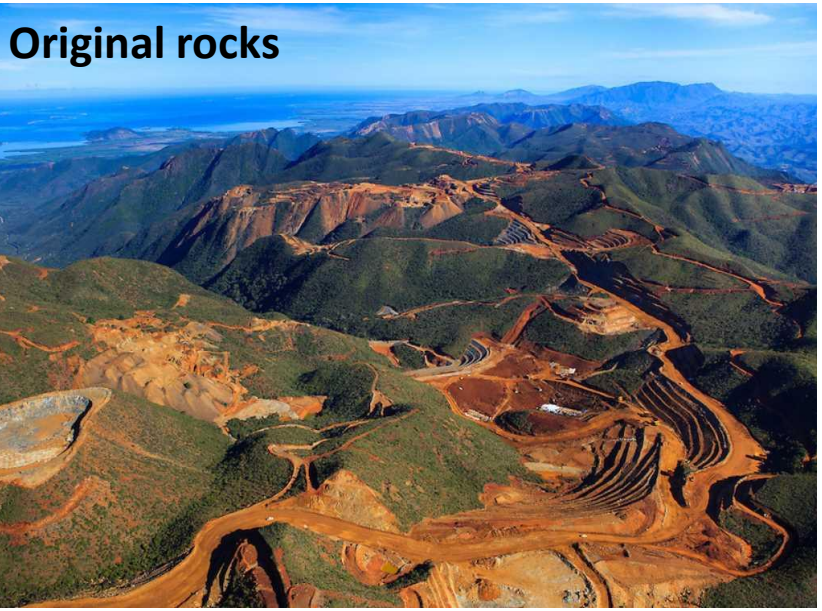
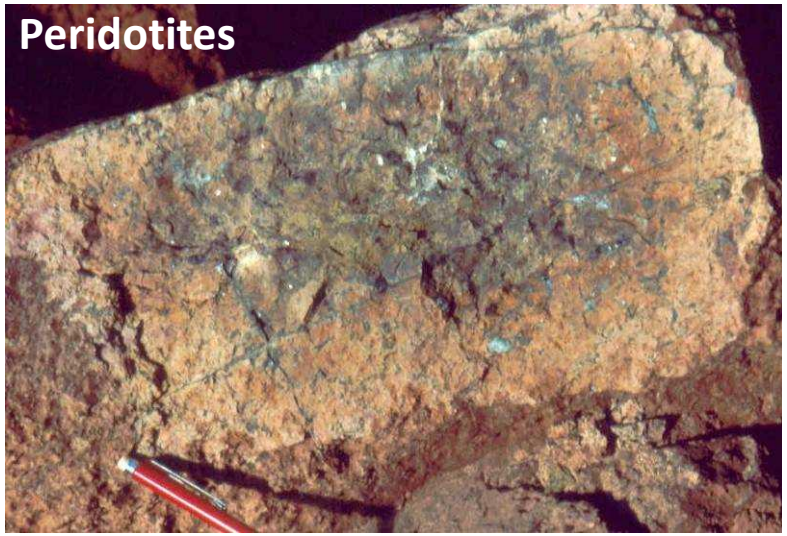
Nickel Slag Aggregates– New Caledonia

11 sept. 2025

What about the NC Slag ?



