

Technical Data

Construction Tolerances for Travelling Tracks

(Notes taken from ISO 12488-1: 2012)

For the majority of our cranes, Tolerance Class 2 will be used $10,000 \leq L < 50,000$ Km. Where L is calculated as the product of the normal travel speed and the specified working time of the relevant travel mechanism.

Crane Gantries

1 Track joints, wheel running and guidance surfaces

- Any misalignment of running faces or gaps occurring between sections of track will have an adverse effect on the performance and life of the crane.
- Joint arrangement should ensure accuracy in the alignment of running faces or guidance faces to provide a smooth transition path for the wheel between sections of track.
- Track running and guidance faces should be free of obstruction and should be left unpainted. These faces should be free from damage and pitting or other surface defects.

2 Dimensional and geometrical tolerances of tracks for top running cranes.

2.1 General.

Tracks should be within the tolerances given in 2.2 to 2.5 when not supporting the crane.

2.2 Tolerance on span.

Tolerance span (s) of the cranes rails related to rail centre at each point of travelling track.

The tolerance should be as follows;

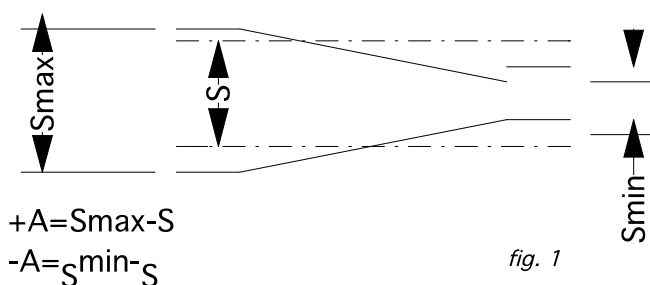
Valid for all spans $s \leq 16$ m

$$A = \pm 5\text{mm}$$

Valid for spans $s > 16$ m, s in metres.

$$A = \pm[5 + 0.25(s-16)]$$

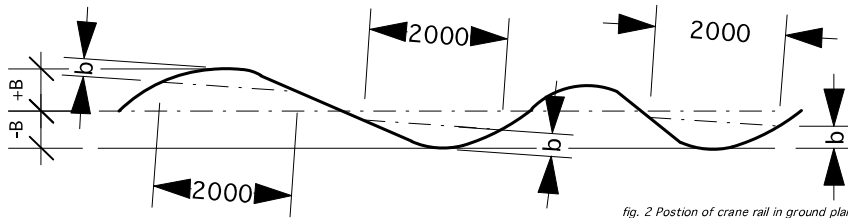
$$A = \pm 15\text{mm max.}$$



2.3 Track straightness tolerances

2.3.1 *Tolerance of Horizontal Straightness.* At each point of the travelling track the horizontal straightness of the rail head should be $\pm 10\text{mm}$. (B)

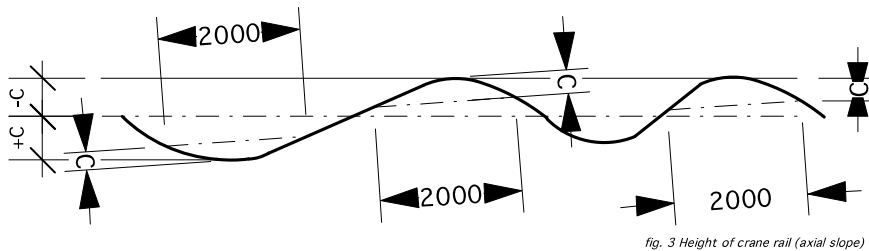
Related to test length of 2000mm at each point of rail head should be 1mm. (b)



2.3.2 (C) *Tolerance of Height Straightness.*

At each point of the travelling track the tolerance of straightness related to height of crane rail centre should be $\pm 10\text{mm}$. (C)

Related to test length of 2000mm at each point the height of the crane rail should be 2mm. (c)



2.4 (E) Tolerance of Height

Related to opposite measuring points at right angles at each point of the travelling track.

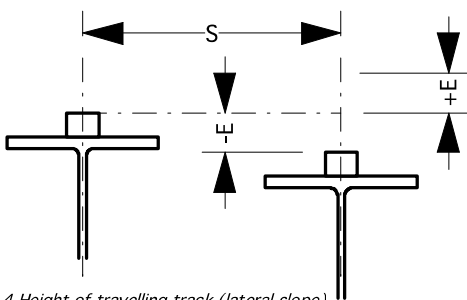
Should be as follows;

$$E = \pm S\text{mm}$$

S in Meters

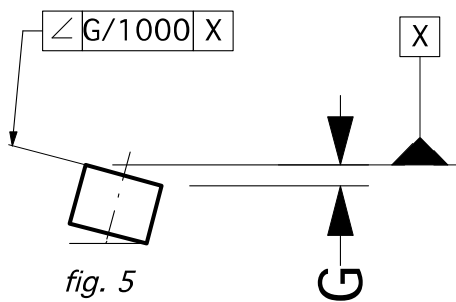
$$E \leq E_{\text{max}}$$

$$E = \pm 10 \text{ max.}$$



2.5 Tolerance of angularity

Related to crane rail cross section at each point of the travelling track should be 6/1000. (G)



3 Measurement of crane tracks

- When measuring crane tracks, calibrated steel measuring tapes should be used.
- It is important that the readings obtained are corrected to allow for sag in the tape and for temperature variation.
- All track measurements for a particular crane should be made with the same measuring tape and the same applied tension force.

3.1 Precautions

- Check that the stress from the crane installation can be safely taken up by the building.
- Compare the crane rail with the endcarriage wheel width.
- Ensure rail & runway surfaces are clean, dry & free of surface rust & contamination before welding.
- Check environmental conditions. Install with average air temperature.

3.2 Fitting procedure.

1. Lay out runway beams.
2. Mark out centre line of runway beam - (use string line/chalk).
3. Place rail on top of runway beam.
4. Clamp rail in position & tack rail to runway beam.
5. Carry out welding rail to runway beam.
6. Carry out welding or bolting of endstops. They must be flush with each other and be within Tol F.
7. Carry out inspection/M.P.I. welds.
8. Ensure running surfaces are free of oil, grease, paint or other dirt.

