

Total no. of pages (including annexes): 8

Person in charge: Dr. Jan Roth

Email: jan.roth@daimler.com

Plant: 050; Dept.: TF/VBT

Phone: +49(0)7031-90-82231

Date of translation: 2016-06

## Self-Adhesive Labels

### Foreword

DBL 8230 describes the requirements for self-adhesive labels.

This edition supersedes the previous edition 2015-06 of this Standard.

### Changes

In comparison with edition 2015-06, the following changes have been made:

- Addition of recommended materials for the current product versions in Table 1
- Definition of timeframe between bonding and adhesion test of the as-delivered condition in Table 2
- Change in the requirements of climate resistance (constant atmosphere) for PV 62 in Table 2
- Change in the specification of the test equipment for the scratch exposure in Table 2
- Change in execution of abrasion resistance in Table 3

**NOTE:** This translation is for information purposes only.  
The German version shall prevail above all others.

## Contents

1	Scope .....	2
2	Normative references .....	2
5	Abbreviated material designation for documentation .....	3
6	Technical requirements .....	3

## 1 Scope

Self-adhesive labels are used as model and information labels which offer information for the customer, authorities, and the service organization. The corresponding product versions are listed in Table 1.

**Table 1: Product versions (PV), overview**

PV	Recommended materials	Applications
30	Polypropylene film, acrylate adhesive	Information labels - EXTERIOR
40	Polypropylene film, acrylate adhesive	Information labels – INTERIOR
50	Polyacrylate film, acrylate adhesive	Information labels – laser labels
60	Polypropylene film, acrylate adhesive	Airbag warning labels – adhesive labels
61	Polypropylene film, acrylate adhesive	Airbag warning labels – adhesive labels (delaminating)
62	Polyurethane film	Airbag warning labels – heat transfer labels
63	Polypropylene film, acrylate adhesive	Airbag warning labels – "Advanced Airbag USA"

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any changes) applies.

DBL 5306	General Technical Delivery Conditions and Test Methods for Interior Equipment Materials and Similar Products
DBL 5430	Emissions and Odor in the Vehicle Interior
DBL 5471	Trim and Molded Padded Parts for Vehicle Interiors (Composite Parts)
DBL 6565	General Technical Supply Specifications for Process Materials and Service Products
DBL 6714	Negative List – Constituents of Process Materials
DBL 7384	Coating of Plastic Parts in Vehicle Interiors
DBL 8585	Negative Substance List for the Selection of Materials
DIN EN ISO 2409	Paints and Varnishes - Cross-Cut Test
DIN EN 1939	Self Adhesive Tapes - Determination of Peel Adhesion Properties
DIN 30643	Signs, Plates and Labels - Resistance to Wiping and Wear of Lettering - Requirements and Testing
DIN EN 20105-A02	Textiles - Tests for Colour Fastness - Part A02: Grey Scale for Assessing Change in Colour
VDA 270	Determination of the Odour Characteristics of Trim Materials in Motor Vehicles
VDI 3882 Sheet 1	Olfactometry; Determination of Odour Intensity
ISO 2768-1	General Tolerances - Tolerances for Linear and Angular Dimensions without Individual Tolerance Indications
ISO 6270-2	Paints and Varnishes - Determination of Resistance to Humidity - Part 2: Procedure for Exposing Test Specimens in Condensation-Water Atmospheres

## 3 Terms and definitions

Not applicable

## 4 General requirements

For safety requirements, homologation (in particular, exhaust emissions) and quality, the existing statutory requirements and laws shall be complied with. In addition, the relevant requirements of the Daimler Group apply.

All materials, procedures, processes, components, and systems shall conform to the current statutory requirements regarding regulated substances and recyclability.

DBL 8585 shall be observed.

The selection of the (film) adhesives and bonding methods shall be based on bonding and technical requirements, taking work safety requirements and environmental aspects into account (also see DBL 8585, DBL 6714, DBL 6565 and DBL 5430).

The labels shall exhibit no manufacturing defects or defective adhesive coating.

