MASKING EXPERTISE FOR EXCELLENT PAINT JOBS

Our Masking Solutions for the Automotive Industry
Enabling diverse design upgrades

Car customization is one of the megatrends in today’s automotive industry. We offer a wide range of sophisticated solutions for car body and bumper masking applications that meet the demanding requirements of the paint process. This helps OEMs to create a unique yet reproducible car design.

Our paper masking range helps OEMs to deliver long-lasting and flawless cars to their customers, enabling, for example, the temporary sealing of holes before the underbody coating and the economic finish of repair jobs – our paper masking tapes are all-rounders in the paint shop.

The trend for lightweight material is an important topic in the automotive industry, leading to the increased use of adhesive bonding techniques. The use of flange masking thereby enables the safe and primerless bonding of different materials, such as PP as well as crash-relevant parts like the windshield. As a result, the complexity in the manufacturing process is reduced.
EASY AND LEAN PAINT SHOP PROCESSES

Paint jobs easily accomplished

Before the car body arrives in the assembly shop with an eye-catching surface finish, it runs through a dozen process steps in the paint shop. Each of these steps – such as surface treatment for corrosion protection; temporary and permanent sealing; and the painting of base and clear coats – features its own demanding conditions including a zero-fault tolerance principle.

Our masking range and expertise helps OEMs to master the challenges and keep each step as lean as possible. This includes ensuring reliable adhesion; avoiding overspray on e-, solvent-, and water-based coatings even at high temperatures in the oven; and guaranteeing simple and residue-free tape removal to prevent extra work.

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**Technical data**

<table>
<thead>
<tr>
<th>Key characteristics</th>
<th>Conformable flange masking tape</th>
<th>Highly temperature-resistant flange masking tape</th>
<th>Universal and conformable flange masking tape</th>
<th>Conformable flange masking tape with strong adhesion</th>
<th>Conformable flange masking tape with PET backing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature resistance (°C/1h)</td>
<td>170</td>
<td>170</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backing color</td>
<td>PVC film/ yellow</td>
<td>PVC film/ yellow</td>
<td>PET film/ yellow</td>
<td>PET film/ yellow</td>
<td>PP-EPDM</td>
</tr>
<tr>
<td>Adhesive</td>
<td>Natural rubber</td>
<td>Natural rubber</td>
<td>Natural rubber</td>
<td>Natural rubber</td>
<td>Natural rubber</td>
</tr>
<tr>
<td>Thickness of tape (μm)</td>
<td>160</td>
<td>160</td>
<td>150</td>
<td>150</td>
<td>140</td>
</tr>
<tr>
<td>Adhesion to steel (N/cm)</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>Tensile strength (N/cm)</td>
<td>70</td>
<td>70</td>
<td>100</td>
<td>100</td>
<td>150</td>
</tr>
<tr>
<td>Elongation at break [%]</td>
<td>120</td>
<td>120</td>
<td>100</td>
<td>100</td>
<td>152</td>
</tr>
</tbody>
</table>

**Application examples**

- Flange masking: used during flange painting and body painting
- Paint masking: used during body painting and fine lines painting
- Design masking: used during narrow curves and fine lines painting
- Repair masking: used during narrow curves and fine lines painting
- Assembly and final inspection: used during final inspection

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**Fineline tapes**

- **tesa® 4185**
- **tesa® 50777**
- **tesa® 4574**
- **tesa® 51108**
- **tesa® 4244**
- **tesa® 1215**
- **tesa® 4236**
- **tesa® 7193**

**Technical data**

| Key characteristics | Highly conformable and yet highly temperature-resistant flange masking tape | Highly temperature-resistant flange masking tape | Universal and conformable flange masking tape | Conformable flange masking tape with strong adhesion |
|---------------------|---------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|
| Temperature resistance (°C/1h) | 160 | 140 | 140 | 120 |
| Backing color | PVC film/blue | PVC film/blue | PET film/ yellow | PET film/ yellow |
| Adhesive | Natural rubber | Acrylic | Natural rubber | Natural rubber |
| Thickness of tape (μm) | 94 | 120 | 110 | 110 | 150 |
| Adhesion to steel (N/cm) | 2.2 | 2.2 | 2.4 | 2.3 | 3.7 |
| Tensile strength (N/cm) | 36 | 30 | 25 | 27 | 31 |
| Elongation at break [%] | 270 | 240 | 200 | 237 | 252 |

