



Termomeccanica Industrial Process

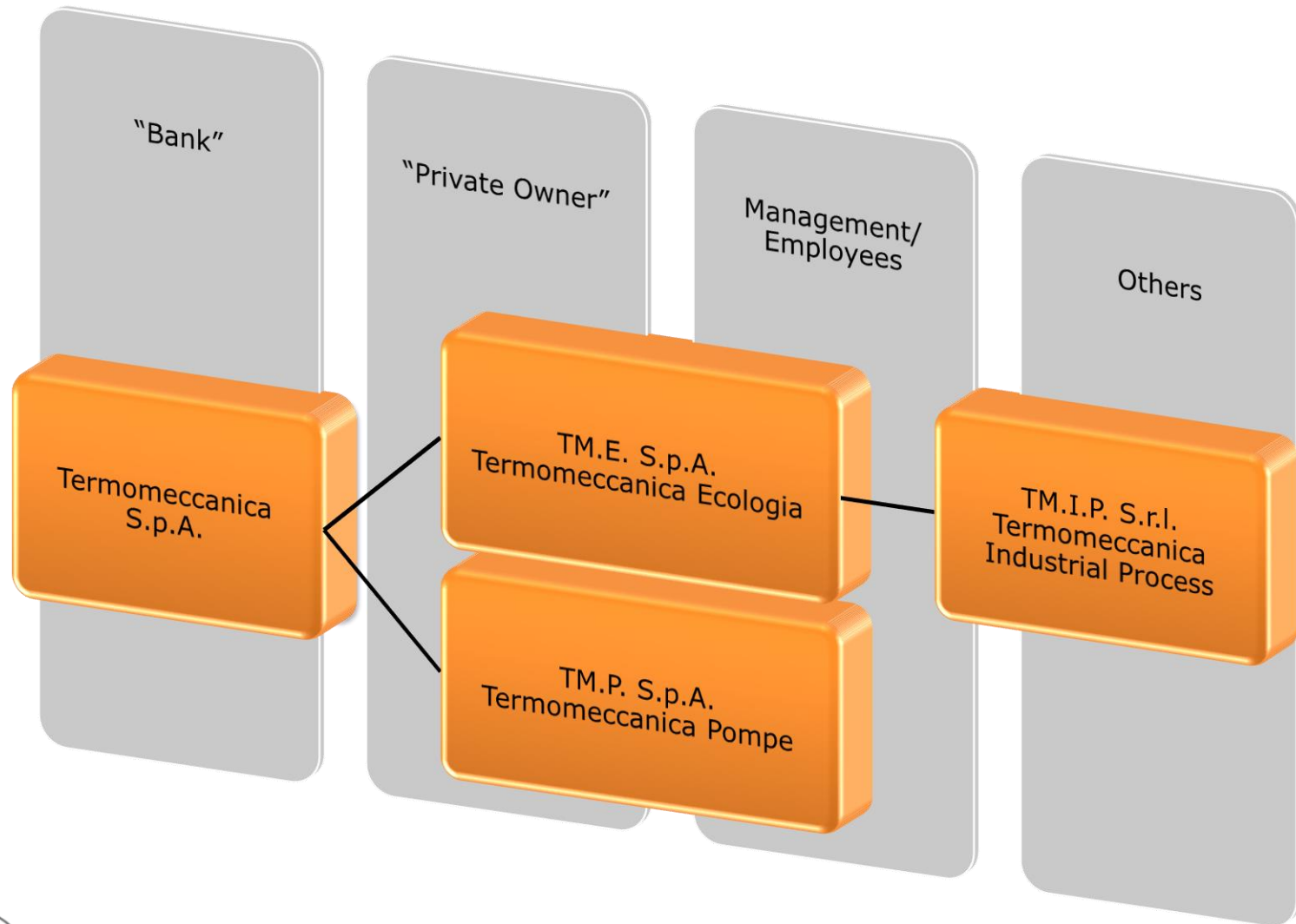
Termomeccanica Group



Production

June 2020

TM Group



TM.I.P.

“TM.I.P.” was founded towards the end of 2011 to incorporate the know-how, the engineering and constructions technology and of the company “C.M.G.” founded in 1977.

The company operates in the environmental protection and production sectors making use of C.M.G. credentials, patents and technical expertise in synergy with the know-how and industrial experience of “Termomeccanica Group”. **It is organized into two sections:**



The “**Environmental protection plants**” section operates in the design and construction of plants (turn key) for the recovery of chemicals (solvents, light and heavy hydrocarbons, etc.) and for treatment of liquids, sludge and gaseous effluents from industries.

The “**Production plants**” section operates in the design and construction of plants for the production of compound chemicals (adhesive, wood board glue , formaldehyde , resins, PU and PVC paste for coating process , textile auxiliary chemicals , etc.) and in the mixing process for industries.



TM.I.P. – production plant

TM.I.P. builds production reactors and mixers from a capacity from 2'000 to 60'000 litres.

TM.I.P. designs and builds:

- “Turnkey” plants for batch or continuous production of chemicals products with the latest automation systems
- Reactors – vacuum and pressure mixers with more settings for the pharmaceutical and cosmetics industries
- Complete plants for production of chemical products

TM.I.P. is able to provide to the basic and detailed engineering for the construction of the entire production plants; when necessary, TM.I.P. can also adapt the new production line at the “old” recipe with the training and start up assistance to ensure the customer the quality and characteristics of finished product.



TM.I.P. – production plant

The above mentioned plants can be used to prepare:

- ✓ Chemicals for different uses
- ✓ Cosmetics
- ✓ Detergents
- ✓ Auxiliary chemicals to be used in textile or tanning industries for finishing
- ✓ Blending of lubricants

Complete plants for adhesive paste production (to be used in adhesive tapes production or in shoes production or to be sold in the market).

Mixers equipped with special stirrer, feasible for an efficient and fast dissolution of components to be mixed.

Complete plants for preparation of PU paste (polyurethane) / PVC paste in synthetic leather production.



TM.I.P. – production plant



...some example of reactor / mixer.



TM.I.P. - CPTM



Consorzio Polo Tecnologico Magona

TM.I.P. is also partners of "**Consorzio Polo Tecnologico Magona**", a consortium which the aim is to promote the technological research and innovation transfer in all the sectors of Chemical Engineering and of Process and Material Industry.

CPTM represents a meeting point between companies searching for new solutions and the applied research, result of the synergetic competencies gained by universities, engineering consulting companies, and manufacturers. Applications include chemical and material engineering, environmental protection, industrial safety, energy industry, renewable energy and green chemistry.

Our main reference:

...more than 40 years of expertise in the design and supply of plants for chemical process, energy and environmental protection tailored to Customers requirements.

TM.I.P: A reliable company for non-conventional processes and solutions...



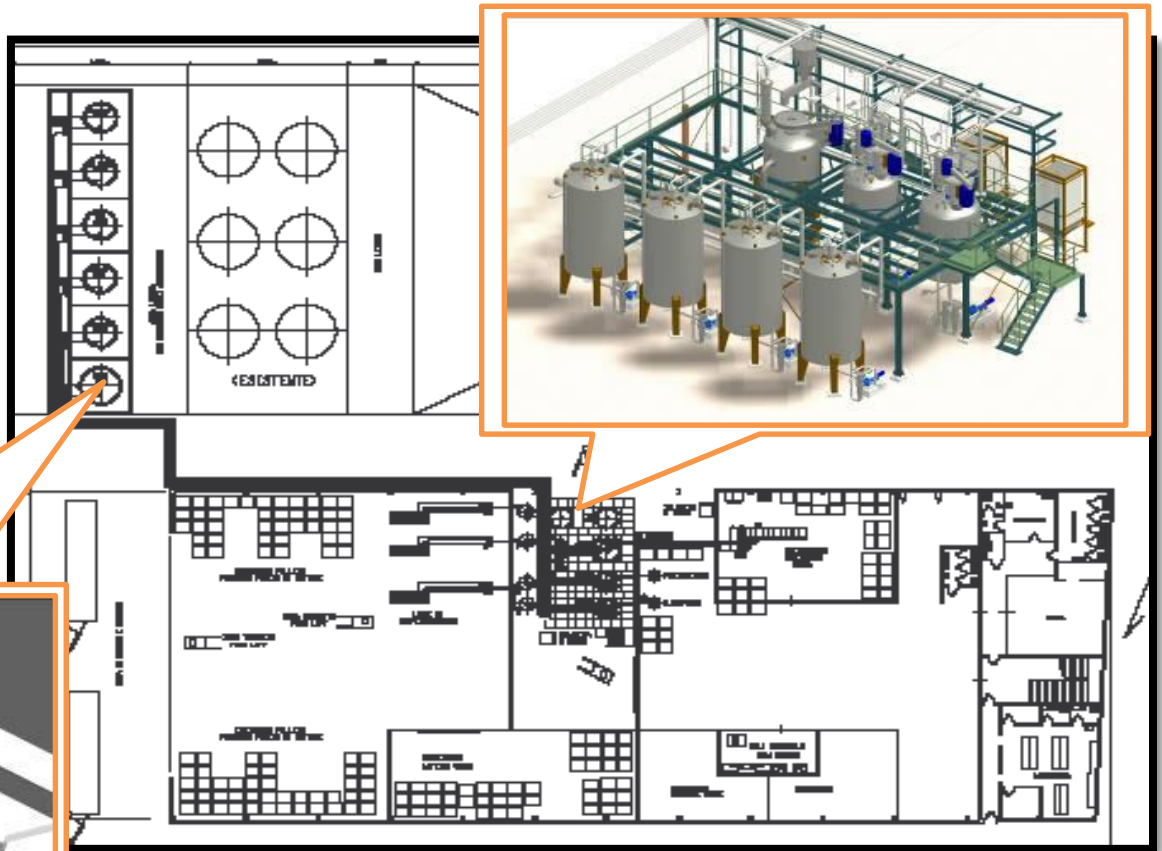
Adhesive preparation plant

Case study 1

Complete plant to produce adhesive for shoes:

- Polyurethane
- Natural Rubber
- Chloroprene

TURN KEY supply: design of the buildings, all equipment, software control system, technologies and formulation.



