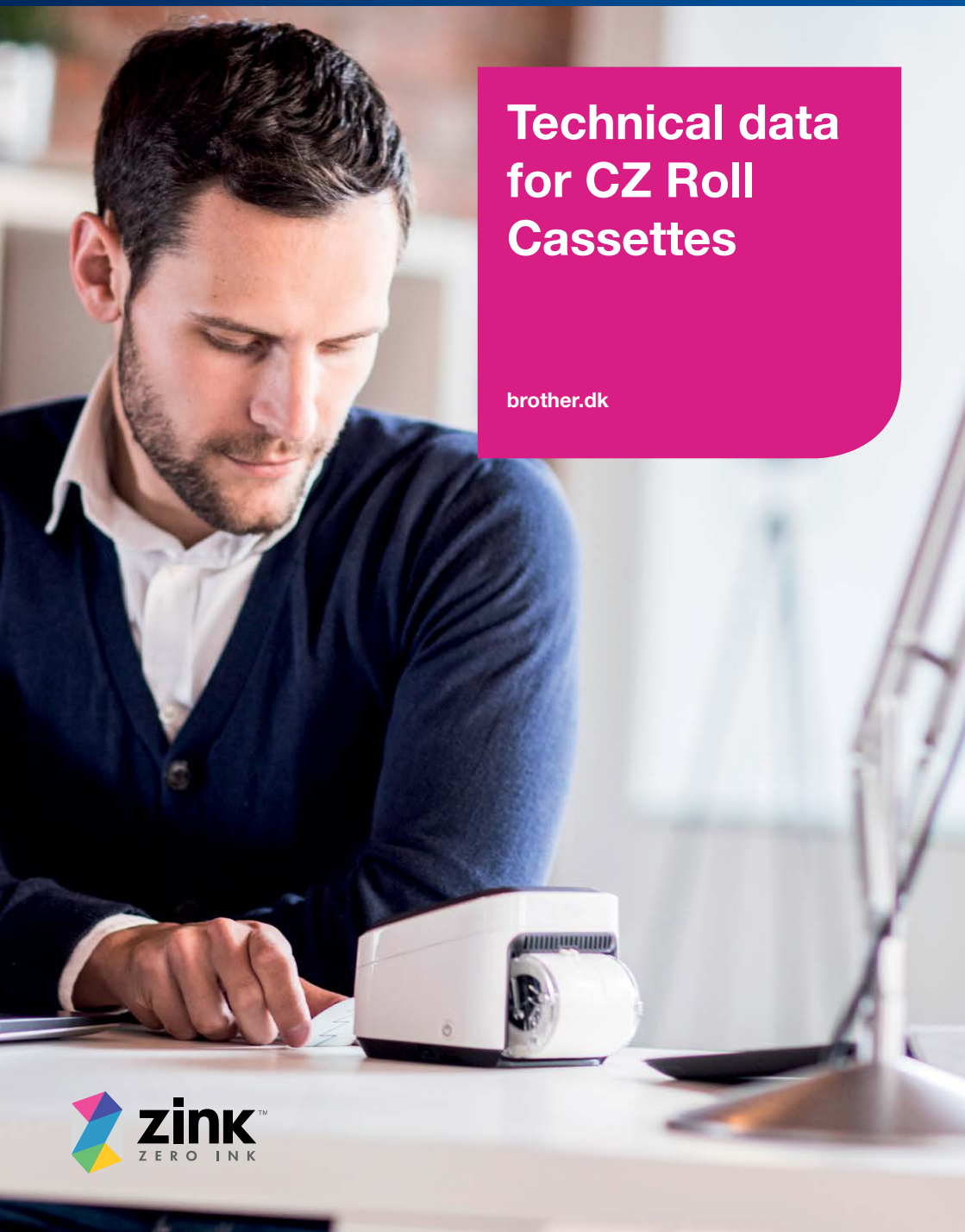
brother
at your side

Technical data for CZ Roll Cassettes

brother.dk



zink™
ZERO INK

Print full colour labels on demand, without ink

Create labels to the length required

ZINK Paper™ allows you to print full colour labels for a wide range of labelling needs. It can be used in the office or home for identification of files, boxes, shelves, personal possessions or other important items.

Powered by ZINK Zero Ink™ Technology From ZINK™, the secret's hidden in the label rolls. Special colour crystals in the paper are activated by heat to create full colour labels without the need for additional ink cartridges.

Add a personalised touch to craft projects. From photos, to images to symbols, give your creations that added personal touch with full colour labels.

We've thought about where, when and how you might need to use our labels and put them through a series of rigorous tests.