The labels shall exhibit good bonding onto the original surfaces and good, permanent adhesion. The backing shall be easily removable when the labels are used.

When used on inorganic or organic glasses (e.g. Plexiglas), the adhesive shall not cause any unremovable residues or clouding of the glass.

For environmental protection and safety-at-work guidelines, refer to DBL 8585.

## 5 Abbreviated material designation for documentation

Not applicable

## 6 Technical requirements

The technical requirements, including resistance to chemical attack, are listed in Table 2 and Table 3.

**Table 2: Technical requirements for information labels**

Properties	PV.30	PV.40	PV.50	PV.60	PV.61	PV.62	PV.63
<b>For substance and climate resistance with subsequent adhesive force test, see Annex B (data in N/cm)</b>							
24 h after bonding	4	4	4	4	b)	n/a	b)
After 24 h storage in engine oil at 70 °C	4	n/a	4	n/a	n/a	n/a	n/a
After 24 h storage in diesel fuel at 23 °C	4	n/a	4	n/a	n/a	n/a	n/a
After 30 min storage in gasoline at 23 °C	4	n/a	4	n/a	n/a	n/a	n/a
Plastic cleaner 1 h at room temperature	4	4	4	4	b)	n/a	b)
Storage for 168 h in a constant condensation water atmosphere (ISO 6270-2)	4	4	4	4	b)	n/a	b)
Cyclic climate test (4 cycles: 4 h 80 °C, 4 h -30 °C, 16 h constant condensation water atmosphere)	4	4	4	4	b)	n/a	b)
Hot storage for 168 h at 80 °C	4	4	4	4	b)	n/a	b)

Table 2 (continued)

Properties	PV.30	PV.40	PV.50	PV.60	PV.61	PV.62	PV.63
<b>Peel-off behavior</b>							
	n/a	n/a	n/a	n/a	n/a	n/a	Removable without residues
<b>Cross-cut test according to DBL 7384 (based on DIN EN ISO 2409)</b>							
	n/a	n/a	n/a	n/a	n/a	Rating 0 - 3	n/a
<b>Climatic resistance (constant atmosphere) according to DBL 5471.92</b>							
	n/a	n/a	n/a	n/a	n/a	a), b)	n/a
<b>Shrinkage</b>							
After hot storage for 24 h at 80 °C	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	≤ 1,5 % in X-Y direction	< 1 %
<b>Exposure to scratches with appropriate test equipment according to DBL 5306</b>							
With weight of 1 kg	c)	c)	c)	c)	c)	c)	c)
<b>Abrasion resistance according to DBL 7384 with test stamp (B)</b>							
As in DIN 30643 on steel, rub cotton wool or felt over surface (30 double strokes of 10 N each)  <b>Test fluids</b> - Hand sweat - Isopropanol - N-heptane - Grease (sun lotion test mixture)	a) (Test for grease not necessary)	a)	a)	a)	a)	a)	a)
<b>Change in color according to DBL 5471.92 after climate storage (based on DIN EN 20105-A02)</b>							
	Rating 4-5	Rating 4-5	n/a	Rating 4-5	Rating 4-5	Rating 4-5	Rating 4-5
<b>Odor test</b>							
Odor intensity (VDA 270)	n/a	Rating 0-3	n/a	Rating 0-3	Rating 0-3	Rating 0-3	Rating 0-3
Hedonics (VDI 3882)	n/a	Rating 0-4	n/a	Rating 0-4	Rating 0-4	Rating 0-4	Rating 0-4
<b>Solar simulation according to DBL 5306, determination according to colorfastness and aging (evaluation according to DIN EN 20105-A02)</b>							
	n/a	n/a	n/a	a)	a)	a)	n/a
<b>Contents as per DBL 8585</b>							
	No health-endangering materials, confirmation of conformity for emissions not relevant						
<b>General tolerances</b>							
	According to ISO 2768-1 (tolerance class c)						
<b>Reliability/durability</b>							
	Shelf life as per DBL 5306 Part 1 107						

