

Measuring tapes

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Measuring tapes

Measuring Tapes

Guaranty for Accuracy

All measuring tapes with the remark "Accuracy according EC standard" keep the tolerances of the EC standard in accuracy class II. These are calculated as follows:

Formula: $(a + bL)$ mm; (a = 0,3 mm; b = 0,2 mm; L in m)

Example: tolerance for tape 20 m long 0,3 mm + 20 x 0,2 mm = +/- 4,3 mm

Certain steel measuring tapes are supplied in accuracy class I also (at additional costs). The tolerances for accuracy class I are calculated as follows:

Formula: $(a + bL)$ mm, (a = 0,1 mm; b = 0,1 mm; L in m)

Example: tolerance for steel measuring tape 20 m long 0,1 mm + 20x0,1 mm = +/-2,1 mm

Error table for measuring tapes class I and II on page 31.



Fiber glass tape according EC standard class



Steel tapes according EC-standard class II

Measuring tapes are produced under the following conditions:

Temperature: 20 degree Centigrade

Tension: Fiber glass measuring tapes 20N

Steel measuring tapes 50 N

Steel measuring tapes with dip weights are produced under the tension according to the weight of the dip weight, for example dip weight 600 g = tension 6 N.

Insert of Refills

All fiber glass and steel measuring tapes are made to enable insert of refills without use of any tool. Therefore the tapes can be changed quick and easy.

Fiber Glass Measuring Tapes



end of tape - part for insert in the winding device

Steel Measuring Tapes



end of tape - part for insert in the winding device

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Measuring tapes

Winding Devices for Measuring Tapes



Strong plastic case (horseshoe shaped or round) made of durable plastic material. Tapes 13 mm wide - round case Tapes 16 mm wide - horseshoe shaped case



Plastic coated steel case
sheet steel with durable PVC coating, very robust, handle of high valued plastic.



SR-Frame
of anodised light metal with strong plastic handle, very handy and useful, long foldable winding arm of meta



"V"-Frame
of anodised light metal in V-shape, specially useful for longer measuring tapes, better guidance when rewinding the tape. Handy plastic grip, long foldable winding arm of metal.

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Measuring tapes



Plastic frame type "R"

of durable plastic, handy and light, specially useful for fiber glass and polyamid coated steel tapes.



Brass frame

with oblique wooden grip, long foldable winding arm of metal, winding core of metal. Specially useful for tank dipping tapes.

The above shown winding devices are our standard types, besides of these, we produce cross and field frames for special measuring tapes. Pictures and descriptions on the pages of the catalog of the relative measuring tapes.

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Measuring tapes

Measuring Tapes and Graduations

Fiber Glass Measuring Tapes 16 mm wide



cm graduation



mm graduation



feet, inches, 1/16" graduation

Fiber Glass Measuring Tapes 13 mm wide



cm graduation



mm graduation

Woven Fiber Glass Measuring Tapes 16 mm wide



cm graduation



feet, inches, 1/16" graduation

Steel Measuring Tapes 13 mm wide coated with polyamid or yellow laquered



cm graduation



mm graduation



mm duplex graduation

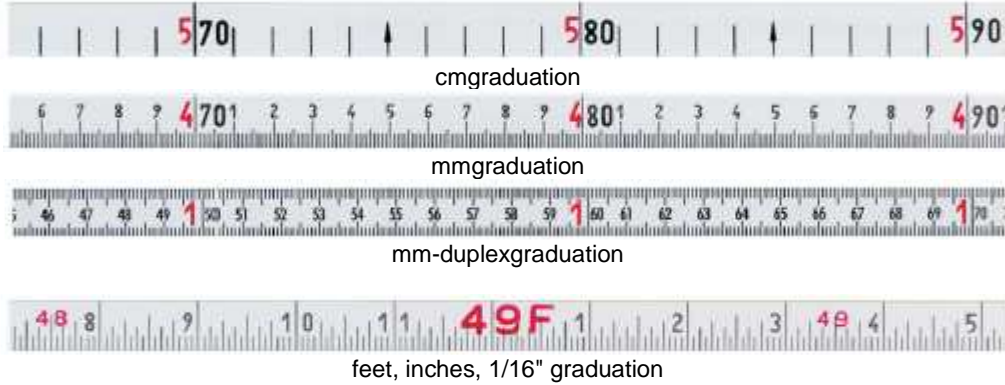
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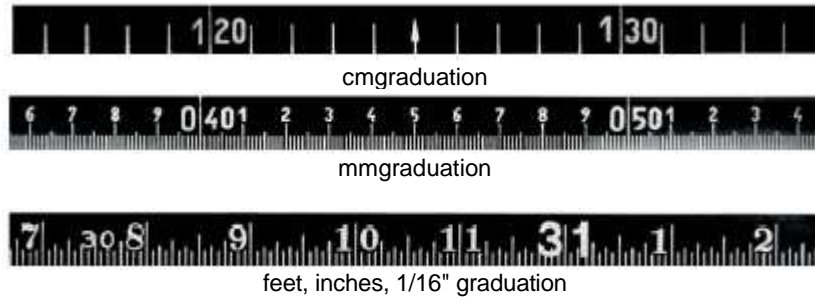
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Measuring tapes

