

MINERALI



INDUSTRIALI



ENGINEERING

# MTC

# MINERALS TREATMENT CENTER

A BRIEF INTRODUCTION





# Description

**MINERALI INDUSTRIALI ENGINEERING (MIE) HAS COMPLETED THE CONSTRUCTION OF ITS INNOVATIVE MINERALS TREATMENT CENTER (MTC).**

MTC is a facility that reproduces on a small scale various industrial treatment processes such as crushing, screening, milling, washing, magnetic separation, gravitational separation, flotation, etc.....

This facility is located in Masserano (BIELLA) - Italy, within the heart of the research center of the Minerali Industrial Group and it is 100% dedicated to tests and treatments research for MIE customer.

**MTC CAN BE USED FOR BOTH MINERALS TREATMENT & WASTE RECOVERY PROCESSES**



# Why MTC?

MIE IS PERFORMING TESTS AT LAB SCALE AND INDUSTRIAL SCALE.

- **Lab scale tests** are inexpensive, they require a small amount of samples and they can ensure no contamination during the process; however they cannot completely simulate industrial scale processes and they have limitation in terms of representativeness due to the small amount handled.
  - **Industrial tests** are obviously representative of the process, but they are expensive and require a huge amount of raw material (20-50 tons).
- ➔ **MTC solution** represents the best match between these two way of testing: it can guarantee the representativeness of the results applying an industrial-type process on a consistent quantity of sample but lowering the costs and minimizing the risk of contamination.



# How does it work?

- ✓ MTC is very **flexible**: the sequence of treatments can be easily varied according to the customer's request.
- ✓ It is possible to treat samples **from a minimum of 100 kg to a maximum of 2 tons**.
- ✓ The throughput can vary **from 200 to 1,000 kg/h**.
- ✓ MTC consists of **several treatment modules** grouped into three treatment areas.

## MTC INCLUDES 3 TREATMENT AREAS:



# 1. Crushing & First Screening Area

THREE INDEPENDENT MODULES PERFORMED WITH DEDICATED INDUSTRIAL SCALE MACHINERIES.



*Various types of crushers*



*Various types of primary mills (impact, roll, etc..)*



*Various types of screens*

## **MODULE 1C**

FIRST CRUSHING

Input : < 250 mm Ø - Output: 0 ÷ 20 mm Ø

SECONDARY CRUSHING WITH CONTROL SCREEN

Input : < 30 mm Ø - Output : 0 ÷ 5 mm Ø

## **MODULE 2C**

GRANULATION

Input: 0 ÷ 5 mm Ø

Output: 0 ÷ 0.6 mm Ø

## **MODULE 3C**

COARSE SCREENING

(1 ÷ 5 mm Ø nets)