Adhesive preparation plant



Adhesive preparation plant



Adhesive preparation plant

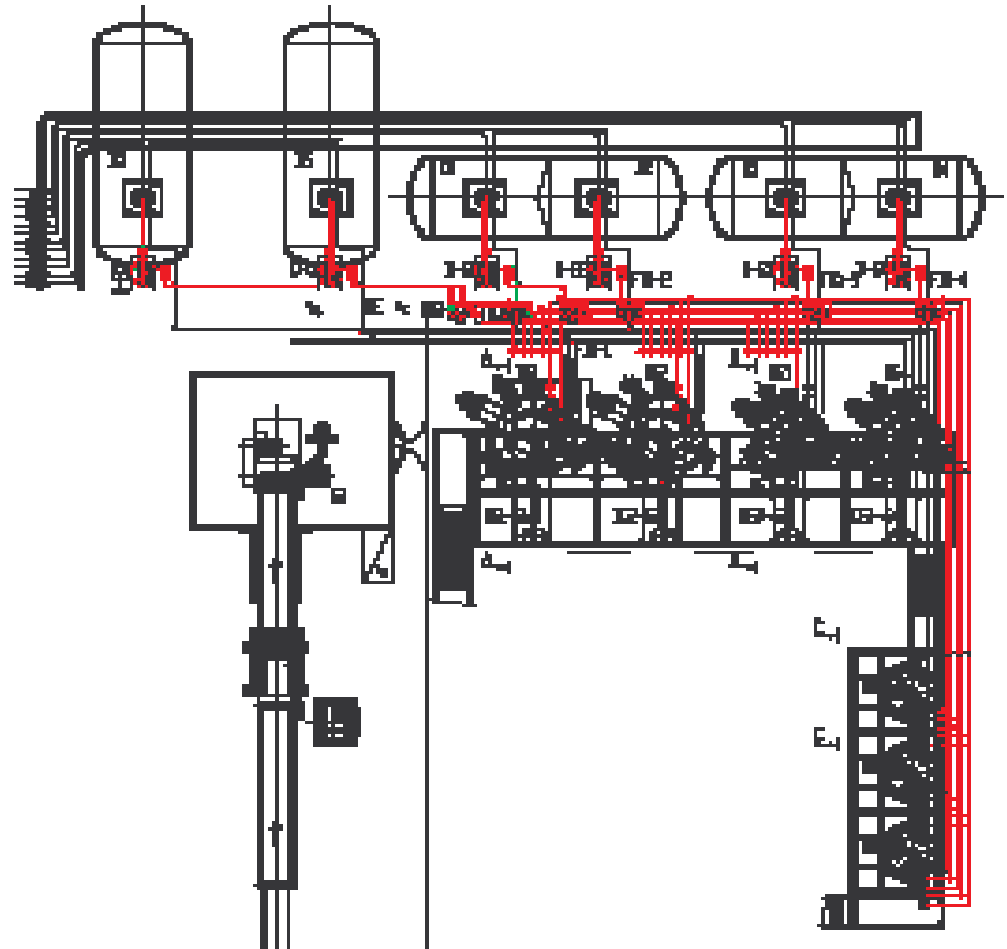


Adhesive preparation – Solvent base

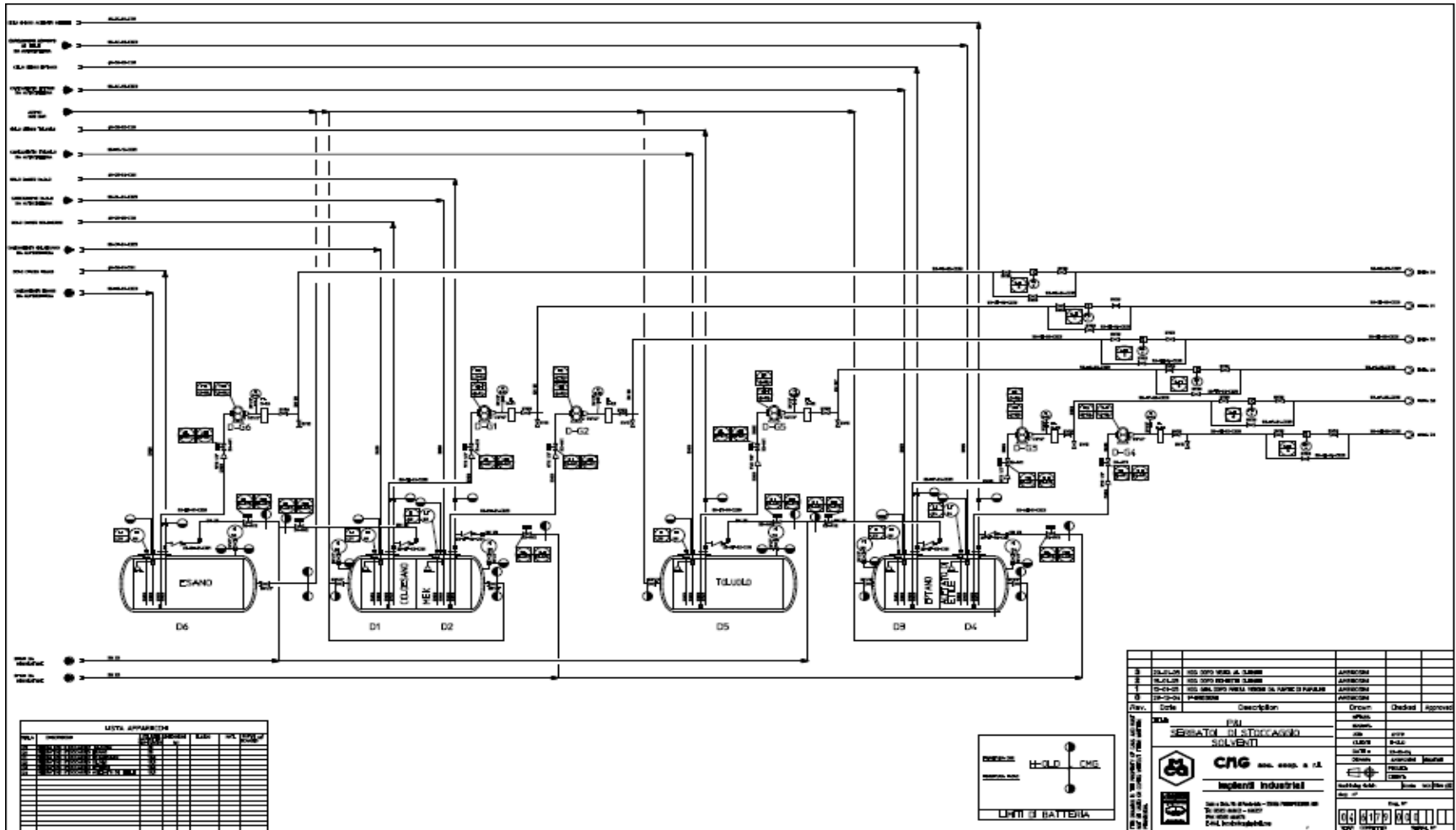
Case study 2

Turn-key supply:

- n°2 Solvent tanks 25 m³ (underground)
- n°2 Solvent tanks 25 m³ (underground), internally divided in two parts
- Grinding Machine for Natural Rubber
- n°2 Dissolvers for Natural Rubber 7.500 l
- n°2 Dissolvers for Natural Rubber 3.500 l
- n°3 Mixers for Primers and Release 1.500 l
- n°1 Pilot Dissolver 150 l
- Piping , Carpentry , Pumps, Instruments (ATEX)
- Automatic Control system



Adhesive preparation – Solvent base



MATERIE APPLICAZIONE				
NO.	DESCRIZIONE	Q.TA.	UNITA	NO. CANTIERE

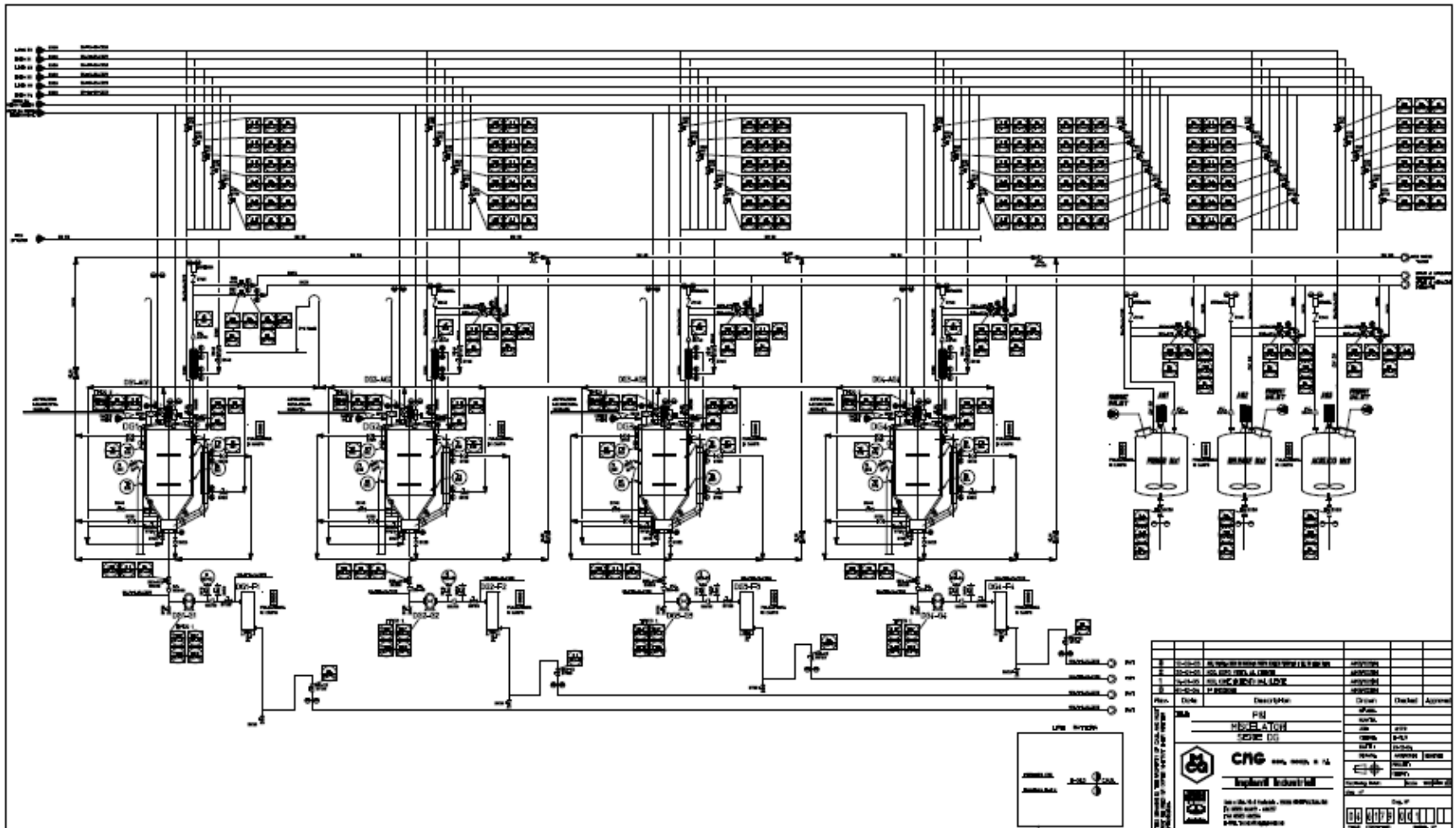


Rev.	Data	Descrizione	Disegnato	Verificato	Approvato

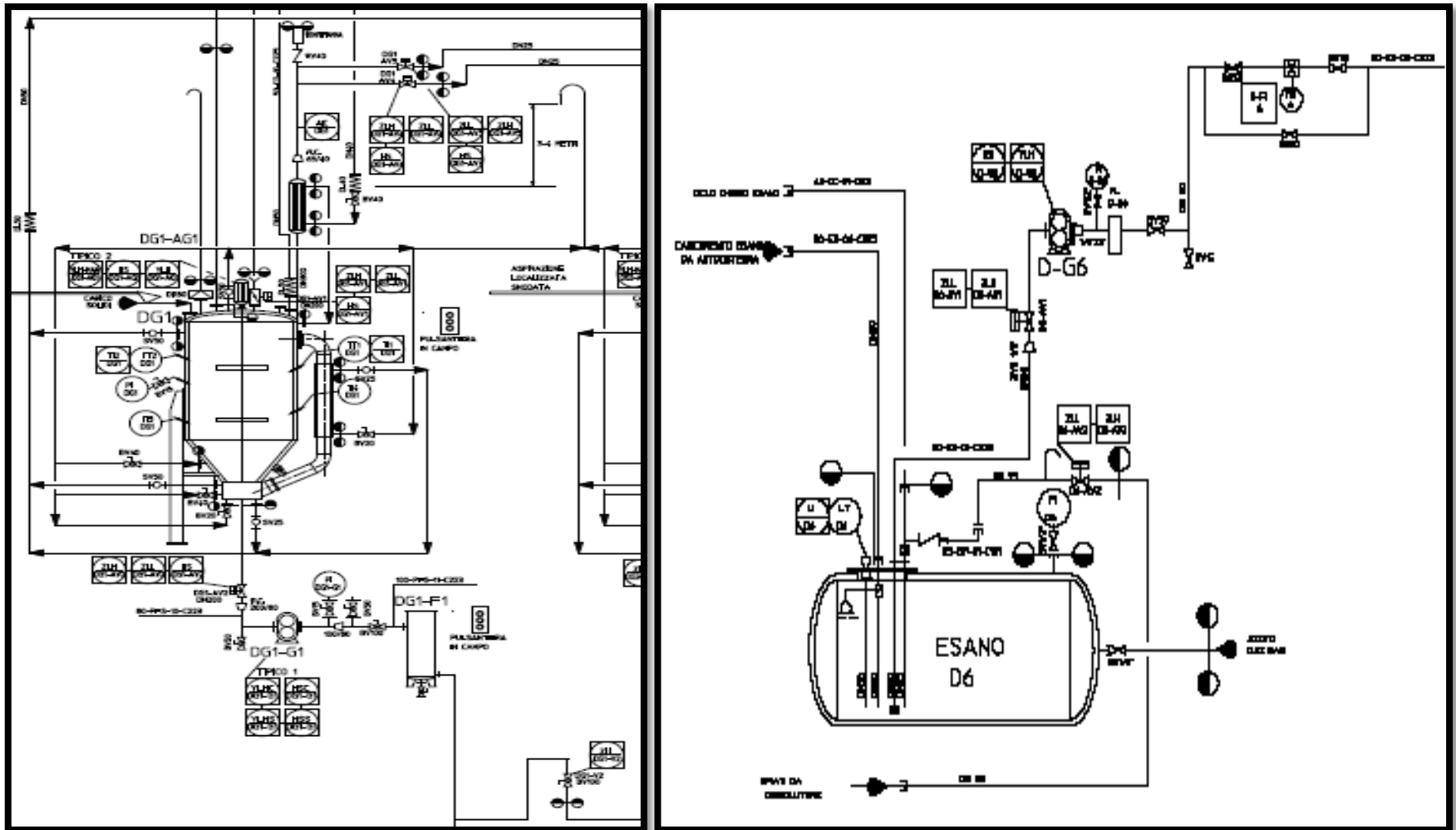
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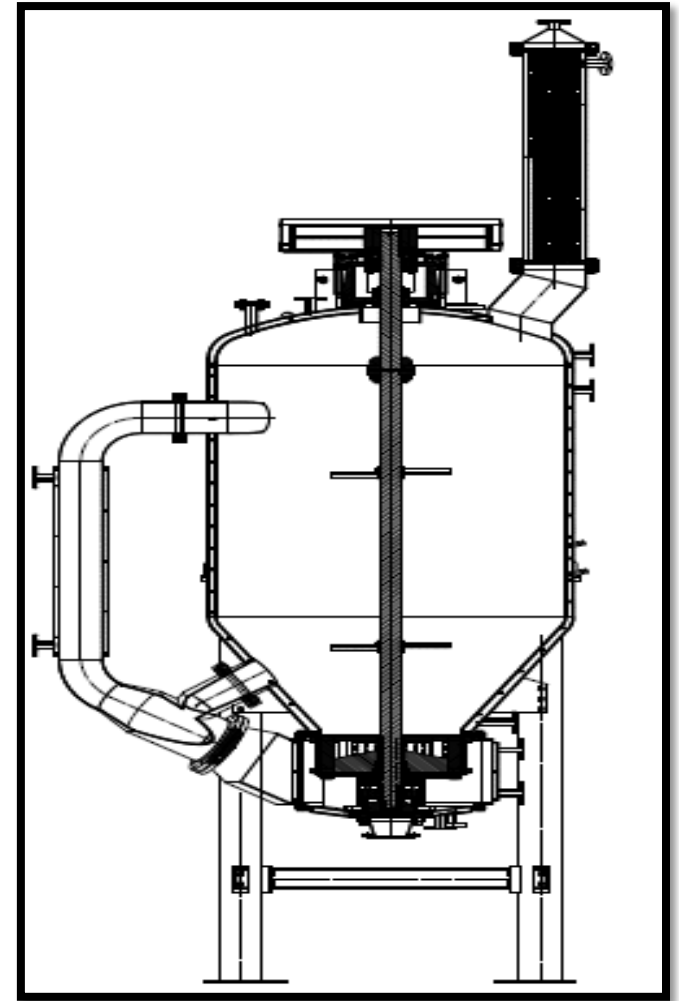
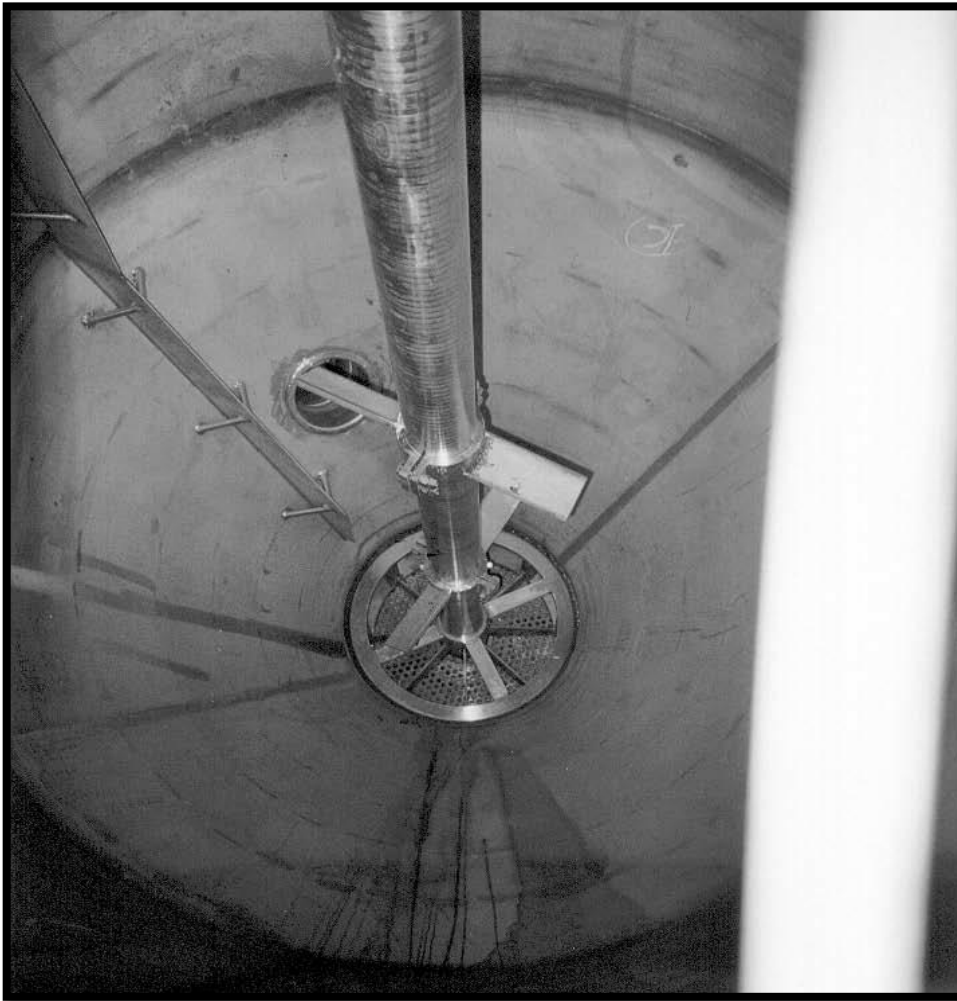
Adhesive preparation – Solvent base