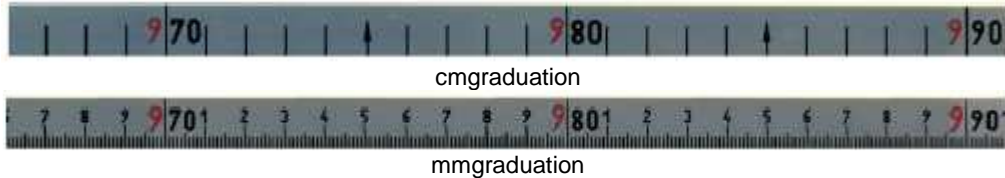
Steel Measuring Tapes white enamelled 13 mm wide



Steel Measuring Tapes Carbon and Stainless Steel 13 mm wide - etched



Steel Measuring Tapes Stainless Steel, 13 mm wide laquered



White Steel Measuring Tape 10 mm wide



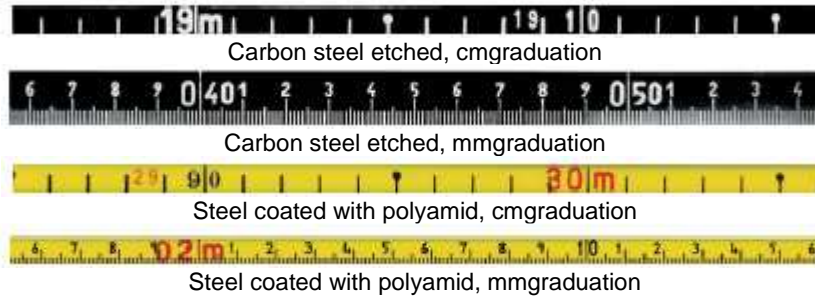
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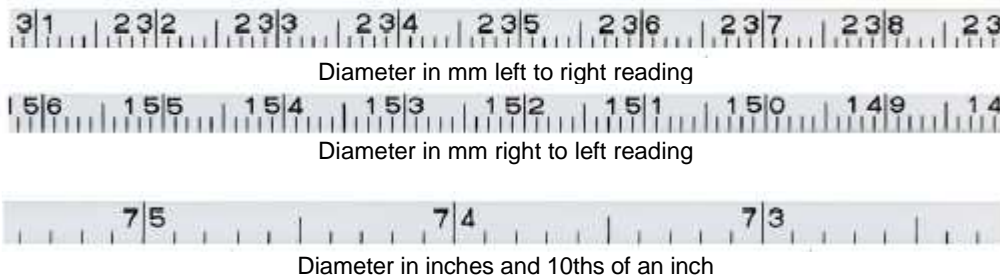
Measuring tapes

Special Steel Measuring Tapes 6,5 mm wide

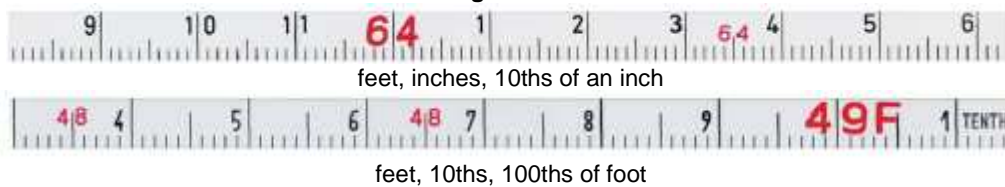


Special Graduations

Diameter Graduations



Feet graduations



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Measuring tapes

Measuring Commencements



Commencement „A”, approx. 10 cm blanc space before zero



Commencement „B”, the measure starts at the clasp



Commencement „C”, ring included in measurement



Commencement „D”, the measure starts at the clasp. The clasp is provided with a foldable hook to hang the tape in for one man measurements.