The following tests were performed on samples of labels from Brother CZ Roll Cassettes which are made of ZINK Paper.

Test	Result
Abrasion Resistance	Affected, but legible
Temperature Resistance	Not affected, -20°C to +60°C
Indoor Fade Resistance	Not affected
Outdoor Fade Resistance	Affected, but legible
Water Submersion	Affected, but legible
Chemical Submersion	Illegible
Water Abrasion	Illegible
Chemical Abrasion	Not affected

CZ Label Tests

Abrasion Resistance Test

ZINK Paper can withstand occasional, moderate abrasion without affecting the legibility of the label.

The Abrasion Test Procedure
The adhesive side of each sample were stuck on a stainless-steel plate, which was fixed on the scratch test equipment.

A weighted sanding device was passed over the printed surface of each sample. After 50 return passes a visual inspection was made.

Abrasion Test Results

Sample	ZINK Paper
Printed letter legibility after 50 return passes	▲

● = Not affected
▲ = Affected, but legible
X = Illegible

Before After

CZ Label Tests

Temperature Resistance Test

ZINK Paper can be used in a wide range of temperatures, from freezing cold to hot environments. It can withstand temperatures from -20ºC to +60ºC.

Temperature Resistance Test Procedure
Labels were attached to stainless steel then subjected to a range of temperatures from -20ºC to +80ºC for 240 hours.

Temperature Resistance Test Results
The results showed that the labels were unaffected at temperatures ranging from -20°C to +60°C. At +80°C the results showed bluing and the image was illegible.

Temperature Resistance Test Results

Temperature	Hours	ZINK Paper
-20ºC	240hrs	●
25ºC	240hrs	●
60ºC	240hrs	●
80ºC	240hrs	X

● = Not affected
▲ = Affected, but legible
X = Illegible

Before

After +60°C for 240 hours

CZ Label Tests

Indoor Fade Resistance Test

ZINK Paper is ideal for indoor usage.

The Indoor Fade Test Procedure
The labels were attached to metal plates and placed inside a fade-inducing chamber at 25°C with 50% humidity. The test was equivalent to one year of irradiation indoors.

Indoor Fade Resistance Test Results
The test samples were found to be clear and legible and no remarkable fade of the print was observed, as shown below. *

*Different environmental conditions will have varying effects on the printed ZINK Paper, and as such Brother cannot guarantee that labels placed in another environment other than those tested will have the same result as shown.

Labels should not be placed in a location that is subjected to direct sunlight.

Indoor Fade Resistance Test Results

Sample	ZINK Paper
Results	●

● = Not affected
▲ = Affected, but legible
X = Illegible

Before After

CZ Label Tests

Outdoor Fade Resistance Test

ZINK Paper is not ideally suited for outdoor use. Although it should not be used for long periods of time outdoors, it is suitable for short-term temporary outdoor labelling (if it's not raining!)

Outdoor Fade Test Procedure
The labels were attached to metal plates and placed inside a fade-inducing chamber at 36ºC with 50% humidity.

The test was conducted with an exposure time of 1,417 hours which under these test conditions was the equivalent to one year of sunlight outdoors. Intermediate checks were also made at 472 and 945 hours.

Outdoor Fade Resistance Test Results
The test samples were found to be clear and legible and no remarkable fade of the print was observed, as shown below.*

Outdoor Fade Resistance Test Results

Sample	ZINK Paper
Results	▲

● = Not affected
▲ = Affected, but legible
X = Illegible

Before | After 1,417 hours

*A yellowing of the label was observed

CZ Label Tests

Water and Chemical Resistance Test

ZINK Paper was tested for legibility in various chemicals and water.

The water and chemical resistance test consists of the following 2 parts:

Part 1: Water and chemical submersion test
Part 2: Water and chemical abrasion test

Part 1: Water and chemical submersion test
To test ZINK Paper against the effects of water and chemicals, the labels were attached to glass slides and immersed in a variety of liquids for 2 hours.

Water and Chemical Submersion Test Results
In water the labels were affected, but the letters were still legible. They should not be submerged in chemicals, such as acetone and ethanol.

Water and Chemical Submersion Test Results

Liquid	ZINK Paper
Water	▲
Ethanol	X
Acetone	X

Before

After Water

● = Not affected
▲ = Affected, but legible
X = Illegible

CZ Label Tests

Water and Chemical Abrasion Test

Part 2: Water and chemical abrasion test
Labels were affixed to glass plates and a 500g weight with a water or chemical infused cloth were passed over each label 40 times (40 return passes). The cloths were infused with the following liquids:

- Water
- Ethanol
- Acetone

After the test the legibility of letters printed on each sample label were inspected visually.

