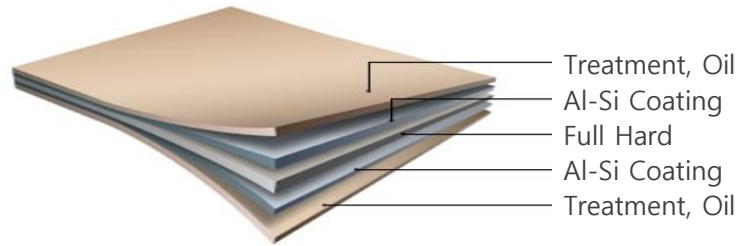


# **Comparative Overview**

## **: Aluminized Steel & Galvanized Iron**

# Product Overview: Aluminized Steel & Galvanized Iron

## ◆ Aluminized Steel Features



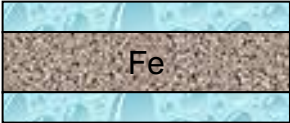
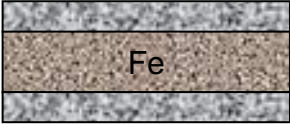
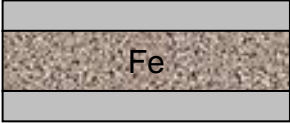
- The coating layer does not undergo any damage or discoloration even when exposed to high temperatures of 400°C for a long time due to Al-Fe alloying phenomenon.
- The formation of a passive film of oxidized aluminum on the surface enhances its corrosion resistance.
- After the molten plating, the growth of aluminum crystals is inhibited, resulting in a smooth surface appearance.

## ◆ Product Overview

	Aluminized Steel	Galvanized Iron
plating layer cross section		
composition of plating Pot(%)	Al : 89.0%, Si : 9.0%, Fe : 2.0%	Zn : 100%
thickness of a plating layer (one side, g/m <sup>2</sup> )	20 ~ 120	40 ~ 360
thickness of an alloy layer(μm)	3~5	-
use	Automotive exhaust system, Heat Shield, Thermal appliances etc.	Construction, Automotive etc.

# Application Difference

## ◆ Product Types and Characteristics

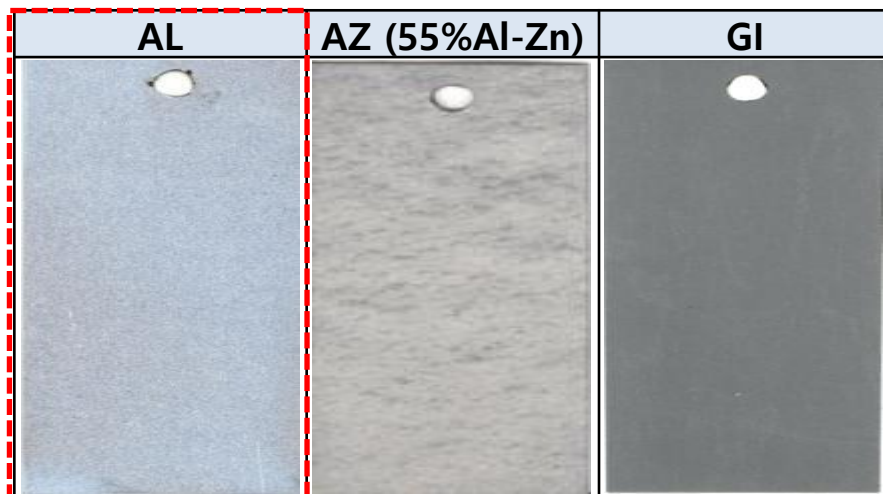
Product Name		Coating Structure	Post-treatment	Application
AL [Aluminized Steel]	Hot dip Aluminum coated steel	 <p>Al: 40~240g/m<sup>2</sup></p>	Cr	Muffler, Engine Heat cover, Home appliances
			Cr free (Inorganic resin)	
			lubricant coating	Pail Can
GI [Galvanized Iron]	Hot dip Zn coated steel	 <p>Zn: 80~350g/m<sup>2</sup></p>	Cr	Construction materials
			Cr free	Home appliances
			Cr 3	Automotive parts
			Cr (Organic resin)	Construction materials
AZ [Galvalume]	55% Aluminum-Zinc Hot dip Alloy coated steel	 <p>Al+Zn: 70~200g/m<sup>2</sup></p>	Organic coating (Acrylic)	Construction materials
			Cr free organic coating (Polyurethane)	Home appliances
			PE-Foam	Roofing materials
			Colored organic coating (Green)	Metal roof tile

