

Electrocolouring process for grey, blue, green and many other colours

MULTICOLOUR



PROCESS DESCRIPTION

Multicolour is a revolutionary electrocolouring process capable of producing a range of colours from grey to blue, or green. The process involves a three step procedure.

STEP ONE: ANODIZING PROCESS

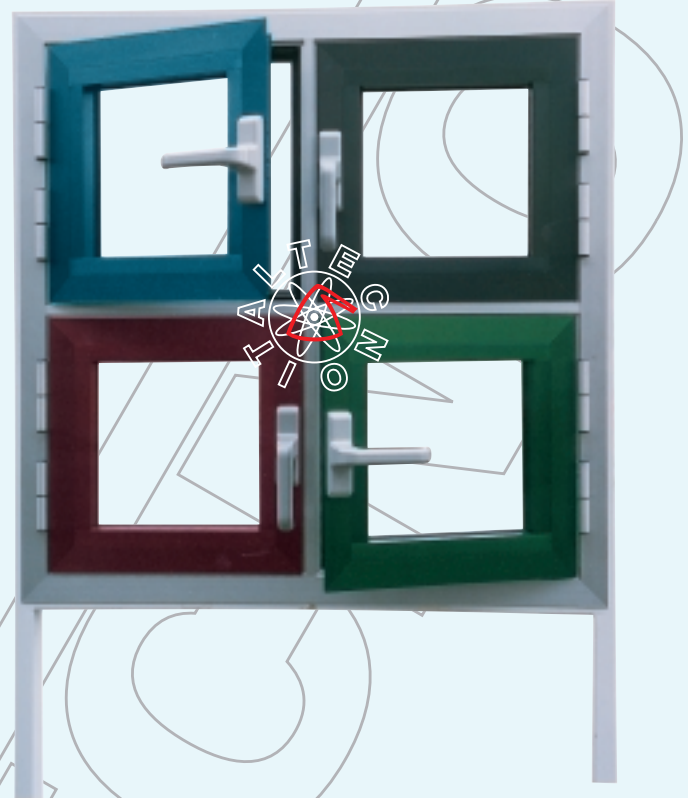
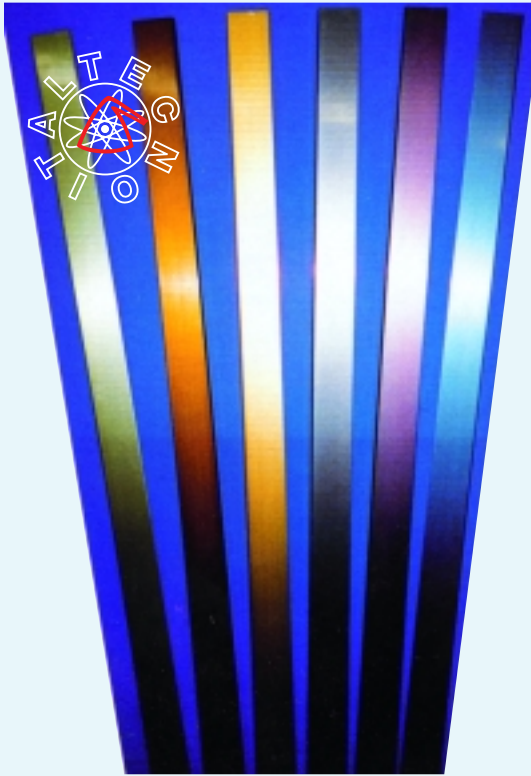
Sulphuric acid	160 - 220 g/l	
Aluminium (dissolved)	8 - 12 g/l	(1)
Temperature	20 °C (± 0.5°)	(2)
Current density	1.5 A/dm ²	
Anodic thickness	>10 micron	

- (1) Dissolved aluminium level is important and should be controlled (for example with Freeal equipment)
- (2) Temperature control is critical, the use of appropriate chillers and heat exchangers is necessary.

STEP TWO: MODIFICATION OF THE ANODIC LAYER

Sulphuric acid	30 g/l (± 0.2 g/l)	(3)
COLOURMIX IM1	40 g/l	
Temperature	19 °C (± 0.1°)	(4)
Current density	max 0.5 A/dm ²	
Treatment time	10 - 20 minutes	(5)

- (3) Detailed users manual will be provided to all licensees. A particular patented computerized power supply (TECHNO-COLOUR) is necessary. The lay-out of the current supply bars of the Technocolour to the post anodizing tank must be carried out according to our drawings which will be supplied upon receipt of order.
- (4) Temperature control is critical, use of appropriate chillers and heat exchangers is necessary.
- (5) Treatment time required depends on the requested colour and the characteristics of the anodic layer.



