Template for comments and secretariat observations: USA

Date: **2016_02_25**	Document: **ISO FDIS_7637- 3**	Project:

1	2	3	4	5	6	7
MB	**Clause No /Subclause No /Annex**	**Paragraph /Figure /Table / Note**	**Type of com ment**	**Comment (justification for change) by MB**	**Proposed change by the MB**	**Secretariat observation on each comment submitted.**
US 1	4.1	3rd para	ed	Text states: Some transient pulses tests."	Change to: " Some transient pulse tests …"	
US 2	4.1	2nd to last bullet point	ed	"the leads to be included in the inductive clamp, if used; and"	Drop the term "and" to simplify the statement. Results in: "the leads to be included in the inductive clamp, if used;" This conforms to word usage in other bullet points.	
US 3	4.1	1st sentence after bullet points.	ed	Inconsistent term usage: "Suggested values for the evaluation … "	Change text to: "Suggested transient pulse levels for the evaluation … "	
US 4	4.4	3rd paragraph	ed	Paragraph talks about placement of the DUT on an insulator above ground or directly on ground and also attempts to talk about local DUT grounding. The paragraph is confusing. Also, the same information is repeated in sections 4.5.4, 4..4, and 4.74 for the three test methods. Each of those are similar information but wording is different in each one	Clear and concise DUT setup information should only appear in section 4.4 since it is common for all test methods. All redundant statements should be removed. Two changes are proposed. 1) Replace the text in 4.4, 3rd paragraph with a modified text from section 4.6.4 (para 4 & 5). Specifically: "The DUT shall be placed on a non-conductive, low relative permittivity material ($\varepsilon_r \leq 1{,}4$), at (50 ±5) mm above the ground plane. If the DUT is locally grounded (maximum length of 200 mm), then the DUT's ground supply line shall be connected to the ground plane as defined in the test plan. The DUT has a metal case, it shall not be grounded to the ground plane unless it is intended to simulate the actual vehicle configuration." 2) Delete redundant paragraphs in sections 4.5.4 (para 8 & 9); 4.6.4 (para 4 & 5); and 4.7.4 (para 4 & 5)	
US 5	4.5.2	1st paragraph	ed	Figure references are incorrect. Fast transients are in figures 10 and 11	Replace Figures 8 and 9 with Figures 10 and 11	
US 6	4.5.3	2nd paragraph	ed	Use of the phrase "…50 Ω attenuator which is mounted to coupling clamp as shown in Figure 1." is not clear of intent to connect the attenuator to the CCC directly (i.e. no cables)	Propose word change to: "…50 Ω attenuator which is directly connected to the output of the CCC (no intermediate cable connections) as shown in Figure 1."	
US 7	4.5.4	1st paragraph	ed	The text: "the test method using the CCC is shown in Figure 2" should be modified because it is	Replace text with: "The test setup using the CCC is shown in Figure 2"	

