MONOPOL COLORS

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Repair and Touch-up of Damaged Surfaces

General

This Technical Information has been prepared for the touch-up of two component (2K) or stove-coated components that have been coated with Monopol coating systems. It is generally applicable to all types of substrates (aluminum, steel, etc.). The type of damage and the preservation of corrosion protection must, however, be assessed on a case-by-case basis.

Quality of the repair coating

For on-site repairs the touch-up paint is available either as a two-component (2K) system or in aerosol cans. Both variants cure at ambient temperature. For factory coating there is additionally a stoving variant with curing at 165 °C.

If the touch-up material is ordered together with the original coating, costs are lower because the material can be taken from the original production batch. If ordered later, a small separate batch must be produced - even for a single aerosol can - which increases the cost.

Pre-treatment before touch-up

Scratches or minor damage must be pretreated before painting to remove dust, grease and other contaminants. Cleaning can be done by:

- a mild solvent (e.g. isopropyl alcohol),
- a water-based cleaner (e.g. Cleaner N) in combination with red Scotch-Brite,
- or light sanding (abrasive paper P180–P280).

Silicone removers must not be used, as they can cause adhesion problems.

If a water-based cleaner is used, the surface must subsequently be rinsed with water. If demineralized water is not used, the surface must be wiped dry so that no mineral residues remain.

For isolated damages on an otherwise sound substrate: sand the spot until the defect is no longer detectable to the touch. Then clean with compressed air and a tack cloth to avoid dust inclusions.

Primer

We recommend applying a thin coat of Vernit EP C400 (2K epoxy primer) to improve adhesion, protect the substrate against corrosion and fill small depressions.
In regions with high humidity and/or elevated airborne salt (e.g. coastal areas), use Filidur ST C420 (special 2K epoxy primer) to protect aluminum against filiform corrosion.

Spot-prime the damaged area with the primer, wait briefly and then prime the entire area to ensure optimal adhesion and a homogeneous surface.

Vernit EP C400 can be overcoated wet-on-wet after 15–20 minutes at a dry film thickness of approx. 50 µm (standard climate 25/50). The time until overcoating depends on ambient temperature and relative humidity.

Topcoat(s)

To achieve a matching appearance, apply the same number of coats as in the original coating system. If a clearcoat was used originally, the repair must also include a clearcoat, even if color and gloss could be matched with the basecoat alone.

Apply basecoat or topcoat in a cross-pass technique according to the shape of the substrate; allow to flash off for 5–10 minutes and then apply a second cross-pass. If a clearcoat is to be applied afterwards, it can be applied in the cross-pass after a basecoat flash-off time of approx. 10–15 minutes.

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Color and gloss

The human eye is particularly sensitive to certain color ranges and surface characteristics. With light, achromatic colors (e.g. white), even small deviations are readily noticeable. Differences are also easily detected on matt or high-gloss surfaces.

Different application methods between the original coating and the repair coating can - depending on color and surface - result in visible color deviations. Inform the client about possible differences. Where possible, leave intact panels in highly visible areas (e.g. entrances or façade fronts) so that repairs can be restricted to less conspicuous areas.

Effect colors (e.g. metallic or other effect finishes) are especially difficult to repair. This is caused by the orientation of the effect pigments, which depends on application parameters such as coating method (e.g. coil coating vs. spray coating), temperature, humidity and spray-gun-to-substrate distance. A changed pigment orientation alters light reflection and can create light/dark effects. Therefore, it is generally very difficult to touch up effect colors so that no visible differences remain.

Environmental conditions for on-site repair coatings

- Dew-point differential: Maintain a minimum difference of 4 °C between surface temperature and dew point to prevent moisture entrapment.
- Temperature range: Do not carry out painting at surface or ambient temperatures below 10 °C or above 35 °C.
- Direct sunlight: Work in the shade; avoid direct solar radiation. Surfaces must not be heated by direct sunlight.
- Weather conditions: Suspend painting operations if rain or thunderstorms are forecast. Allow the coating to dry off for at least 4–5 hours before expected rain. Very high relative humidity prolongs drying time.
- Fluoropolymer (FEVE) coatings: When using FEVE systems, note that a second FEVE coat should normally be applied on the following day. If a longer intercoat drying time occurs, a light sanding of the first coat is required.
- Dust control: Provide an environment as dust-free as possible to prevent particles from becoming embedded in the coating film.
- Technical Data Sheets: Observe our TDS and contact our Technical Service if you are uncertain.

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