

## PUMA COAT B466

### Introduction

PUMA Coat B466 is a one component, flammable, solvent based, In-mold Coating (IMC) system. PUMA Coat B466 offers excellent light and heat stability combined with a high degree of flexibility. The combination of these properties makes PUMA Coat B466 the ideal general purpose IMC for flexible and semi-rigid polyurethane foam systems. In the case of soft, flexible, and rigid polyurethane systems alternative products are available in the PUMA Coat range.

### Method of Use

PUMA Coat B466 is applied using conventional air spray equipment. An air atomization pressure of 28.6–42.9 psi (2–3 bar) and a nozzle size of 0.5–1.0 mm are recommended. When pressure pots are used, fluid pressures of 14.3–21.45 psi (1–1.5 bar) are normally applied. High atomization pressure gives rise to “bounce back” and wide fan patterns cause excessive over spray. High Volume Low Pressure (HVLP) guns are worth considering on environmental and cost-saving grounds.

Before application, polyurethane, metal, and epoxy molds should be treated with an appropriate release agent. Next, you should coat the mold surface with an even coating of PUMA Coat, avoiding excessive application which can result in flooding and slow drying.

When applied correctly, paint usage is approximately 204–326 ft<sup>2</sup>/gal (5–8 m<sup>2</sup>/L) and dry film thickness is 20–25 µm. If the mold temperature is 95–122° F (35–50° C), the finish will be completely dry in 10–60 seconds. The exact time will depend upon paint formulation, spraying technique, mold design, and atmospheric conditions. If the paint is not allowed to dry completely before molding blistering will occur. Blistering results from the entrapment of solvent between the paint film and the polyurethane.

The surface finish obtained i.e., whether it is glossy or matte, depends mainly on the mold surface and the choice of release agent.

### Typical Physical Properties

The following table explains the typical physical properties of PUMA Coat B466.

Property	Clear	Colored
Non-volatile Solids (% by weight)	6	9–11
Viscosity (Ford No 4 Cup, Seconds 71.6° F (22° C))	12–15	12–15
Specific Gravity (g/cc 71.6° F (22° C))	0.84	0.85–0.90
Flash point (Abel Pensky Closed Cup)	0–2° F (32–35° C)	0–2° F (32–35° C)

### Performance Properties

PUMA Coat B466 is approved against the following automotive specifications:

- Rover Specification RES22PL06 – Moldings – Integral Skin Polyurethane – Interior Trim
- Rover Specification RES22PL08 – Plastic Components – General
- Ford Specification SKM-98D9736-B – Polyurethane Foam with Integral Skin

Rover Specification RES22PL06

Note: Gray Scale Rating (1 = Maximum Change 5 = No Change)

Test	Results
<b>RES 30EE 102/105U – Accelerated Climatic Cycling</b> Three cycles as follows: <ul style="list-style-type: none"> <li>• 22 hours at -40° F (-40° C)</li> <li>• 2 hours at room temperature</li> <li>• 22 hours at 221° F (105° C)</li> <li>• 2 hours at room temperature</li> <li>• 24 hours UV exposure (first two cycles only) Xenon arc wavelength 290–800 nm</li> <li>• 22 hours 100% humidity at 107.6–118.4° F (42–48° C)</li> <li>• 2 hours at room temperature (visual assessment before continuing to next cycle)</li> </ul>	Tested samples showed no evidence of any color change, cracking, or any other detrimental effect.