a) No optical change

b) No peeling

c) No visible surface damage

n/a Not applicable

**Table 3: Additional resistance against chemical attack**

Property	PV.30	PV.40	PV.50	PV.60	PV.61	PV.62	PV.63
<ul style="list-style-type: none"> <li>• For test, see Annex C / 24 h including cellophane tape strength (b), without cross-cut</li> <li>• Abrasion resistance according to DBL 7384 (see Table 2) before and after cyclic climate test from Table 2</li> </ul>							
Diesel fuel	a), b)	n/a	a), b)	n/a	n/a	n/a	n/a
E85 gasoline blend (85 % ethanol, 15 % gasoline)	a), b)	n/a	a), b)	n/a	n/a	n/a	n/a
Engine oil	a), b)	n/a	a), b)	n/a	n/a	n/a	n/a
Brake fluid	a), b)	n/a	a), b)	n/a	n/a	n/a	n/a
MB antifreeze	a), b)	n/a	a), b)	n/a	n/a	n/a	n/a
MB window cleaner	a), b)	a), b)	a), b)	n/a	n/a	n/a	n/a
MB plastics cleaner	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
MB polish	a), b) (with pillars <b>only</b> )	n/a	a), b)	n/a	n/a	n/a	n/a
MB stain remover	n/a	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
MB glass cleaner	n/a	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
MB textile cleaner	n/a	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
Spirit	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
Sun lotion test mixture	n/a	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
Dry	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)
Wet	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)	a), b)

a) No optical change  
b) No peeling  
n/a Not applicable  
MB: Mercedes-Benz

## Annex A (normative)

### Overview of product versions not for new designs (NFN)

Table 4 shows product versions from edition 2015-06 that shall not be used for new designs as of the current edition.

**Table 4: Product versions not for new designs (NFN)**

00	Self-adhesive metal labels
10	Self-adhesive plastic labels
11	Self-adhesive plastic labels in the vehicle interior
20	Self-adhesive paper labels
21	Self-adhesive paper labels in the vehicle interior

## **Annex B (normative)**

### **Adhesion force test - determination of peel resistance**

#### **Production of test pieces**

Test strips with a width of 25 mm and a length of at least 175 mm shall be cut out from the information labels. Prior to the test, the test strips and material samples shall be conditioned for at least 4 h at  $23 \pm 2$  °C and  $50 \pm 5$  % r.h.

The test strips shall be bonded on the material sample so that approx. 30 mm (not bonded) protrudes for clamping in the testing machine.

After bubble-free application of the test strip, a roller weighing 2 kg shall be rolled twice in both directions at a rate of approx. 10 mm/s over the strips to be bonded.

#### **Test procedure for determining peel resistance**

To determine the peel resistance at an angle of 90° (based on DIN EN 1939 - Annex B), the measurements shall be carried out for 24 h following application of the test strips (mean of 3 individual measurements in each case).

To do this, the test piece shall be inserted into a roller peeling device. The projecting part of the test strip shall be inserted between the rollers and into the lower chuck of the tensile testing machine. Peeling shall be carried out at a feed rate of 300 mm/min. The first load maximum (initial tear force) shall be omitted when evaluating the peeling force.

The peel resistance shall be specified in N/cm and is calculated from the peeling force and sample width.

## **Annex C (normative)**

### **Resistance to chemicals - stain method**

This test shall serve to determine the resilience of the surface of an information label to the action of chemicals within 24 h.

To do this, the information labels shall be bonded onto clean test plates and rolled on using a roller weighing 2 kg twice in both directions at a rate of approx. 10 mm/s.

The corresponding chemicals from Table 3 shall be applied on the horizontally positioned test plates, whereby contact with their edges shall be avoided. These shall then be stored for 24 h at 23 °C. When using volatile chemicals, storage shall take place in a sealed container.

On completion of the test period, the information labels shall be cleaned with water containing detergent to remove the chemicals and dried using absorbent paper or cloth. If chemical residues remain on the surface, cleaning shall be repeated with an inert solvent such as cleaning fluid.

Directly afterwards, the change in color or the printing image shall be assessed according to Table 3.