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UNDERGROUND WARNING TAPES

Timely and reliable location of utility lines

KELMAPLAST

KELMAPLAST UNDERGROUND WARNING TAPES: Two principles – one solution



The problem is as old as it's relevant today: more than 90 per cent of damage to underground utility lines is caused during excavation work. The consequences: delayed construction and added costs.



The solution is both innovative and cost effective: **KELMAPLAST** underground warning tapes make timely and reliable location of underground supply and sewage lines possible.

Brilliant colours (yellow, blue, green, red as standard) and permanent legibility of print thanks to the transparent lamination guarantee the perfect warning effect, as well as accurate and immediate identification of the type of utility line and its owner.

The PE composite tapes are resistant to all influences in the ground. Both the environmental compatibility of the material and the simplicity of laying the tapes in the trench are additional bonuses that make **KELMAPLAST** underground warning tapes indispensable for the protection of underground utility lines.

KELMAPLAST underground warning tapes work – as required – according to two fundamentally different principles. The one is based on the elongation of the tapes and the other on their tensile strength in relation to their rated breaking point.



KELMAPLAST Underground Warning Tape No 10 – in accordance with German standard FTZ 548464 TV1

The product has a maximum elongation to breaking point of 300 per cent!

It is laid in the ground roughly 30 to 40 cm above the utility line. During earthworks or excavation, the excavator catches on the tape, stretching it until it tears apart in the bucket above the ground, giving a visible danger warning.



Technical features

Thickness: 150 µm ± 20 µm

Extension: up to 300 %

Tensile strength (according to DIN EN ISO 527): ≥ 20 N/mm²

Temperature stability: -200 °C to +700 °C

Chemical stability

No change in colour after 24 hours of exposure to:

25 % nitric acid

20 % sodium carbonate solution

20 % ammonium iron sulphate

WIDTH	LENGTH	BOX	PALLET
40 mm ± 2 %	250 m ± 0,5 m	10	100-300
80 mm ± 2 %	250 m ± 0,5 m	5	50-150
100 mm ± 2 %	250 m ± 0,5 m	4	40-120
156 mm ± 2 %	250 m ± 0,5 m	2	30-75
200 mm ± 2 %	250 m ± 0,5 m	2	20-60
250 mm ± 2 %	250 m ± 0,5 m	1	20-45
310 mm ± 2 %	250 m ± 0,5 m	1	15-35

Other dimensions and colours on request. The standard print colour is black.

KELMAPLAST Underground Warning Tape No 94 – in accordance with DIN EN 12613



The optimum warning effect of this tape is guaranteed by its combination of high tensile strength and perforated, predetermined breaking points along its length. The tape tears along the perforation when extreme force is exerted by the excavator bucket. Even when the excavator is working at high speeds, fragments of the tape are reliably brought to the surface, thus giving the excavator driver timely and perfectly visible warning that utility lines are buried in the ground ahead.

The product was developed in collaboration with the Institute of Damage Assessment Research in Hanover, the University of Applied Sciences in Mainz and Deutsche Telekom. **It conforms to all safety and production specifications of DIN EN 12613.**



Technical features

Thickness: 250 µm ± 20 µm

Tensile strength (in accordance with DIN EN 12613, Item 6.3.3, Type 1): 200 N

Temperature stability: -20 °C to +70 °C

Chemical stability

No change in colour after 24 hours of exposure to:

10% nitric acid

20% sodium carbonate solution

20% ammonium iron sulphate

WIDTH	LENGTH	BOX	PALLET
50 mm ± 2 %	250 m ± 0,5 m	4	120
100 mm ± 2 %	250 m ± 0,5 m	2	60
150 mm ± 2 %	250 m ± 0,5 m	1	40
200 mm ± 2 %	250 m ± 0,5 m	1	24

Other dimensions and colours on request. The standard print colour is black.

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