

	OPERATIONAL DOCUMENT	HAR OD 107-2
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DECISION LIST OF HAR OSM PART A (TECHNICAL)

Agreed list of working decisions on cable standards and testing, noting
where appropriate questions of application referred to
CENELEC TC 20.

Approved by: Date of issue: Supersedes:	HAR Group + AC meeting of (2025-04-01) April 2025 HAR OD 107-2 – April 2024	No. of pages: 9 Page 1 of 9
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This Operational Document lists all decisions of the HAR OSM Group that have a permanent validity for the operation of the HAR Scheme and are not yet laid down in another HAR Scheme PD or OD. It is reviewed and updated at each meeting of the HAR OSM, and submitted for endorsement at the following meeting of the HAR Group.

This document is maintained in accordance with the HAR OSM *Rules for Operational Staff Meetings*, HAR OD 110 (April 2021), and with the *Constitution, Organization, Tasks and Process of the Operational Staff Meetings (OSMs)*, OD ECS 30 (April 2022).

All the decisions noted are considered as “Recommendations for Use”.

HAR OSM Group meetings from which decisions are extracted		
Dates of OSM Meeting	Venue	Decision Numbers
30 & 31 May 2006	Prague	1; 2
22 & 23 October 2007	London	3; 4; 5; 6; 7
7 & 8 October 2008	Istanbul	8; 9; 10;
6 & 7 October 2009	Budapest	11
5 & 6 October 2010	Athens	12; 13
21 & 22 September 2011	Stockholm	14; 15; 16; 17;
3 & 4 October 2012	Brussels	18; 19; 20; 21; 22; 23;
1 & 2 October 2013	Zurich	24; 25; 26; 27
30 Sept & 1 Oct 2014	Vienna	28; 29; 30; 31
29 & 30 September 2015	Warsaw	1; 32; 33; 34; 35
23 & 24 November 2016	London	36; 37; 38; 39
26 & 27 September 2017	Lisbon	40; 41; 42; 43; 44; 45
25 & 26 September 2018	Amsterdam	18
1 & 2 October 2019	Paris	20; 46; 47; 48
6 October 2020	Web conference	-
22 September 2021	Warsaw	7; 12; 15; 17; 24; 28; 32; 43; 47
20 & 21 September 2022	Madrid	7; 10; 15; 21; 29; 31; 33; 34; 35; 41; 42; 46
26 & 27 September 2023	Bergamo	42;44;46;49
24 & 25 September 2024	Aschaffenburg	33; 50; 51

Note on Decisions: Greyed rows are no longer active for the reasons specified.

LIST OF DECISIONS

No	QUESTION or AGENDA ITEM	DECISION	IMPLEMENTATION DATE	TC 20
1	Surface applied colouring for insulation or sheath	a) Painted surface colouring is not allowed. b) TLs should consider that surface colouring for insulation and sheath is accepted only if it is a result of an extrusion process, using materials of practically same properties. The two resulting layers should be practically homogenous. c) There is no need for any further test to be introduced, to test this requirement, as all the current tests are relevant. d) Different colours are only permitted where the layers are not separable and are of essentially the same material.	2010 (a, b c) 2015 (d)	No
2	Different system of marking HAR cables	In sheathed cables, it is accepted to mark the type of cable (cable designation) and HAR mark on the sheath, while the identification of the manufacturer can be located in any core except green/yellow, if this is also acceptable from national authorities (TC20/sec/1497/DC)	2010 Reconfirmed in 2015 but removed as now in standard	No
3	Tensile testing	The mechanical tests shall be carried out on each tested core and on the sheath, initially on a minimum of 3 test pieces. If one or more test pieces produce a failure then the additional test pieces shall be tested and the result shall be based on all 5 test pieces	Included already in PD D Nov 2008 in the last § of clause 2.2	No
4	Is it allowed to mark a cable with different code designations (i.e. H07RN-F, H07RN8-F, H07BN4-F) at the same time, on the sheath of the same cable.	It is not allowed to mark at the same time, a cable, with different code designations.	2010 Reconfirmed in 2015	No

