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|  | 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.

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Note on Decisions: Greyed rows are no longer active for the reasons specified.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

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|----|---|--|--|-------|
| 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 a 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 |