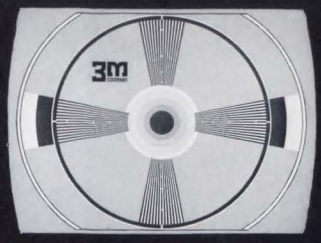
Physical and Magnetic Specifications



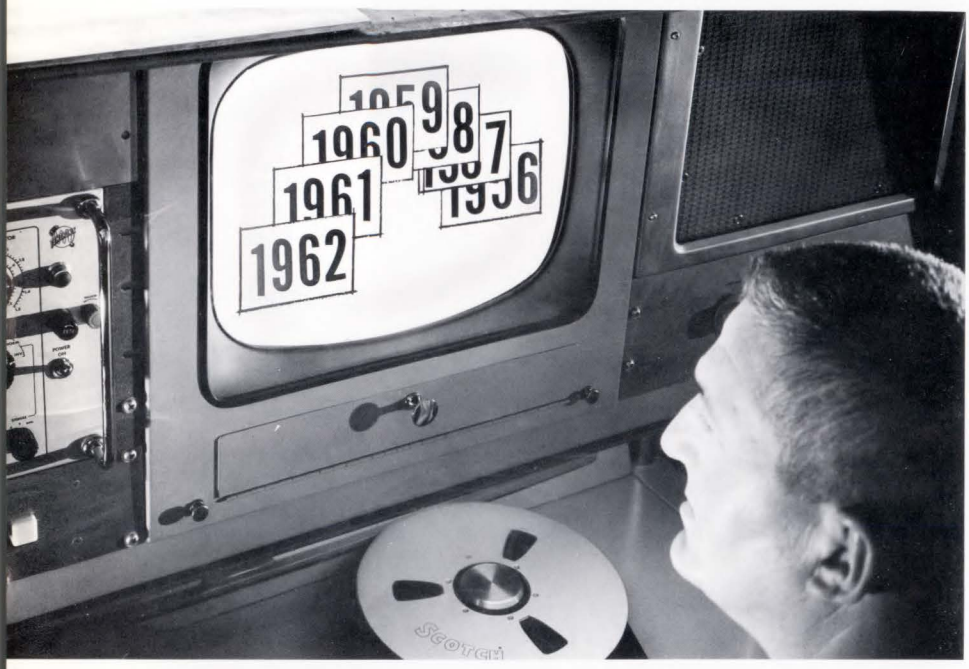
Scotch®
BRAND

video tape

FOR COMMERCIAL BROADCAST, INDUSTRIAL AND EDUCATIONAL CLOSED-CIRCUIT, SPECIAL VIDEO INSTRUMENTATION APPLICATIONS

379
377
379T

Scotch® BRAND video tapes . . .



TO FIRST DEVELOP a tape capable of serving the precise, abusive demands of video recording required exacting research, careful, tedious manufacture, and a "personalized" quality control. To produce such tapes time after time, year after year in ever-growing quantities, requires still more: the utmost in coating knowhow.

"SCOTCH" Video Tapes are manufactured exclusively by 3M, where the application of all kinds of coatings to all kinds of base materials is general, everyday practice. This fifty years of coating knowledge produced the first American-made magnetic tape, the first instrumentation tape, the first plastic based magnetic tape, and others. It was therefore only natural that such coating leadership would also produce the first and only acceptable, quantity produced video tape.

Video recording's requirements of uniformity, reliability and "microsecond" accuracy testify to the long standing superiority of "SCOTCH" Video Tape. Its excellent freedom from error, replay ruggedness, and close slitting and dimensional tolerances are established benefits to experienced video tape users.

"SCOTCH" Video Tapes feature a specially developed synthetic gamma ferric oxide coating of acicular particles less than one micron in length. These needlelike particles are bonded to the stable (PE) backing by a highly advanced heavy duty heat resistant binder to assure durability and freedom from defects.

Scotch® BRAND VIDEO TAPE 379

Formerly No. 179, "SCOTCH" Video Tape No. 379 is designed to serve commercial telecast video equipment where head travel is nearly perpendicular to tape travel. Number 379's oxide coating is transversely oriented (the fine particles aligned across the width of the tape) to match the recording "path" of the vertically moving heads. This increases the magnetic efficiency of the oxide to provide better signal-to-noise ratio.

Scotch® BRAND VIDEO TAPE 377

Designed for use on video recorders for closed circuit, industrial and educational applications, Video Tape No. 377 is longitudinally oriented. This provides optimum output for the long sweep of record and playback heads on this equipment. It otherwise possesses the same qualities of dependability and consistency found in No. 379 Tape.

dimensional stability

Tough pre-inspected 1 mil polyester (PE) base material supplies video tape's needed stability to assure the critical synchronization demanded in video recording, yet is flexible enough to afford optimum head-to-tape conformity.

splice free

All lengths of both 377 and 379 Video Tapes are splice free, the result of absolute consistency in the coating application.

standard sizes available:

Guaranteed Minimum Footage	*Time**	*Reel Size*
400′	5:20 min.	6½″
800′	10:40 min.	6½″
1200′	16 min.	10½″
2400′	32 min.	12½″
2600′	34:40 min.	12½″
3200′	42:40 min.	12½″
3600′	48 min.	12½″
4800′	64 min.	12½″
5400′	72 min.	12½″
7200′	96 min.	14″

Both No. 377 and 379 Video Tapes are available in the above sizes.

