

RUBBER PROPERTIES APPLICABLE FOR RAILWAY LEVEL X-ING ROAD

The material should confirm to the requirements and tests as under:-

Sr. No.	Property	Method of Test(Any one)	Test Condition	Requirement
1	Hardness	ASTM D2240	Original	80 Shore A (Max)
		AS1683.15.2 IS 3400 Pt 2	Accelerated Ageing for 96 Hours at 70 deg C	Change from original +8 (Max)
2	Tensile strength	ASTM D 412 AS 1180.2 IS 3400 Pt I	Original	20 Mpa (Min)
		ASTM D 573 AS 1180.3 IS 3400 Pt 4	Accelerated Ageing for 96 Hours at 70 deg C	15 Mpa (Min)
3	Elongation at break	ASTM D 412 AS 1180.2 IS 3400 Pt. I	Original	250% (Min)
		ASTM D 573 AS 1180.2 IS 3400 Pt 4	Accelerated Ageing for 96 Hours at 70 Deg C	200% (Min)
4	Compression Set	ASTM D 395 AS 1683.13B IS 3400 Pt 10	22 Hours at 70 deg C in air oven at 25% compression.	30% (Max)
5	Resistance to Ozone Cracking	ASTM D 1149 AS 1683.24 IS 3400 Pt 20	1 p.p.m. at 20% strain at 40 deg C for 100 hours	No cracking visible by eye
6	Abrasion resistance	DIN 53516 BS 903 A9 IS 3400 Pt 3	Method B, 1000 revolutions	0.50 CC (Max)
7	Water resistance	ASTM D 471 IS 3400 Pt 8	Change in mass after immersion in water for 96 hours at ambient Temperature.	02% (Max)
8	Load Test	To be applied vertically on the full surface of the rubber pad.	At 60 Tonne/Sq Ft	No puncture or rupture of rubber observed

Special Conditions for provision of Rubberised surface on Level crossings:

1. Contractor shall have to keep qualified technical supervisor during execution for the quality control.
2. Contractor has to deploy sufficient labour to carry out the work as directed by the site in charge.
3. Work will be carried out as per Rly's & IS specification.
4. Work affecting safety will be operated under block made available.
5. Work will be carried out under speed restrictions, if required as imposed by Engineer-in-charge at site.
6. The vehicle shall ply 6 M clear of track any movement/work at less than 6 M and upto 3.5 M (Minimum) clear of track or centre, shall be done only in the presence of Rly Employee authorised by the engineer-in-charge. No part of the road vehicle will be allowed less than 3.5 m from track centre.
7. Payment will be made as per actual qty executed/operated.
8. Railway administration will not be responsible for the safety of contractor's labour engaged for this work.
9. The contractor shall make his own arrangement for men, material, tool, consumable etc. Required for this work at his own cost and shall be responsible for safe working of trains.
10. Level crossing surface improvement work to be done by rubberised surface method.
11. The brief scope of work is manufacturing and installation of rubberised level crossings pads of approved quality having width approx. 3.50 Mtr" conforming to specification given in the tender schedule. The rate includes sales tax and duties, warranty etc. Required to complete the wok.
12. Tenderer should submit his own drawing acceptable to the Railways and test report of the rubber pad with the tender document. Without these documents, the tender will be summarily rejected.
13. In case of level crossing on any crossover, the measurement of the rubberized surface will be taken in total area and will be converted into Track Metre using relation (1 Tr. Mtr=3.50 Sq Mtr).
14. Considering the safety reasons in use of rubberised level crossing, tenderer should have proven technology and propriety on rubberised level crossing system. Tenderer should also have own manufacturing and quality control facilities. Necessary documents in this regard should be submitted along with the tender document.
15. Tenderer should meet the manufacturing and quality control requirements as mentioned in the tender document.
16. The rubber pads are manufactured out of special grades or natural or synthetic rubbers of suitable blend thereof, reinforced with high-reinforcing materials and compounded with other ingredients and special additives (propriety item of manufacturer) to meet the ultimate performance.
17. Moulding of rubber pad should be done in specially designed hydraulic press at single impression with two stage curing system at minimum 800 tonnes pressure having automatic digital temperature controller.
18. Tenderer should have own RHEOMETER for quality control or unvulcanised rubber compound prior to manufacturing of rubber pad.
19. RCC beams used in this system should be casted at 1:1:2 ratio.
20. The rubber material should conform to the test requirements as attached in the table.
21. Maintenance period for this work shall be for 06 (Six) months from the date of actual completion. Contractor will have to maintain the work done by him till the maintenance period is over. If any defect arise during this period, the contractor has to rectify the same to the entire satisfaction of the engineer-in-charge Otherwise security deposit will be forfeited.
22. The Contractor is not entitled for any compensation or damage against wastage of labour if any due to non availability of traffic block.
23. Tender should have all in-house testing facilities for their own quality control and should submit the test report along with the tender document. Railway may conduct above tests as far as practicable from any Govt. approved labrotary at contractor's expense.