SLOVENSKI STANDARD
SIST EN 60774-1:1999

01-april-1999

Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS -- Part 1: VHS and compact VHS video cassette system (IEC 60774-1:1994)

Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS -- Part 1: VHS and compact VHS video cassette system

Video-Bandkassettensystem mit Schrägspuraufzeichnung auf Magnetband 12,65 mm (0,5 in) VHS-Format -- Teil 1: VHS- und kompaktes VHS Video-Kassettensystem

Système de magnétoscope à cassette à balayage hélicoïdal utilisant la bande magnétique de 12,65 mm (0,5 in) de format VHS -- Partie 1: Système de cassette vidéo VHS et VHS compacte

Ta slovenski standard je istoveten z: **EN 60774-1:1994**

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ENGLISH VERSION

Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS Part 1: VHS and compact VHS video cassette system (IEC 774-1:1994)

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Video-Bandkassettensystem mit Schrägspuraufzeichnung auf Magnetband 12,65 mm (0,5 in) VHS-Format Teil 1: VHS- und kompaktes VHS Video-Kassettensystem (IEC 774-1:1994)

This European Standard was approved by CENELEC on 1993-12-08. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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FOREWORD

The text of document 60B(CO)150, as prepared by Sub-Committee 60B: Video recording, of IEC Technical Committee 60: Recording, was submitted to the IEC-CENELEC parallel vote in April 1993.

The reference document was approved by CENELEC as EN 60774-1 on 8 December 1993.

This European Standard replaces HD 463 S1:1987.

The following dates were fixed:

- latest date of publication of an identical national standard	(dop)	1995-01-01
- latest date of withdrawal of conflicting national standards	(dow)	1995-01-01

Annexes designated "normative" are part of the body of the standard. Annexes designated "informative" are given only for information. In this standard, annexes A, B, C and ZA are normative and annexes D and E are informative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 60774-1:1994 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

NOTE : When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
94-1	1981	Magnetic tape sound recording and reproducing systems - Part 1: General conditions and requirements	EN 60094-1	1993
756	1991	Non-broadcast video tape recorders Time base stability	EN 60756	1993
1041-1	1990	Non-broadcast video tape recorders Methods of measurement - Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics	HD 619 S1	1992
1041-3	-	Non-broadcast video tape recorders Methods of measurement - Part 3: Audio characteristics for FM recording (in preparation)	-	-
1054	1991	Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS - FM audio recording	EN 61054	1993
1105	1991	Reference tapes for video tape recorder systems	EN 61105	1993

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Système de magnétoscope à cassette à balayage hélicoïdal utilisant la bande magnétique de 12,65 mm (0,5 in) de format VHS –

Partie 1:
Système de cassette vidéo VHS et VHS compacte

Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS –

Part 1:
VHS and compact VHS video cassette system

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

HELICAL-SCAN VIDEO TAPE CASSETTE SYSTEM USING 12,65 mm (0,5 in) MAGNETIC TAPE ON TYPE VHS –

Part 1: VHS and compact VHS video cassette system

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.

4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 774-1 has been prepared by sub-committee 60B: Video recording, of IEC technical committee 60: Recording.

This first edition cancels and replaces the first edition of IEC 774 published in 1983.

The text of this standard is based on the following documents:

DIS	Report on voting
60B(CO)150	60B(CO)167

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

IEC 774 consists of the following parts, under the general title: *Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS:*

- Part 1: VHS and compact VHS video cassette systems;
- Part 2: FM-audio recording (replacing IEC 1054);
- Part 3: S-VHS video tape cassette system (*in preparation*);
- Part 4: PCM-audio recording (*in preparation*).

Annexes A, B and C form an integral part of this standard.

Annex D is for information only.

HELICAL-SCAN VIDEO TAPE CASSETTE SYSTEM USING 12,65 mm (0,5 in) MAGNETIC TAPE ON TYPE VHS –

Part 1: VHS and compact VHS video cassette system

Section 1: General

1.1 Scope

This part of IEC 774 is applicable to the basic VHS and compact VHS video cassette system. Compact VHS video cassette is used just like the normal VHS video cassette with the aid of a cassette adaptor (see annex D for an example of a compact video cassette adaptor) for recording and/or reproducing video and audio signals in accordance with the system defined in this standard. This standard defines the electrical and mechanical parameters and the necessary characteristics of the VHS and the compact VHS video cassette system. The requirements relate to the 525 line-60 field and 625 line-50 field TV systems. Equipment manufactured according to this standard and tapes recorded following this standard, provide the necessary interchangeability of recorded video cassettes.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 774. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 774 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 94-1: 1981, *Magnetic tape sound recording and reproducing systems – Part 1: General conditions and requirements*

IEC 756: 1991, *Non-broadcast video tape recorders – Time base stability*

IEC 1041-1: 1990, *Non-broadcast video tape recorders – Methods of measurement – Part 1: General video (NTSC/PAL) and audio (longitudinal) characteristics*

IEC 1041-3: 199x, *Non-broadcast video tape recorders – Methods of measurement – Part 3: Audio characteristics for FM recording* (in preparation)

IEC 1054: 1991, *Helical-scan video tape cassette system using 12,65 mm (0,5 in) magnetic tape on type VHS-FM audio recording*

IEC 1105: 1991, *Reference tapes for video tape recorder systems*

1.3 Environment

Tests and measurements made on the system to check the requirements of this standard shall be carried out under the following conditions:

Temperature:	20 °C ± 1 °C
Relative humidity:	(50 ± 2) %
Barometric pressure:	86 kPa to 106 kPa.

