

# ARCOR® International

a Division of AEC Corp.

## Coating Repair Specification

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**1.0 Definitions:**

1. Holiday: Flaw or defect in the coating that exposes or could expose the underlying substrate.
2. Stress Riser: Area of the coating, which protrudes abruptly above the contiguous area coating level. Typically found at coating interfaces, substrate edge interfaces or large, coating filled, substrate pitted areas.
3. Recoat Window: Time interval during which a subsequent coat of a multi-coat system can be applied. Associated terms include minimum and maximum recoat time.
4. Minimum Recoat Time: Time required for a coat to become sufficiently cured to resist thickness disturbance when overcoated or lightly abraded with fine-medium grit paper to remove unevenness or to repair defects. A general guideline determines minimum recoat time to be 10% of full cure per coating product cure schedule. Minimum recoat is verified by Thumb Twist Test.
5. Maximum Recoat Time: Maximum time allowed for satisfactory intercoat adhesion without special treatment of the surface of the prior coat. Also the minimum cure time required before heavy abrasion of coat, i.e. mechanical sanding with medium-coarse sandpaper or use of rotary grinder or light ‘sweep’ abrasive blast. A general guideline determines minimum recoat time to be 20% of full cure per coating product cure schedule. Maximum recoat is verified by Thumbnail Test.
6. Thumb Twist Test: The test used to determine that an epoxy has cured sufficiently

to remove unevenness or repair defects. The thumb is pressed into the coating with moderate pressure and twisted simultaneously. If there is no visible disturbance of the epoxy and there is no epoxy on the thumb, the coating is sufficiently cured to accept another coat or for light sanding.

7. Thumbnail Test: The test used to determine whether or not the coating recoat window has closed. The thumbnail is pressed into the epoxy with enough force to deflect the nail. If no evidence of an impression remains when the thumbnail is removed, the recoat window has closed.
8. Tie-in Zone: The feathered zone between fresh and existing coating.
9. Feather: Creating an abraded tapered transition along interfaces between coating materials or between coating and bare substrate. Feathered edges promote interface adhesion without the stress riser and unsightly condition that would otherwise occur at abrupt edges.
10. Mask: To prevent inadvertent overlap onto surfaces that are *not* intended or are unsuitable for overcoating.

**2.0 Precautions:**

1. Preening tools may damage some surfaces or change material properties.
2. Coatings that have exceeded allowable shelf life must *not* be used.
3. Coating material and cleaning solvent fumes and other materials associated with this process *may* be toxic. Safety measures specified on MSDS must be followed.
4. Organic fumes associated with coating material fumes in areas serviced by HVAC charcoal filters may affect filtration systems.
5. Unused portions of coatings *may* be considered hazardous and must be mixed, hardened, and disposed of in accordance with customers chemical control procedures
6. To avoid improper mix ratios, do *not* mix partial epoxy kits unless mass and/or volume ratios have been verified using mass/volume ratios as provided in coating Data Sheet.
7. Ensure that use of chemicals is allowed for the work area.

### 3.0 Recommended Tools and Consumables:

1. Sandpaper
2. Scraper
3. Non-woven abrasive pad such as Scotchbrite.
4. Wire brush.
5. Rotary wire brush, wheel or cup
6. Disc sander
7. Non-woven abrasive disc, wheel or cup.
8. Flapper wheel
9. Abrasive blast equipment using water and oil free compressed air for larger sweep areas.
10. Pistol blaster for spot blast.
11. Chloride free abrasives;
  - 12/40-20/40 Black Beauty;
  - 25-40 mesh Steel Grit;
  - 24-36 mesh Aluminum Oxide;
  - 16/35-8/20 Mesh Silica Sand.
12. Quality Control equipment to monitor air and surface temperature, humidity control equipment, dust collection equipment as required to maintain specified environmental conditions and ensure proper air flow.

13. Cleaning solvent MEK (methylethylketone) or Isopropyl Alcohol in solvent controlled areas.

#### 4.0 Intercoat Coating Repair:

- 4.1 Between coats: Visually inspect coating for obvious defects and stress risers prior to application of subsequent coating.
- 4.2 If a minor coating defect is identified record the observation on the ARCOR® Daily Procedure Log.

#### <HOLD POINT>

- 4.3 Determine whether Minimum Recoat Window has passed using Thumb Twist Test.
- 4.4 Determine whether Maximum Recoat Window has passed using Thumbnail Test.
- 4.5 **WHEN** coating has passed minimum recoat time **AND** has not passed maximum recoat time, touch-up and repair can commence.
- 4.6 **IF** coating repair can be completed before the maximum recoat window is exceeded then apply touch-up coating and blend ridges and/or lumps and level the surface.

<CAUTION> In order for the above test to be valid the touch-up repair must proceed in the same direction as the coating was/is applied i.e. the first areas the coating is applied would be the first areas tested and repaired.

- 4.7 If local surface areas protrude above surrounding coating material e.g. runs or a stress riser, or if debris or foreign matter is observed in the coating the area *must* be abraded to level the surface.
- 4.8 Using medium grit sandpaper or an abrasive pad abrade the coating in a linear fashion i.e. left to right or up and down.
- 4.9 **WHEN** abrading is complete, using a combination of brushing, vacuuming and solvent wipe, **REMOVE** all dust and debris from the surface.
- 4.10 If after abrading the abraded area is determined to be lower than the surrounding coating, as in removal of debris, apply touch-up material and level the surface.

## 5.0 Topcoat Coating Repair:

- 5.1 Visually inspect coating for obvious defects and stress.
- 5.2 If a minor coating defect is identified record the observation on the ARCOR™ Daily Procedure Log.

### <HOLD POINT>

- 5.3 Determine whether Minimum Recoat Window has passed using Thumb Twist Test.
- 5.4 Determine whether Maximum Recoat Window has passed using Thumbnail Test.
- 5.5 **WHEN** coating has passed minimum recoat time **AND** has not passed maximum recoat time, touch-up and repair can commence.
- 5.6 **IF** coating repair can be completed before the maximum recoat window is exceeded then apply touch-up coating and blend ridges and/or lumps and level the surface.

<CAUTION> In order for the above test to be valid the touch-up repair must proceed in the same direction as the coating was/is applied i.e. the first areas the coating is applied would be the first areas tested and repaired.

- 5.7 If local surface areas protrude above surrounding coating material e.g. runs or a stress riser, or if debris or foreign matter is observed in the coating the area *must* be abraded to level the surface.
- 5.8 Using medium grit sandpaper or an abrasive pad abrade the coating in a linear fashion i.e. left to right or up and down.

- 5.9 **WHEN** abrading is complete, using a combination of brushing, vacuuming and solvent wipe, **REMOVE** all dust and debris from the surface.
- 5.10 If after abrading the abraded area is determined to be lower than the surrounding coating, as in removal of debris, apply touch-up material and level the surface.
- 5.11 **IF** coating repair *cannot* be completed before the maximum recoat window is exceeded then it is advisable to wait until maximum recoat has passed. Heat may be applied to accelerate cure. Consult the material Data Sheet and Cure Schedule for direction.
- 5.12 Once the maximum recoat window has passed Use a High Voltage Spark Test to locate pinholes/defects. Consult ARCOR® ‘General Specification’ Section 6.6 for Spark Test procedures.
- 5.13 If a defect is identified circle the area with a chalk and record the observation on the ARCOR® Daily Procedure Log.

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