

Matter and metallurgical characterization of materials

Matter and microstructure characterization

Iron-Carbon Alloys: Fe-C Steels - Cast Iron

Metallographic analyzes

- Average grain size, type and average proportion of metallurgical present phases
- Analysis of the microstructure by scanning electron microscopy (SEM)
- Analysis of the crystal structure of the phases present by X-ray diffraction

ASTM E112 ; NF EN ISO 643 Standards



Mirror polish



Optical microscope



Microstructure of a steel (x 500)

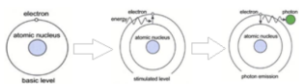
Material characterization and chemical composition

All types of metal alloys: Fe-C steels - Cast iron - Aluminum alloys - Copper alloys - etc ...

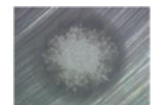
Spark source optical emission spectrometry:

- Determination of the mass percentages of the chemical present elements

NF EN 1426 ;
NF EN 15079
Standards



Spark source optical emission spectrometer



Typical spark

Fe-C steel samples analyzed by spark spectrometry