

## **ΠΡΟΔΙΑΓΡΑΦΗ ΠΛΕΓΜΑΤΟΣ ΣΗΜΑΝΣΗΣ ΔΙΚΤΥΟΥ ΟΠΤΙΚΩΝ ΙΝΩΝ**

**ΣΥΝΤΑΞΗ:**

**ΔΙΕΥΘΥΝΣΗ ΤΕΧΝΙΚΗΣ  
ΥΠΟΣΤΗΡΙΞΗΣ**

**ΕΛΕΓΧΟΣ:**

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**ΤΕΧΝΙΚΟΣ ΔΙΕΥΘΥΝΤΗΣ**

**ΔΙΕΥΘΥΝΤΗΣ ΜΕΛΕΤΩΝ &  
ΚΑΤΑΣΚΕΥΩΝ**

**CONTENTS**

1. INTRODUCTION.....	3
2. AIMS .....	3
3. MARKER TAPE CHARACTERISTICS.....	3
3.1 Materials .....	3
3.2 Colour .....	3
3.3 Size and weight.....	3
3.4 Packaging.....	3
3.5 Markings.....	3
4. TESTS AND REQUIREMENTS .....	4
4.1 Materials testing .....	4
4.1.1 Composition.....	4
4.1.2 Density.....	4
4.2 Finished product testing.....	4
4.2.1 Visual inspection.....	4
4.2.2 Tear resistance .....	4
4.2.3 Rupture elongation.....	5
4.2.4 Rupture load .....	5
4.2.5 Brittle temperature .....	5
4.2.6 Weight and size checks .....	5
4.2.7 Indelibility of markings .....	5
4.2.8 Quality standards .....	5
5. TESTS.....	6

### 1. INTRODUCTION

This document refers to the marker tape used to signal the presence of underground telecommunications infrastructures installed by EDA Attikis.

The marker tape intends to warn other excavation enterprises of the presence of installations that are located beneath it, thus serving as a cautionary measure.

### 2. AIMS

This document details the marker tape's characteristics and constituent materials.

### 3. MARKER TAPE CHARACTERISTICS

The marker tape intends to signal the presence of telecommunications underground infrastructure. It should be placed in conjunction with laying operations pertaining to the infrastructure, in accordance with modalities specifically stated by regulations concerning the installation of grid infrastructure.

#### 3.1 Materials

The marker tape consists of three layers of co-extruded polyethylene, which is chemically inert with respect to soil alkalis and acids. The use of glues is not allowed.

#### 3.2 Color

The marker tape's background color is RAL 11016.

#### 3.3 Size and weight

The marker tape should have a width of 150 mm ( $\pm 5\%$ ) and a thickness of 138 microns ( $\pm 10\%$ ).

The marker tape's weight should be 19 g/m ( $\pm 3\text{g/m-}$ ).

At the middle and along the marker tape an aluminum (and plastic coated) tape 8-10mm in width should be adhered in order to facilitate the future traceability of the optic cables.

#### 3.4 Packaging

The marker tape should be wound on spools compatible with transport activities, each of which should store either 100m ( $\pm 5\%$ ) or 300m ( $\pm 5\%$ ).

#### 3.5 Markings

The marker tape should be labeled with the following information:

- "ΠΡΟΣΟΧΗ ΚΑΛΩΔΙΑ ΤΗΛΕΠΙΚΟΙΝΩΝΙΩΝ " RAL 5005 colour
- Supplier code RAL 5005 colour;
- Production year, indicating the last two figures, RAL 5005 colour. the two ensuing labels should be located at no more than 100 mm.

The size of the labels will be 50 mm.

## 4. TESTS AND REQUIREMENTS

This chapter refers to tests concerning both the finished product and its constituent materials. The approval of the former and its subsequent supply are conditional on these tests.

### 4.1 Materials testing

#### 4.1.1 Composition

The materials that the supplier provides should be counter-verified in accordance with current regulations.

#### 4.1.2 Density

Procedures for this test are specified by ASTM D 1248 standards.  
The measured density should be 0.93 g/cm<sup>3</sup>.

### 4.2 Finished product testing

#### 4.2.1 Visual inspection

The tape should look homogeneous and smooth, whilst showing no sign of cracks, deficits, inclusions or other defects that might affect its intended purpose.

#### 4.2.2 Tear resistance

Procedures for this test are specified by ASTM D 1922 standards.  
The tape's tear resistance should exceed 800 g.

#### 4.2.3 Rupture elongation

Longitudinal tape rupture elongation should be 700%.  
Procedures for this test are specified by ASTM D 882 standards.

#### 4.2.4 Rupture load

Procedures for this test are specified by ASTM D 882 standards.  
Clamp separation should be 50 mm and the test piece width 25 mm.  
Longitudinal rupture load should be 20 N/mm<sup>2</sup>.

#### 4.2.5 Brittle temperature

Procedures for this test are specified by ASTM D 746 standards.  
The measured brittle temperature should be -30 °C.

#### 4.2.6 Weight and size checks

These parameters should comply with those indicated hereto.

#### 4.2.7 Indelibility of markings

Indelibility of markings shall be verified by appropriate test certificates. The tests shall be performed in accordance with any valid national or international standard.

#### 4.2.8 Quality standards

The supplied batches should be tested to comply with part one of UNI ISO 2859 standards, or equivalent.

The product should satisfy minimum acceptable quality levels, ascertained via the double sampling plan adopted at the S3 special testing level.

## 5. TESTS

The following table lists required tests. An X indicates those tests that are required for product and/or supply batch approval. The other headings indicate the pertinent reference standards and the paragraphs where the tests are listed.

		Product approval	Batch acceptance	Paragraph	Standards
<b>Materials testing</b>					
1	Composition	X		4.1.1	
2	Density	X		4.1.2	ASTM D 1248
<b>Finished product testing</b>					
3	Visual inspection	X	X	4.2.1	
4	Tear resistance	X	X	4.2.2	ASTM D 1922
5	Rupture elongation	X	X	4.2.3	ASTM D 882
6	Rupture load	X	X	4.2.4	ASTM D 882
7	Brittle temperature	X	X	4.2.5	ASTM D 746
8	Weight and size checks	X	X	4.2.6	
9	Indelibility of markings	X	X	4.2.7	