Water and Chemical Abrasion Test Results
ZINK Paper shows good resistance against abrasion with cloths infused with Ethanol or Acetone, but some letters become illegible through abrasion with cloths infused with water.

Abrasion Test Results

Liquid	Letters printed on sample labels made of ZINK Paper
Water	X
Ethanol	●
Acetone	●

● = Not affected
▲ = Affected, but legible
X = Illegible

Before

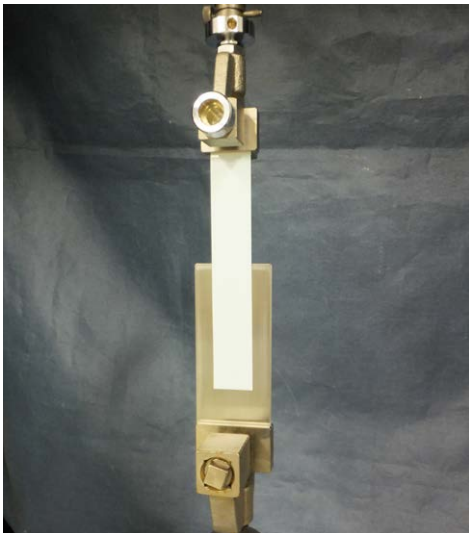
After Ethanol

After Acetone

CZ Label Tests

Strong Adhesion Test

The adhesion strength of samples stuck on three commonly used materials was measured.



Strong Adhesion Test Procedure
To test the adhesive strength of the labels, samples were affixed to a variety of surfaces at room temperature and left for 30 minutes. The adhesive strength was tested by removing the label at an angle of 180°. This testing method complies with Japanese Standard JIS Z0237: 2009.

Strong Adhesion Test Results
ZINK Paper shows the strongest adhesion to glass plates. It was least adhesive to the polypropylene.

Strong Adhesion Test Results

		Adhesive strength 180° Peel Test (N/10mm)
Plate Material		ZINK Paper
Stainless Steel	1	2.47
	2	2.42
Glass	1	2.94
	2	3.14
Polypropylene	1	0.12
	2	0.10

CZ Label Tests

Curved Surface Adhesion Test

To test whether the labels stick sufficiently to cylindrical surfaces, samples were tested for their adhesion on curved surfaces of glass bars and Polyethylene tubes.

Curved Surface Adhesion Test Procedure
Labels were attached to cylindrical surfaces of various materials and diameter. Samples were stuck on their curved surfaces longitudinally by hand and left for approximately 30 minutes. The labels were then visually checked for their ability to stay affixed to each surface.

Curved Surface Adhesion Test Results
The labels stayed affixed to the glass bars. On the Polyethylene tubes the edges of the labels sprang back.

Curved Surface Adhesion Test Results

Sample			ZINK Paper
Glass bar	Φ 10mm	1	●
		2	●
Polyethylene tube	Φ 11mm	1	▲
		2	▲
	Φ 15mm	1	X
		2	X
	Φ 18mm	1	▲
		2	▲

Before

Glass bar Φ 10mm after 30 min

Φ 11mm After 30 min

Φ 18mm After 30 min

● = Sticks perfectly to the curved surface

▲ = 5 mm to 10 mm of the sample's edge springs back

X = Does not stick to the curved surface

Two pieces were prepared for each combination of materials and diameters.

CZ Roll Cassettes Range

Cassette type	Width (mm)	Length (m)
CZ-1001 roll cassette	9 mm	5 m
CZ-1002 roll cassette	12 mm	5 m
CZ-1003 roll cassette	19 mm	5 m
CZ-1004 roll cassette	25 mm	5 m
CZ-1005 roll cassette	50 mm	5 m
CK-1000 print head cleaning cassette	50 mm	2 m

Full-colour roll cassettes:

Available in 9, 12, 19, 25 and 50mm widths to offer maximum flexibility. Despite their compact size each label roll is 5 metres in length.

brother
at your side

Contact:

Brother Nordic A/S
Baldershøj 22, 2635 Ishøj
Tlf: +45 43 31 31 31
brother.dk · info@brother.dk

All specifications correct at the time of printing and are subject to change. Brother is a registered trademark of Brother Industries Ltd. Brand product names are registered trademarks or trademarks of their respective companies. ZINK, the ZINK logo, the Z logo, ZINK.ZERO INK., ZERO INK, ZINK Technology, ZINK Paper, hAppy, SMART SHEET, the ZINK Motion and all related elements are indicia are trademarks of ZINK HOLDINGS LLC.