Adhesive preparation – Solvent base



Adhesive preparation – Solvent base



Adhesive preparation – Solvent base



Adhesive preparation plant

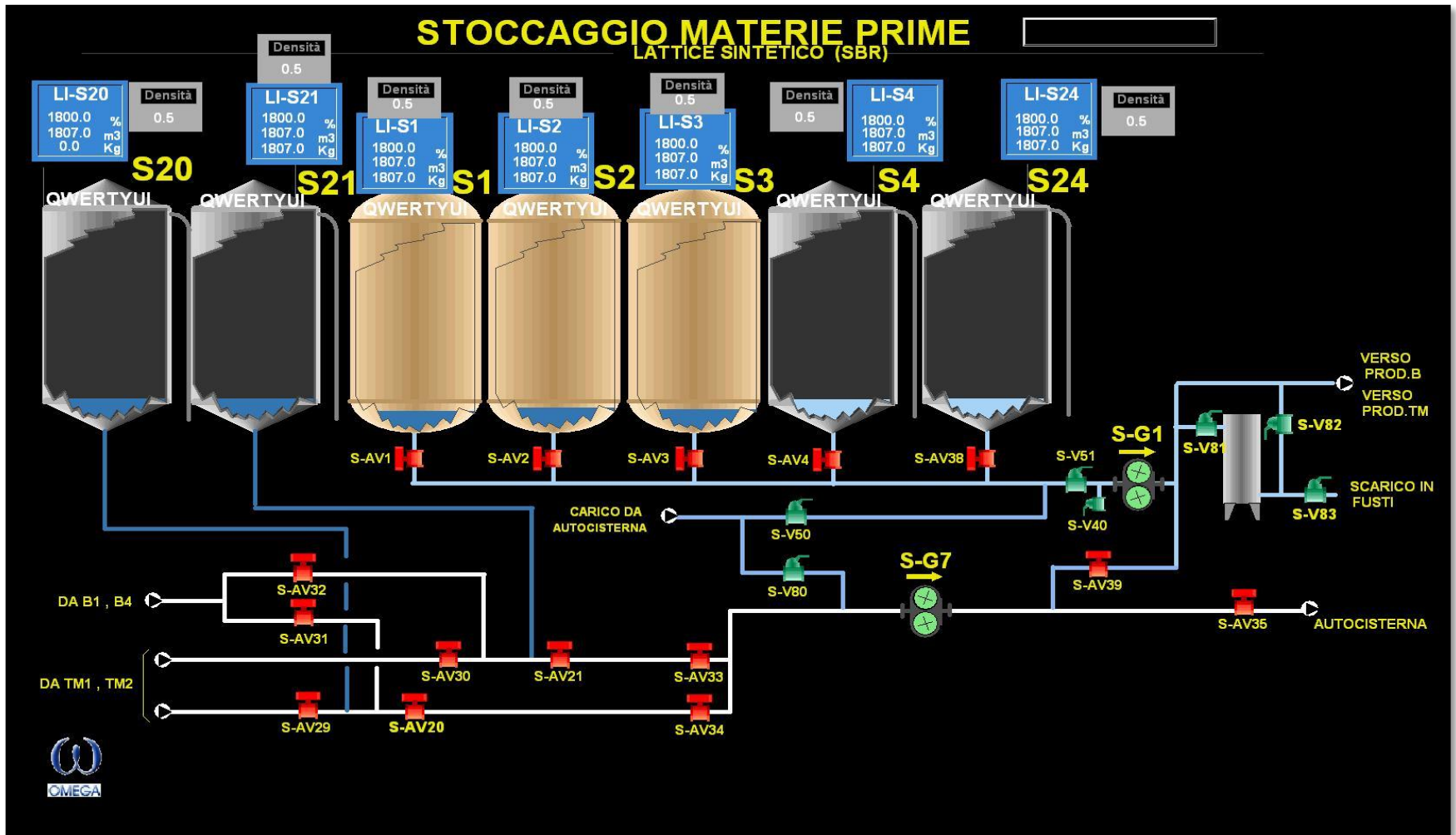
Case study 3

TURN KEY supply:

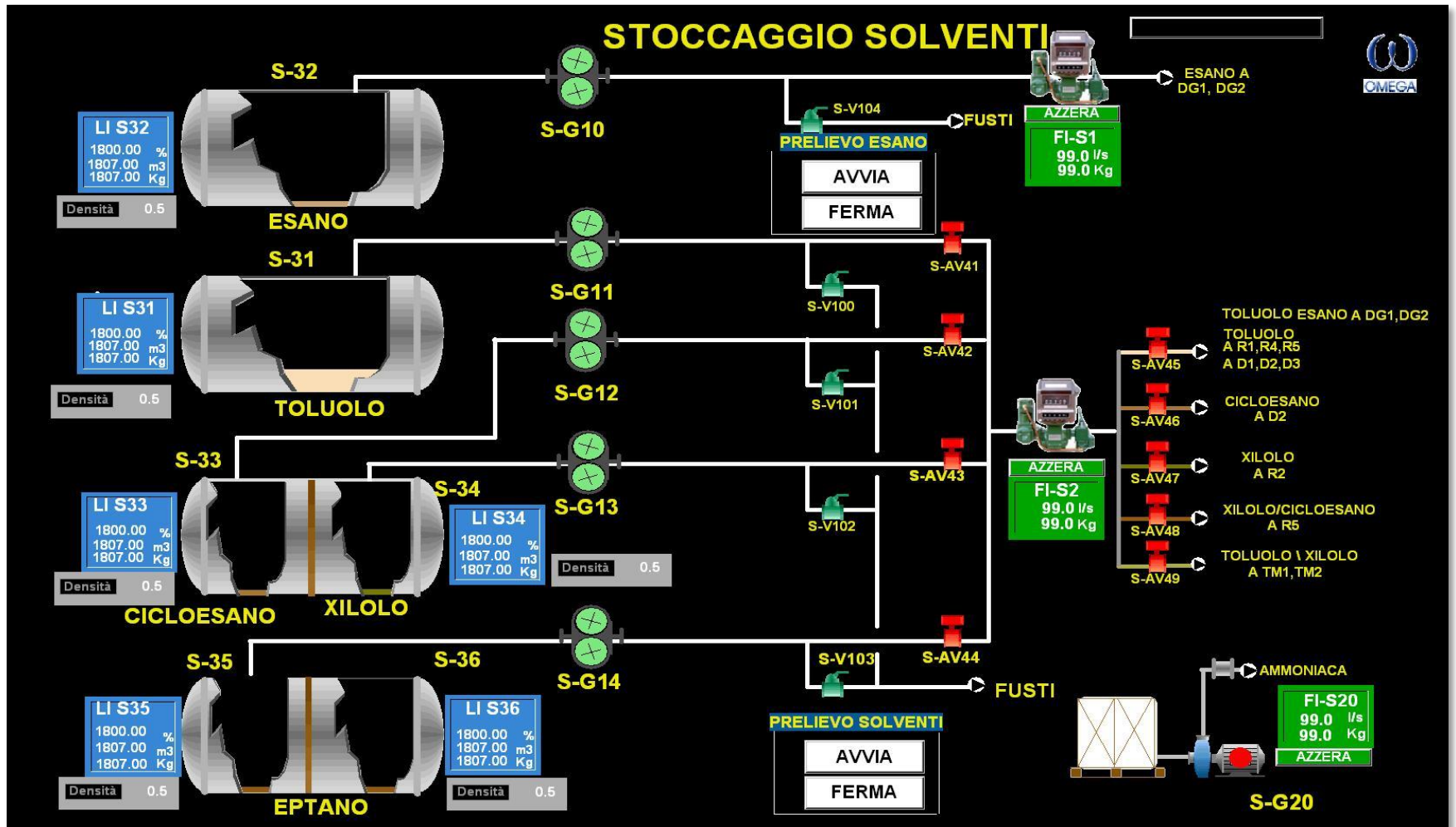
- Nr. 4 tanks for solvent underground; capacity: 20 m³
- Nr. 12 tanks for adhesive; capacity: 20 m³
- Nr. 4 tanks with stirrer for adhesive; capacity: 20 m³
- Nr. 1 mixer for solvent based adhesive; capacity: 5 m³
- Nr. 1 dissolver for natural rubber based adhesive; capacity: 7,5 m³
- Nr. 1 dissolver for natural rubber based adhesive; capacity: 3 m³
- Nr. 1 mixer for water based adhesive; capacity: 1 m³
- Pumps for solvents and adhesive
- Piping, instruments and valves (automatic and manual)
- Rubber granulating system with pneumatic conveyor
- Control and power panel
- Control system with n. 2 operator stations



