 5372:1975</td>
<td>For M16 Bolt IS 3063:1994</td>
</tr>
<tr>
<td>CR-80</td>
<td></td>
<td>22.50</td>
<td>90.00</td>
<td></td>
<td>75X75X10</td>
<td>IS 1364 (Part 1):2002 ISO 4014 – M16x40 LG-4.6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR-100</td>
<td></td>
<td>21.00</td>
<td>100.00</td>
<td></td>
<td></td>
<td>50X32X15 0 LG</td>
<td>M16x46 LG IS 1364 (Part 1) 4.6:1992</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR-120</td>
<td></td>
<td>18.50</td>
<td>110.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR-140</td>
<td></td>
<td>19.50</td>
<td>110.00</td>
<td>32.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
BLOCK (2)  
FIG. 3

CLIP (1)  
FIG. 2

<table>
<thead>
<tr>
<th>RAIL SIZE</th>
<th>( \varphi )</th>
<th>( \alpha )</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR-50</td>
<td>8</td>
<td>22.50</td>
</tr>
<tr>
<td>CR-80</td>
<td>8</td>
<td>22.50</td>
</tr>
<tr>
<td>CR-100</td>
<td>8</td>
<td>21.00</td>
</tr>
<tr>
<td>CR-120</td>
<td>8</td>
<td>18.50</td>
</tr>
<tr>
<td>CR-140</td>
<td>8</td>
<td>19.50</td>
</tr>
</tbody>
</table>

WELDING ARRANGEMENT OF WEARING PLATE WITH TOP FLANGE OF CRANE GIRDER  
FIG. 6

DETAILS SAME AS ITEM (2) WITHOUT TAPPED HOLE

450 (MAX)  
STAGGERED

LONGITUDINAL RAIL CLAMPING ARRANGEMENT  
FIG. 5
4. INSTALLATION

4.1 Full length wearing plates shall be provided under the trolley rails. The wearing plates shall be 6 mm thick and welded in place with minimum 5 mm fillet weld as shown in Fig-6. The wearing plates shall be 10 mm to 12 mm less in width than the rail base so that the welds of the wearing plates do not project beyond the rail base. Wearing plates shall not be considered in the strength calculation of the bridge girders.

4.2 Alternatively, in case of specific heavy duty needs, synthetic elastomer pads, specially resistant to wear, shear and crushing, oil, grease, oxygen and ultraviolet rays of suitable thickness can be used in consultation with the suppliers. These pads help in following ways:

- Recentering the load when the rail is mounted on a steel girder in order to reduce flexure stresses in the upper flange.
- Absorb the uneven surface between rail and girder.
- Reduce the wear of the rail as well as upper flange of the girder
- Protect the crane mechanism.

4.3 The rails shall be clamped to the girders with double bolt clamping clips, spaced not more than 900 mm apart (as shown in Fig-4) with welded alignment blocks between every two clamps, so that the distance of a clamp from any adjacent alignment block is not more than 450 mm.

4.4 Alternatively, the rail clamps may also be positioned in a staggered arrangement as shown in Fig-5 where the distance between two consecutive clamps does not exceed 450 mm.

4.5 Rails shall be prevented from creeping in the longitudinal direction by providing welded rail stops at either ends.

5. TOLERANCES

5.1 The tolerances wherever not specified shall be as per the “medium” class of IS 2102 (Part 1):1993 `General tolerances – Part 1 – Tolerances for Linear and Angular dimensions without individual tolerance indications (third revision).