

**East Coast Railway
Engineering Department**

CE Circular No. 39


Sub: Identification and Opening and Examination of Joggeled Fish Plates provided with FB/AT Welded joints, chamfering of bolt holes reg.

Ref: ECoR/BBS's CE Circular No: 18 dated 29.04.2005

Joggled Fish Plates are provided at AT welds having (a) Carried 50% or more GMT of stipulated rail fatigue life, (b) Bridge & its 100m approach (Bridge with 100m or more water way length), (c) on curve with 3 degree or sharper, (d) on bank having height 5m or more and Defective AT Welds as a precautionary measure against sudden fracture. During analysis of weld failures of joggle fish plated joints, it has been observed that cracks emanate from bolt holes and then propagate diagonally up to rail heads causing discontinuity of rails endangering safe running of trains. Non-chamfering of bolt holes is the main reason of formation of star cracks due to concentration of stress and intended objective of providing joggle fish plates are defeated. Thus, it has become very essential to open and examine joggle fish plates for proper monitoring of safety of rail joints for which following instructions are issued for compliance.

- (i) Joggle fish plates should be opened once in a year or during mechanized maintenance and thoroughly examined using powerful convex lens and mirror after removing all dirt, dust, grease etc with the help of wire brush in addition to the occasion of USFD testing of welds. The aspects to be examined are (a) condition of weld collars on either side of the weld about formation of corrosion pits, (b) origination of cracks from fish bolt holes and (c) development of horizontal cracks at contact areas of fish plates underneath the rail heads and on top of rail flange at web foot junction. The spare joggled fishplates provided near each KM post and manned level crossings painted with yellow colour should also covered.
- (ii) When joggle fish plates are removed to facilitate maintenance with track machines, a speed restriction of 30 Kmph should be imposed till such time the joggle fish plates are re-fixed.
- (iii) It shall be ensured that while fixing joggle fish plates, they do not rest on the riser of the weld of the bottom rail flange.
- (iv) After removal, examination and cleaning of weld and the holes, weld collar should be painted with two coats of anti-corrosive bituminous black paint conforming to IS 9862-1981 for rails in service. Fish bolt and nuts should be properly oiled and fishing planes of fish plates properly greased. And any defect marked by USFD should be put back with red paint.
- (v) Defective welds detected during examination should be replaced with good welds and joggle fish plated.
- (vi) Chamfering of bolt holes should be done as per the procedures contained in para 251(5) of IRPWM.

The above track maintenance is an important safety related activity should be completed before October of every year.


(S. Nayak)
Chief Track Engineer

No.: W-4/374/CE/Circulars /Pt.I/3768

Date:02.05.2018

Copy to:

1. Secy. to GM for kind information of GM.
2. PHODs/CHODs for information and n.a. please
3. CAO/Con/BBS, FA&CAO/BBS, for information and n.a. please
4. RVNL & other PSU's for information and n.a. please
5. DRM/KUR, DRM/SBP & DRM/WAT for information and n.a. please
6. Sr. DEN/Co-ord/KUR, SBP & WAT for information and n.a. please
7. Sr. DEN/Estate/BBS, KUR WAT & SBP for information and n.a. please
8. EDCE/G, Railway Board for information please.