No	QUESTION or AGENDA ITEM	DECISION	IMPLEMENTATION DATE	TC 20
5	Acceptance of using much smaller wires (in diameter) for flexible cables cores. In this case, the cable is still a harmonized type under the same code designation.	<ul style="list-style-type: none"> Currently there are not lower limits for wires diameter There is no objection to the acceptance of smaller wires (in diameter) in the cores of flexible cables, as far as the tested cable sample results, comply with all the required test specifications. In this case, the cable is still a harmonized type, under the same code designation. 	2010 Reconfirmed in 2015	No
6	Flexing test	When a cable passes the standard requirements of the flexing test, but there are reasonable doubts about its safety, due to obvious deterioration, break up or cracks, on the sheath, the test shall be considered as a fail.	2010 Reconfirmed in 2015 but now included in EN 50525-1	No
7	Uncertainty common approach	<p>Procedure 2 of IEC Guide 115, will be used for the tests in the HAR scheme.</p> <ul style="list-style-type: none"> Some of the tests (see the relevant HAR OSM (SEC) 04/2007 document), are still under consideration to be decided later. OSM HAR considers that uncertainty calculation is not applicable for qualitative tests HAR OSM members will use the common document for the purpose of uncertainty approach 	2010 Reconfirmed in 2015 until HAR OSM Chair document produced 2022	No
8	Use of a camera system for dimensions	The camera system for dimension measurements, is considered as operating like a microscope, so there is no reason for considering that it is not allowed by the standard.	2010 Reconfirmed in 2015 but now in standard	No
9	F5 tests	The requirement is that at least two samples per insulation or sheath material type have to be tested per year, but there is no objection, if a TL wants to test more.	2010 Reconfirmed in 2015	No
10	Wear resistance test	A sample subjected to the test is considered as non complying when the total length in the same position exceeds the standard requirement. In case of doubt, the test is suggested to be repeated.	2010 Reconfirmed in 2022	No

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11	Transparent / translucent insulated cables	<p>Transparent / translucent insulated cables are accepted to bear the HAR mark,</p> <ul style="list-style-type: none"> if they have an non-translucent stripe of at least 1 mm width <p>or</p> <ul style="list-style-type: none"> the whole insulation is translucent coloured (light colouring of the insulation). <p>In the case of the green-yellow core, the complete surface shall be coloured. The colour scheme needs to be identified easily without any magnification. (the decision wording was modified by a voting procedure in December 2010– January 2011).</p>	2010 Reconfirmed in 2015	No
12	Ozone Test	For EM2 sheath compound, the ozone resistance test is applicable for both type tests and (as F5) for surveillance tests.	2011 Reconfirmed in 2015, 2018 Ozone test is HAR rule on PCP 'equivalence'.	Yes
13	Conductor removal (H05SS-K , H05SS(T)-F)	For cable types H05SS-K , H05SS(T)-F and if it is not possible to remove the conductor, the procedure indicated on EN 60811-401 clause 4.2.2 shall be applied.	2011 Reconfirmed in 2015	No
14	Hot pressure test	All laboratories are to use the original mean thickness as the baseline for calculation, not the after-test thickness, until publication of the new edition of EN 60811-508.	Now in standard	No
15	Cold bend test	Chest freezers with appropriate methods to maintain the temperature and conduct the bending should be used.	2012 Reconfirmed in 2021	No
16	Filler in H05V2V2-F Cable	Fillers are not permitted unless specifically allowed in the relevant standard.	Now in standard	No
17	Multi-layer sheath on H07RN-F cable	Multi-layer sheath construction is not permitted unless specifically stated in the standard, and in those cases appropriate approaches to testing must be adopted.	2012 2015 but to be kept under review.	No

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18	Is use of the HAR mark on cables voluntary or mandatory?	It was agreed that although the HAR mark was a voluntary mark for the market, if a manufacturer holds a HAR license then it was mandatory to use the mark. This must be included in the contract the CB has with the manufacturer. It is recommended for the CB to check if the HAR manufacturer does not produce non HAR marked certified harmonised cables during factory inspections.	2013 Reconfirmed in 2018	No
19	Rubber cables and the soldering test	It was agreed that darkening of rubber cables would not be acceptable in a soldering test.	2013	No
20	It was queried whether cables to H07RN-F could be made with a braid	It was agreed that a braid is not permitted in this construction or for any other type of cable (also if used for decorative purposes)	2013 Revised in 2019	No
21	Ozone test and humidity. In method A no requirement for humidity is defined	It was agreed that 50% ±20% be adopted as a recommendation. It was noted that the phrase "dry air" was defined elsewhere as air having a dew point of <4°C.	2013 Reconfirmed in 2022	Yes TC brings it to WG17
22	Flexing test preconditioning: is it permitted to fix the ends of the cable to prevent damage and jumping off?	It was agreed that the cable should be warmed up by using the applied current, and that the test procedure should be followed as normal, and the ends not fixed.	2013	No
23	Colour of sheath – is it required to test all possible colours?	It was agreed to follow IEC practice (When a CBTC covers all colours, it may be sufficient to test white and black) that only white and black need to be tested – all other colours would then be assumed to be acceptable. It was agreed that for single colour wires then G/Y and at least two other colours are tested, including a dark colour, and that during routine testing all other colours would be picked up.	2013	No
24	Test method for removal of sheath without damage	It was agreed that an ad hoc test for the removal of sheath without damage consisting of a 60N pull on a 10cm sample would be adopted for the time being in cases of doubt and that this issue would be taken up further with TC20.	2014	Yes