Commencement „H”, for fiber glass and steel measuring tapes. The ring is provided with a foldable hook for hanging in the tape for one man measurements.



Commencement „N”, flexible joint of brass

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Measuring tapes

Stamping for Accuracy

Measuring Tapes can be supplied Government stamped for accuracy according European standard class II or I on request. Additional costs see price list.

Calibration Certificate

Richter Measuring Tapes could be supplied with calibration certificate issued by the Bavarian Gauging Office. Error indication in 10th of mm. Additional costs see price list.

Work test table

Error determination per meter +/- in 10ths of mm with a maximum tolerance of +/- 0,2 mm. The test is made when the tape is on a horizontal surface under the corresponding temperature and tension. The indicated difference refers from zero to the corresponding meter figure.

Important Notice

If the order specifies no measuring commencement we supply the commencement type „A“

Measuring tapes with other commencements than "A" are produced according clients order and cannot be returned. The same is for measuring tapes with work test table or Government stamped measuring tapes or tapes in accuracy class I.

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Measuring tapes

Fiber Glass Measuring Tapes

16 mm wide - two colors yellow/beige Accuracy according EC standard class II

parallel situated glass fiber coated with PVC, graduation in black, figures black and red, reinforcement at the beginning of the tape

- durable graduation
- good readability
- no stretch when measuring (under normal tension 20 N)
- cold resistant up to 40 degree centigrade

Stamping for accuracy according EC class II possible

Typ No.	graduation							
	front				back			
278	cm							
279	cm				cm			
279	cm				feet, inches, 1/8 inch			
280	m							
length	10	15	20	25	30			m
	33	50	66	82	100			ft



Strong plastic case

Typ No.	graduation							
	front				back			
271P	cm							
273P	cm				cm			
273P	cm				feet, inches, 1/8 inch			
272P	m							
length	10	15	20	25	30			m
	33	50	66	82	100			ft



PVC coated steel case

Typ No.	graduation							
	front				back			
274R	cm							
275R	cm				cm			
275R	cm				feet, inches, 1/8 inch			
272R	m							
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



Plastic frame „R“

Typ No.	graduation							
	front				back			
271-V	cm							
273-V	cm				cm			
273-V	cm				feet, inches 1/8 inch			
272-V	m							
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



„V“-frame of light metal

Refills see price-list

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Measuring tapes

Fiber Glass Measuring Tapes

13 mm wide - yellow color Accuracy according EC standard class II

parallel situated glass fiber coated with PVC, graduation in black, figures black-red, reinforcement at the beginning of the tape

- durable graduation
- good readability
- no stretch when measuring (under normal tension 20 N)
- cold resistant up to 40 degree centigrade

Accuracy stamping according EC class II possible

Typ No.	graduation							
	front				back			
216X	cm							
218X	mm							
length	10	15	20	25	30			m



Strong plastic case

Typ No.	graduation							
	front				back			
216P	cm							
218P	mm							
length	10	15	20	25	30			m



PVC coated steel case

Typ No.	graduation							
	front				back			
216R	cm							
218R	mm							
length	10	15	20	25	30	50	100	m



Plastic frame „R“

Typ No.	graduation							
	front				back			
216SR	cm							
218SR	mm							
length	10	15	20	25				m



Light metal frame „SR“

Typ No.	graduation							
	front				back			
216-V	cm							
218-V	mm							
length	10	15	20	25	30	50		m



„V“-frame of light metal

Refills see price-list

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Measuring tapes

Woven Fiber Glass Tapes

16 mm wide

made of Trevira cloth, reinforced with glass fibers. This cloth is impregnated with special plastic material. High tensile strength lengthwise also. • **cold resistant up to 40 degree centigrade**

Typ No.	graduation							
	front				back			
268G	cm							
269G	cm				cm			
length	10	15	20	25	30	50		m

Typ No.	graduation							
	front				back			
261GP	cm							
263GP	cm				cm			
length	10	15	20	25	30	50		m

Typ No.	graduation							
	front				back			
264G-R	cm							
265G-R	cm				cm			
length	10	15	20	25	30	50	100	m

Typ No.	graduation							
	front				back			
261G-V	cm							
263G-V	cm				cm			
length	10	15	20	25	30	50	100	m

Refills see price-list



Strong plastic case



PVC coated steel case



Plastic frame „R“



„V“-frame of light metal

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Measuring tapes

Steel Measuring Tapes coated with nylon - Metri-Polysan 13 mm wide Accuracy according EC standard II

specially resistant against corrosion, yellow background, black graduations, black-red figures, through transparent nylon coating high resistance against wear off.