				talking about the setup not the overall method, which includes test procedures.		
US 8	4.5.4	2nd paragraph	te	Text states that DUT supply lines (ground and supply) are not to be included in CCC. However ground or supply delivered from DUT to auxiliary equipment (sensors, actuators) is okay to do. The approach is fundamentally flawed because it assumes differences in source/load impedance. The technical rational to preclude primary power/ground to the DUT must also be applied to DUT supplied power to another load (e.g. sensor). The text essentially precludes testing two wire sensors.	Propose the following changes: 1) State that only DUT ground are not to be placed in the CCC 2) Inclusion of an artificial network on the DUT supply to improve coupling efficiency to the supply lead. This has proven to be extremely effective when testing two wire sensors. This change should be applied to all three test methods.	
US 9	4.5.4	3rd paragraph	ed	The text implies wires shall remain flat, but language is not strong enough	Propose change in text in paragraph from: "The lines which are included in the CCC shall be limited to the maximum number of lines which can be placed flat in a single layer in the CCC (typically 10 to 20 lines); this may require multiple tests to be performed in order to test all the DUT lines." To: "All lines which are placed in the CCC shall lie flat in single layer (typically 10 20 lines). This may require multiple tests to be performed in order to test all the DUT lines."	
US 10	4.5.4	Note at bottom of page 4	ed	Text states: "For special applications a flat harness with maximum 10-20 lines inside the CCC may be agreed upon in the test plan." It is not clear what is being stated. Does not allow use of a flat ribbon cable or flat conductor/flat cable?	Clarify meaning of note	
US 11	4.5.4	Figure 2	ed	Figure dimensions are incomplete (e.g. distances between DUT and CCC not shown)	Update Figure for clarity	
US 12	4.5.4	Paragraph 8 & 9		Information regarding DUT setup is redundant with information provided in 4.4	Delete paragraphs 8 and 9 per US4	
US 13	4.6.3	1st bullet point under paragraph 1	ed	Text states that "The transient pulse level shall be measure using a high impedance passive probe." No parameters are provided regarding the characteristics of this probe. Text should reference ISO 7637-2.	Proposed text change: "The transient pulse level shall be measure using a high impedance passive probe whose characteristics conform with that delineated in ISO 7637-2"	
US 14	4.6.3	Figure 3a	ed	Figure key lists passive probe. Should also include reference to ISO 7637-2	Proposed text change: "6. high impedance passive probe (see ISO 7637-2)"	
US 15	4.6.4	paragraph 4 & 5	ed	Information regarding DUT setup is redundant with information provided in 4.4	Delete paragraphs 4 and 5 per US4	
US 16	4.6.4	Whole section	ed	There is no mention of including or not including DUT (ground and supply) lines as is delineated in section 4.5.4	Need to have consistency between test methods. However, specific language needs to reconcile with US8.	

US 17	4.6.4	Figure 4a, 4b, 5a, 5b	ed	Figure Key # 8 references paragraph 4.6.1 for capacitor information. Better to reference Table 2 which contains the specific information	Change text for Key # 8 to: "8. high-voltage non polarized leaded capacitor (see Table 2)"	
US 18	4.6.4	Figure 4a, 4b, 5a, 5b	ed	Dimensions between DUT and edge of ground plan is shown to be >100 mm. This is not consistent with ground plane requirements in 4.3	Update figures to show correct dimensions.	
US 19	4.6.4	Figure 5a, 5b	ed	Superscript by capacitors (a, b). "b" does not exist	Update figure. Replace "$8^{a,b}$" with "8^{a}"	
US 20	4.7.3	1st paragraph	ed	Figure references are incorrect.	In first sentence, replace "Figures 10 and 11" with "Figures 8 and 9".	
US 21	4.7.3	1st paragraph	ed	Sentence structure causes confusion	Propose changing the text from: "The transient pulses, as described in Figures 8 and 9, applied to the injection probe and measured with a high impedance oscilloscope according to the verification test set-up defined in Figure 6 shall fulfill the requirements stated in Table 3." To: "The transient pulses, described in Figures 8 and 9, when applied to the injection probe are measured with a high impedance oscilloscope according to the verification test set-up defined in Figure 6. Using this configuration, the transient pulse timing characteristics shall fulfill the requirements listed in Table 3."	
US 22	4.7.3	Last paragraph before Table 3	ed	Last sentence in paragraph states: "Information on the process used for estimating the inductive coupling factor is described in Annex C." What is the purpose of Annex C. Does anyone use it?	Delete Annex C unless there is a technical reason to keep it.	
US 23	4.7.4	1st paragraph	te	Text states that DUT supply lines (ground and supply) are not to be included in CCC. However ground or supply delivered from DUT to auxiliary equipment (sensors, actuators) is okay to do. This is the same comments as delineated in section 4.5.4 (CCC method). As stated in US 8, the approach is fundamentally flawed because it assumes differences in source/load impedance.	Propose same approach as US 8	
US 24	4.7.4	2nd paragraph	te	Text states that ICC test can be performed either as shown in Figure 7 or with a straight harness as implemented in ISO 11452-4. Within ISO 11452-4, the separation distance between DUT and edge of ground plan is to > 500 mm which conflicts with requirements in 4.3.	Delete entire paragraph. Test will be performed in accordance with that illustrated in Figure 7.	
US 25	5.3.2	3rd paragraph	ed	Figures 10 and 11 are referenced. It should be Figures 8 and 9.	Change sentence to: "The transient pulse shapes and parameters are given in Figures 8 and 9."	

