

CHAPTER 22 - SURFACE FINISH

SURFACE FINISH

An effective surface finish requires the use of specified materials and established painting procedures that ensure optimal surface protection of the structure.

22.1 Galvanized Finish

A galvanized finish is MnDOT’s standard on new traffic control signal poles, mast arms, transformer bases, and luminaire extensions. Some cities and counties require painted traffic control signal systems.

If painting is required, the painted poles, bases, and mast arms must be pre-painted, over the galvanization at the manufacturer. See MnDOT Standard Specifications for Construction 2565.3X for further information.



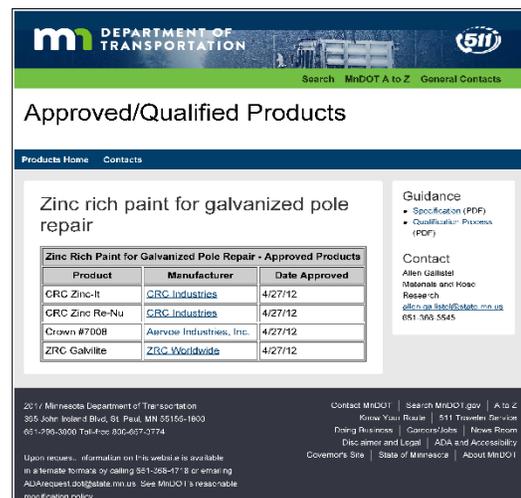
Figure 22-1: MnDOT Standard Galvanized Finish

22.1.1 Galvanized Pole or Mast Arm Finish Repair (2565.3Q)

The galvanized finish is highly abrasion resistant, but if the galvanized finish is scratched off and the bare steel is exposed, a field repair of the finish must be made. The repair must be in accordance with ASTM A780 Annex A2.

Approved zinc rich paints can be found on MnDOT’s Approved/Qualified Products List (APL) for signals.

<http://www.dot.state.mn.us/products/index.html>



Approved/Qualified Products

Zinc rich paint for galvanized pole repair

Product	Manufacturer	Date Approved
CRC Zinc-It	CRC Industries	4/27/12
CRC Zinc Re-Nu	CRC Industries	4/27/12
Crown #700B	Aerovse Industries, Inc.	4/27/12
ZRC Galville	ZRC Worldwide	4/27/12

Guidance

- Specification (PDF)
- Qualification Process (PDF)

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Figure 22-2: MnDOT APL Zinc Rich Paint

22.1.2 DELIVERING PAINTED POLES

When painted poles or mast arms are delivered to the job site, any protective wrap provided by the manufacturer during shipping must be removed immediately (protective wrap tends to soften paint on painted poles). The collar used to erect the pole must be of such material as to ensure protection of the finish.



Figure 22-3: Protective Wrap on Pole

Any damage to the finish (galvanized or paint) must be repaired as specified in the contract documents, to the satisfaction of the engineer, and in accordance with the manufacturer's recommendations.



Figure 22-4: Damage to Paint Finish



Figure 22-5: Damage to Paint Finish

22.1.3 REPAINTING EXISTING TRAFFIC CONTROL SIGNAL SYSTEMS

If it is required to repaint an existing traffic control signal system refer to the contract documents for painting requirements. Almost all existing traffic control signal systems constructed in 1995 and earlier were originally painted with lead base paint. As this paint is now considered hazardous waste, it must be removed and contained using the appropriate methods in accordance with the contract documents. There are very strict guidelines regarding hazardous material removal, disposal, and transportation in the contract documents that must be followed.

Painting metallic structures and components of a traffic control signal system must conform to all the requirements in the contract documents.

Painting metallic structures must consist of:

- Preparing the surface
- Furnishing and applying the paint
- Protecting and drying the paint coatings

Pedestrians, vehicles, and property must be protected against damages resulting from the painting operation and all work incidental to the painting operation.

Materials

The paint and other ingredients must conform to the specifications for the type and kind specified in the contract documents. The paint must be pre-mixed, ready to use, and must be delivered to the place of use in the original containers not to exceed five gallons in capacity. Inspection, sampling, and testing of paint must be as specified in the contract documents. Contents of the paint containers must not be altered unless permitted by the engineer. Surface preparation and painting must not be started until all the materials have been inspected and approved by the inspector.

Local agencies may use colors other than those detailed above. Consult contract documents for the correct required paint colors.

Polycarbonate signal heads, background shields, and visors do not require painting.

22.2 Chapter 22 Resources

- MnDOT's Approved/Qualified Products List (APL)
- MnDOT Standard Specifications for Construction 2565.3Q, 2565.3X

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