Typ No.	graduation							
	front				back			
402X	cm							
404X	mm							
length	10	15	20	25	30			m



Strong plastic case

Typ No.	graduation							
	front				back			
402P	cm							
404P	mm							
length	10	15	20	25	30			m



PVC coated steel case

Typ No.	graduation							
	front				back			
402SR	cm							
404SR	mm							
length	10	15	20	25				m



Light metal frame „SR“

Typ No.	graduation							
	front				back			
402R	cm							
404R	mm							
length	10	15	20	25	30	50	100	m



Plastic frame „R“

Typ No.	graduation							
	front				back			
402V	cm							
404V	mm							
length	10	15	20	25	30	50	100*	m



„V“-frame of light metal

*) 402V + 404V/100 m werden in Kreuzrahmen geliefert

Refills see price-list

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Measuring tapes

Steel Measuring Tapes coated with nylon - *Metri-Polysan* 10 mm wide Accuracy according EC standard class II

specially resistant against corrosion, yellow background, black graduations, black-red figures, through transparent nylon coating high resistance against wear off.

Typ No.	graduation							
	front				back			
384P	mm							
length	10	15	20	25	30			m



PVC coated steel case

Typ No.	graduation							
	front				back			
384R	mm							
length			20	25	30	50	100	m



Plastic frame „R“

Refills see price-list

White enamelled Steel Measuring Tapes 10 mm wide Accuracy according EC standard class II

Protected against corrosion through phosphate layer on the steel before white coating. Black graduation, black-red figures on white laquered tape steel, graduation and figures protected through transparent burnt in laquer.

Typ No.	graduation							
	front				back			
348	mm							
length	10	15	20	25	30	50		m



PVC coated steel case

Refills see price-list

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Measuring tapes

White Enamelled Steel Measuring Tapes 13 mm wide Accuracy according EC standard class II

Protected against corrosion through phosphate layer on the tape steel before white coating. Black graduation, black-red figures on white laquered tape steel, graduation and figures protected through transparent burnt in laquer.

Typ No.	graduation							
	front				back			
306WP	cm							
308WP	m							
309WP	m				feet, inches, 1/16 inch			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



PVC coated steel case

Typ No.	graduation							
	front				back			
306WX	cm							
308WX	m							
309WX	m				feet, inches, 1/16 inch			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



Strong plastic case

Typ No.	graduation							
	front				back			
412W-SR	cm							
414W-SR	mm							
415W-SR	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



Light metal frame „SR“

Typ No.	graduation							
	front				back			
412W-V	cm							
414W-V	mm							
415W-V	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



„V“-frame of light metal

Refills see price-list

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Measuring tapes

Steel Measuring Tapes with mm-duplex graduation Accuracy according EC class II 13mm wide



mm-graduation throughout on upper and lower edge of the measuring tape, each meter with cm-figures from 1 – 99 black graduations, black cm-figures, meter figures in red repeated before each decimeter.

White enamelled Steel Measuring Tapes

black graduation, black-red figures, protected through transparent burnt in laquer. **Type: 318W**

Metri-Polysan

yellow laquered tape steel, black graduation, black-red figures, specially protected against abraision through transparent nylon coating. **No. 418**

Typ No.	graduation						
	one side graduation only						
	10	15	20	25	30	50	m
318WP	Steel white enamelled						
418P	Steel nylon coated						

* 50 m white enamelled tapes only



PVC coated steel case

Typ No.	graduation						
	one side graduation only						
	10	15	20	25	30	50	m
318WSR	Steel white enamelled						
418SR	Steel nylon coated						

30 + 50 m white enamelled tapes only



Light metal frame "SR"

Typ No.	graduation						
	one side graduation only						
	10	15	20	25	30	50	m
318W-V	Steel white enamelled						
418-V	Steel nylon coated						



„V“-frame of light metal

Refills see price-list

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Measuring tapes

Yellow Enamelled Steel Measuring Tapes 13 mm wide Accuracy according EC standard class II

Protected against corrosion through phosphate layer on the tape steel before yellow coating. Black graduation, black red figures on yellow laquered tape steel, graduation and figures protected through transparent burnt in laquer.