US 26	5.3.2	Figure 8 & 9	te	The parameters listed for tr and t1 do not align with ISO 7637-2 (2011). In 7637-2, t_r is listed to be 1 (-0.5 +0) usec whereas Figure 8/9 report it as ≤ 1usec. In 7637-2, t_1 is listed to be 0.2 – 5 sec whereas Figure 8/9 report it as 0.5 – 5s.	Align parameters listed in Figures 8 and 9 with those values in ISO 7637-2	
US 27	5.3.3	2nd paragraph		Figures 8 and 9 are referenced. It should be Figures 10 and 11.	Change sentence to: "The transient pulse shapes and parameters are given in Figures 10 and 11."	
US 28	5.3.3	Figures 10 & 11	ed	Print quality is terrible. Barely legible	Replace Figures 10 and 11 with higher quality graphics	
US 29	5.4	1st bullet point	ed	Text states: "- typical coupling capacitance between cable and clamp is around 100 pF". The term "around" should be replaced by "~" or "approximate"	Replace text with: "- typical coupling capacitance between cable and clamp is approximately 100 pF".	
US 30	5.4	2nd bullet point	ed	Text states: "- applicable diameter range of harness: 4 mm to 40 mm." This statement is not relavent considering conductors are to be place flat per paragraph 3 of 4.5.4.	Delete bullet point.	
US 31	Annex C	Whole section	ed	Question the need for this section. Per US22, does anyone use this information?	Delete Annex C unless there is a technical reason to keep it.	

Revised Figures are shown below:

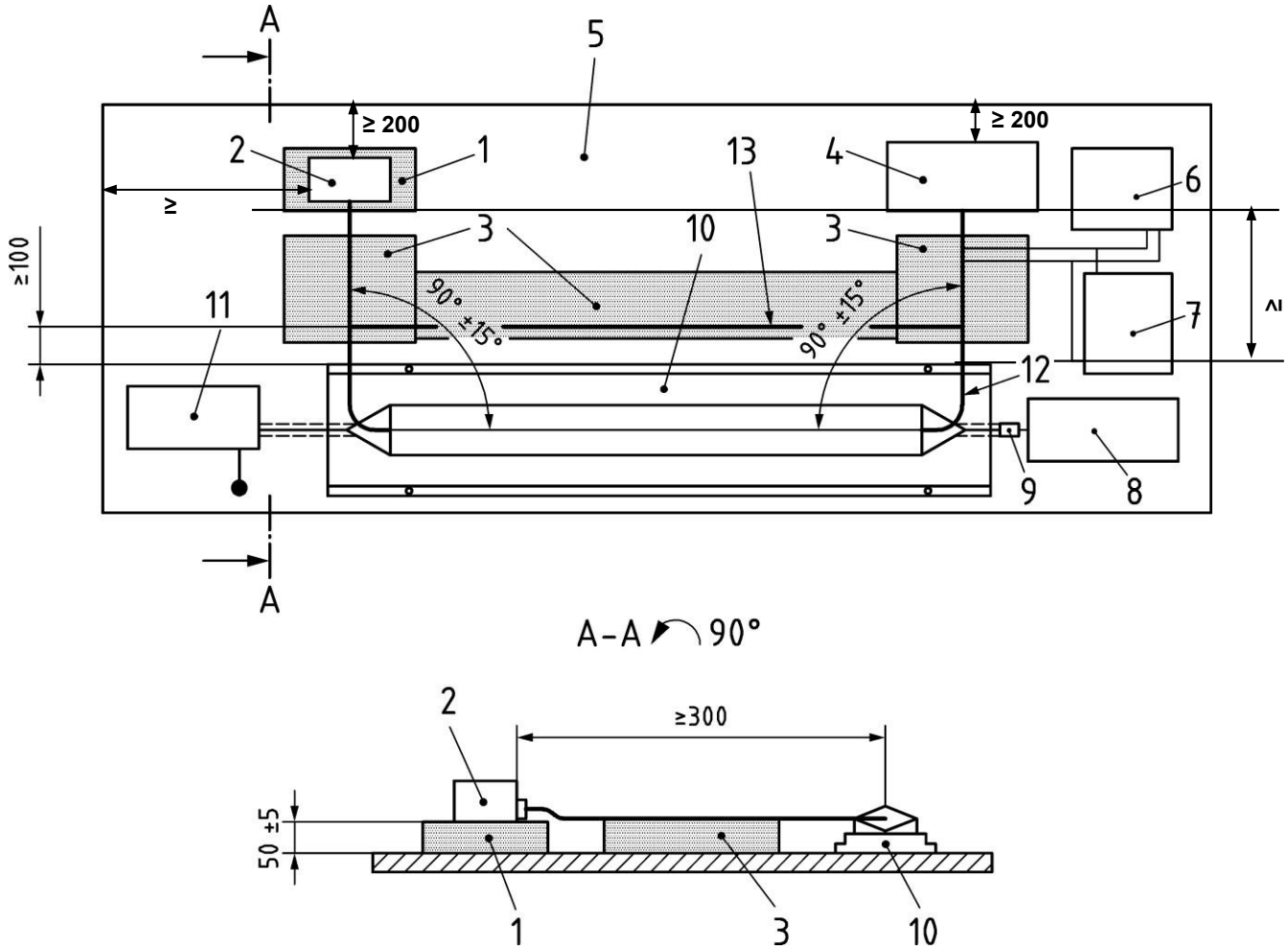

Figure 2 – Test set-up for CCC method – DUT Test

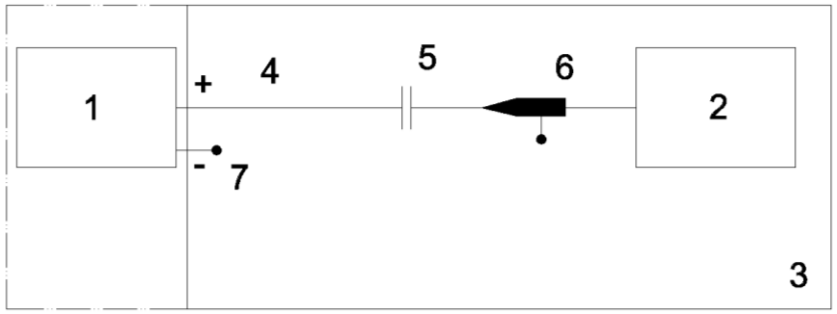

Figure 3a – Set-up for slow transient pulses level adjustment – DCC method

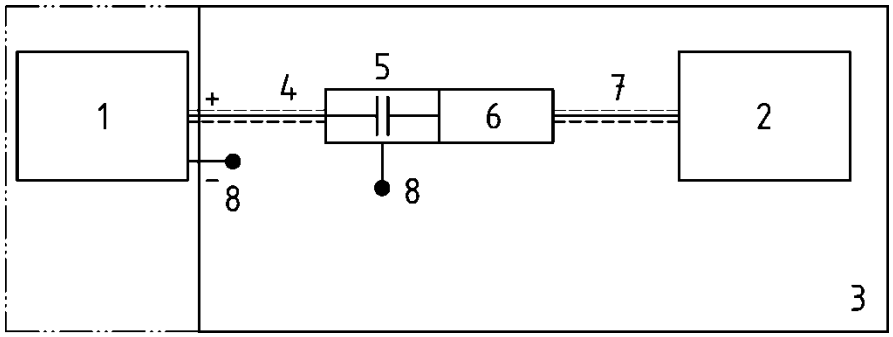

