

ISO 15003:2019-11 (E)

Agricultural engineering - Electrical and electronic equipment - Testing resistance to environmental conditions

Contents		Page
	Foreword	v
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	General	2
4.1	General conditions for testing.....	2
4.2	Test sequence.....	3
4.3	Test report.....	3
4.4	ISO 16750 conformance.....	3
5	Tests	3
5.1	Monitoring for impaired function.....	3
5.2	Cold and dry heat.....	4
5.2.1	Changes of temperature with specified rate of change.....	4
5.2.2	Temperature shock.....	5
5.3	Damp heat, steady-state.....	7
5.3.1	Test method.....	7
5.3.2	Test limits.....	7
5.4	Damp heat, cyclic.....	7
5.4.1	Test method.....	7
5.4.2	Test limits.....	9
5.5	Impact.....	9
5.5.1	Particle impact.....	9
5.5.2	Mechanical shock.....	9
5.6	Vibration.....	10
5.6.1	Random vibration test.....	10
5.6.2	Sinusoidal (resonance) test.....	11
5.7	Corrosive atmosphere.....	12
5.7.1	Test method.....	12
5.7.2	Test limits.....	12
5.8	Degrees of protection provided by enclosures (IP Code).....	12
5.8.1	Dust — Test method/test limits.....	12
5.8.2	Water spray — Test method/test limits.....	12
5.9	Air pressure (altitude).....	12
5.9.1	Test method.....	12
5.9.2	Test limits.....	13
5.10	Chemical brush or spray.....	13
5.10.1	Test method.....	13
5.10.2	Test limits.....	14
5.11	Solar radiation (ultraviolet).....	14
5.11.1	Test method.....	14
5.11.2	Test limits.....	14
5.12	Readability of display devices.....	14
5.12.1	Test method.....	14
5.12.2	Test limits.....	15
5.13	Electromagnetic compatibility.....	15
5.13.1	Susceptibility and emissions — Test method/limits.....	15
5.14	Electrical environment.....	15
5.14.1	Operating voltage.....	15
5.14.2	Over-voltage — Test method/limits.....	15

5.14.3 Reverse polarity — Test method/limits 15
5.14.4 Short circuit — Test method/limits 16
5.14.5 Battery-less operation — Test method/limits 16
5.14.6 Transient supply — Test method/limits 16
5.14.7 Electrostatic discharge — Test method/limits 16
Annex A (informative) Example test report 17
Annex B (informative) Machinery/equipment codes and guidance for use of severity levels 18
Annex C (informative) Corresponding tests in ISO 16750 22
Bibliography 23