Typ No.	graduation							
	front				back			
306GP	cm							
308GP	mm							
length	10	15	20	25	30	50		m

Typ No.	graduation							
	front				back			
306GX	cm							
308GX	mm							
length	10	15	20	25	30	50		m

Typ No.	graduation							
	front				back			
412G-SR	cm							
414G-SR	mm							
length	10	15	20	25	30	50	100	m

Typ No.	graduation							
	front				back			
412G-V	cm							
414G-V	mm							
length	10	15	20	25	30	50	100	m

Refills see price-list



PVC coated steel case



Strong plastic case



Leichtmetallrahmen „SR“



„V“-frame of light metal

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Measuring tapes

Steel Measuring Tapes Carbon Steel etched 13 mm wide Accuracy according EC standard class II

Raised Markings in natural steel color on dark etched background

Typ No.	graduation							
	front				back			
306P	cm							
308P	mm							
309P	mm				feet, inches, 1/16			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



PVC coated steel case

Typ No.	graduation							
	front				back			
306X	cm							
308X	m							
309X	m				feet, inches, 1/16 inch			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



Strong plastic case

Typ No.	graduation							
	front				back			
412-SR	cm							
414-SR	mm							
415-SR	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



Leichtmetallrahmen „SR“

Typ No.	graduation							
	front				back			
412-V	cm							
414-V	mm							
415-V	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



„V“-frame of light metal

Refills see price-list

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Measuring tapes

Stainless Steel Measuring Tapes etched 13 mm wide Accuracy according EC standard class II

Raised markings in natural steel color on dark, etched background

Typ No.	graduation							
	front				back			
356P	cm							
358P	mm							
359P	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



PVC coated steel case

Typ No.	graduation							
	front				back			
356X	cm							
358X	mm							
359X	mm				feet, inches, 1/16 inch			
length	10	15	20	25	30	50		m
	33	50	66	82	100	165		ft



Strong plastic case

Typ No.	graduation							
	front				back			
462-SR	cm							
464-SR	m							
465-SR	m				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



Leichtmetallrahmen „SR“

Typ No.	graduation							
	front				back			
462-V	cm							
464-V	m							
465-V	m				feet, inches, 1/16 inch			
length	10	15	20	25	30	50	100	m
	33	50	66	82	100	165	330	ft



„V“-frame of light metal

Refills see price-list

BANDMASSE_E_1208

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Homepage: www.talsperre.de

Measuring tapes

Stainless Steel Measuring Tapes with protecting laquer 13 mm wide Accuracy according EC standard class II

stainless tape steel with surface treatment, black graduation, black and red figures, meter figures in red repeated before each decimeter, on light grey background.

Typ No.	graduation							
	front				back			
472-SR	cm							
474-SR	mm							
length			20	25	30	50	100	m



Leichtmetallrahmen „SR“

Typ No.	graduation							
	front				back			
472-V	cm							
474-V	mm							
length			20	25	30	50	100	m



„V“-frame of light metal

Refills see price-list

Measuring Tapes in Light Metal Case Yellow Enamelled Steel Measuring Tapes

13 mm wide, same as model 306GP with graduation on one side but in strong case of light metal disks with stamped out holes with handle of plastic

Typ No.	graduation							
	front				back			
306GL	cm							
308GL	mm							
length	10	15	20	25	30			m



Light metal case

Refills see price-list

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Measuring tapes

Steel Measuring Tapes according EC standard accuracy class I

These measuring tapes are specially destined for accurate measurements or for control and check of standard measuring tapes in EC accuracy class II. The tolerances for these tapes are shown in table I on page 31. In connection with work test certificates - error indication in 10ths of mms - more accurate measurements could be done with these measuring tapes.

Could be supplied Government stamped for EC I in accuracy class I or Government stamped with certificate and error indication issued by the Bavarian Calibration Office. (Additional costs see price list).

Steel Measuring Tapes coated with nylon "*Metri-Polysan*" 13 mm wide - mm graduation throughout

phosphated tape steel with yellow laquer, black graduation, black and red figures with transparent nylon coating

Typ No.	winding device	length					
		10	20	30	50	100	m
404P-I	PVC coated case	10	20	30			m
404V-I	V-frame	10	20	30	50		m
404R-I	Plastic frame "R"		20	30	50	100	m

White Enamelled Steel Measuring Tapes 13 mm wide – mm graduation throughout

Protected against corrosion through phosphate layer on the steel before white coating. Black graduation, black -red figures on white laquered tape steel, graduation and figures protected through transparent burnt in laquer.

Typ No.	winding device	length					
		10	20	30	50	100	m
308WP-I	PVC coated case	10	20	30	50		m
414W-SR-I	SR-frame	10	20	30	50		m
414W-V-I	V-frame	10	20	30	50	100	m

Stainless Steel Measuring Tapes 13 mm wide – mm graduation throughout

Raised markings, in natural steel color on dark, etched background.

