

CONTINUUS-PROPERZI CCR ETP & FRHC COPPER LINES





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CCR COPPER ETP

(Electrolytic Tough Pitch)

ROD LINES

SMALL OUTPUT RATE

- Production rate: from 5 tph to 10 tph
- Expected yearly output: from 25,000 t to 58,000 t

MEDIUM OUTPUT RATE

- Production rate: from 12.5 tph to 20 tph
- Expected yearly output: from 61,000 t to 115,000 t

LARGE OUTPUT RATE

- Production rate: from 25 tph to 50 tph
- Expected yearly output: from 125,000 t to 310,000 t

Parameter	Reference	Value
Chemical composition	Cu+Ag %	>99.95
Oxygen	Ppm	150 ÷ 250
Elongation	A ₂₀₀ %	42 ÷ 46
Tensile strength	Kg/mm ²	22 ÷ 24
Conductivity	IACS %	101.0 ÷ 102.0
Twist test to failure	No	54 ÷ 60
Best drawability	mm	0.05
POPS test – surface oxides	Ångstrom	100 – 200
Re-crystallization temperature	°C	180

CCR COPPER FRHC

(Fire-Refined High-Conductivity)

ROD LINES

There are three types of Continuous-Properti process for the production of FRHC copper:

No. 1

Batch Process with maximum refining

Copper scrap mix ≥93%

Expected yearly output: from 12,000 t to 90,000 t

No. 2

Continuous Process with limited refining

Copper scrap ≥97%

Expected yearly output: from 25,000 t to 100,000 t

No. 3

Batch Process with limited refining

Copper scrap mix ≥96%

Expected yearly output: from 12,000 t to 24,000 t

No. 1 PROCESS

Is based on one reverberatory furnace usually feeding a rod line or a slab caster during approximately one shift per day (1st – 2nd – 3rd Class).

No. 2 PROCESS

Is based on a vertical (shaft) furnace and two holding refining furnaces feeding a rod line 24 hour/day (1st – 2nd Class).

No. 3 PROCESS

Is based on a reverberatory furnace usually feeding an ingot line during approximately one shift per day. Ingots are then diluted with cathodes in a shaft furnace for ETP rod production (1st – 2nd Class).

Parameter	Reference	Value
Chemical composition	Cu+Ag %	>99.90
Oxygen	Ppm	150 ÷ 250
Elongation	A ₂₀₀ %	38 ÷ 43
Tensile strength	Kg/mm ²	22.8 ÷ 23.5
Conductivity	IACS %	100.5 ÷ 101.3
Twist test to failure	No	43 ÷ 50
Best drawability	mm	0.25
POPS test – surface oxides	Ångstrom	100 – 200
Re-crystallization temperature	°C	280

No. 1 PROCESS

1st CLASS



CU > 99%

No. 2 PROCESS

2nd CLASS



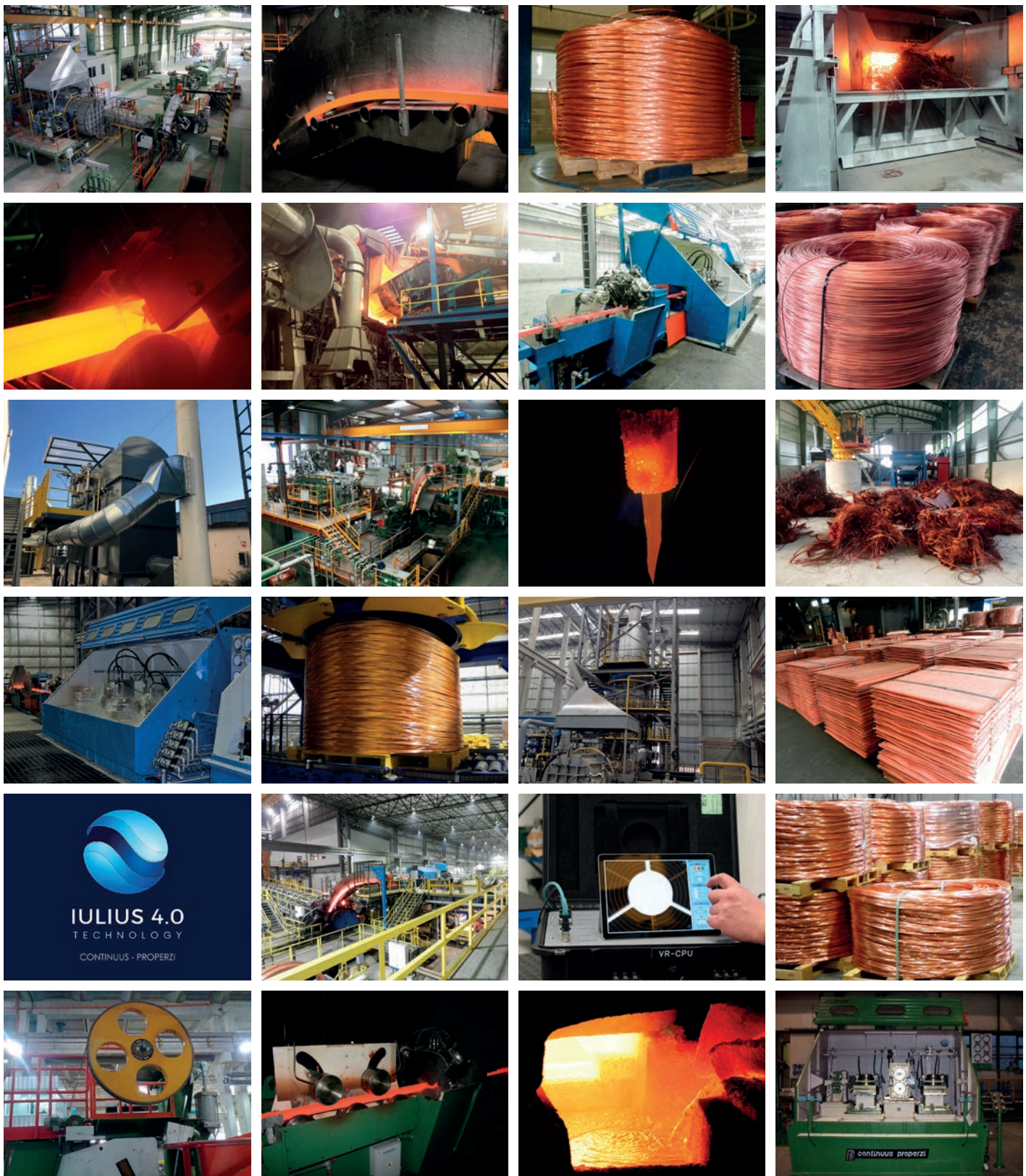
CU > 96%

No. 3 PROCESS

3rd CLASS



CU > 93%



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