Figure 3b – Set-up for fast transient pulses level adjustment – DCC method

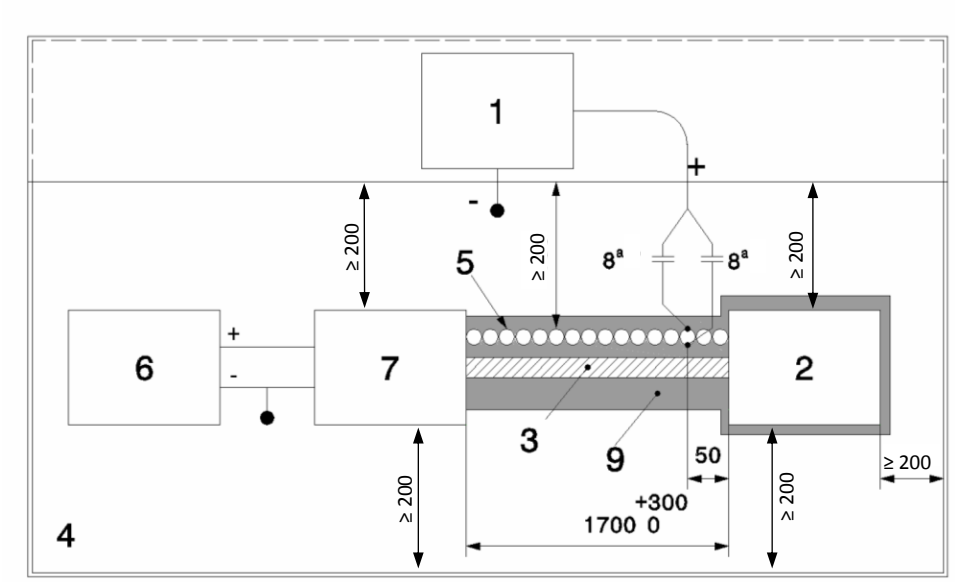

Figure 4a – Test set-up for DCC method – Slow transients – DUT Test

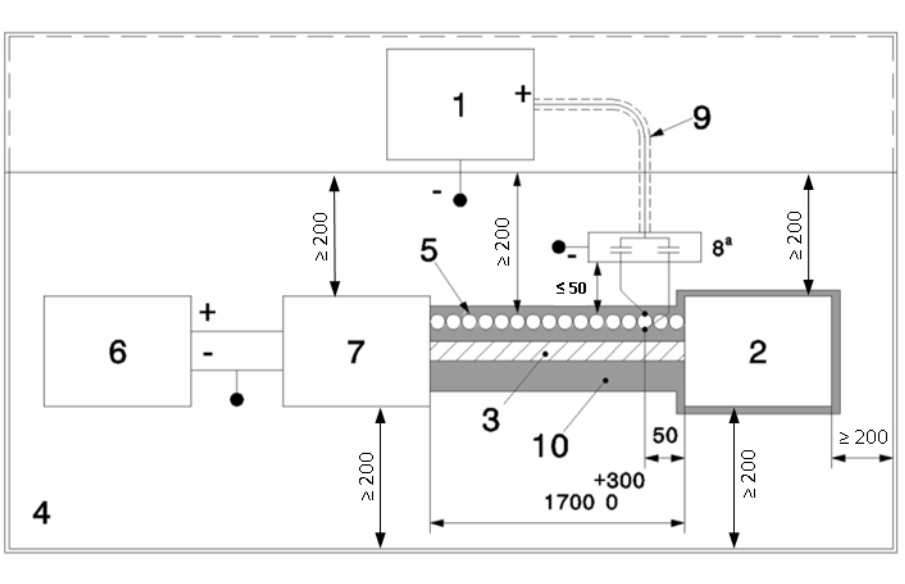

Figure 4b – Test set-up for DCC method – Fast transients – DUT Test