Typ No.	winding device	length					
		10	20	30	50	100	m
358P-I	PVC coated case	10	20	30	50		m
464SR-I	SR-frame	10	20	30	50		m
464V-I	V-frame	10	20	30	50	100	m

Refills see price-list

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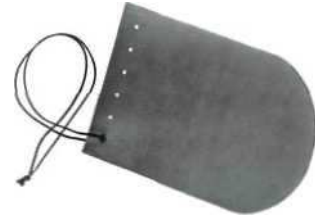
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Measuring tapes

Leather bag

for steel measuring tapes in frames

No. 430	10-15	20-30	50	100	m
Dimension	125 x 190	150 x 220	175x 240	210x 280	mm



PVC coated steel case with metal handle

for fiber glass and steel measuring tapes, Please write the letter „Z" after the type number (for example No. 306WP-Z). Additional costs see price list.



Brass frame

with oblique wooden handle for 13 mm wide steel measuring tapes. Please write the letters „MS" after the type number (for example No. 462-MS).

MS	10-15	20-30	50	m
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Tension handle

from 0 to 10 kp with hand grip and swivel hook for attachment at the beginning of the tape, graduation 0,1 kp. No. 550



Roller grip

for 6 mm wide steel measuring tapes No. 551



Magnifier of plastic

8 times magnifying with graduation in 10ths of mm
1/10 mm



Plastic case

for protecting of measuring tapes and accessories



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Measuring tapes

Steel Measuring Tapes "Superlong"

13 mm wide - 0,2 mm thick

Frame: Strong field frame of stainless steel with "D"-grip and steel point.



White enamelled tape steel

black graduation, black and red figures

Typ No.	graduation			
	front		back	
414W-F	mm			
/ length	150	200	300	m

Stainless steel, etched

Raised markings, bright graduation on dark etched background.

Typ No.	graduation			
	front		back	
464-F	mm			
length	150	200	300	m

Other types and lengths on request

Refills see price-list

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Measuring tapes

Special Steel Measuring Tapes

Carbon steel - 6,5 mm wide - 0,5 mm thick

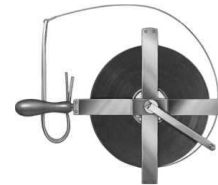
raised markings in bright natural steel colour on dark etched background. Each tape is supplied with 2 leather thongs.

The narrow special steel measuring tapes are specially useful for measuring works in rough country. When measuring longer distances, take out the tape from the frame and use it with the leather thongs on both ends for quick measurements.

Stainless cross frame

strong cross frame of stainless steel, long foldable winding arm, laquered wooden handle

Typ No.	graduation				
	front			back	
594-K	mm				
595-K	mm			feet, 10ths, 100ths	
length	30	50	60	100	m
	100	165	200	330	ft



Stainless field frame

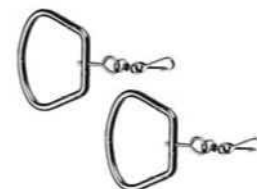
strong field frame of stainless steel with long foldable winding arm, D-grip for carrying and steel point for putting the tape on the earth when unwinding or rewinding the measuring tape.

Typ No.	graduation				
	front			back	
594-F	mm				
595-F	mm			feet, 10ths, 100ths	
length	30	50	60	100	m
	100	165	200	330	ft



Accessories:

detachable and turnable handles type "HK"



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Measuring tapes

Special Steel Measuring Tapes "*Metri-Polysan*"

nylon coated tape steel 6,5 mm wide - 0,5 mm thick

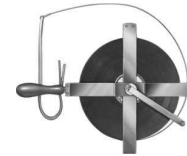
specially resistant against corrosion, yellow background, black graduations, black - red figures protection through transparent nylon coating gives high resistance against wear and tear. Each tape is supplied with 2 leather thongs.

The narrow special steel measuring tapes are specially useful for measuring works in rough country. When measuring longer distances, take out the tape from the frame and use it with the leather thongs on both ends for quick measurements.

Stainless cross frame

strong cross frame of stainless steel, long foldable winding arm, laquered wooden handle

Typ No.	graduation				
	front			back	
594P-K	mm				
length	30	50	60	100	m



Stainless field frame

In strong field frame of stainless steel with long foldable winding arm, D-grip for carrying and steel point for putting the tape on the earth when un- or rewinding the measuring tape.