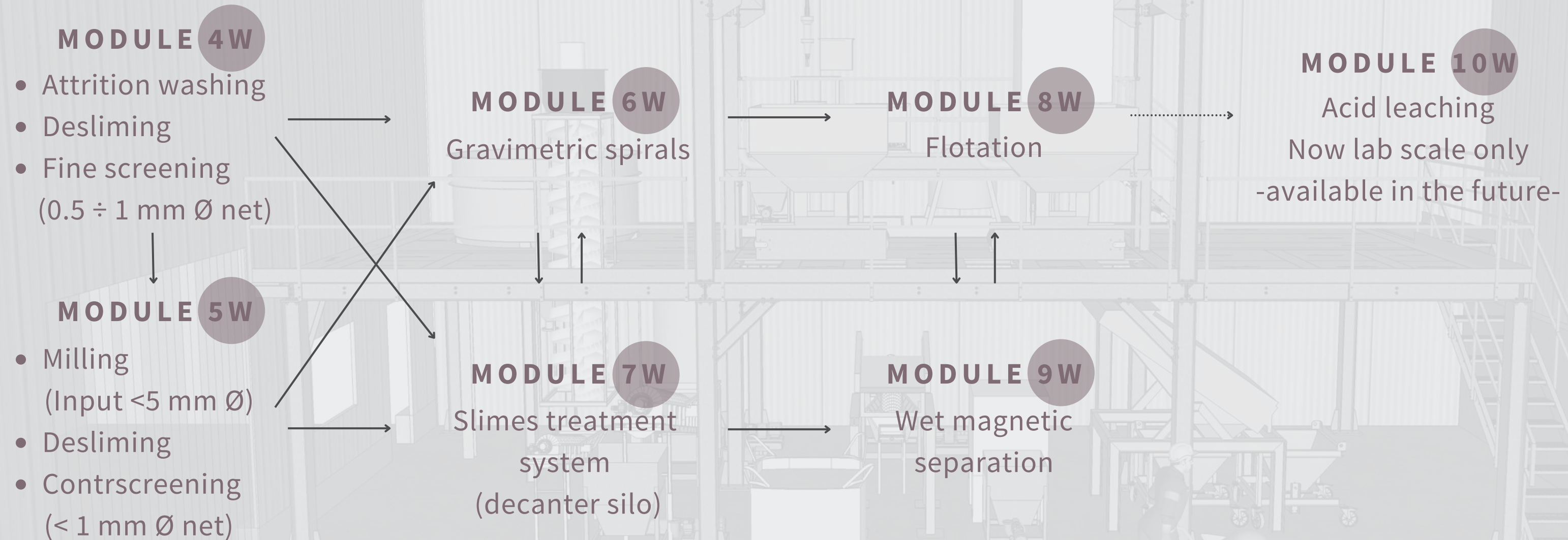




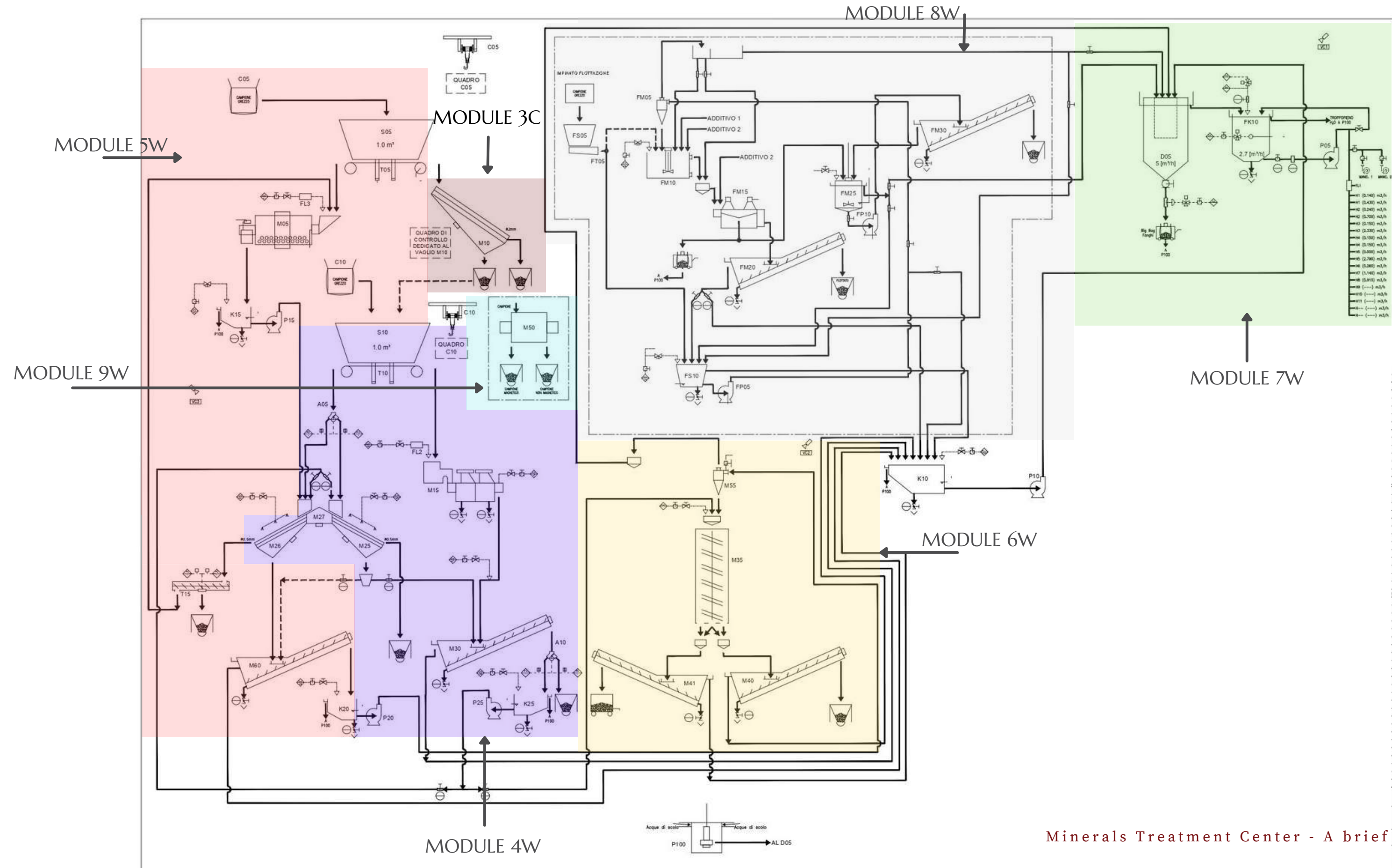
# 2. Wet Treatment Area

WET TREATMENT AREA INCLUDES THE FOLLOWING PROCESS MODULES.

EACH MODULE IS ENCLOSED IN A SINGLE CONTINUOUS LINE BUT CAN BE EASILY BYPASSED IF NECESSARY.



