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Development of Colored Stainless Steel "LUMINA COLOR" by Using Alternating Current Electrolyzing Method

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Synopsis :
A unique coloring process named the "slternating current electrolyzing method" has been developed, which is entirely different from the conventional, so called "INCO method" and has succeeded in producing colored stainless steel, "LUMINA COLOR". Features of LUMINA COLOR are as follows: (1) the INCO method used a two-solution and two-step process, i.e., coloring in a sulfuric acid-chromate solution and colored-oxide-film hardening by the cathodic electrolysis, whereas LUMINA COLOR is produced by a one-solution and one-step process using alternating current electrolyzing. (2) Alternating current electrolyzing method can produce stainless steel with several colors such as black, bronze, blue or gold only in a single solution, while coloring in black by the INCO method requires another specific solution. (3) Being superior in corrosion resistance, LUMINA COLOR is suitable for exterior panels in addition to interior decorative materials.

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交番電流電解法による化学発色ステンレス「ルミナカラー」の開発*

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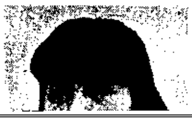


要旨

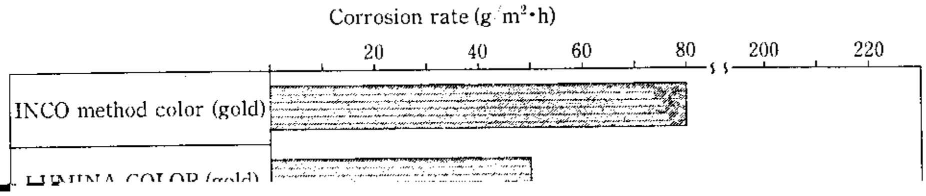
ステンレス鋼板の発色法として，従来のインコ法と全く異なる交番電流電解法を考案し，**ルミナカラー**を開発した。ルミナカラーの特徴は次のとおりである。(1)ルミナカラーは，交番電流電解法に

の金属イオンが表面近傍に均一に分布し、次の陰極分解で金属イオ

が封孔されて硬膜が同時に行われる。この交番電解を繰り返すこと
で表面全体に均質な皮膜成長が行われる。このように交番電流電解

わち、インコ法でブラックを発色するにはこれ以外の色調用とは別

因は **Fig. 4** に示すようにブロンズとブルーの発色浸漬時間の範囲
は比較的広いのに反して、ブラックのそれはきわめて狭く、制御


Corrosion rate (g/m²·h)
20
40
60
80
200
220
INCO method color (gold)