CENTRO DE INOVAÇÃO E TECNOLOGIA SENAI

INSTITUTO SENAI DE INOVAÇÃO PROCESSAMENTO MINERAL

TESTING PORTFOLIO

Mineral Processing

Recognition and Certifications

LABORATORY QUALITY MANAGEMENT SYSTEM (ABNT NBR ISO/IEC 17025)

Quality Management System for Laboratories, in compliance with the requirements of ABNT NBR ISO/IEC 17025, promoting excellence in analytical services, ensuring consistent results, impartiality, and confidentiality.

Under certification:

ABNT NBR ISO 9001

Quality Management System: an international certification that reflects CIT's commitment to implementing a robust and effective quality management system, aligned with global best practices.

The SENAI Institute of Innovation in Mineral Processing (ISIPM) is a center of excellence focused on technology and sustainable innovation for the mineral sector.

To this end, ISIPM has a highly specialized laboratory infrastructure comprising:

Sample Preparation Laboratory
Mineralogical and Petrographic Characterization Laboratory
Flotation, Dispersion, and Flocculation Laboratory
Gravity Concentration and Dense Media Laboratory
Magnetic and Electrostatic Separation Laboratory
Process Control and Physical Characterization Laboratory
Comminution and Classification Laboratory
Extractive Metallurgy and Materials Laboratory
Pilot Plant for Mineral Process Scale-Up

Tests

TEST	METHOD
Sample Preparation by Pulverization	In-House Method
Drying Test	
Sample Homogenization and Splitting in Stacker (100 kg to 30 tonnes)	
Particle Size Analysis, Wet/Dry	
Large-Volume Screening, Wet/Dry	
Ore Washing in Trommel	
True Density Determination	Method using Helium Stereopycnometer/Conventional Pycnometer
Particle Size Distribution Test using the Cyclosizer	In-House Method
Bulk Density Determination	
Moisture Determination	ABNT NBR 16079
Laser Particle Size Analyzer	In-House Method
Determination of Surface Area and Porosity	BET Method

Tests

TEST	METHOD
Macroscopic Description of Rocks and Fragments	In-House Method
Photomicrographs of Minerals, Rocks and Fragments	
Petrographic Description of Polished Thin Sections	Optical Microscopy in Transmitted Light
Preparation of Polished Grain Sections	In-House Method
Petrographic Description of Grains in Polished Sections	Optical Microscopy in Reflected Light
Mineralogical Description of Mineral Processing Products	In-House Method
Mineralogical Analysis Automated: 1. Modal mineralogy; 2. Elemental distribution; 3. Particle size distribution; 4. Mineral association; 5. Mineral liberation by particle composition; 6. Mineral liberation by free surface.	Scanning Electron Microscopy + AMICS software
Identification and Quantification of Crystalline Mineral Phases by X-Ray Diffraction	Rietveld Refinement
Determination of Crystallinity and Amorphous Content by X-Ray Diffraction	In-House Method
Scanning Electron Microscopy + Energy-Dispersive X-Ray Spectroscopy (SEM-EDS)	
Mineralogical Analysis of Loose Grains	

Tests

TEST	METHOD
Determination of the Work Index	Bond Method
Los Angeles Abrasion	ABNT NBR Method 6465
Grindability Curve	In-House Method
Crushability Curve	
Classification Tests using Pneumatic Cyclones	
Grinding Test in a Ball/Rod Mill at Bench Scale	
Crushing Tests	
Attrition and Desliming	
Elutriation Test	
Filtration Test (Leaf Test)	
Flotation Tests in Mechanical Cells at Bench Scale	
Sedimentation Tests at Bench Scale	
Flocculation Tests Selective, at Bench Scale	
Gravity Concentration Tests	Centrifugal Concentrator Knelson / Spirals / Jigs
Flocculation Tests Selective, at Bench Scale	Micro Mill Wave Table and Wilfley

Tests

TEST	METHOD
Heavy Liquid Tests	In-House Method
Separation Tests in Dense Media	
Separation Tests Wet/Dry Magnetic, at Bench Scale	
Separation Tests Wet/Dry Magnetic, at Pilot Scale	
Separation Tests Electrostatic Separation at Bench Scale	
Manual Magnetic Separation	
Pelletizing Test at Bench Scale	
Briquetting Test at Bench Scale	
Leaching Test at Bench Scale	
Calcination Test in Rotary Kiln / Slate Furnace	
Calcination Test in Muffle Furnace	
Homogenization in Intensive Mixer - 5 and 75 liters	
Flotation Test in Mechanical Cells/Columns at Pilot Scale	
Classification Tests using Spiral Classifier	

Tests

TEST	METHOD
Classification Tests using Bowl Classifier	In-House Method
Classification Tests using Hydrocycloning	
Pilot Plant Services	
Grinding Test in a Ball/Rod Mill at Pilot Scale	
Determination of Dust Content	
Sand Beneficiation	
Determination of Organic Impurities	NBR NM 49:2001
Micro-cavitation	Method of Disaggregation
Determination of Fines Content	In-House Method

Contact us to discover how we can transform your industry.

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(31) 3489-2362
isi-mineral@fiemg.com.br
www.fiemg.com.br/cit/processamento-mineral/

SENAI

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