



Problem:

Fuel consumption minimization in presence of charge and/or process variations.

Solution:

RedCo, a diagnostic tool, on-line calculates the specific carbon requirement per hot metal ton of the blast furnace (theoretical limit). The theoretical limits depend on:

- global thermal requirements
- reduction capability of the process.

RedCo plots the theoretical heat and chemical boundaries in an indirect reduction degree – total carbon consumption diagram.

In off-line mode RedCo benchmarks the specific fuel required by different charge compositions and operative practices.



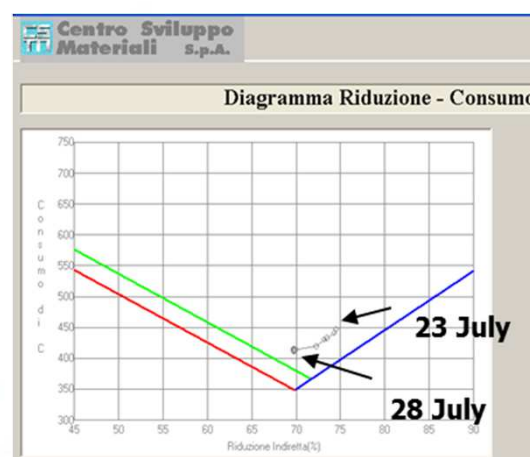
Throat

Shaft

Bosh

Raceway

Hearth

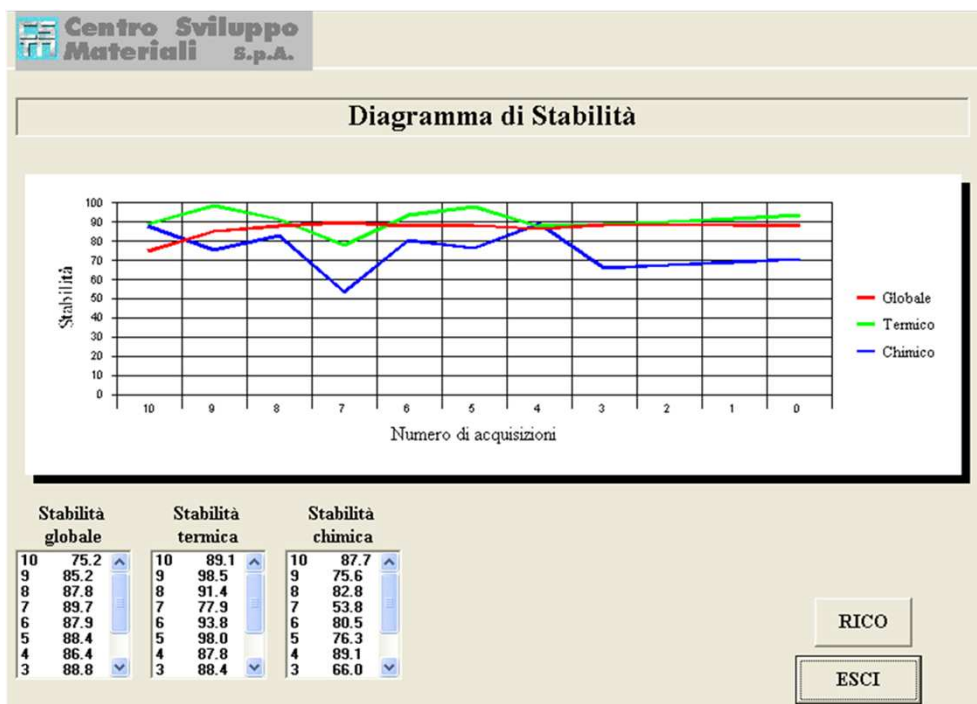


Benefits:

- Minimisation of fuel consumption
- Indication of which process conditions should be modified to reduce fuel consumption
 - Correlation of process condition variations with fuel consumption

Industrial Arrangement:

RedCo model needs data from L1 and L2, the chemical characteristics of burden and fuels, etc..



Process stability in terms of distance of the operating point to the:

- 1) Chemical boundary
- 2) Heat boundary