# Performance Comparison: Heat Resistance

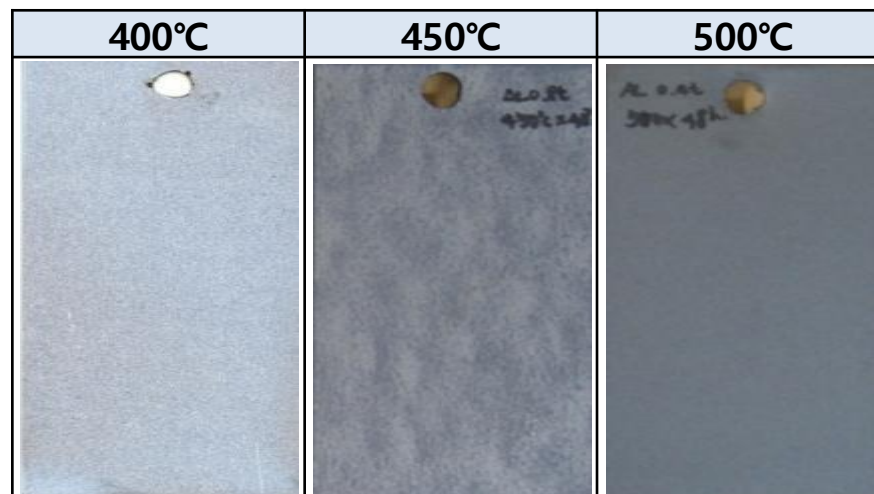
## ■ Heat resistance

- ALCOSTA (Brand name of Aluminized Steel) exhibits better resistance to surface discoloration under long-term exposure at 400°C compared to GI and 55% Al-Zn coated steel.

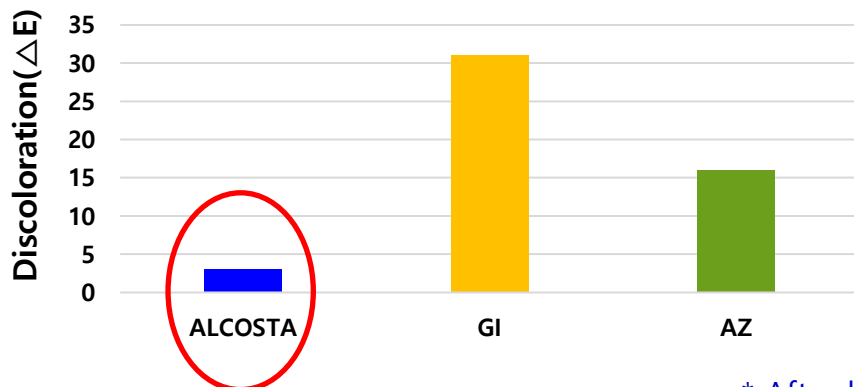
A. Discoloration after 400°C x 24hr



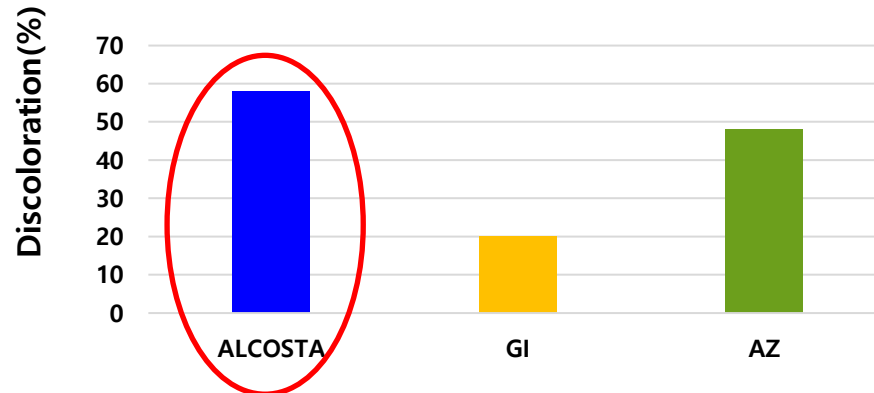
B. AL (Heat resistance test by temperature)



◆ Color difference before and after heating ( $\Delta E$ )



◆ Thermal reflectance (%) after heating (%)



