

## Stain-Resistant Pre-Coated Aluminum Sheets “FUSCOAT CLEAN Series”

### 1. INTRODUCTION

Recently, urban-type pollution is presenting problems including those caused by automobiles' emission gas and the like. Building materials and civil engineering structures tend to degrade in terms of the beauty as well as in function when pollution proceeds, so that there is a strong need for “stain-resistant material” and “easy-to-clean material”.

Furukawa Electric has developed, in response to such a need, stain-resistant, pre-coated aluminum sheets “FUSCOAT CLEAN Series”.

### 2. FEATURES

- 1) The sheet is stain-resistant, and even when stained, the material is easy to be cleaned.

The FUSCOAT CLEAN Series is the first pre-coat aluminum material that passed the Test for Stain-Resistant Materials for Civil Engineering Use, Type-I that is conducted by the Public Works Research Center under the auspices of the Ministry of Land, Infrastructure and Transport.

The coating film is resistant against adhesion of organic pollutants such as automobiles' emission gas and tar as well as that of solid pollutants such as mud

and metallic powder. Moreover, by making the surface hydrophilic, it is provided with self-cleaning property utilizing rain.

- 2) The sheet is hard to change in appearance and quality when used outdoors, including discoloration.
- 3) Four series of products in terms of resin and color are available, enabling to meet the various needs.
- 4) Because it is pre-coated, the sheet is stabilized in quality realizing cost reductions on the processed products.

### 3. STRUCTURE OF COATING FILM

Figure 1 shows the structure of the coating film. After chemical conversion coating is applied on the aluminum sheet as surface preparation, the surface is coated with

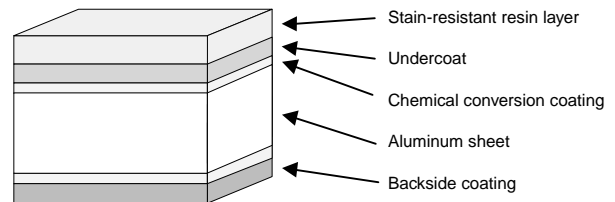


Figure 1 Structure of coating film of FUSCOAT CLEAN.

Table 1 Properties of FUSCOAT CLEAN.

Item	Product	Series No.	E100	E200	C100	C200
		Resin type	Fluoroplastic	Non-Fluoroplastic	Fluoroplastic	Non-Fluoroplastic
		Color type	Color 1)	Color 1)	Clear	Clear
		Standard coating film thickness	20 μm	15 μm	20 μm	15 μm
Stain resistance	Stain-resistance test, type I		Passed	Passed	Passed	Passed
	Outdoor exposure test for rain stain (18 mo.)		Good	Good	Good	Good
Scratch hardness (Pencil method)	Fracture		3H	4H	3H	4H
Adhesion	Cross-cut test		100/100	100/100	100/100	100/100
Bending resistance	Tape peeling after 180° bending		No peeling	No peeling	No peeling	No peeling
Impact resistance	DuPont method (500 g, 500 mm)		No peeling	No peeling	No peeling	No peeling
Corrosion resistance	Salt spray test for 1000 hrs		No abnormalities	No abnormalities	No abnormalities	No abnormalities
Humidity resistance	49°C, RH95 % or above, 1000 hrs		No abnormalities	No abnormalities	No abnormalities	No abnormalities
Weather resistance	Accelerated test using sunshine carbon, 500 hrs		GR 90 % or above	GR 90 % or above	GR 90 % or above	GR 90 % or above
Acid resistance	Sulfuric acid 2 % solution, 20°C, 24 hrs		No abnormalities	No abnormalities	No abnormalities	No abnormalities
Alkali resistance	Saturated calcic water, 20°C, 24 hrs		No abnormalities	No abnormalities	No abnormalities	No abnormalities

1) Almost all colors are available. Please speak with us when ordering.

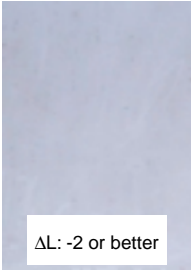

	FUSCOAT CLEAN Accepted product in stain-resistance test, type I	Ordinary colored aluminum sheet Unaccepted product in stain-resistance test, type I
Stain resistance	 ΔL: -2 or better	 ΔL: -40

Figure 2 Appearance of coating films after stain-resistance test.

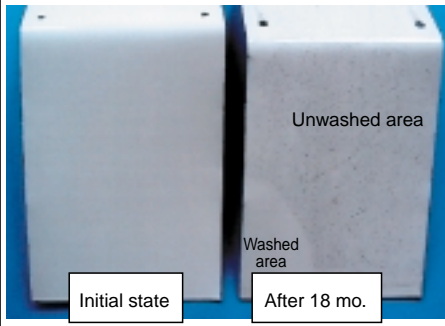
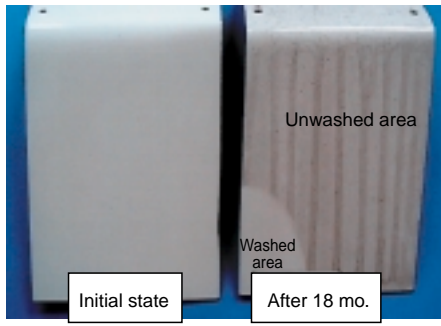
FUSCOAT CLEAN	Conventional stain-resistant coated material
 Unwashed area Washed area Initial state After 18 mo.	 Unwashed area Washed area Initial state After 18 mo.

Figure 3 Appearance of coating films after outdoor exposure test for rain stain.

undercoat when needed, and then a stain-resistant resin layer is provided at the outermost surface.

#### 4. PROPERTIES

The properties of FUSCOAT CLEAN are shown in Table 1, and the appearance after stain-resistance tests in Figures 2 and 3.

It can be seen that not only is the sheet superior in stain resistance, but also its basic property satisfactorily meets all the standards specified in JIS H 4001 --Painted aluminium and aluminium alloy sheets and strips--.

#### 5. APPLICATIONS

With its superior stain resistance, FUSCOAT CLEAN can be used for such applications as building panel for indoor or outdoor use, siding panel, sound barrier, sign board, van body, and panel for prefabricated bath unit, in addition to casing and housing for electro-electronic equipment.

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