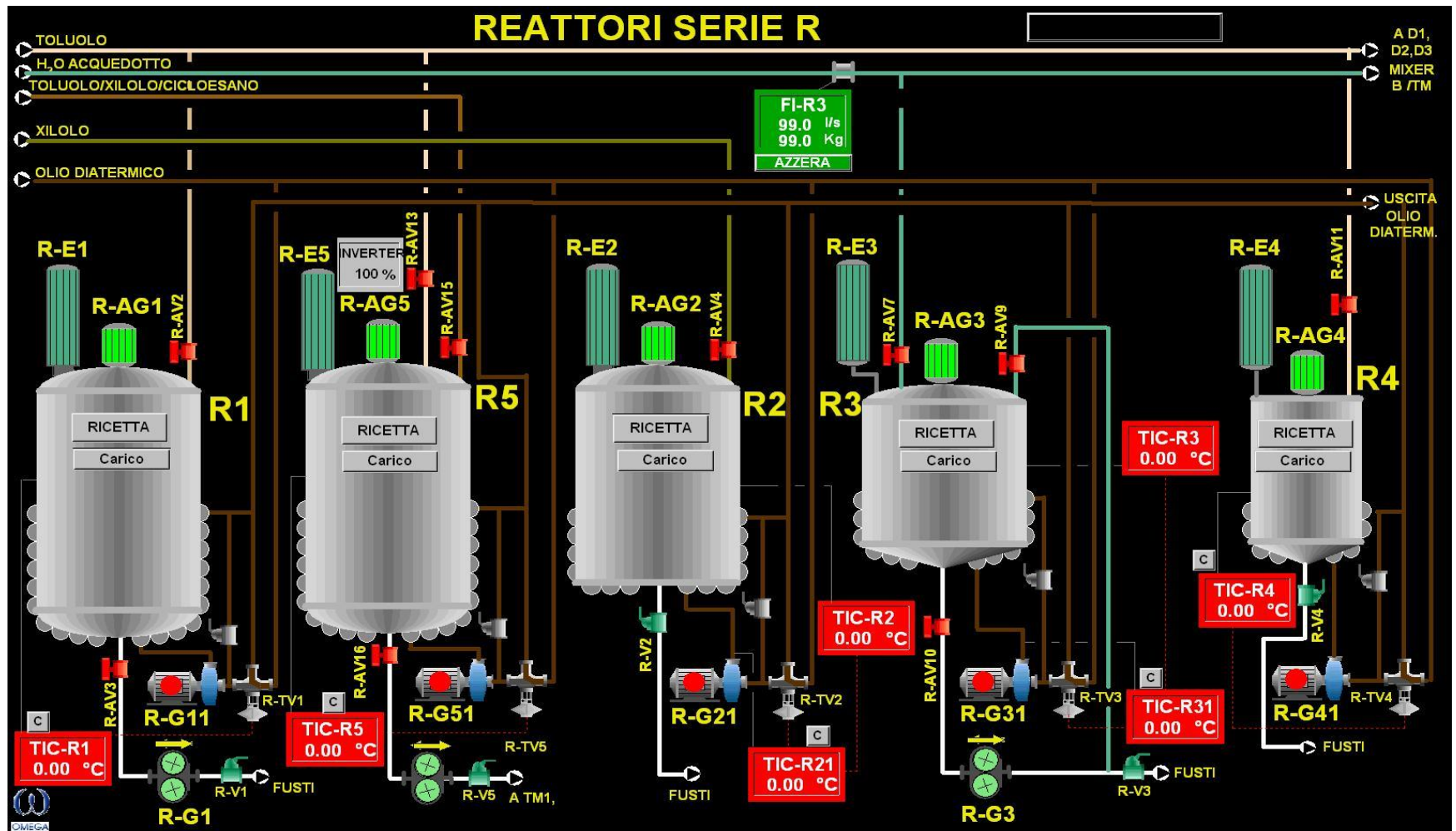
Adhesive preparation plant



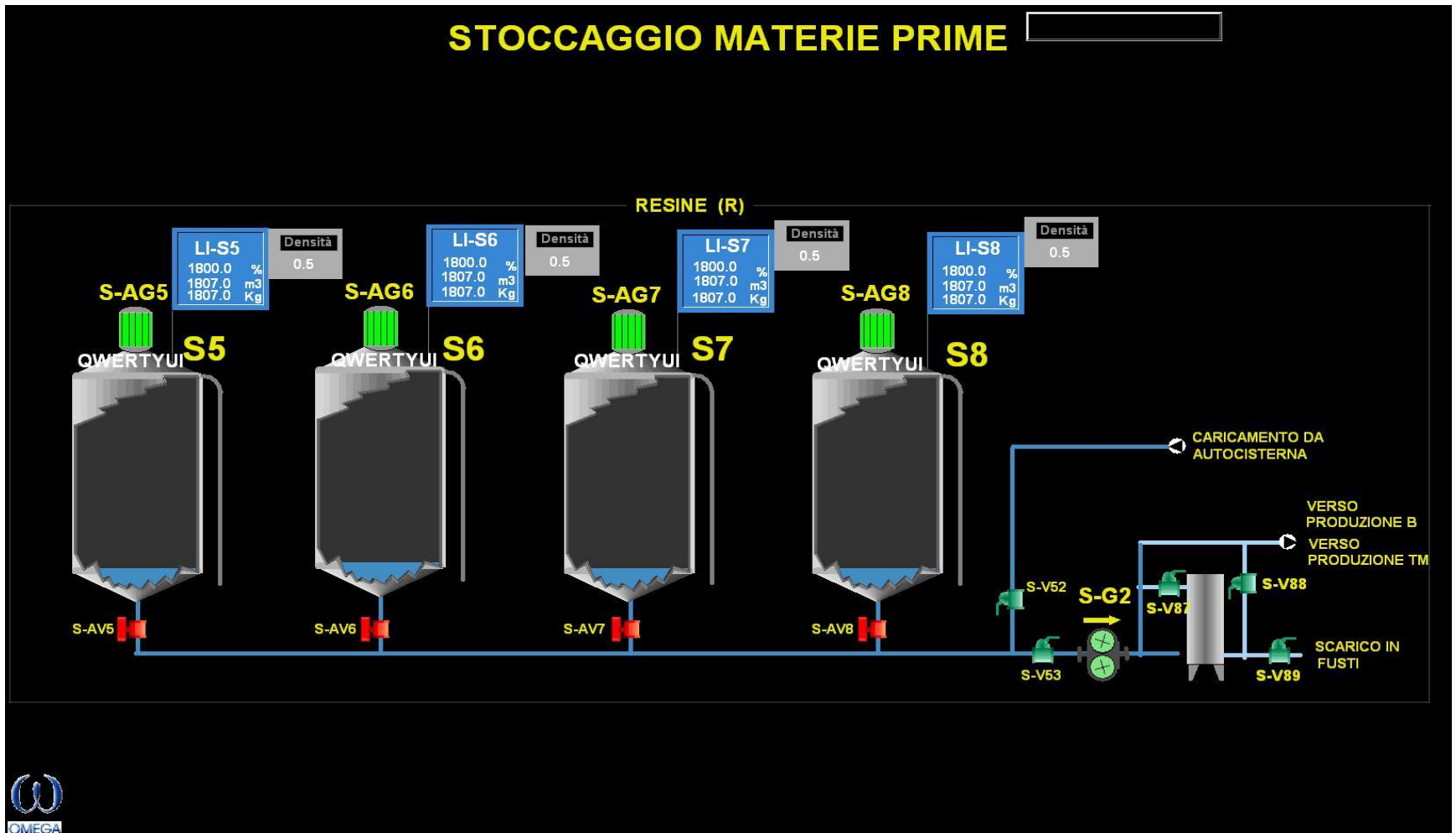
Adhesive preparation plant



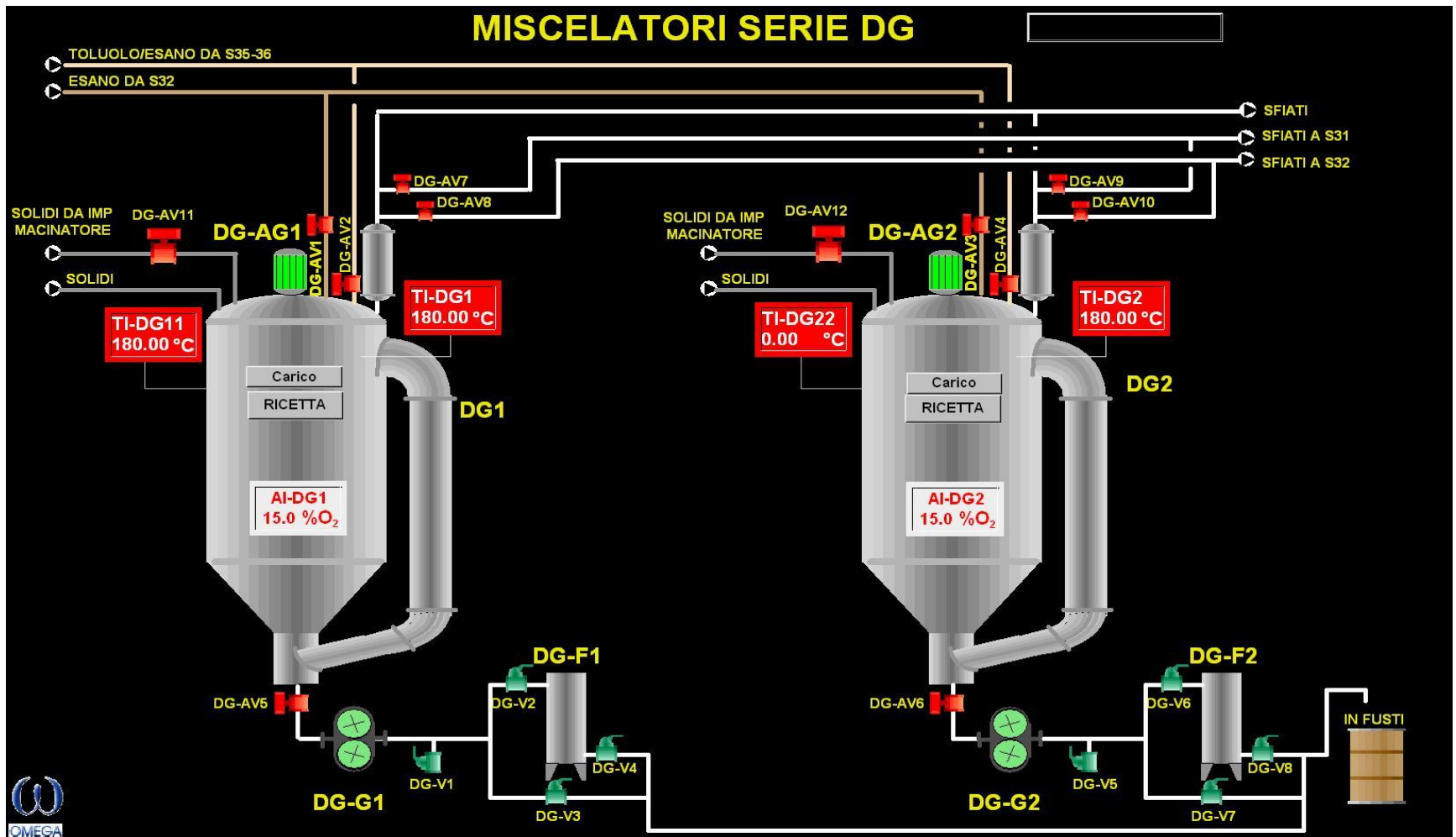
Adhesive preparation plant



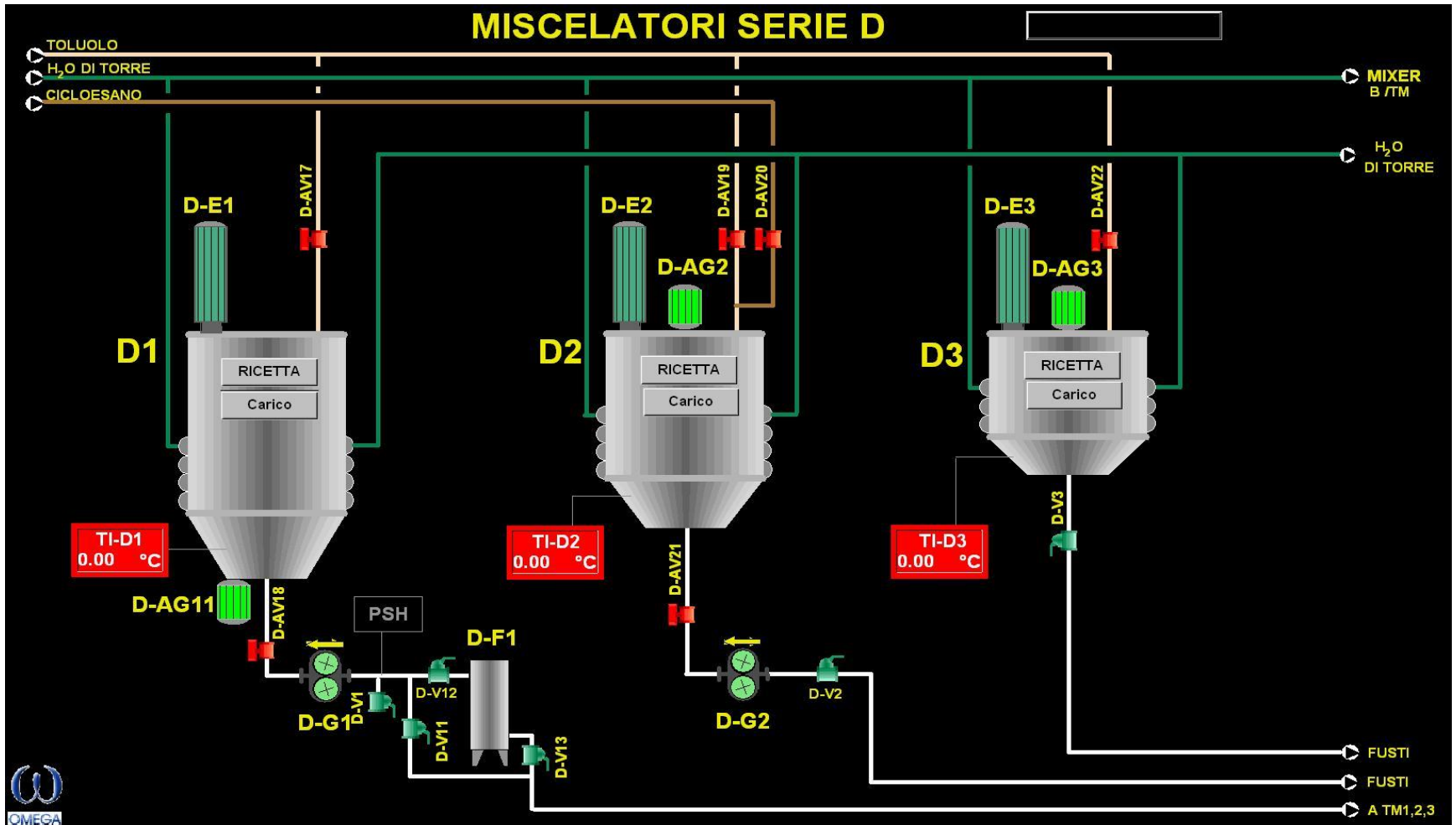
Adhesive preparation plant



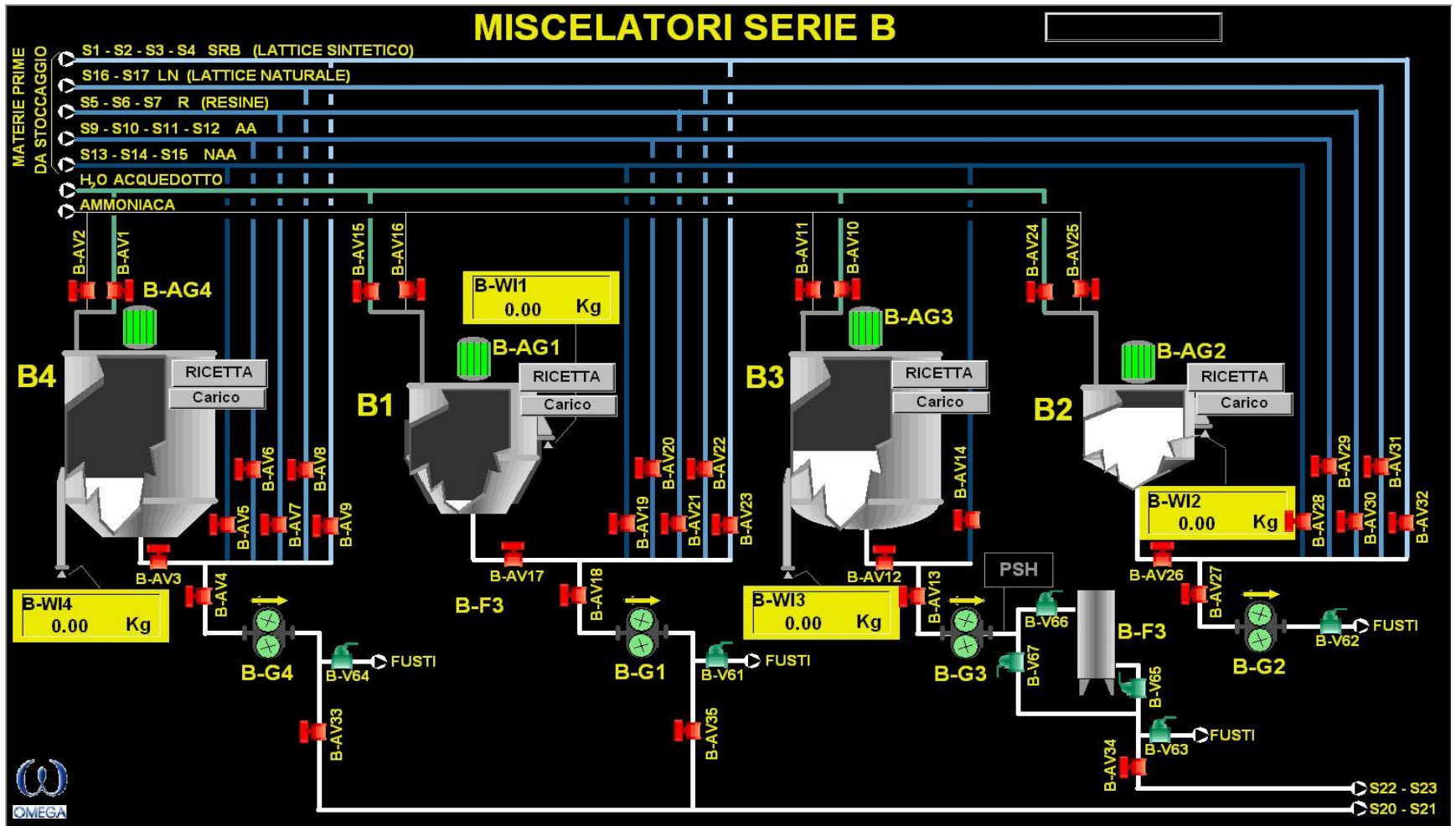
Adhesive preparation plant



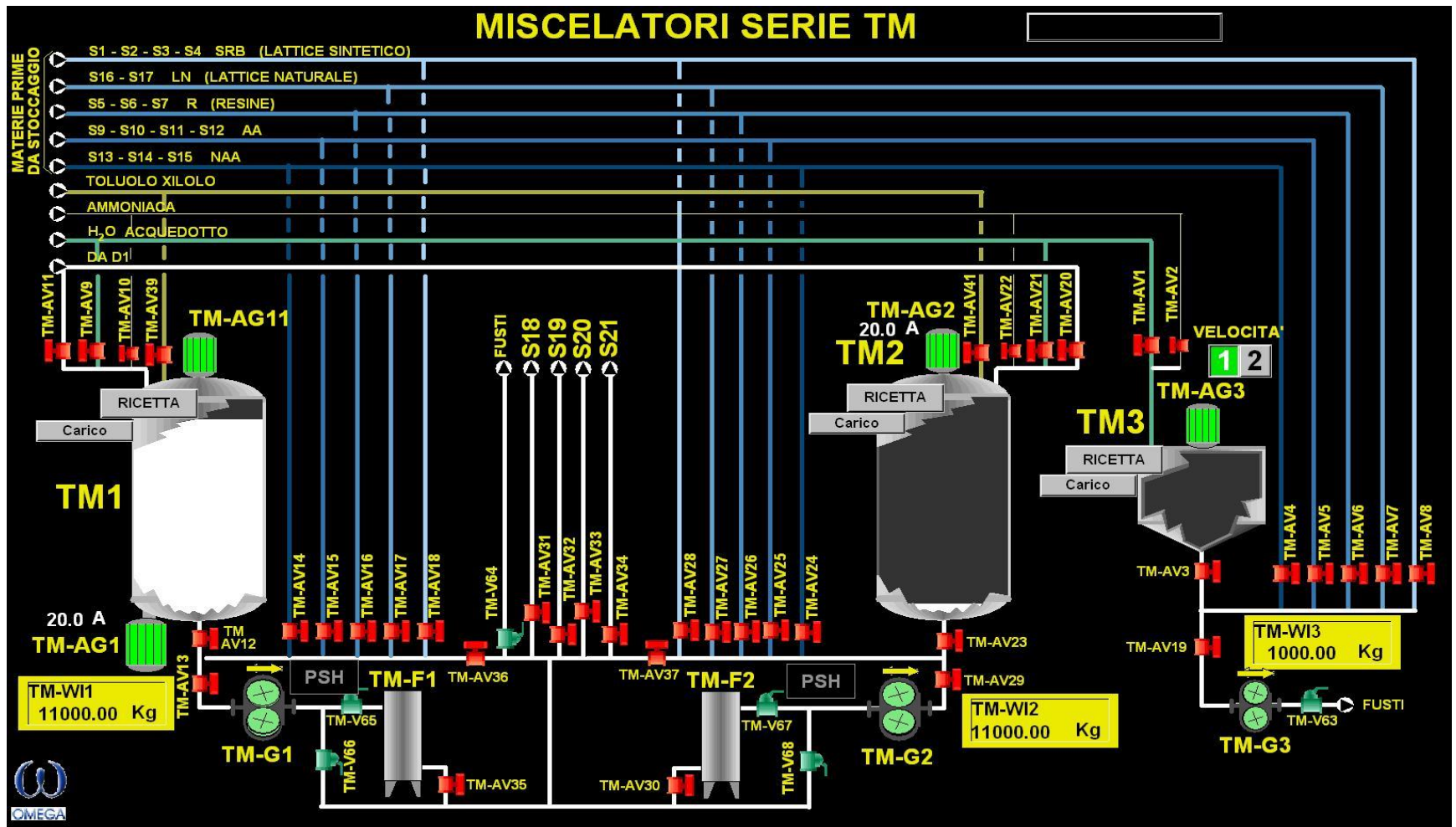
Adhesive preparation plant



Adhesive preparation plant



Adhesive preparation plant



Adhesive preparation plant



Adhesive preparation plant



Adhesive preparation plant



Resins, Maleic and Phthalic Anhydride production plants

Case study 4

