

**Standard Practice for  
Repair of Damaged and Uncoated Areas of Hot-Dip  
Galvanized Coatings<sup>1</sup>**

This standard is issued under the fixed designation A 780; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

**1. Scope**

1.1 This practice describes methods which may be used to repair damaged hot-dip galvanized coatings on hardware, structural shapes, and other products fabricated prior to hot-dip galvanizing, and uncoated areas remaining after initial hot-dip galvanizing. The damage may be the result of welding or cutting (flame), in which case the coating will be damaged predominantly by burning. This practice can also be used to repair hot-dip galvanized coatings damaged by excessively rough handling during shipping or erection. Requirements concerning the renovation of uncoated areas remaining after initial hot-dip galvanizing are contained within the applicable material specification.

1.2 This practice describes the use of low melting point zinc alloy repair rods or powders made specifically for this purpose, the use of paints containing zinc dust, and the use of sprayed zinc (metallizing).

1.3 The extent of repair shall be limited to an area mutually agreeable to the contracting parties. Similarly, contracting parties shall agree to the repair method to be used.

1.4 *This standard does not purport to address the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.5 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

**2. Referenced Documents**

**2.1 ASTM Standards:**

A 902 Terminology Relating to Metallic Coated Steel Products<sup>2</sup>

D 520 Specification for Zinc Dust Pigment<sup>3</sup>

**2.2 Society for Protective Coatings (SSPC) Documents:**

SSPC-PA2 Measurement of Dry Paint Thickness with Magnetic Gages<sup>4</sup>

SSPC-SP2 Hand Tool Cleaning<sup>4</sup>

SSPC-SP5/NACE No.1 White Metal Blast Cleaning<sup>4</sup>

SSPC-SP10/NACE No.2 Near-White Blast Cleaning<sup>4</sup>

SSPC-SP11 Power Tool Cleaning to Bare Metal<sup>4</sup>

**3. Terminology**

3.1 *Definitions*—For definitions of terms used in this practice, refer to Terminology A 902.

**4. Materials**

4.1 *Properties*—The material used for repairs shall have the following characteristics:

4.1.1 One application of the material shall provide a coating thickness of at least 2.0 mils (50.8  $\mu$ m).

4.1.2 The applied coating shall provide barrier protection and shall preferably be anodic to steel.

4.1.3 Application of the coating material shall be possible under shop or field conditions.

4.2 *Types*—There are three types of material that possess the required properties and may be used to repair damaged galvanized coatings, as follows:

4.2.1 *Zinc-Based Solders*—Zinc alloy solders are to be used for repairs. The most common types of solders are zinc-cadmium, zinc-tin-lead, and zinc-tin-copper alloys. Zinc-cadmium and zinc-tin-lead alloys have liquidus temperatures in the ranges from 518 to 527°F (270 to 275°C) and 446 to 500°F (230 to 260°C), respectively. (The liquidus temperature is that temperature above which an alloy is completely molten.) The zinc-tin-copper alloys have a liquidus temperature in the range from 660 to 670°F (349 to 354°C), but they are applied while in a semisolid state in the preferred application temperature range from 480 to 570°F (250 to 300°C). The solders can be used in rod form or as powders. Annex A1 describes the use of zinc-based solders.

4.2.2 *Paints Containing Zinc Dust*—These are usually based on organic binders, pre-mixed and formulated specifically for use on steel surfaces. Paints containing zinc dust, with concentrations of zinc dust in the range of 65 to 69 % or above

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee A05 on Metallic Coated Iron and Steel Products and is the direct responsibility of Subcommittee A05.13 on Structural Shapes and Hardware Specifications.

Current edition approved April 10, 2001. Published June 2001. Originally published as A 780 – 80. Last previous edition A 780 – 00.

<sup>2</sup> Annual Book of ASTM Standards, Vol 01.06.

<sup>3</sup> Annual Book of ASTM Standards, Vol 06.03.

Solicitante: TRYTECH S.R.L

Nº O.T.: 025 / 2697 / UNICO

Pág. 3 de 4

Fecha de informe: 13 de Febrero de 2006

**4. RESULTADOS OBTENIDOS:**

**4.1- Determinaciones sobre la muestra de pintura líquida "Converttech Plata"**

Se detallan en el siguiente cuadro los resultados obtenidos:

| Ensayos   | Converttech Plata |
|---|-------------------|
| Viscosidad Copa Ford Nº 4 (seg) (a 23 °C)           | 24                |
| Densidad (g/ml) (a 23 °C)                           | 2.02 ± 0.3 %      |
| Contenido de sólidos en peso                        | 77.4 % ± 0.2 %    |
| Contenido de sólidos en volumen                     | 64.9 %            |
| Contenido de solventes                              | 22.6 %            |
| Poder cubritivo<br>(100 $\mu$ m, espesor en húmedo) | 99.7 %            |