Section 2: VHS video tape cassette

2.1 Mechanical parameters

2.1.1 *Cassette dimensions*

The dimensions of the cassette shall be in accordance with figures 1 to 4.

2.1.2 *Reel dimensions*

The dimensions of reels shall be in accordance with figure 5.

2.1.3 *Tape winding and tape path*

The tape winding and the tape path shall be in accordance with figure 6. The *E* value of the tape pack shall be greater than 1,5 mm. See note 4 of figure 4, for *E* value.

2.1.4 *Unlocking of front cover*

The unlocking of the front cover shall be accomplished when a force no greater than 0,15 N is applied to the cover unlocking pin, as shown in note 8 of figure 1.

2.1.5 *Opening of front cover*

The force necessary to open the front cover as shown in note 3 of figure 3, shall be less than 1 N.

2.1.6 *Releasing of reel brake*

The reel brake shall be released by the reel brake unlocking pin as shown in note 4 of figure 3, with a force less than 0,7 N.

2.1.7 *Reel spring*

The reels in the cassette shall be pushed down by the reel spring with a force of $1{,}6\ ^{+0,4}_{-0,2}$ N, with the reels in the position indicated in figure 4.

Section 3: Compact VHS video cassette

3.1 Mechanical parameters

3.1.1 *Cassette dimensions*

The dimensions of the compact VHS video cassette shall be in accordance with figures 7 to 12. The cassette dimensions are given for two types of front covers, with and without a front cover locking structure.

3.1.2 *Front cover*

3.1.2.1 *Front cover with a locking structure*

The front cover with a locking structure is shown in figure 13. With this type of cassette, a permanent spring force is used to keep the front cover shut. The forces F_1 and F_2 necessary to open the front cover with the lock released, as defined in note 1 of figure 13, shall be as follows:

$$0{,}1\ \text{N} \leq F_1 \leq 0{,}25\ \text{N}$$

$$0{,}05\ \text{N} \leq F_2 \leq 0{,}2\ \text{N}$$

Even when the front cover is locked, it shall be forcibly released with a force F_3 of less than 0,8 N applied to the unlocking position, as indicated in note 3 of figure 13. The unlocking pin shall be pushed to the unlocking position indicated in note 4 of figure 13 with a force F_4 less than 0,8 N. The unlocking pin shall be pushed to the surface of the cassette side wall with a force F_5 less than 3 N (see note 6 of figure 13).

3.1.2.2 *Front cover without a locking structure*

The front cover without a locking structure is shown in figure 14. The front cover has two stable positions, completely closed and completely open. The front cover shall open or close by itself when it is within an angle of 20° of its completely open or completely closed position as indicated in note 1 of figure 14. The forces F_1 and F_2 necessary to open and close the front cover as shown in figure 14 shall be as follows:

$$0{,}05\ \text{N} \leq F_1 \leq 0{,}2\ \text{N}$$

$$0{,}05\ \text{N} \leq F_2 \leq 0{,}2\ \text{N}$$

3.1.3 *Reel dimensions and brake force*

The dimensions of the reel shall be in accordance with figures 15 and 16. The tape shall be pulled out with the following force as shown in note 3 of figure 15, and note 2 of figure 16, with the brake engaged:

Supply reel:	$0{,}4\ \text{N} \leq F \leq 1{,}5\ \text{N}$
Take-up reel:	$0{,}05\ \text{N} \leq F \leq 3\ \text{N}$

3.1.4 *Tape winding and tape path*

The tape winding and tape path shall be in accordance with figure 17.

3.1.5 *E value*

The *E* values l_1 and l_2 are shown in note 1 and note 2 of figure 17 and shall each be greater than 0,7 mm.

NOTE – *E* value is the radial clearance between the outer edge of the wound tape and the edge of the reel flange.

3.1.6 *Guide rollers*

Guide rollers shall be provided as shown in figure 17. The inclination of all rollers shall be within 0,1 mm.

3.1.7 *Reel spring force*

The reels in the cassette, as shown in note 4 of figure 18, shall be pushed down by a reel spring with the following forces:

Supply reel: 1,6 N ± 0,4 N

Take-up reel: $0{,}7\ ^{+0{,}3}_{-0{,}2}$ N

3.1.8 *Positioning screw of take-up reel*

The deviation of the centre of the positioning screw head shall be less than 0,05 mm from the take-up reel axis (see figure 18).

Section 4: Tape characteristics of VHS and compact VHS cassette

4.1 Dimensions of the video tape

4.1.1 *Magnetic tape thickness*

The maximum thickness of the magnetic tape, including the coating, shall be 20,0 µm. See annex A for alternative thicknesses of VHS cassette and annex B for compact VHS cassette respectively.

4.1.2 *Magnetic tape width*

The width of the magnetic tape shall be 12,65 mm ± 0,01 mm.

4.1.3 *Magnetic tape length*

For the length of the magnetic tape of VHS cassette, see annex A, and annex B for compact VHS cassette.