# Flow Sheet WET TREATMENT AREA



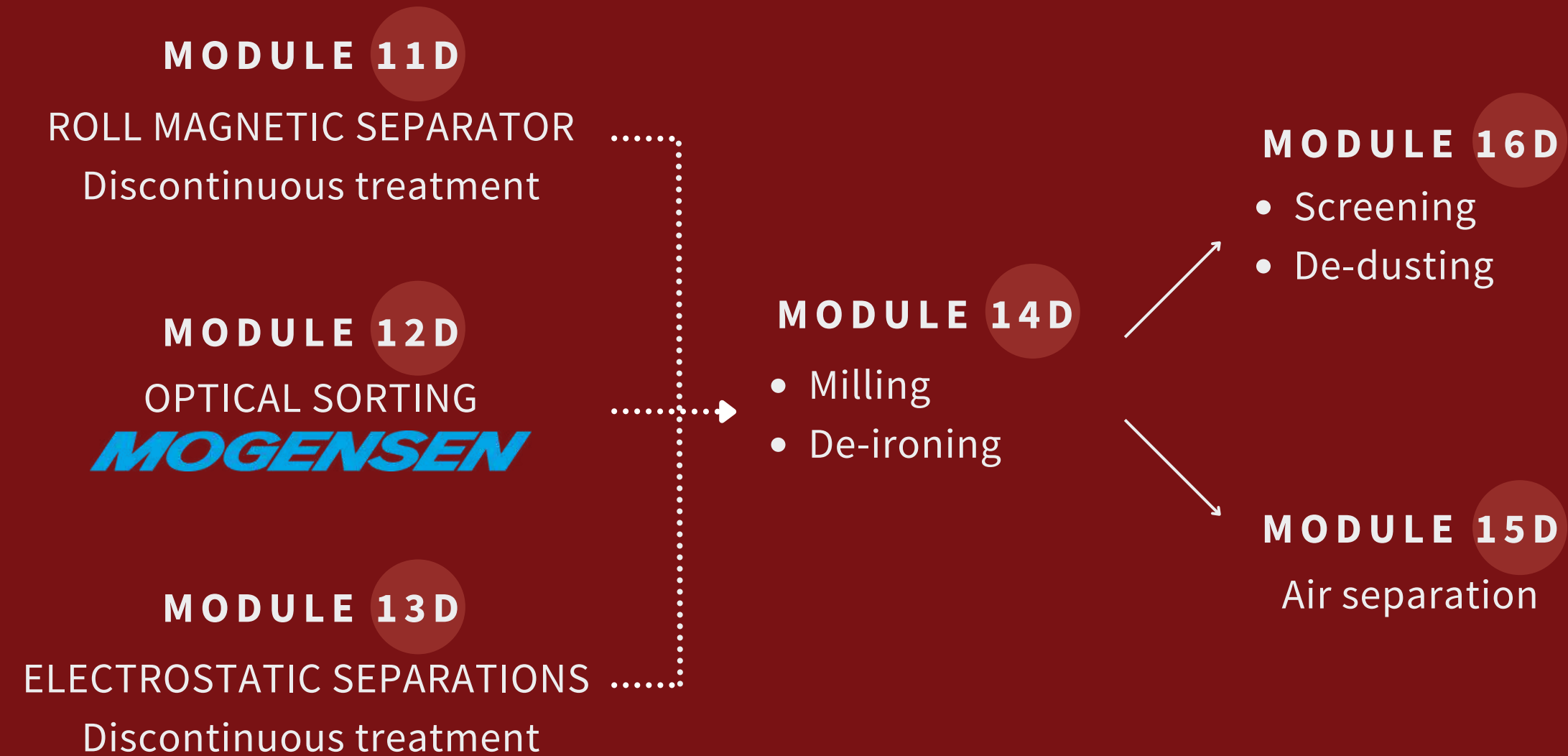