Typ No.	graduation				
	front			back	
594P-F	mm				
length	30	50	60	100	m



Refills see price-list

Accessories:

detachable and turnable handles type "HK"

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Measuring tapes

Diameter Measuring Tapes

These measuring tapes are specially developed for forest industry for measuring log lengths and diameters

Fiber glass measuring tape 16 mm wide

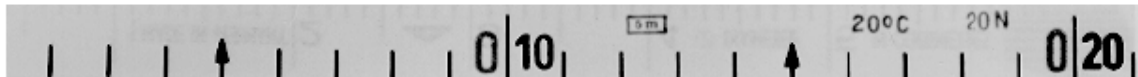
two colored yellow beige, front side yellow, back side beige, very strong and durable type, high tensile strength and resistance against wear and tear of the graduation.



PVC coated case

Graduation:

Front: m and cm graduation upto the nominal length of 20 or 30 m diameter



Back: graduation up to 10 m circumference in cm and mm



Commencement:

Front: Type „H" with foldable hookring included in measurement (allows one man measurements)



Back: Type „A" approx. 10 cm from ring the zero mark and the measured circumference line could be easy positioned and read.



Typ No. 275 D	length	20	30	m
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Refills see price-list

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Measuring tapes

Diameter Measuring Tapes

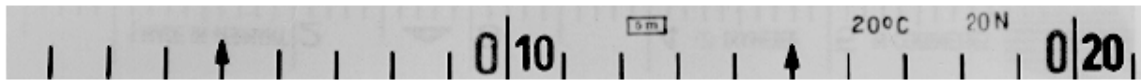
for direct reading of diameter from circumference measurements. The diameter is determined in cm and mm or in inches and 10ths of an inch

Fiber Glass Measuring Tapes 16 mm wide
woven fiber glass with reinforcement, graduation both sides

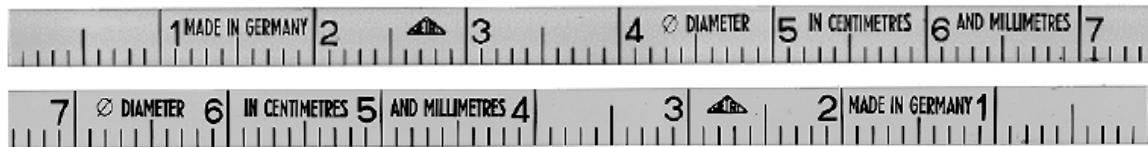


Graduation - metric

Front: cm graduation , each dm and m figured, meter figures in red color repeated before each dm



Back: diameter graduation cm and mm reading each cm figured



Graduation - English

Front: feet, 10ths and 1/2-1 0ths of a foot graduation

Back: diameter in inches and tenths of inches, each inch figured



Mögliche Maßanfänge:

commencement „A“



Commencement "A" with hook ring



Commencement "A" with claw hook



Attention: When ordering, please state the required commencement and graduation

Typ No. 283D	length	5	7,5	10	m	20	ft
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Refills see price-list

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Measuring tapes

Diameter Measuring Tapes

for direct reading of diameter from circumference measurements. The diameter is determined in cm and mm or in inches and 10ths of an inch.



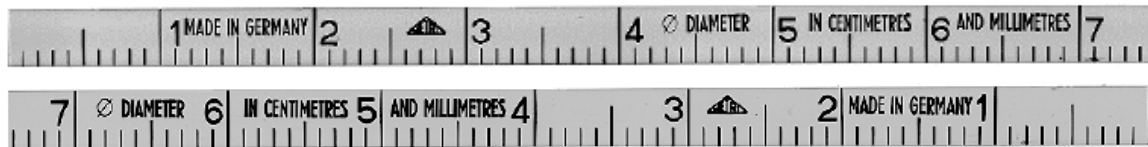
PVC coated case

Steel Measuring Tapes 10 mm wide with graduation both sides

Graduation - metric

Front: mm graduation, each cm, dm and m figured, meter figures repeated before each dm

Back: diameter graduation cm and mm reading, each cm figured



Graduation - English

Front: feet, 10ths and 100ths of a foot graduation

Back: diameter in inches and 10ths of inches, each inch figured



commencement:

commencement „A”



Commencement „A” with claw hook



Commencement „A” with hook ring



Attention:

When ordering, please state the required commencement and graduation.

Typ No.	Finish	length					
		5	8	10	m	20	ft
349D	Steel white enamelled, 10 mm wide	5	8	10	m	20	ft
385D	Steel polyamid coated, 10 mm wide	5	8	10	m	20	ft
345D	Carbon steel etched, 10 mm wide	5	8	10	m	20	ft
395D	stainless steel etched, 10 mm wide	5	8	10	m	20	ft

Refills see price-list

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Measuring tapes

Circumference Measuring Tapes

For measuring the circumference and diameter at the same time with 10ths of mm vernier.