SUPPLY of TURN KEY plants for:

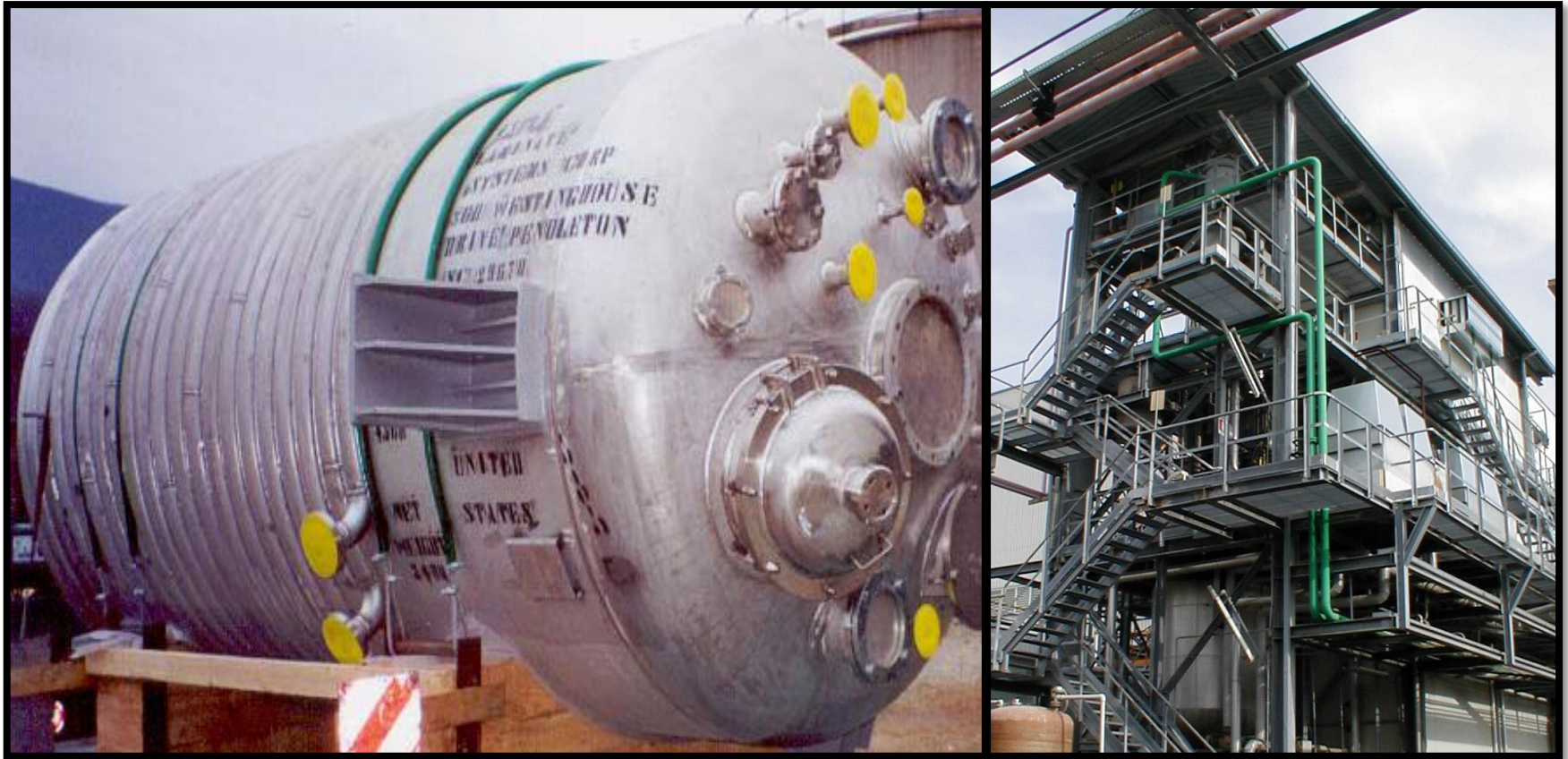
- MALEIC ANHYDRIDE
- PHTALIC ANHYDRIDE

SUPPLY of TURN KEY plants for:

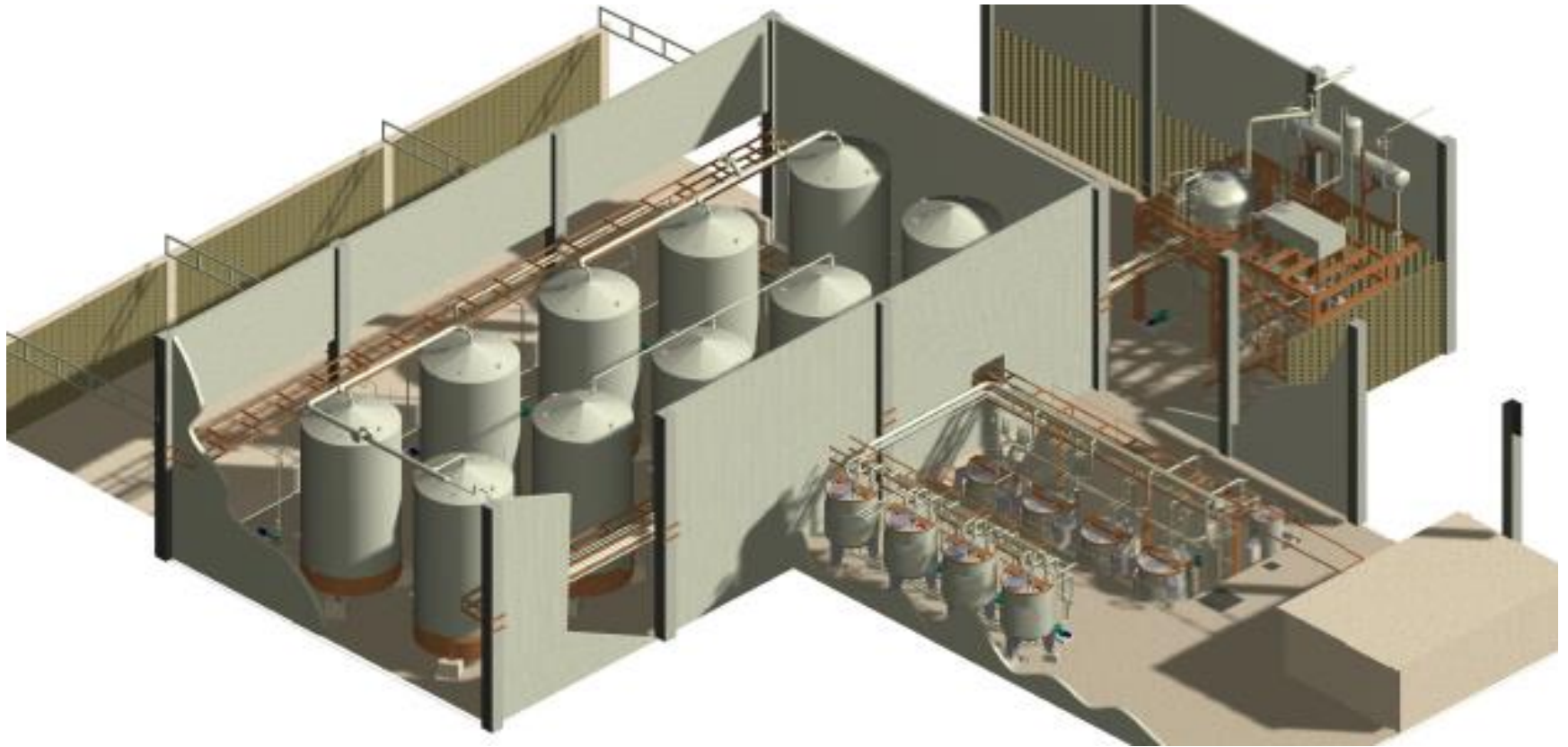
- Polyester resins
- Alkyd resins
- Amino resins
- Acrylic resins
- Epoxy resins
- Polyurethane resins
- CONTROL SYSTEM
- FORMULATIONS according to the final uses
- TRAINING for Clients' operators directly in Resins Producer companies



Resins, Maleic and Phthalic Anhydride production plants



Resins, Maleic and Phthalic Anhydride production plants



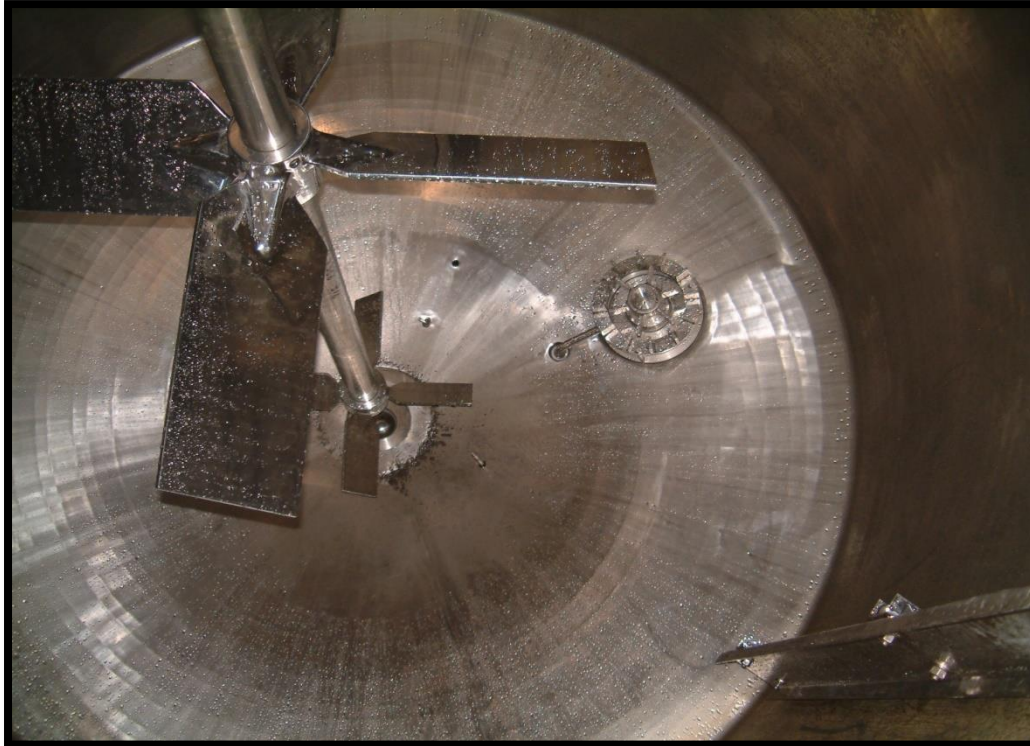
Resins, Maleic and Phthalic Anhydride production plants