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25	Cables of non-standard sizes – are they 'Harmonised'?	It was decided that cables of 1,25 mm ² nominal cross section mentioned in the Annexes of standards should be classified as harmonised and the full designation code should be used, with the 'H', i.e., H05VV-F.	2014 Reconfirmed in 2018	No
26	Is spark testing sufficient to cover routine voltage testing requirements?	It was decided that even though a manufacturer may be spark testing at each stage the mandated voltage tests must still be performed between cores, as this is a safety critical issue. Members were asked to ensure that factory inspectors are checking this. The manufacturer must take the issue to TC20 if they wish to challenge it.	2014	No
27	Frequency of conductor resistance testing by the manufacturer	It was decided that as conductor resistance is a sample test, even though it is an F100 test in the HAR scheme, it is up to the manufacturer to determine the sampling programme in the factory.	2014	No
28	Bi-colours other than G/Y for H07 cables	The view of members was that this was not permitted.	2015 Reconfirmed in 2021	No
29	Tapes, screens and drain wires. Some standards permit tapes, but are screens permitted in these cases?	It was agreed that a working definition be applied: Tape is defined as not being metallic. Screen is metallic or laminated.	2015 Reconfirmed in 2022	Yes TC will bring it to the WG
30	Where it is not possible to use tubular samples (e.g. lift cables) is it permitted to use dumbbells thinner than 0.8mm?	It was agreed a thickness lower than 0.8mm but with a minimum of 0.6mm may be used, but in the test report this must be stated. A speed of 25mm/min must be used in this case.	2015	No
31	Hot pressure test on multicore sheaths. Use of mandrels	It was agreed that best practice is for laboratories to have the diameter of the mandrel equal to the diameter of the core or core shape (+10%, -0%).	2015 Valid until issuance of A2 for EN 60811-508	No
32	Single core flame propagation on LSHF cables.	For 1,5 mm ² and 2.5sqmm low smoke halogen free single core cables test three pieces and all must pass.	2015	Yes
33	PV cables acc. to EN 50618 – separation of layers	Test non-separable insulation and sheath layers as a single layer.	2015 Reconfirmed in 2022. Reviewed in 2024	Yes will be solved

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34	PV cables acc. to EN 50618 – damp heat test	Prepare samples using EN 60811-501	2015 Reconfirmed in 2022	Yes will be solved
35	Mica tape layer over conductor in single core halogen free cable acc. to EN 50525-3-41	Permitted as long as thickness and overall dimensions requirements are met. Not permitted acc. to the answer from TC20	2015 Changed in 2022	Yes solved
36	Additional marking of alternative temperature rating	It was agreed that this is not allowed on the cable, according to OD 107 D.3, but that it is allowed to put this information in technical literature and on packaging (OD 107 B.11)	2016	No
37	Cable conforming to three standards simultaneously, and possible conflicting marking	It was agreed that this is allowed if the marking is a clearly divided into separate blocks and that only one harmonised code designation is applied.	2016	No
38	Thermal endurance test	End point of thermal endurance test should be 50% of initial value absolute value.	2016	Yes
39	Removal of conductors before ageing	It was agreed that in general the conductors shall be removed before ageing whenever possible.	2016	No
40	Fillers in H07RN-F cable when a tape is applied around core assembly	It is not allowed to fill the spaces between the cores with a separate filler material for cable H07RN-F. Sheath shall fill the spaces.	2017	No
41	Cold impact test temperature variation	It was agreed that a provisional variation of $\pm 2^{\circ}\text{C}$ shall be used.	2017 Reconfirmed in 2022	Yes will be passed to WG
42	Continued ageing conditions for material EM 6 acc. to EN 50363-2-1	Two sets of 5 test samples shall be tested. One set of samples shall be kept for 3 days, second set of samples shall be kept for 10 days of continuous ageing.	2017 Reconfirmed in 2022	Yes waiting for clarification from WG
43	Fillers in H05VV-F cable when a separator is applied around core assembly	The construction with fillers and separator is allowed for 2-core cable H05VV-F if a tape is used as a separator and the sheath is pressurised.	2017 Revised in 2021	No
44	Voltage value in flexing test followed, after immersion in water, by a voltage test	Voltage as per standard for flexing test followed, after immersion in water, by a voltage test shall be used.	2017 Reconfirmed in 2022	Yes
45	Marking of HAR mark	The HAR mark should be a triangle. A dotted approach is permissible, but angle brackets are not.	2017	No

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46	Ozone resistance test	The distance of 33% of elongation on stretched dumb-bells shall be measured between the markings.	2019 reconfirmed by TC 20 in 2023	Yes
47	Cyclic bending test according to EN 50620	Sub-clause 5.9 instead of 7.3 of ISO 14572:2011 given in the EN 50620 shall be used.	2019	Yes
48	Required number of samples (cores) for multicore cables at hot set test	Three cores shall be tested according to EN 50363-0 sub clause 4.2.1.	2019	No
49	Thermal stability test (if ink mark shall be considered as part of test sample)		2023	Yes
50	Shrinkage test on sheath – Number of cycles not defined.		2024	Yes
51	Thermal stability - Fixing of the additional period time after that a material met the minimum requirement		2024	Yes