

**COLORADO DEPARTMENT OF TRANSPORTATION  
 PROPRIETARY ITEM – CERTIFICATIONS OR FINDING IN THE PUBLIC  
 INTEREST (FIPI)**

**PROPRIETARY ITEM OR PROCESS:**

Name of proprietary item or process: Natina Steel Solution for galvanized metals only	Manufacturer name, address & phone No.: Natina Reactive Color Treatment 1555 N. VIP Blvd. Casa Grande, AZ 85122 <a href="https://www.natina.com/services/steel/">https://www.natina.com/services/steel/</a> Colorado Solutions Specialist Erik Lingren (951 225 0050)
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**JUSTIFICATION:**

I hereby certify that it is in the public interest to specify the above named proprietary item or process for the following reasons: (Check all that apply)

<input type="checkbox"/> It is essential for synchronization.(Certification only)	<input type="checkbox"/> No equally suitable alternative exists (Certification only)
<input type="checkbox"/> It will be used for research or experimental purposes on short sections of road.	<input checked="" type="checkbox"/> It is in the public interest not to allow any other products even though other equally acceptable materials or products are available.

JUSTIFICATION (required). Justification consists of information that documents the reasons marked above for use of the proprietary item or process. For research or experimentation include a work plan that describes how the research or experimental feature will be used and evaluated. Attach additional pages and documentation as necessary.

Please see attachment.

<b>NEED FOR PROPRIETARY ITEM (Check only one):</b>	Project Specific <input type="checkbox"/> Approved by the Resident Engineer	Region-Wide <input type="checkbox"/> Approved by the Program Engineer and FHWA	Statewide <input checked="" type="checkbox"/> Approved by the Branch Manager and FHWA
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**APPROVED BY:**

Name Jane Hann	Title (CDOT Resident Engineer, Program Engineer, or Branch Manager) Environmental Programs Branch Manager	Signature 	Date 8/11/21
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**COPIES OF FORM TO (as appropriate):**

CDOT Project Engineer Tyler Weldon (Maintenance Engineering Asset Manager)	CDOT Resident Engineer:
CDOT Program Engineer:	CDOT Research Engineer:
CDOT Standards and Specifications Engineer (all, FIPI with draft of any required specification change): Shawn Yu	CDOT Branch Manager

## **Natina Steel Solution Statewide FIPI Justification**

Attachment to CDOT's Form 1381

August 3, 2021

One of the most common and cost-effective ways of increasing the lifetime of steel is galvanization; a process which coats a substrate such as steel in zinc. The American Galvanizers Association has guidance and recommendations for chemical post treatments, paint and powder coatings that can be applied to hot-dip galvanizing (HDG) to achieve a desired color. Because of the highly corrosive environment of the guardrails and other transportation components painting and powder coating is not viable solutions based on service life aesthetics and costs comparisons. The Landscape Architecture Sections has done a thorough search of chemical post treatment products and it clear that the Natina Steel Solution product is an industry gold standard used by many other DOTs and approved on other federal projects.

Natina Steel Solution is a patented manufactured product that reacts with galvanized metal and develops into a mottled and rustic, brown finish. The product can be applied to all galvanized surfaces (guardrail, signposts, utility towers, utility boxes, rock mesh, etc.) to meet the reflectivity requirements of the Federal Lands MOU and other stakeholder esthetic requirements. Natina Steel Solution results in rustic, brown hues using only minerals and bioactive chelates commonly found in hydroponics that is eco-friendly and non-toxic.

It is in the public interest not to allow any other products other than Natina Steel Solution to color galvanized steel infrastructure components. This recommendation is based on Natina's extensive transportation product safety testing that no other known manufactures have completed at this time. Below is summary of the Natina testing on transportation critical components.

1. METL Metallurgical Report (June 4, 2019) - Concluded that Natina Steel Solution does not reduce the corrosion resistance of the protective hot-dipped galvanized coating on steel components.
2. IMR Test Labs Report (June 4, 2019) – Concluded that Natina Steel Solution does not change the dimensional features of the components to which it is applied. Or does the steel solution change the static or adversely change the dynamic coefficient of frictional properties of hot-dipped galvanized coatings on steel.
3. Lindsay Transpiration Solutions (February 1, 2019) – Concluded that Natina Steel Color Solution is an acceptable surface treatment for use on the MAX and TAU-M, although may only be applied to surfaces that do not affect the energy absorbing capacity or performance of the systems. Provided detail drawings of the energy absorbing elements and critical hardware that shall not be treated with Natina Steel Solution.
4. Safety by Design LLC (November 6, 2019) – Concluded that the Natina Steel Solution will not have detrimental impacts on the longevity or structural adequacy of the MSKT guardrail terminal.
5. Texas A&M Transpiration Institute (March, 2019) – Concluded that Glenwood Canyon Bridge Rail components treated with Natina Steel Solution passed all structural adequacy and occupant risk.