

Manual for Ultrasonic testing of rails & welds, (Revised-2012)

A&C Slip No. 01 of November, 2014

1. Para 8.15.1 is modified as follows :

“8.15.1 Testing of AT welded joints shall comprise of testing by probes with sensitivity setting and calibration as per references indicated against them in the table below:

S.No	Probes	Calibration as per	Sensitivity Setting as per	Scanned area	Acceptance Criteria
1.	0°2 MHz	Para 8.5.1	Para 8.5.2, Fig 20(a)	Head, web	As per Para 8.5.4
2.	70° 2MHz	Para 8.6.1, 8.9.1	Para 8.6.2, 8.9.2, Fig 20(a)	Head, weld foot	As per Para 8.6.4 & 8.9.4
3.	70° 2MHz SL	Para 8.8.1	Para 8.8.2, Fig 22 (a)	Weld foot (Half Moon Defect)	As per Para 8.8.4
4.	45° 2 MHz	Para 8.7.1	Para 8.7.1.2 , Fig 22 (a) & 23	Weld foot (Half Moon Defect/clustered defect & micro porosity)	As per Para 8.7.1.4
5.	45° 2 MHz single crystal probe	As per Para 8.7.2.1	As per Para 8.7.2.2	Lack of fusion in the web and foot region below web	As per Para 8.7.2.4

The frequency of testing of AT welds with above listed probes shall be as under :

S No	Type of Welds	Type of Testing	Testing Schedule		
			Testing Schedule		
1	Conventional AT Weld	Periodic Tests	Every 40 GMT or 5 year, whichever is earlier		
2	SKV Weld	Acceptance Test	Immediately after welding		
3		First Periodic Test	1 year		
4		Further tests based on route GMT	> 45	Routes having GMT	Frequency
5			>30 ≤ 45		2 years
6			> 15 ≤ 30		3 years
7	0-15			4 years	
				5 years	

Due to unusually high weld failure or other abnormal development in some sections, Chief Engineer may order testing of welds early, as per need.

The testing interval of USFD testing of defective AT welds should be reduced by 50% of normal testing interval of AT welds as provided in para 8.15.1 to avoid fractures of defective welds.”

2. Clause 6.6.1.1 is modified as follows:

“ 6.6.1.1 Frequency of testing for all Main line BG (rail head center and gauge face /non-gauge face corner) and Main Line MG routes is given as under: For other sections Chief Engineer of the Railway may adopt a frequency at his discretion.

Route	Routes having GMT	Testing frequency Once in
All MG routes	< 2.5	5 years
	2.5 – 5.0	3 years
	> 5	2 years
All BG routes (rail head center and gauge face corner / non-gauge face corner testing)	≤ 5	2 years
	> 5 ≤ 8	12 months
	> 8 ≤ 12	9 months
	> 12 ≤ 16	6 months
	> 16 ≤ 24	4 months
	> 24 ≤ 40	3 months
	> 40 ≤ 60	2 months
	> 60 ≤ 80	1½ months
> 80	1 month	

Digital double Rail Tester is to be used for testing of 'D' marked rails at reduced interval to be decided by Chief Track Engineer of Zonal Railway.”

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