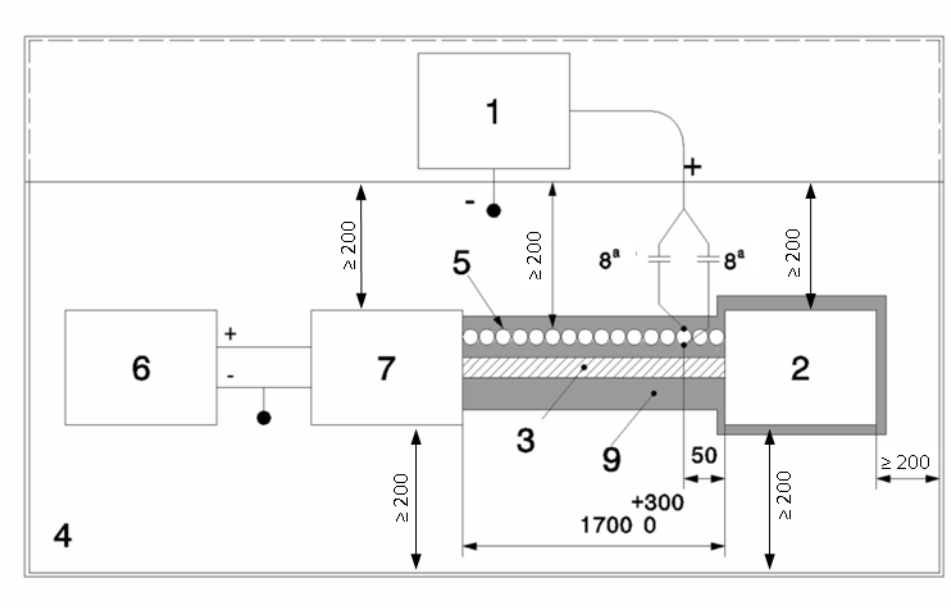

Figure 5a – Example of Test set-up for Balanced Symmetrical Lines – Slow transients – DUT Test

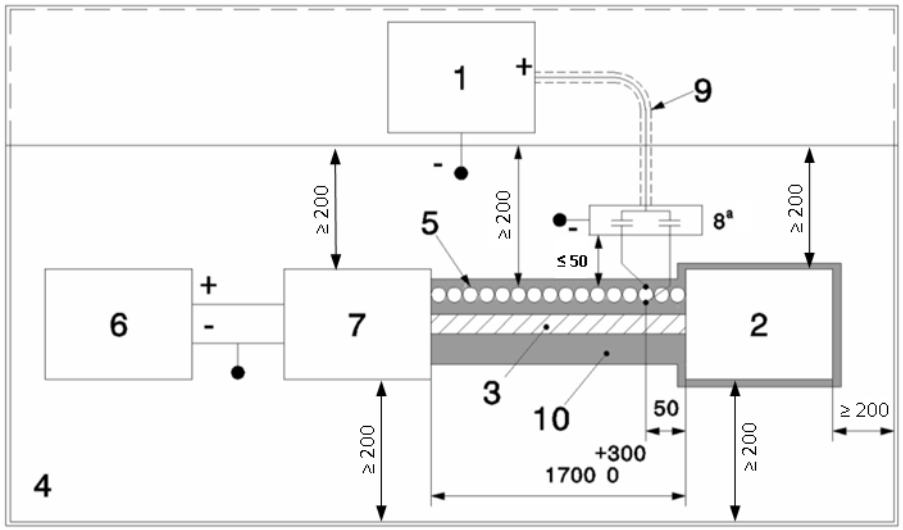

Figure 5b – Example of Test set-up for Balanced Symmetrical Lines – Fast transients – DUT Test