# 3. Dry Treatment Area



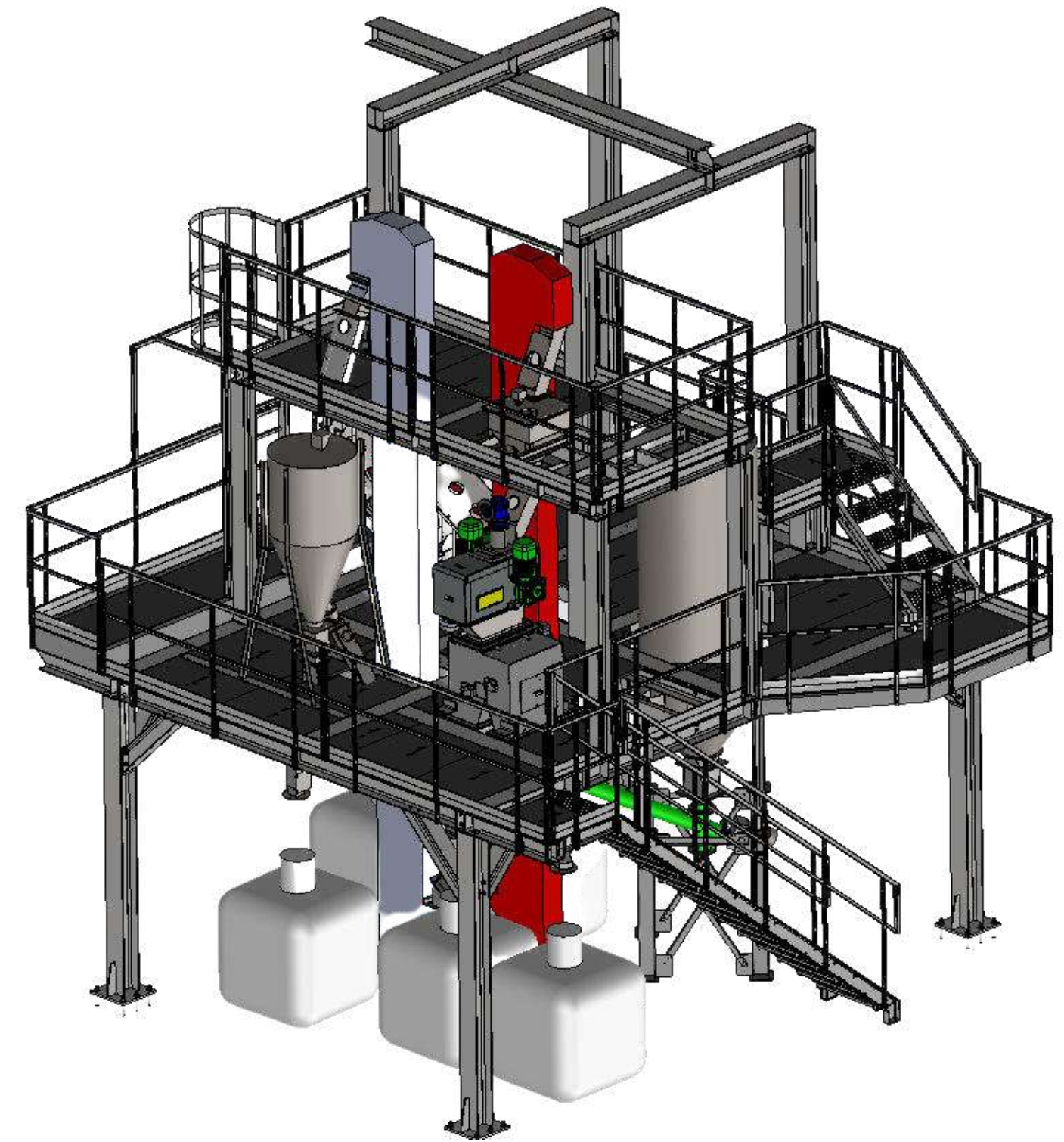