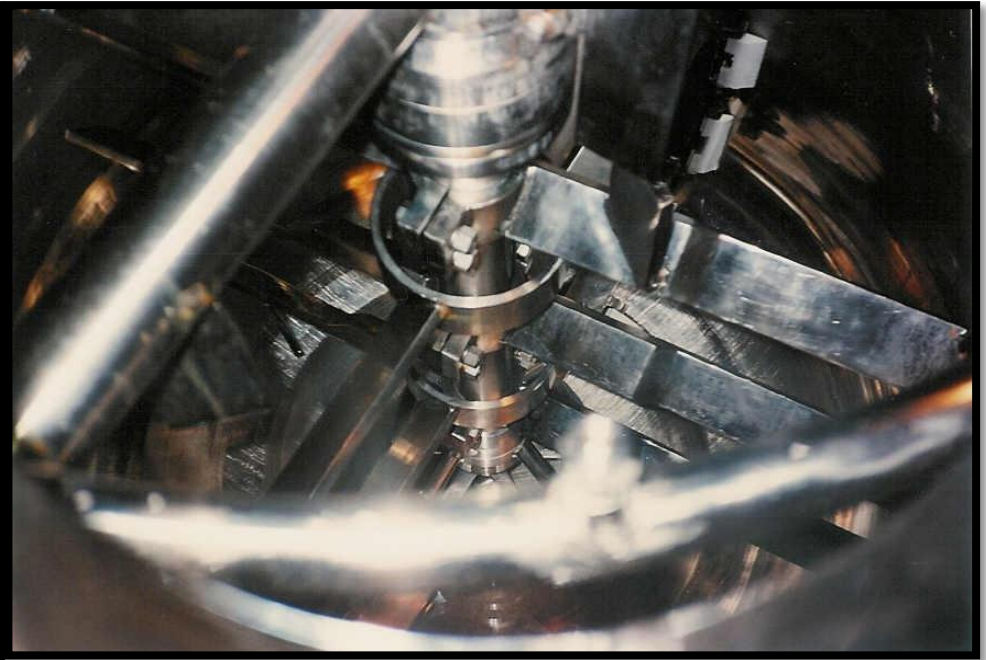
Resins, Maleic and Phthalic Anhydride production plants



Mixing plant for chemical products



Mixing plant for chemical products



PVC paste production plant

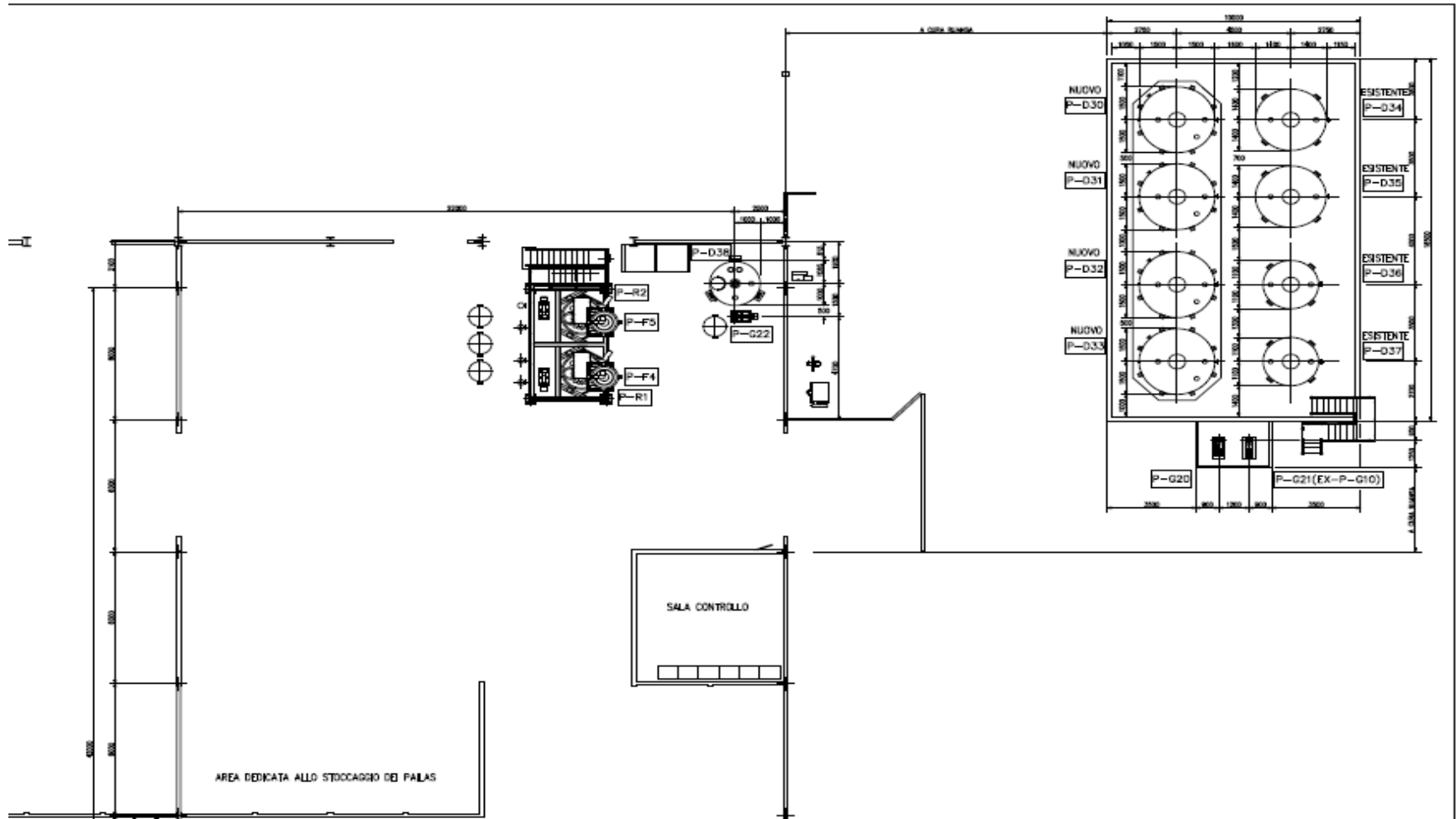
Case study 5

TURN-KEY supply:

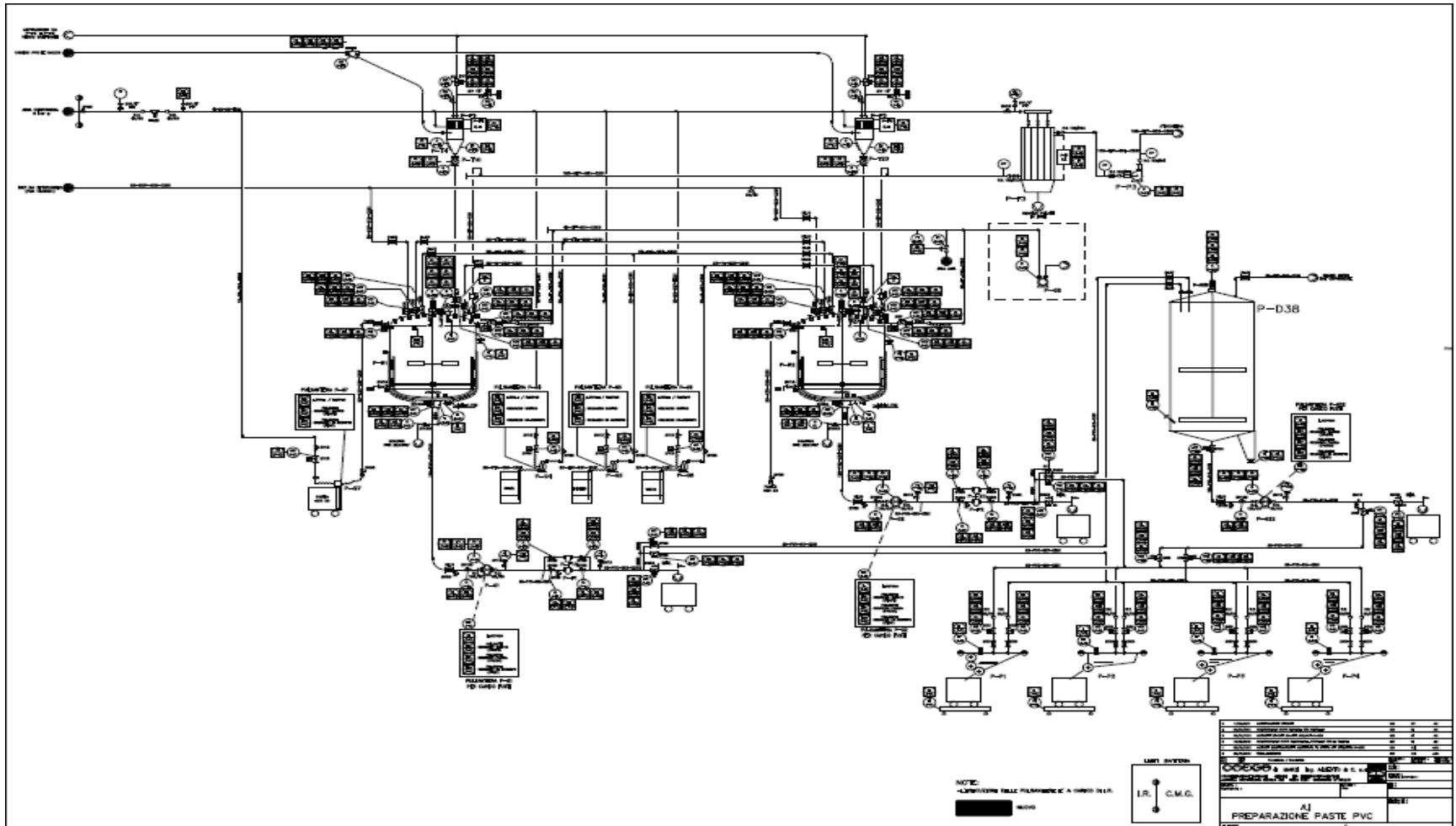
- Nr. 4 tanks for DOP; capacity: 30 m³
- Nr. 4 tanks for powders (CaCO₃ and PVC emulsions); capacity: 30 m³
- Nr. 2 mixers for PVC paste; capacity: 3 m³
- Pumps for DOP and PVC paste
- Pneumatic conveyor for powders from truck to tanks and from tanks to mixers
- Piping, instruments and valves (automatic and manual)
- Control and power panel
- Control system with nr. 2 operator stations



