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## Technical Specification TTR K 2000 ("Foil")

### 1. Purpose

This Technical Specification shall be conclusive with regard to the herein defined, non-customer specific characteristics and quality of the Foil and the respective test procedure to prove conformity of the Foil with this Technical Specification. The tests are performed under the conditions and parameters as outlined and defined below by the KURZ Quality Control prior to delivery.

All Foil characteristics and other criteria that are not defined in this Technical Specification are not subject to the KURZ Quality Control test procedure as described below and are valid only, if expressly set out in our written offer or otherwise confirmed by KURZ in writing. Insofar as such additional characteristics and other criteria may be relevant with regard to specific requirements and use of the customer, these need to be examined and tested by the customer himself under his sole responsibility prior, during and after the application process.

### 2. Foil

This Technical Specification shall apply to the following Foil:

Group of Foil:	TTR
Foil identification:	TTR K 2000
Foil design:	black

### 3. KURZ Quality Control Test Procedure and Approval Process

Prior to delivery each production batch is subject to the KURZ Quality Control test procedure and final approval process.

To prove conformity of the above Foil with this Technical Specification KURZ carries out comparative printing tests in the KURZ Technical Laboratory using sample Foil of the current production batch (KURZ PRODUCTION BATCH) and of the Internal KURZ Standard Reference Foil (KURZ REFERENCE FOIL).

#### 3.1 These tests are carried out under the following conditions:

Printer:	Zebra 110 XI III plus (300dpi)
Manufacturer:	Zebra, Vernon Hills, Illinois
Printer adjustments:	KURZ internal specification TTF80
Print speed:	127 mm/s

Energy settings:	
Normal	see below in brackets
Low	see below in brackets
Print design:	test label
	K2000a.lab (T = -1)
	K2000b.lab (T = - 6)
Substrate:	Gubi labels Chromo-paper white
	Gubi labels gruff paper 80 g/sqm
	Gubi labels PE white glossy
Supplier:	SEUSTER LABELS GmbH
	D-58840 Plettenberg

**3.2** Subject to comparison tests are the KURZ PRODUCTION BATCH and the KURZ REFERENCE FOIL applied to parts under the above defined test conditions (KURZ TEST PART produced with the KURZ PRODUCTION BATCH and KURZ REFERENCE PART produced with the KURZ REFERENCE FOIL).

The defined criteria of comparison and evaluation are the following:

- WORKABILITY (3.2.1) and
- VISUAL APPEARANCE (3.2.2).

**3.2.1** With regard to **WORKABILITY** the following characteristics are tested and compared:

**3.2.1.1** **Print properties** (energy settings: normal)

Evaluation is made by monitoring and assessing the prints in respect to print definition and film wrinkling.

**3.2.1.2** **Start up issues** (energy settings: low)

Evaluation is made by monitoring and assessing the prints of letters, areas and barcodes in respect to intensity and definition.

**3.2.2** With regard to **VISUAL APPEARANCE** the following characteristics are tested and compared in a distance of approx. 50 – 70 cm to the viewer's eye.

**3.2.2.1** **Color** (energy settings: normal)

Evaluation is made by assessing the compliance of the color shade.

### **3.3 Test Evaluation**

Except as specifically otherwise provided, the evaluation of the tests shall be made by visual comparison of the KURZ TEST PART with the KURZ

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REFERENCE PART. Comparison shall be made with the naked eye without any technical means. The result of comparison must show compliance of the KURZ TEST PART with the KURZ REFERENCE PART.

#### **4. Storage Conditions and Workability**

Storage Time:	12 month from the date of delivery
Storage Temperature:	10 – 35 °C
Relative Humidity:	30% - 80%, without precipitation
Workability:	12 Month from the date of delivery in compliance with the storage conditions

No exposure to direct solar radiation, No increase pressure on ribbon layers

#### **5. Compliance with the Technical Specification**

The Technical Specification determines conclusively the characteristics and the quality of the Foil. KURZ warrants that the Foil delivered to the customer shall be in compliance with the respective Technical Specification valid at the time of transfer of risk.

Once the application process has been initiated by the customer, KURZ no longer has control over the conditions to which the Foil will be exposed (e. g. substrate characteristics, temperature, environment, cleaning conditions). As a consequence, KURZ cannot be held liable for the Foil once the application process has commenced unless any material defect in the Foil was in existence at the time of transfer of risk.

The information provided in this Technical Specification shall not constitute any guarantee or commitment with regard to fitness of the Foil for a special application. This information does not release the customer from his own liability for care examination, in particular with regard to the incoming goods inspection and any fitness of the respective Foil for his intended use. This especially applies to any further production steps including but not limited to production steps following subsequent to the Foil application and which may have considerable influence on the result of the application process, but which are completely out of the control of KURZ.

To prove that the Foil does not comply with the Technical Specification and to trace the respective production conditions, the customer must inform KURZ of the batch number of the Foil delivered to the customer.

Any evaluation of the tests must take into account the fact that variations within a certain range are inevitable in any industrial production process. Therefore any such variations, which may result in slight deviations of the application results between the KURZ PRODUCTION BATCH and the KURZ REFERENCE FOIL, shall not be considered as material defect and non-compliance with the characteristics and quality of the Foil as provided in this Technical Specification.

## **6. Issue**

This Technical Specification supersedes all previous issues.

## **7. Intellectual Property Rights**

The customer shall have sole responsibility for observing intellectual property rights as well as the legal regulations at the place of use of the Foil.

## **8. Modification**

This Technical Specification can only be changed by the authorised department of KURZ.