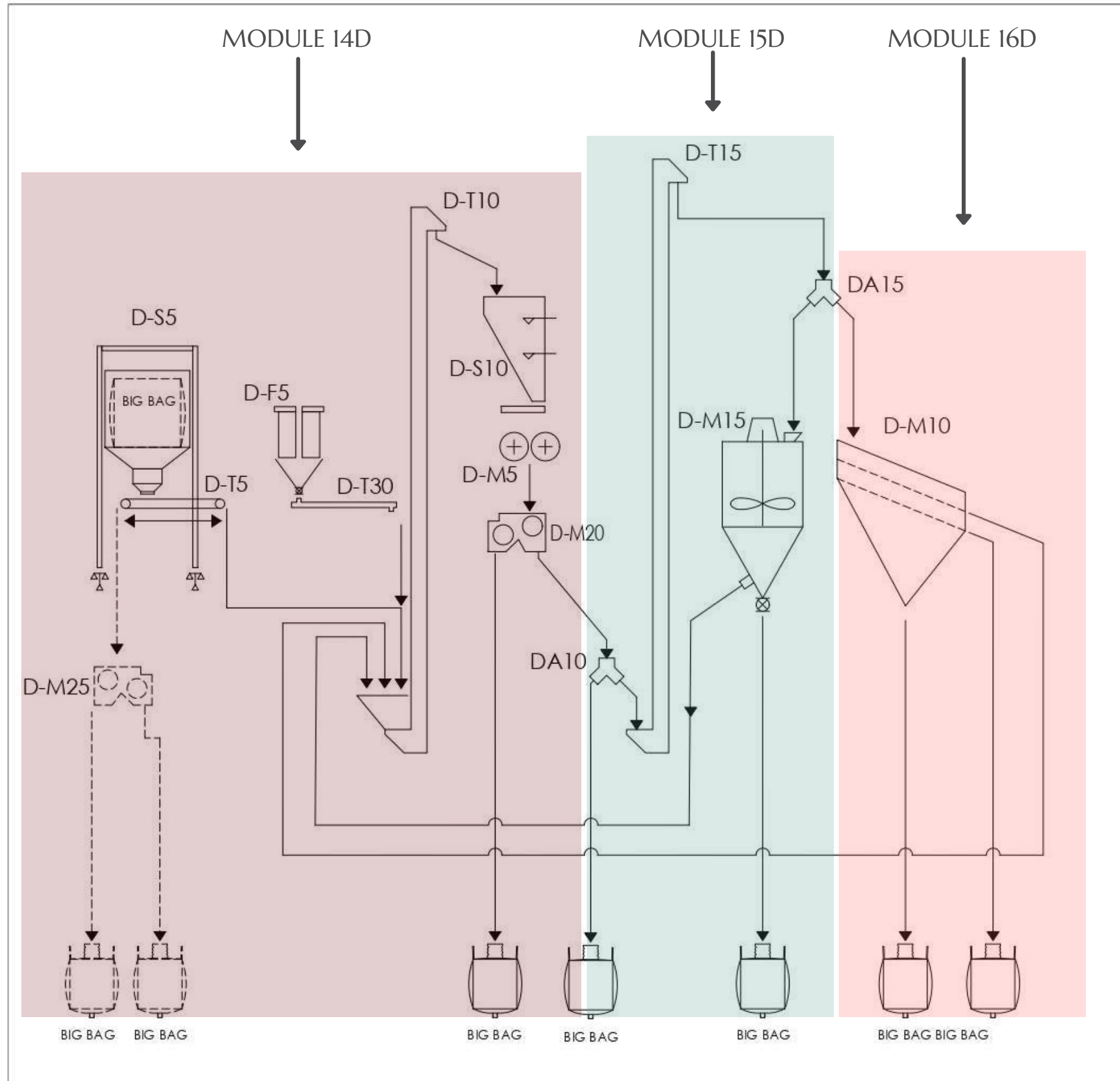
DRY TREATMENT AREA INCLUDES THE FOLLOWING PROCESS MODULES.