13 mm wide stainless steel tape with etched mm graduation and reader with vernier. On the lower edge of tape circumference graduation, on the upper side diameter.

Vernier: 0,1 mm



Typ No.	circumference mm	diameter mm
161R/1	60 - 3780	20 - 1200
161R/2	60 - 7540	20 - 2400
161R/3	60 - 11310	20 - 3600

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Measuring tapes

Invar Steel Measuring Tapes (at time not in stock)

Accuracy according EC class I

Invar steel measuring tapes are by far less effected by temperature influence than normal steel measuring tapes, because the coefficient of thermal expansion of invar steel is less than of normal steel.

Technical details:

Width of tape: 13,0 mm

thickness of tape: 0,3 mm

hardness of steel: HB 184

coefficient of steel: $1,09 \times 10^{-6} \text{ K}^{-1}$

Composition of steel:

Ni 36,25 %

Mn 0,27 %

Si 0,17 %

Fe 63,00 %

C 0,02 %

Graduation

etched mm graduation on one side, each cm, dm and meter figured, meter figures repeated before each dm, bright graduation in natural steel color on dark etched background.

length	10	20	30	50	m
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Typ No. 308 IN
in PVC coated steel case



Typ No. 414 IN
in light metal frame with oblique plastic handle

Invar measuring tapes can be Government stamped for accuracy according EC Standard class I. or with certificate issued by the authority. Additional costs for verification or verification certificate, see price list.

Work test table

Error indication per m +/- with a maximum tolerance of 0,2 mm, made in the manufacturers factory under the relative temperature and tension. The error indicated refers from zero to the corresponding meter figure.

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Measuring tapes

Table I Accuracy Table according EC class I

Table of the maximum tolerances plus / minus for steel and fiber glass measuring tapes
Formula: $a + b L$ ($a = 0,1 \text{ mm}$, $b = 0,1 \text{ mm}$, $L = m$)

m	0	10	20	30	40	50	60	70	80	90	100
0		1,1	2,1	3,1	4,1	5,1	6,1	7,1	8,1	9,1	10,1
1	0,2	1,2	2,2	3,2	4,2	5,2	6,2	7,2	8,2	9,2	
2	0,3	1,3	2,3	3,3	4,3	5,3	6,3	7,3	8,3	9,3	
3	0,4	1,4	2,4	3,4	4,4	5,4	6,4	7,4	8,4	9,4	
4	0,5	1,5	2,5	3,5	4,5	5,5	6,5	7,5	8,5	9,5	
5	0,6	1,6	2,6	3,6	4,6	5,6	6,6	7,6	8,6	9,6	
6	0,7	1,7	2,7	3,7	4,7	5,7	6,7	7,7	8,7	9,7	
7	0,8	1,8	2,8	3,8	4,8	5,8	6,8	7,8	8,8	9,8	
8	0,9	1,9	2,9	3,9	4,9	5,9	6,9	7,9	8,9	9,9	
9	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	

Table II Accuracy Table according EC class II

Table of the maximum tolerances plus / minus for steel and fiber glass measuring tapes
Formula: $a + b L$ ($a = 0,3 \text{ mm}$, $b = 0,2 \text{ mm}$, $L = m$)

m	0	10	20	30	40	50	60	70	80	90	100
0		2,3	4,3	6,3	8,3	10,3	12,3	14,3	16,3	18,3	20,3
1	0,5	2,5	4,5	6,5	8,5	10,5	12,5	14,5	16,5	18,5	
2	0,7	2,7	4,7	6,7	8,7	10,7	12,7	14,7	16,7	18,7	
3	0,9	2,9	4,9	6,9	8,9	10,9	12,9	14,9	16,9	18,9	
4	1,1	3,1	5,1	7,1	9,1	11,1	13,1	15,1	17,1	19,1	
5	1,3	3,3	5,3	7,3	9,3	11,3	13,3	15,3	17,3	19,3	
6	1,5	3,5	5,5	7,5	9,5	11,5	13,5	15,5	17,5	19,5	
7	1,7	3,7	5,7	7,7	9,7	11,7	13,7	15,7	17,7	19,7	
8	1,9	3,9	5,9	7,9	9,9	11,9	13,9	15,9	17,9	19,9	
9	2,1	4,1	6,1	8,1	10,1	12,1	14,1	16,1	18,1	20,1	

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