*The above time designations are based on 60 cps operation at a tape speed of 15 ips. If tape is used on equipment utilizing a tape speed of 7½ inches-per-second, time durations shown above should be doubled.

proven superiority

physical properties

	Longitudinally Oriented **377**	Transversely Oriented **379**
Color	Black	Dark Red
Backing Material	Polyester (PE)	Polyester (PE)
Thickness (mils)		
Backing	.92	.92
Coating	.46	.46
	Total: 1.38	Total: 1.38
Ultimate Tensile Strength		
2″ wide—Room Condition	56 lbs.	56 lbs.
PSI	25,000	25,000
PSI at 150°F.	20,500	20,500
Yield Strength		
5% Stretch in 2″ Width	30 lbs.	30 lbs.
Elongation at Break	100%	100%
Coefficient of Friction	0.28	0.28
Residual Elongation	0.5%	0.5%
Standard Width	2.000″	2.000″
Slitting Tolerances	+.000″ −.004″	+.000″ −.004″
Toughness		
Tear—grams	12	12
Impact—kilogram/cms	70	70
Coefficient of Expansion*		
Humidity	1.1×10^{-5}	1.1×10^{-5}
Temperature	2.0×10^{-5}	2.0×10^{-5}
Temperature Limits for Safe Use		
Low	−40°F.	−40°F.
High	+250°F.	+250°F.
Wear Life	Wear life on rotating head recorders depends on head pressure and other abusive characteristics of recording equipment. The average tape life has been found to be well in excess of 100 passes.	

magnetic properties

	377	**379**
Oxide Orientation	Longitudinal	Transverse
Intrinsic Coercivity (Hci) Oersteds	240	240
Retentivity (Brs) Gauss	1,000	1,000
Remanence (Flux Lines per ¼″ Track)	Lengthwise: 0.68 Crosswise: 0.48	Lengthwise: 0.48 Crosswise: 0.68
Relative Output in db @ 1% Distortion†		
15 mil Wavelength	Lengthwise: +1.0 db Crosswise: −6.0 db	Lengthwise: −6.0 db Crosswise: +1.0 db
Relative Sensitivity (db)†		
15 mil Wavelength	Lengthwise: +1.0 db Crosswise: −5.0 db	Lengthwise: −5.0 db Crosswise: +1.0 db
1 mil Wavelength	Lengthwise: +3.5 db Crosswise: −2.5 db	Lengthwise: −2.5 db Crosswise: +3.5 db
Erasing Field (Oersteds)	800	800
Uniformity at 15 mil Wavelength**		
Within a Roll	±¼ db	±¼ db
Roll to Roll	±½ db	±½ db
Maximum Allowable Dropouts:	20/min. average***	20/min. average***

*These coefficients are unitless and represent the per cent change of relative humidity or degree Fahrenheit over the following ranges:

Humidity: 20% RH to 80% RH.
Temperature: −30°F. to +130°F.

†At optimum bias. (Output referred to "SCOTCH" Magnetic Tape No. 111.)

**Refers to magnetic uniformity of coating only. Backing and equipment parameters which affect head-to-tape contact may produce greater deviations than those noted above. "SCOTCH" Video Tapes have been tested for audio level variations at a minimum of 2 mils audio head protrusion, (See †† below) and at this constant, provide an average of less than ±1 db variation in audio output at 1000 cps.

***Refers to line defects of at least 75% failure of the unlimited playback signal for a duration of 15 microseconds minimum. A group of dropouts (burst) is counted as a single defect for each 500 millisecond duration. These qualifications are based on a video tip penetration of 2.0 mils minimum.

††"SCOTCH" Video Tapes are tested during manufacture on specially designed test equipment, with final broadcast creditability testing conducted on VR 1000-C video tape recorders.

Scotch® BRAND VIDEO TAPE 379T

A special packaging of standard Video Tape No. 379 is available for instrumentation recording where 3600 feet of video tape is wound on a 10½″ reel. Designated No. 379T, this special tape otherwise possesses the same excellent physical and magnetic properties as No. 379.

GENERAL OFFICES

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BRANCH OFFICE LOCATIONS

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5925 Peachtree Industrial Blvd.
Chamblee, Georgia

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Buffalo 5, New York

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Argo P.O.
Bedford Park, Illinois

CINCINNATI
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Cincinnati 37, Ohio

CLEVELAND
12200 Brookpark Road
Cleveland 30, Ohio

DALLAS
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Dallas 28, Texas

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GRAND RAPIDS
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Honolulu 14, Hawaii

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Los Angeles 22, California

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Philadelphia 20, Pennsylvania

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Magnetic Products Division 3M COMPANY