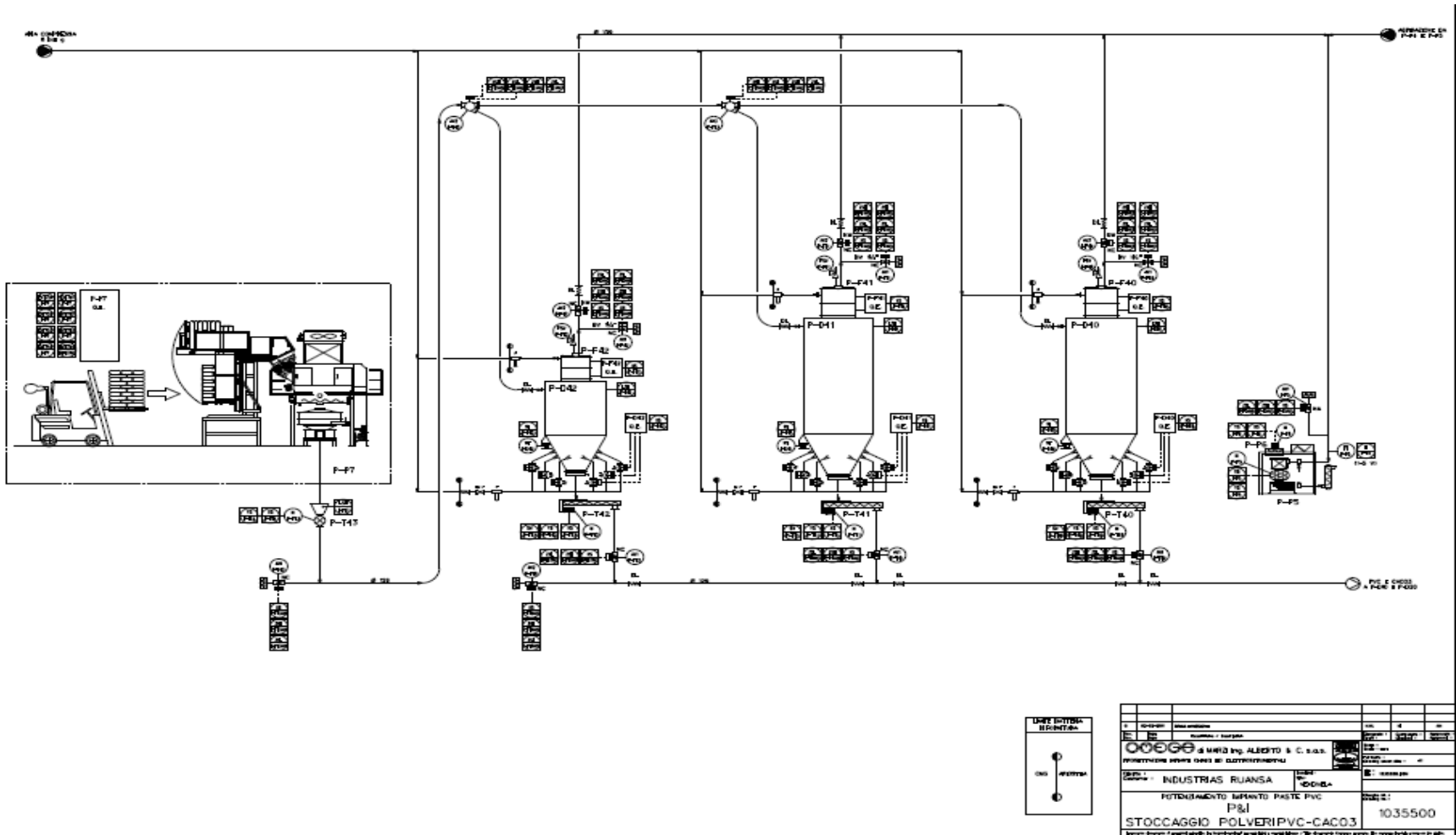
PVC paste production plant



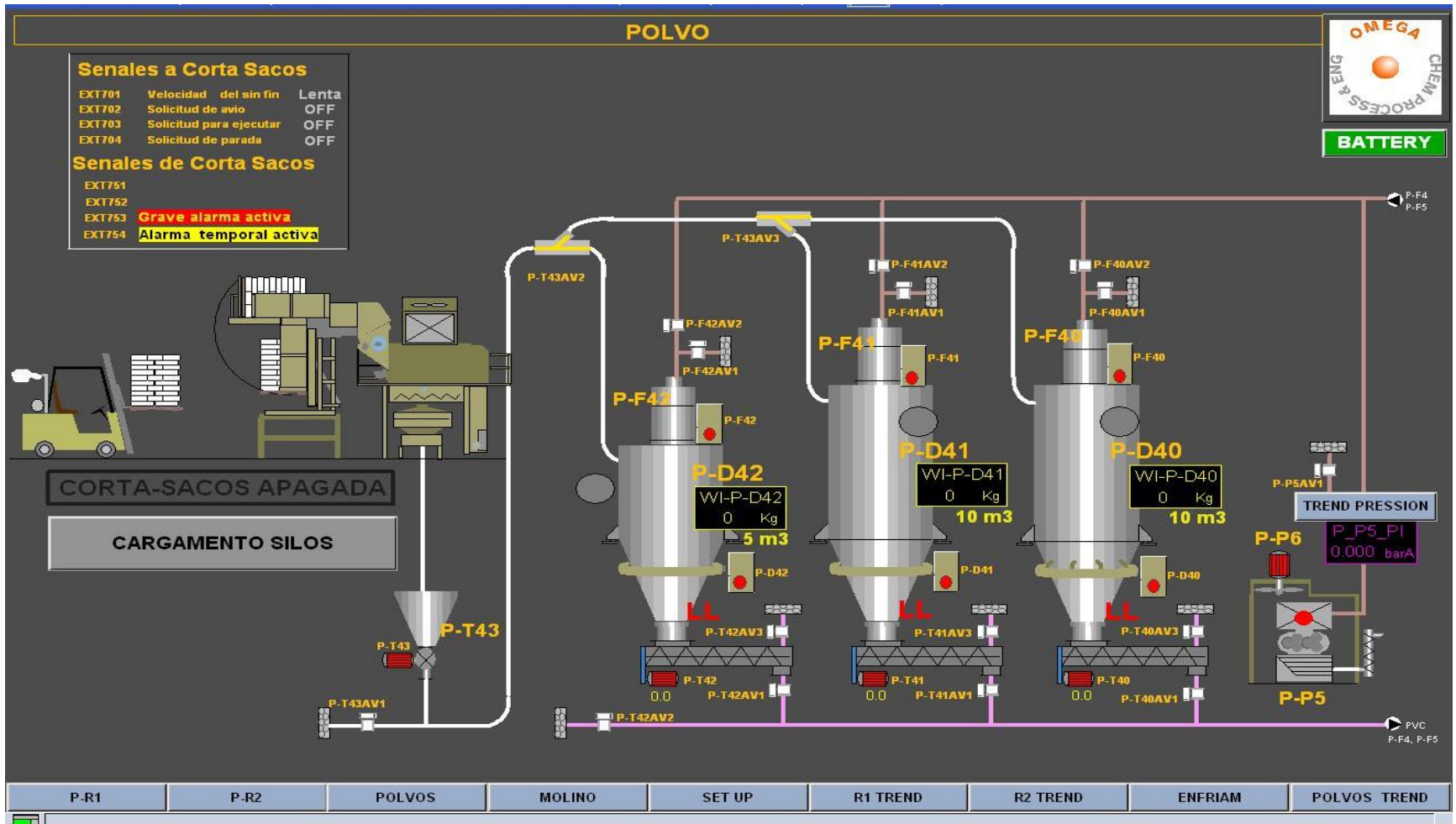
PVC paste production plant



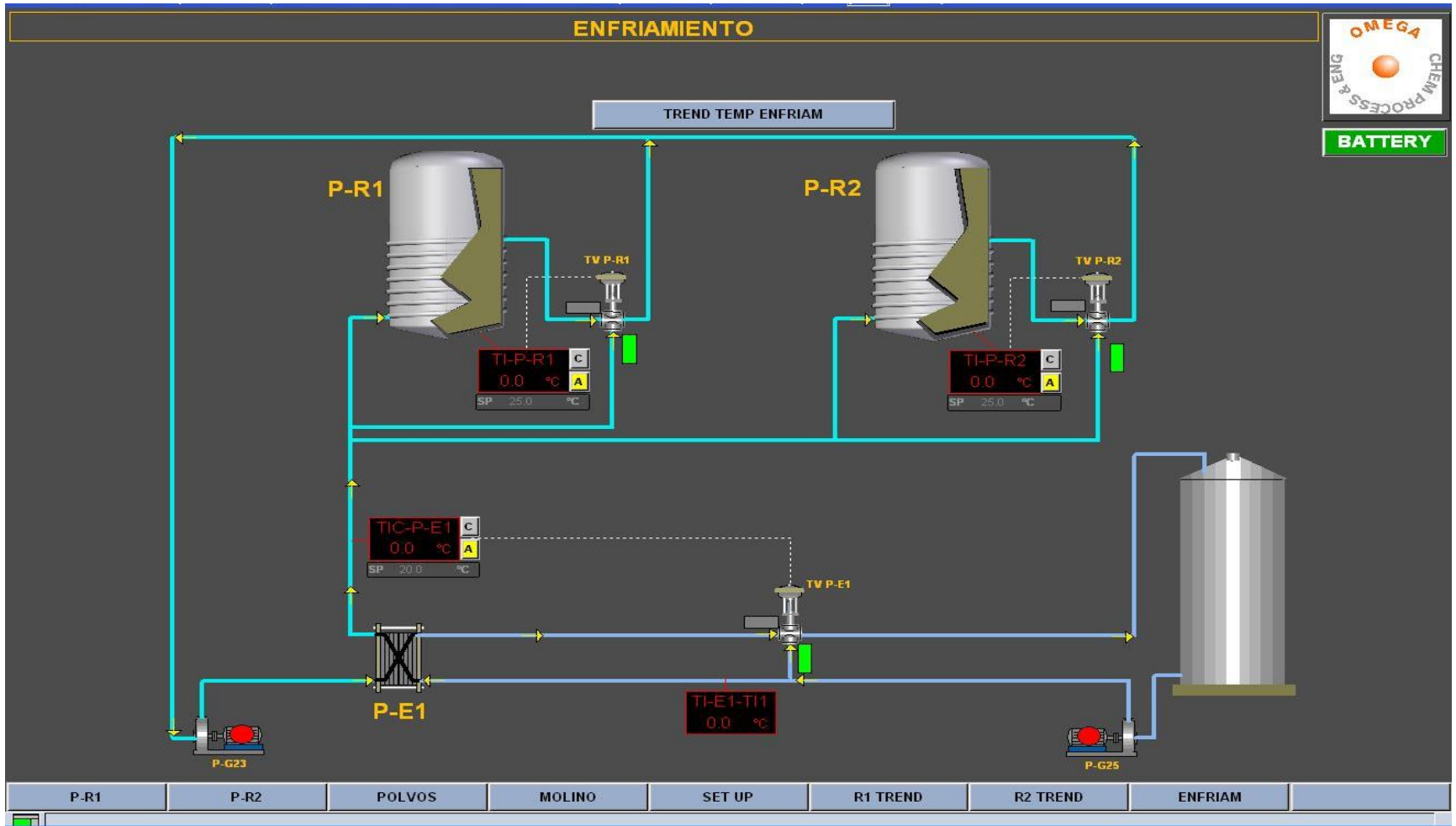
PVC paste production plant



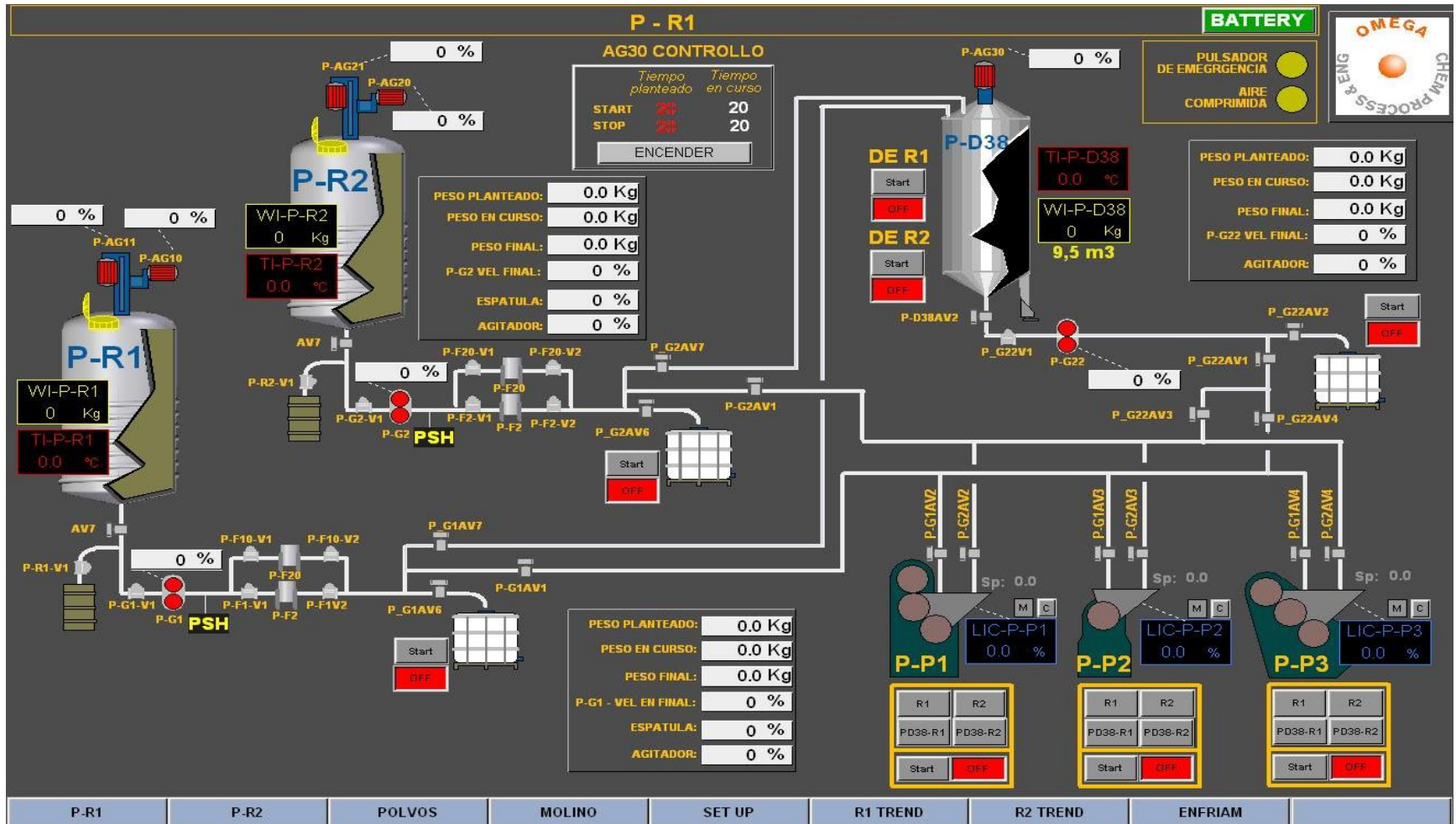
PVC paste production plant



PVC paste production plant



PVC paste production plant



PVC paste production plant

SETUP

CARGAMENTO SILOS

TIMERS

Retraso ante de parar linea al final de la paletta

RANGO	STANDARD	SET	EN CURSO
0-5 min	2 min	05:00	00:00

Retraso ante de parar la valvula de estella

RANGO	STANDARD	SET	EN CURSO
0-1 min	20 sec	00:10	00:00

Retraso ante de abrir valvula PP5 AV1

RANGO	STANDARD	SET	EN CURSO
0-1 min	20 sec	00:10	00:00

Retraso ante de abrir valvula succion Silos

RANGO	STANDARD	SET	EN CURSO
0-1 min	20 sec	00:10	00:00

Retraso senale Fine Paletta a Corta-Sacos

RANGO	STANDARD	SET	EN CURSO
0-1 min	20 sec	00:10	00:00

PESO PALETTA

Peso paletta PVC D-40

RANGO	STANDARD	SET
0-1500 kg	1350 kg	0.0

Peso paletta PVC D-41

RANGO	STANDARD	SET
0-1500 kg	1200 kg	0.0

Peso paletta Carbonato D-42

RANGO	STANDARD	SET
0-1500 kg	1000 kg	0.0

CARGAMENTO MEZCLADORES

TIMERS

Retraso para vaciar linea Silos-Ciclone

RANGO	STANDARD	SET	EN CURSO
0-1 h	3 min	00:10	00:00

Retraso para parar valvula de estella

RANGO	STANDARD	SET	EN CURSO
0-30 min	1 min	00:10	00:00

Depression linea

RANGO	STANDARD	SET	EN CURSO
0-30 min	1 min	00:10	00:00

Retraso para encendir sin fin con P F4 LSH

RANGO	STANDARD	SET	EN CURSO
0-30 min	1 min	00:10	00:00

Retraso para encendir sin fin con P F5 LSH

RANGO	STANDARD	SET	EN CURSO
0-30 min	1 min	00:10	00:10

SIN FIN

Velocidad sin fin T40

RANGO	STANDARD	DEF. BAJA	ALTA	BAJA
0-100%	80 %	20 %	0.0	0.0

Velocidad sin fin T41

RANGO	STANDARD	DEF. BAJA	ALTA	BAJA
0-100%	80 %	20 %	0.0	0.0

Velocidad sin fin T42

RANGO	STANDARD	DEF. BAJA	ALTA	BAJA
0-100%	80 %	20 %	0.0	0.0

PUSH TO OPEN
PUSH TO CLOSE

PUSH TO OPEN
PUSH TO CLOSE

P-R1	P-R2
KG	KG
0.0 COLA CARGAMENTO DE D40	0.0
0.0 COLA CARGAMENTO DE D41	0.0
0.0 COLA CARGAMENTO DE D42	0.0

SP TEMPERATURA MEZCLADORES

25.0	SP IN TIC PR1
25.0	SP IN TIC PR2
20.0	SP IN TIC PE1

T4 APAG	T4 ENC	T3 APAG	T3 ENC
00:00	00:00	00:00	00:00

PERCENTAGE 1° CAMBIO VELOCIDAD SIN FIN

0.0	PERC 1° CAMBIO SIN FIN T42
0.0	PERC 1° CAMBIO SIN FIN T41
0.0	PERC 1° CAMBIO SIN FIN T40

TIEMPO DE DURATION COLAS

Duracion cola PG7 (Pasta ADC)	15	Sec.
Duracion cola PG10 (Plastic.)	15	Sec.
Duracion cola PG4 (Estabiliz.)	15	Sec.
Duracion cola PG5 (Kicker)	15	Sec.
Duracion cola PG6 (Visco)	15	Sec.