STEP THREE: COLOURING PROCESS

The different colours can be achieved by electrocolouring in a tin based solution containing SALMIX NF 40 additive (1-5 minutes)

One power supply only, type TECHNOCOLOUR, can be used to feed the tank for step two and the tank for step three.

SEALING

MULTICOLOUR is sealed in a conventional cold sealing process such as HARDWALL allowing 0.8/1 minute per micron or, alternatively, in hot sealing containing a preventer such as MG SEAL for 3 minutes or in medium temperature sealings (Hardwall VF and Hardwall NNS).

EQUIPMENT

3 Phase Technocolour rectifier/transformer (size depends on the existing rectifiers): please contact Italtecno's Technical Service providing information about existing rectifiers.

TESTS PASSED

Technocolour unit: amperage must be equal to 30-40% of the maximum amperage of the anodizing rectifiers.

- **All tests for oxide quality:**
ISO 1463 - ISO 2106 - ISO 2360
- **All tests for sealing quality:**
ISO 2931 - ISO 2143 - ISO 3210 -
ISO 2932



Example of grey "multicolour" load

- **Main tests for corrosion and light resistance:**

Resistance to Kesternich test:

Method: DIN 50 018 SFW 0.2 S

Duration of test: 5 and 10 cycles of 24 hrs.

Test conditions:

peak emission at 340 nm. Below 300 nm, emission is less than 2% of its total light output.

5 hrs. dry UV exposure with a black standard, temperature of $50\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, relative humidity $10\% \pm 5\%$, followed by 1 hr. conditioned water spray, without radiation at $20\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ temperature black standard.

Resistance to artificial weathering and UV light:

Method: following DIN 53 384

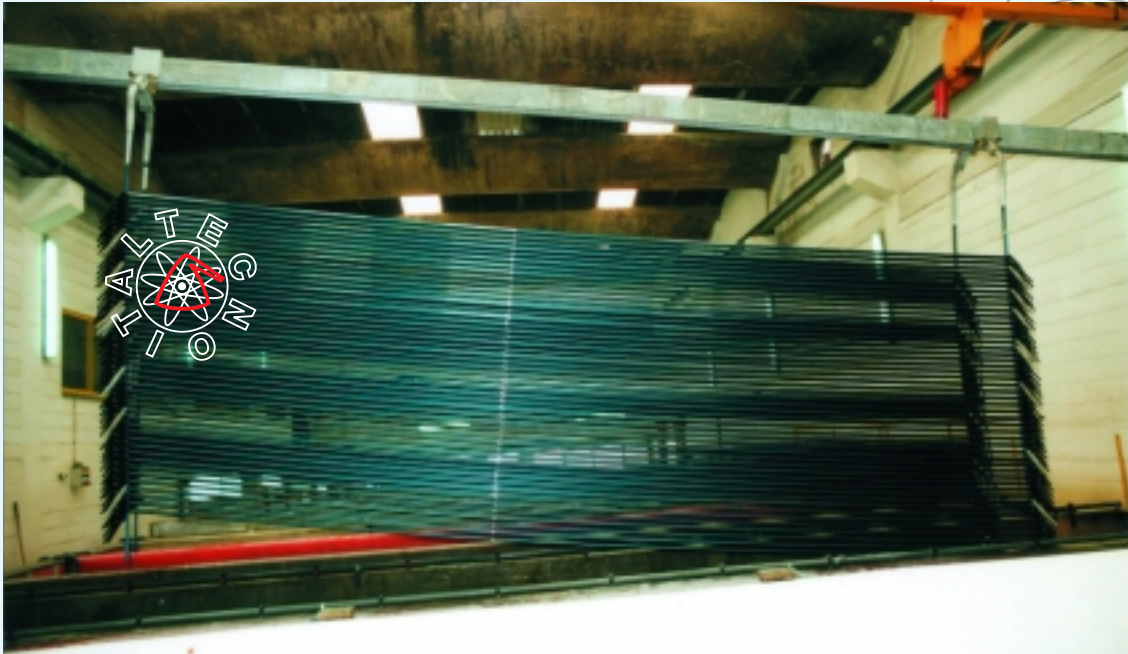
Duration of test: 2400 hrs.

Apparatus: QUV spray option apparatus

Light source: 8 fluorescent UV-A 340 lamps with a spectrum from 295-400 nm. The lamps have a

Florida test

Taber test



Example of blue "multicolour" load



Example of green "multicolour" load