**Application examples**

- Fineline tapes: used during body painting and fine lines painting
- Two-tone car body painting: used during body painting in two-tone colors
- Masking of narrow curves up to 149°C: used during fine lines painting
- Masking in curves up to 200°C: used during narrow curves in high temperature

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**Paper masking tapes**

- **tesa® 4238**
- **tesa® 4239**
- **tesa® 4241**
- **tesa® 4242**
- **tesa® 4243**
- **tesa® 4247**
- **tesa® 4232**

**Technical data**

| Key characteristics | Slightly creped masking tape with a high temperature resistance | Conformable and weather-resistant masking tape | Masking tape with strong adhesion and tearing resistance | Thin and conformable masking tape |
|---------------------|---------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|
| Temperature resistance (°C/1h) | 160 | 140 | 140 | 120 |
| Backing color | Slightly creped paper/ brown | Slightly creped paper/ brown | Slightly creped paper/ brown | Slightly creped paper/ brown |
| Adhesive | Natural rubber | Natural rubber | Natural rubber | Natural rubber |
| Thickness of tape (μm) | 170 | 175 | 190 | 170 | 140 | 140 | 380 |
| Adhesion to steel (N/cm) | 4 | 6.8 | 4.7 | 3.6 | 3.4 | 3.2 | 6 |
| Tensile strength (N/cm) | 47 | 42 | 53 | 47 | 38 | 38 | 26 |
| Elongation at break [%] | 12 | 12 | 15 | 12 | 15 | 10 | 58 |

**Application examples**

- Paper masking tapes: used during body painting and fine lines painting
- Masking of narrow curves up to 149°C: used during fine lines painting
- Masking in curves up to 200°C: used during narrow curves in high temperature

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**E-coating**

Drying 185°C

Paint masking

PVC under body coating, filler

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**Drying ≥ 180°C**

1. Flange masking
2. Paint masking
3. Design masking
4. Assembly and final inspection

**Painted car body**

1. Drying ≥ 180°C
2. Repair masking
3. Painting (base and clear coat)
4. 160°C – 180°C

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**Paper masking tapes**

1. Drying 185°C
2. Paint masking
3. Design masking
4. Assembly and final inspection

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**E-coating**

Drying 185°C

Paint masking

PVC under body coating, filler

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**Drying ≥ 180°C**

1. Flange masking
2. Paint masking
3. Design masking
4. Assembly and final inspection

**Painted car body**

1. Drying ≥ 180°C
2. Repair masking
3. Painting (base and clear coat)
4. 160°C – 180°C
INDUSTRIAL CAR INDIVIDUALIZATION

More than 400 Excellent Two-Tone Paint Jobs per Day and Line

Mastering process times with the right application system

Attractive multicolor paint coatings can increase a car’s selling price by some hundreds of euros. However, the production of two-tone-colored cars often creates challenges in the paint shop to ensure the reproducibility of each painted car at a high quality level and to keep to tight process times.

We have put together a complete package for fine color separation for various locations on the car body, reliable large area maskings, and tools for precise applications and short throughput times. By following this approach, OEMs enjoy the increased value of their cars by maximizing the two-tone car output.

Engineering support beyond the tape

As a reliable partner for the paint shop, our activities and services are not limited to the delivery of tape or overmasking material. We also think in terms of the leanest application of our materials supported by universal and customized tools, such as fineline tape dispensers or jigs.

Based on our extensive industry experience in paint shop projects, we analyze the individual process and design parameters and create integrated and precise masking processes. For example, we support OEMs in defining the right position of visible and nonvisible split lines and in finding lightweight tooling solutions that do not need any guidance from edges or grooves to ensure a high-quality paint line.

This approach and service lead to measurable savings in energy and operating costs as well as to an impressive quality standard. Of course, our support also covers on-site application training, putting the OEM into the driver seat.

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