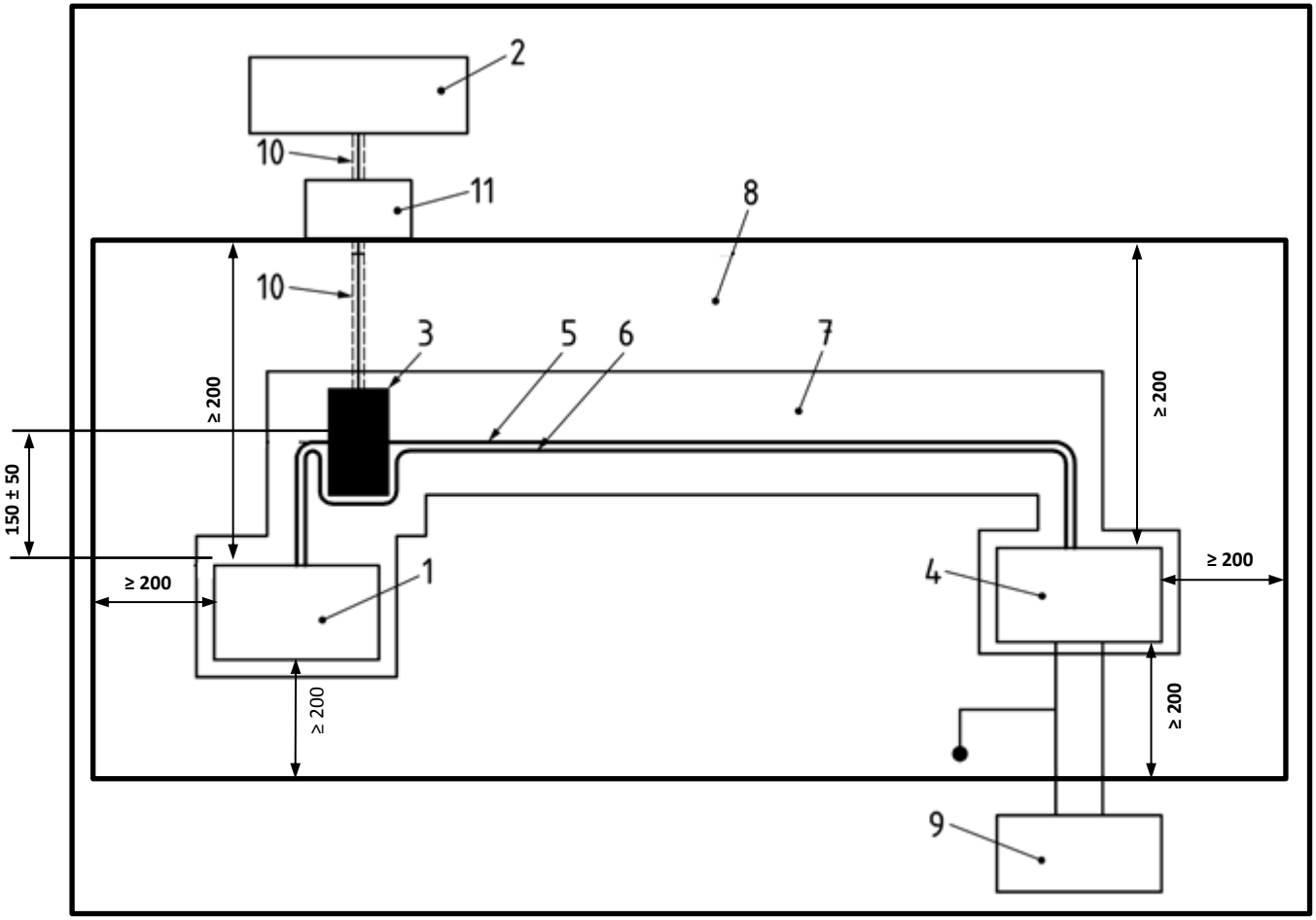

Figure 7 – Test set-up for ICC method – DUT test