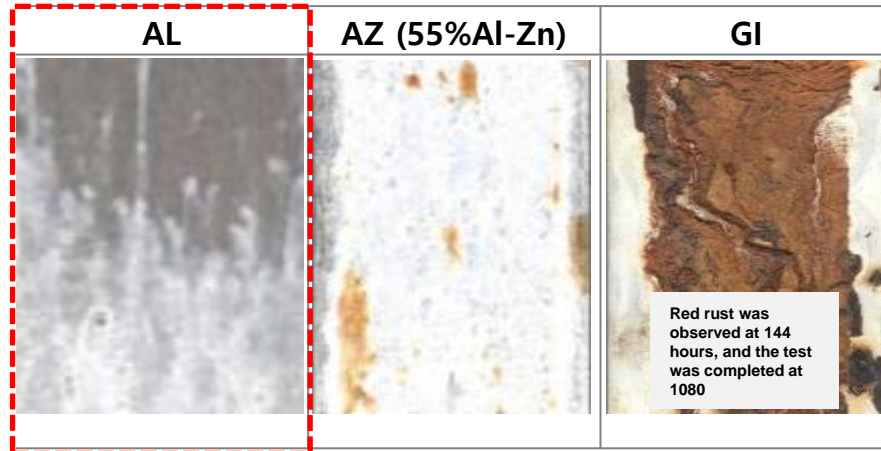
\* After heating at 400°C for 24 hours

# Performance Comparison: Corrosion

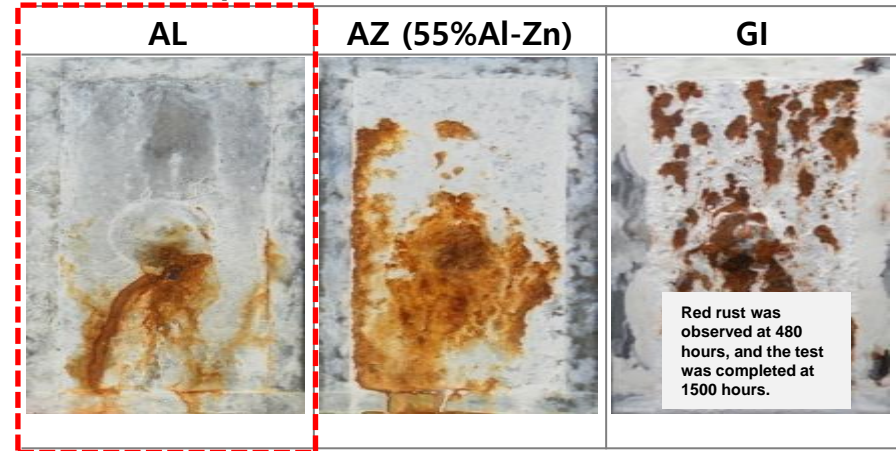
## ■ Corrosion resistance(SST, 35°C x 5%NaCl)

- ✓ ALCOSTA exhibits superior corrosion resistance in flat and processed areas compared to GI and 55% Al-Zn coated steel.

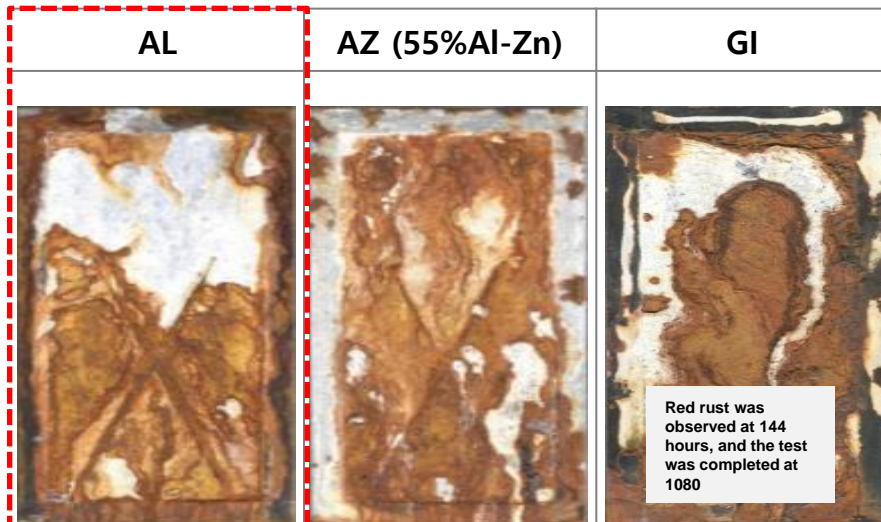
A. Flat surface



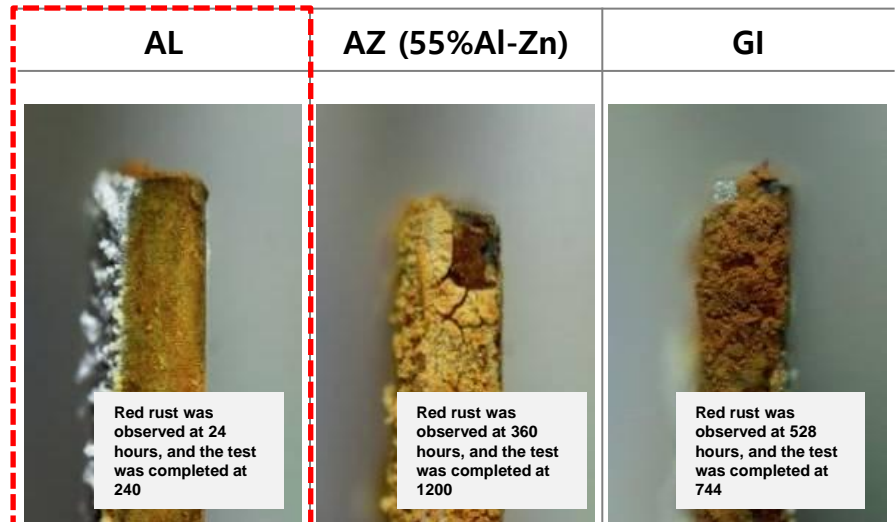
B. Formed part



C. Damaged area



D. Cross section



# #Attachment 1. Applications of Aluminized Steel

FPB



Electric rice cooker



Baking mold



Oven Tray



Gas burner components



Microwave oven back plate



Fan housing components



Internal components of water heater



LNG Pipe Jacket



# #Attachment 2. Applications of Aluminized Steel

Engine Heat Cover



Muffler Pipe



Muffler components



Muffler components for lawn mower



Tractor fuel tank



Automotive fuel tank



Automotive paint oven



Pail Can

