INTERPLANT STANDARD – STEEL INDUSTRY		
	CODE OF PRACTICE FOR CLAMPING OF CRANE RAILS	**IPSS:1-08-017-18 (*Third Revision*)**
	Corresponding IS does not exist	Formerly: IPSS:1-08-017-14 (Second Revision)

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, second revision done in January 2014.

0.2 The Standard discussed again in presence of experts from SAIL, RINL, TATA STEEL, ESSAR, JSPL and Consultants of MECON, HEC & DASTURCO and revised with third revision in **August, 2018**.

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:

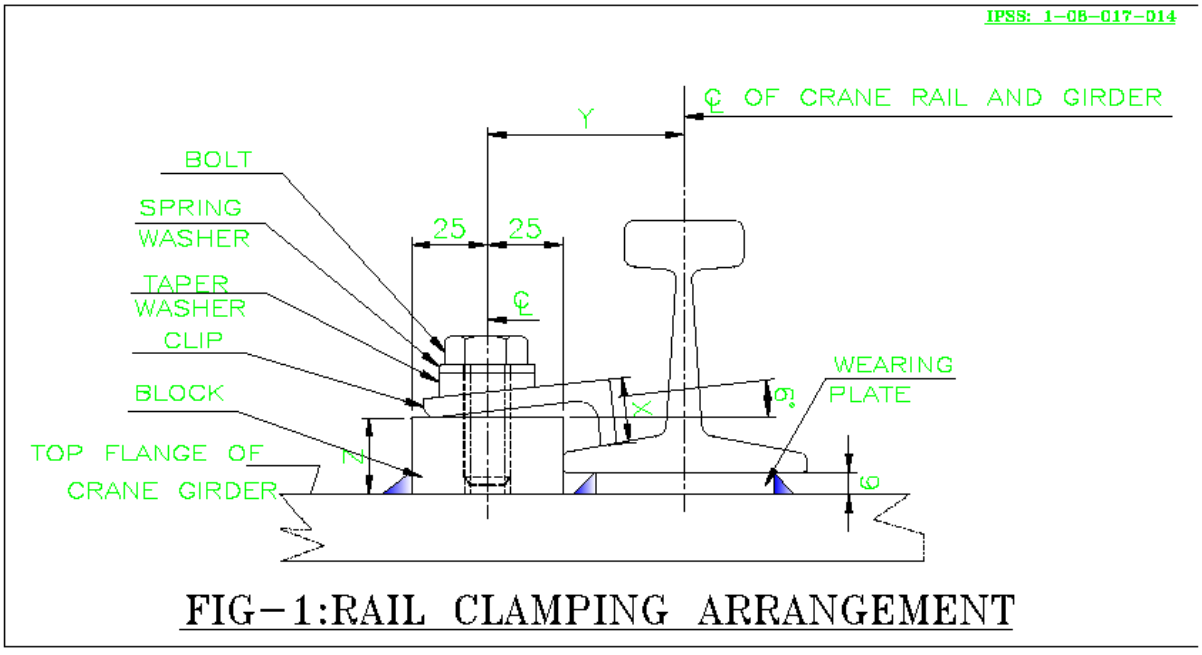
Item 1 CLIP (ISA) IS 2062:2011 Steel for General Structural Purposes (fourth revision) (Amendment 1)

Item 2 BLOCK - IS 2062:2011

Item 3 BOLT - IS 1367 (Part 3):2002 grade 8.8 bolt Fasteners – Threaded Steel – Technical supply conditions: Part III Mechanical Properties and Test Methods for Bolts and Studs with full loadability (third revision) Property **Class 4.6**