EACH MODULE IS ENCLOSED IN A SINGLE CONTINUOUS LINE BUT CAN BE EASILY BYPASSED IF NECESSARY.





# Flow Sheet DRY TREATMENT AREA





# Our offer

MTC WAS DESIGNED AS A COMPLETE TREATMENT SOLUTION FOR THE CUSTOMER, INCLUDING THE FOLLOWING STEPS:

- ✓ **Laboratory prescale test** to find the better treatment setup.
- ✓ **MTC Test Report** including:
  - a) analysis of raw materials, intermediate & final products (chemical, grainsize, etc.);
  - b) determination of yields, energetic costs per tons and mass flow definition for each process.
- ✓ **Basic engineering** for the industrial plant and its approximate investment budget estimate.



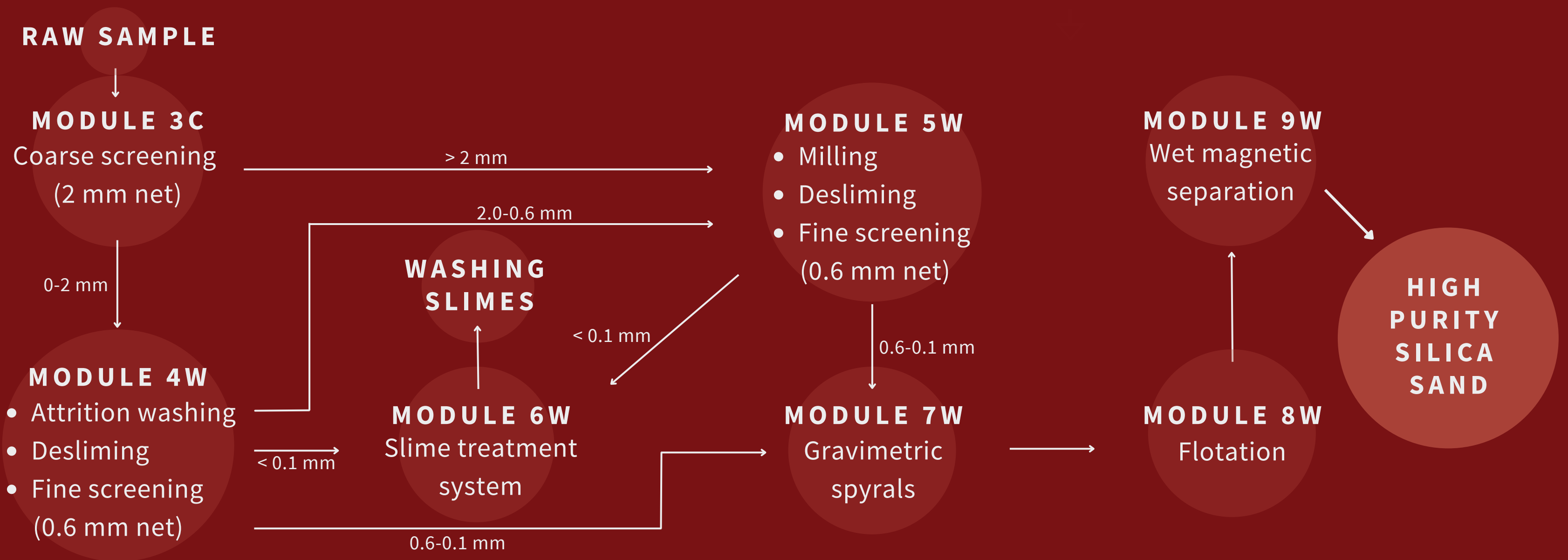
**If the customer is interested in proceeding with the project, MIE suggests to validate the entire Flow Sheet on an industrial scale.**



# Example of MTC application: low purity silica sand

➔ **INPUT: SILICA SAND WITH PERCENTAGES OF CLAY, FELDSPAR AND MICA TO BE REMOVED.**

➔ **GOAL: HIGH PURITY SILICA SAND FOR GLASS APPLICATION.**







**MTC**

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