POLVO IN MANTENIM

ACEPTAR

P-R1

P-R2

POLVOS

MOLINO

SET UP

R1 TREND

R2 TREND

ENFRIAM



PVC paste production plant



PVC paste production plant



Chemicals production plant for the surface treatment for stone materials

Case study 6

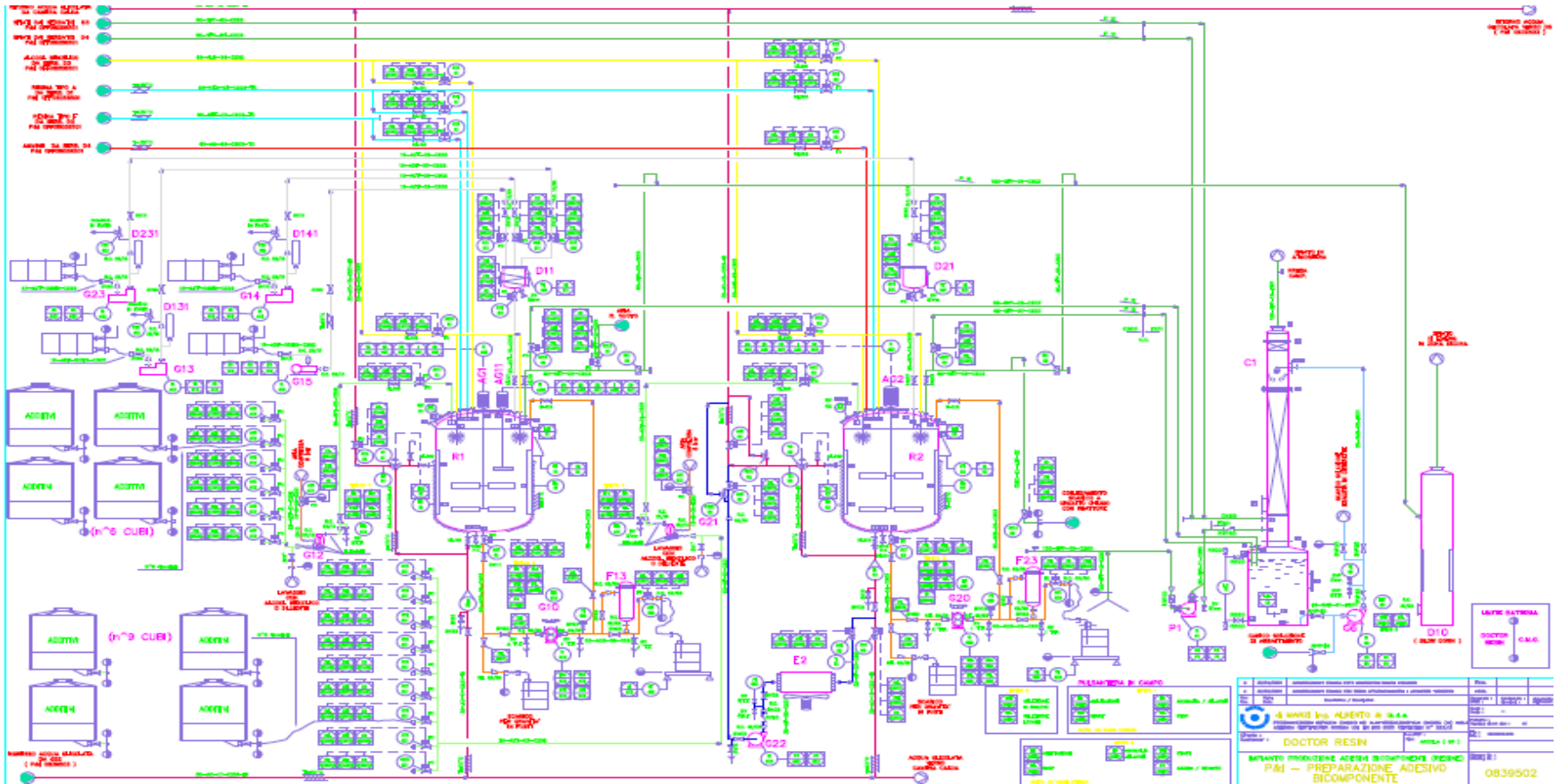
TURN KEY SUPPLY

The plant consists of the following devices:

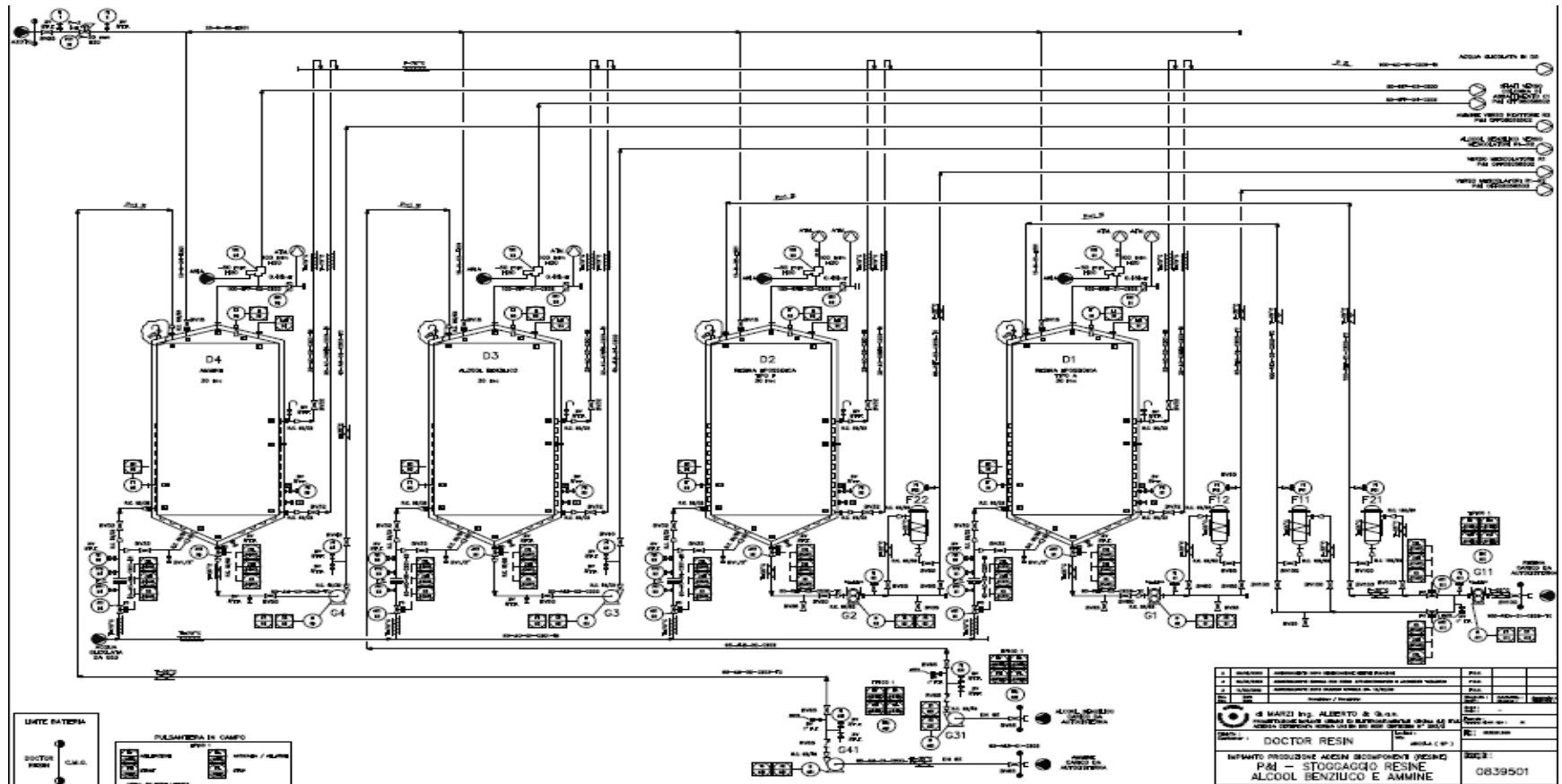
- N° 2 reactors (base component and hardener)
- Storage tanks for raw materials
- Heated storage tanks for raw materials
- Hot room to storage material
- Abatement system for vents
- Instrumentation, pumps a
- Automatic control system



Chemicals production plant for the surface treatment for stone materials



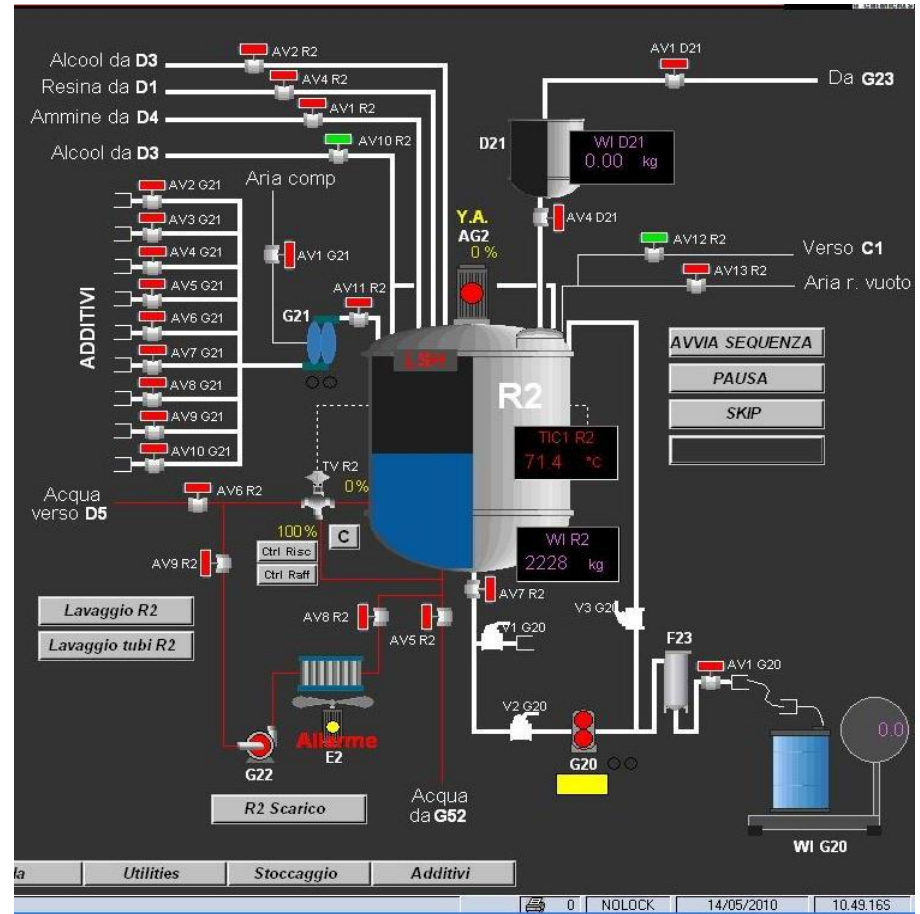
Chemicals production plant for the surface treatment for stone materials



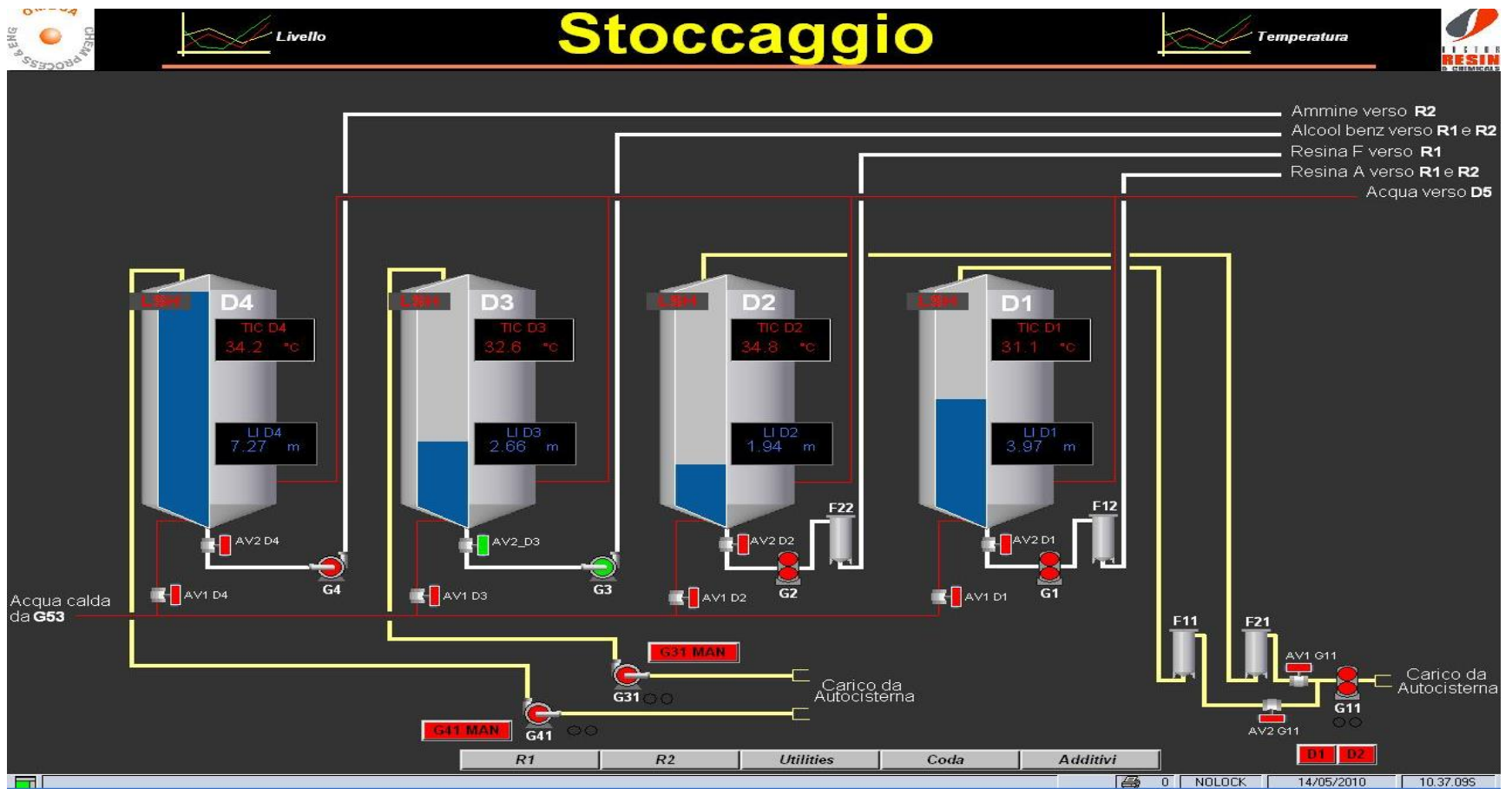
Chemicals production plant for the surface treatment for stone materials



Chemicals production plant for the surface treatment for stone materials



Chemicals production plant for the surface treatment for stone materials



Solvent storage tanks



Solvent storage tanks



Solvent storage tanks



thank you



Termomeccanica Industrial Process

Termomeccanica Group

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