Test	Results
<b>RES 30EE 221° F (105° C)/266° F (130° C) – Surface Temperature Test</b> 2 hours exposure to 266° F (130° C) created by heated glass or ceramic tiles	Tested samples showed no evidence of any cracking, distortion, color change, or any other detrimental effect.
<b>RES 30CF005 – Color Fastness to Light</b> <ul style="list-style-type: none"> <li>72 hours heat aging at 221° F (105° C)</li> <li>72 hours UV exposure at black standard temperature of 131°F (55° C) through window glass. Assessment is made at 24 hour intervals. Instrument used is Heraeus Suntest CPS, 290–800 nm with UV quartz filter and 290 nm cut-off filter in place.</li> </ul>	Tested samples showed no evidence of any change in color, fading, or any other detrimental effect. Gray scale 5 rating.
<b>RES 30ST111 – Contact Staining</b> This test determines the discoloration of trim materials when in contact with natural rubber, synthetic rubber, or other materials likely to cause staining.	No apparent staining.
<b>RES 30CR424 – Soiling and Cleanability</b> Samples are soiled to Gray Scale ¾, then cleaned with approved upholstery cleaner.	Cleaned sample rated at Gray Scale 5.
<b>RES 30CF425 – Color Fastness, Wet and Dry Rubbing</b> Tested to British Standard 3424 Part 14 using approved upholstery cleaner and white spirit to determine fastness to wet rubbing.	Dry - Rating Gray Scale 5. Wet - Rating Gray Scale 5.
<b>RES 30CR129 – Resistance to Perspiration</b> Samples were submerged in the following solutions at 158°F (70°C) for 24 hours. Then, the samples are exposed to UV for 24 hours without drying. <ul style="list-style-type: none"> <li>Distilled Water</li> <li>Salt Solution</li> <li>Acid Solution</li> <li>Alkali Solution</li> </ul>	No detrimental effect noticed in any of the solutions.
<b>RES 30CR113 – Resistance to Cleaning Fluids</b> <ul style="list-style-type: none"> <li>Unipart Upholstery Cleaner</li> <li>White Spirit</li> </ul>	Tested samples showed no evidence of any change in color or any other detrimental effect. Gray Scale 5.
<b>RES 30CT900 – Humidity Resistance</b> 72 hours at 100% humidity and 107.6–118.4° F (42–48° C)	Tested samples showed no evidence of any change in color, fading, or any other detrimental effect.
<b>RES 30PA084 – Abrasion Resistance</b> RCA test 50 cycles	Tested samples showed no evidence of any significant abrasion to substrate.
<b>RES 30XP103 – Flex Resistance of Paint</b> <ul style="list-style-type: none"> <li>At room temperature, 20 cycles at an elongation of 75%</li> <li>At -22° F (-30° C), 20 cycles at an elongation of 50%</li> </ul>	No visible change in the paint after testing.
<b>RES 30MS302 – Flammability Test</b> Maximum burn rate accepted is 80mm/min.	Pass.

Ford Specification SKM98D9736-B

Note: Gray Scale Rating (1 = Maximum Change 5 = No Change)

Test	Results
<b>Environmental Cycling</b> Three cycles as follows: <ul style="list-style-type: none"> <li>3 hours at 194° F (90° C)</li> <li>1 hour at room temperature</li> <li>3 hours at -22° F (-30° C)</li> <li>1 hour at room temperature</li> <li>16 hours at 100.4° F (38° C)</li> <li>98% relative humidity</li> </ul>	No change in appearance when compared with original part.
<b>Heat Resistance</b> The part is placed in a mechanical convection oven at 194° F (90° C) for 7 days.	No change in appearance when compared with original unaged part.
<b>Fastness to Light</b> The part is exposed to 200 sun fade hours in an Atlas Fade-O-Meter.	Fading - Gray Scale 4/5.
<b>Abrasion Resistance</b> Taber abrader CS-10 wheels 4.9N weight force 250 cycles	The part does not show any greater signs of abrasion than the Master Sample approved by the Materials Laboratory.



## PUMA COAT B466 (cont.)

### Cleaning and Dilution

A range of individual solvent blends developed for equipment cleaning and product dilution is available. Since PUMA Coat stains and lacquers can be irreversibly damaged by dilution with the wrong solvent, the use of a correctly formulated blend is essential.

### Storage

The recommended temperature range for storage is 50–77° F (10–25° C). Temperatures above 86° F (30° C) should be avoided because of the danger of excessive pressure build-up in the containers. Before use, stir or shake containers to ensure the product is well mixed. It is a good idea to stir the material periodically during use.

### Shelf Life

12 months at 77° F (25° C).