Item 4 TAPER WASHER - IS 2062:2011

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

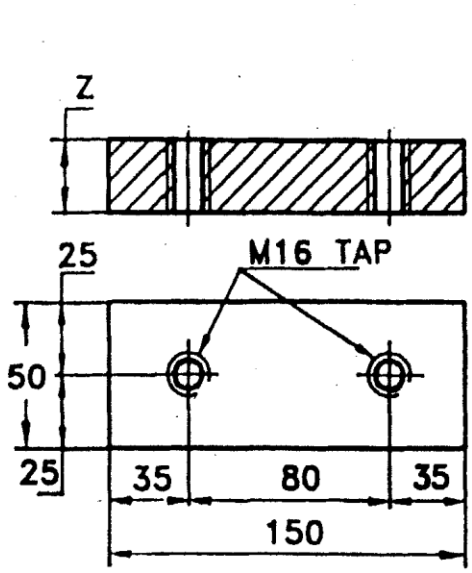


FIG–1:RAIL CLAMPING ARRANGEMENT

TABLE-1

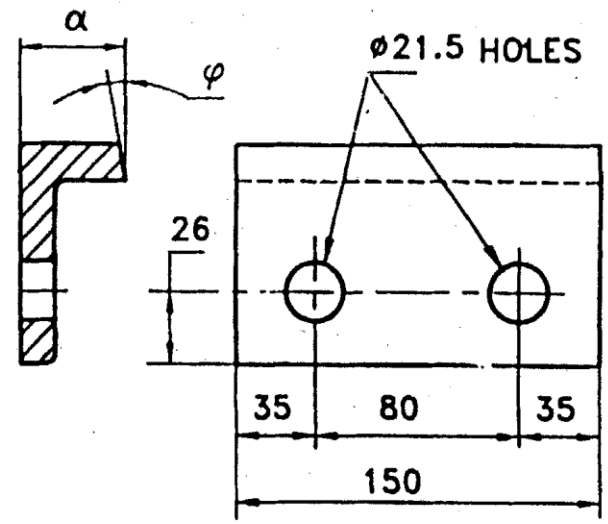
RAIL CLAMPING ARRANGEMENT
(Clause 2.1)

Rail Size	Slope	Dimn. "X" in mm	Dimn. "Y" in mm	Dimn. "Z" in mm	Clip ISA (1)	Block (2)	Bolt (3)	Taper Washer (4)	Taper Washer (5)
CR-5C	1:4	22.50	70.00	26.00	65X65X8	50X26X150 LG	HEX.HD.Bolt IS 1364 (Part 1):2002 ISO 4014 – M16x40 LG-4.6	Size 18 IS 5372:1975	For M16 Bolt IS 3063:1994
CR-80		22.50	90.00		75X75X10				
CR-100		21.00	100.00						
CR-120		18.50	110.00						
CR-140		19.50	110.00	32.00		50X32X150 LG	M16x46 LG IS 1364 (Part 1) 4.6:1992		



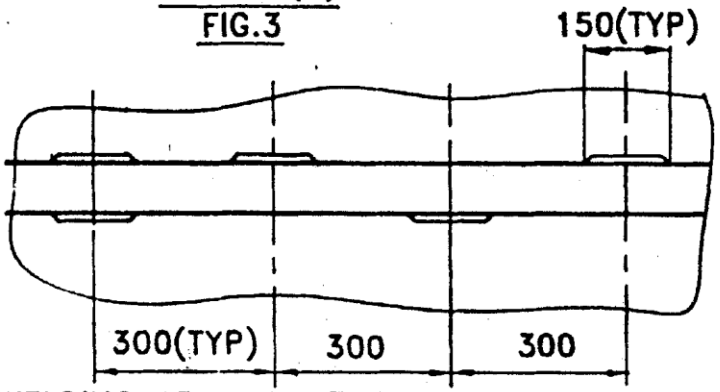
BLOCK (2)

FIG.3



CLIP (1)

FIG. 2



WELDING ARRANGEMENT OF WEARING PLATE WITH TOP FLANGE OF CRANE GIRDER

FIG. 6

RAIL SIZE	φ	α
CR-50	8	22.50
CR-80	8	22.50
CR-100	8	21.00
CR-120	8	18.50
CR-140	8	19.50

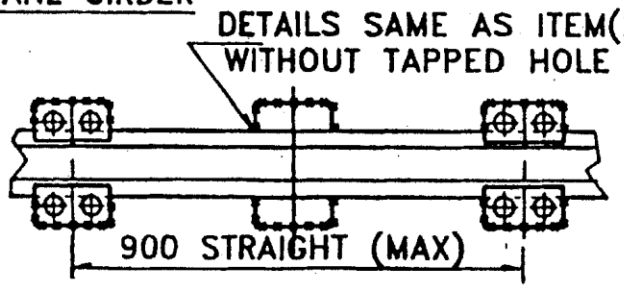


FIG. 4

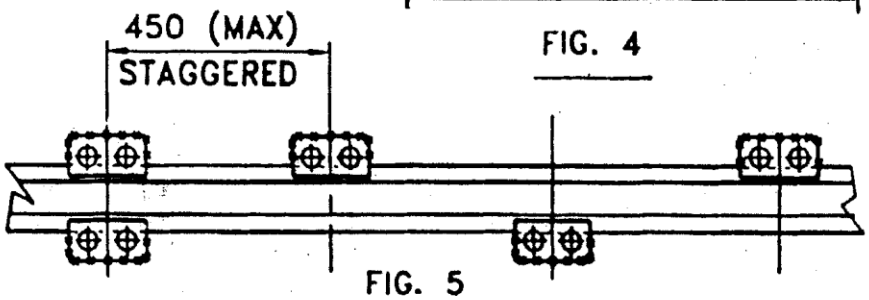


FIG. 5

LONGITUDINAL RAIL CLAMPING ARRANGEMENT

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 flexture 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).