

Technical Guidance Note TGN 29 on EN 50121-4 (2006 EDITION) - Railway applications

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1. Introduction

Standard EN 50121-4 requires in certain cases to carry out surge tests on the input/output cables (according to Table 2). The tests are to be performed line to earth and line to line. All these couplings are done with a source impedance value of $42\Omega + 0,5\mu\text{F}$.

Question: Should tests be carried out on shielded cables and how to perform these tests?

2. Guidelines:

Standard EN50121-4 does not mention the tests on the shielded cables. However Basic Standard EN61000-4-5 (2006 edition) requires a test on the shielding with a source impedance of 2Ω . This test is much more severe than the $42\Omega + 0,5\mu\text{F}$ impedance test, but more in line with reality.

Conclusion: For the surge immunity test on the shielded cables, standard EN61000-4-5 can be used with a source impedance of 2Ω .

Note: This TGN is based on TECHNICAL DECISION n° 15E: Edition 1 – 03/12/08 of the Working Group of French Notified Bodies for EMD Directive 2004/108/EC.

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