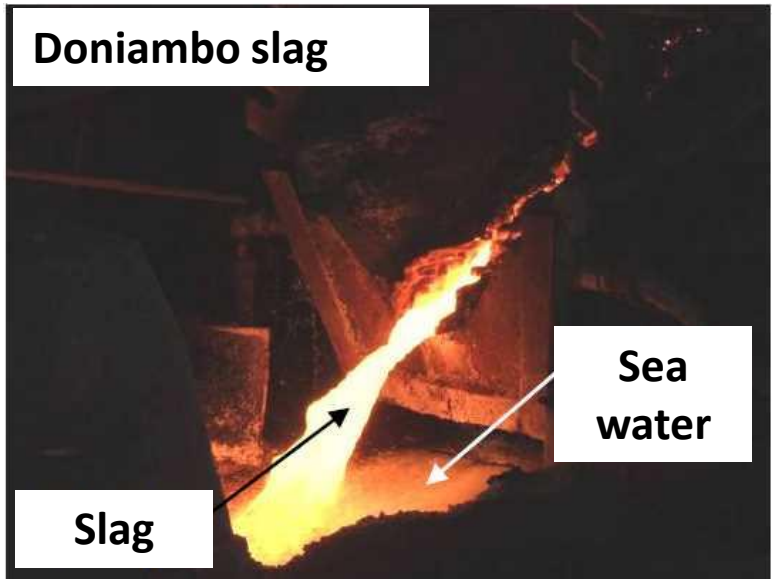


Slag Composition

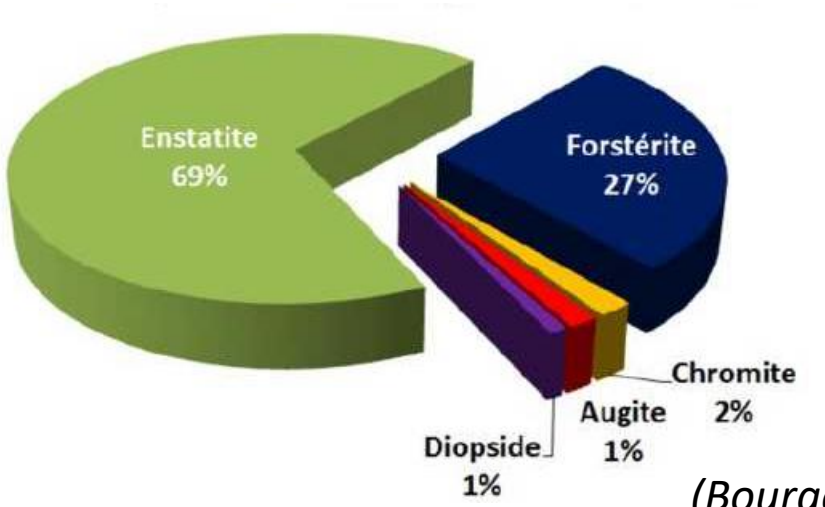
Oxides (Weight %)	KNS Slag	SLN Slag	Orig Rock (Serpentinized Harzburgite)
SiO2	52,1	52,6	41,5
MgO	28,8	31,9	43
Fe2O3	14,4	12	7,5
Al2O3	1,91	2,5	0,5
NiO	0	0	0,3
MnO	0,35	0,53	0,12
CaO	0,46	0,2	0,15
LOI	<0.1	<0.1	6,83
Total	98,02	99,73	99,9

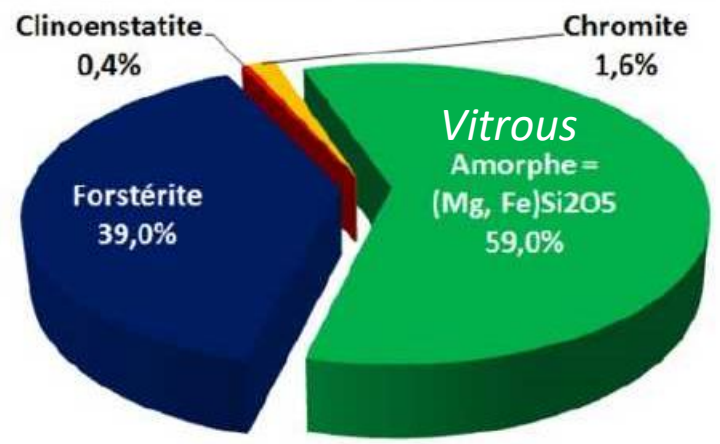
- Forsterite (olivine) Mg2SiO4
- Enstatite (Pyroxene) MgSiO3

Cooled under ambient temp.
Coarse-grained, 100% crystallized



Granulated under sea water,
Fine grained, mostly vitrous





(Bourgeois et coll., 2021)

Slag Safety information

- non-hazardous material under the CLP Regulation (EC 1272/2008)
- non-hazardous material under the Basel Convention
- Slag is an inert, clean aggregate, stable over time.
- It contains no chloride, no free magnesium, and no crystalline silica.
- No significant metal leaching occurs under normal conditions, minimizing water pollution risks.
- No major chemical hazards are identified for health or environment.
- Not classified as a dangerous pollutant, but standard PPE and storage precautions apply.
- The main risks are physical/mechanical: dust, projections, or handling injuries.

Slag applications

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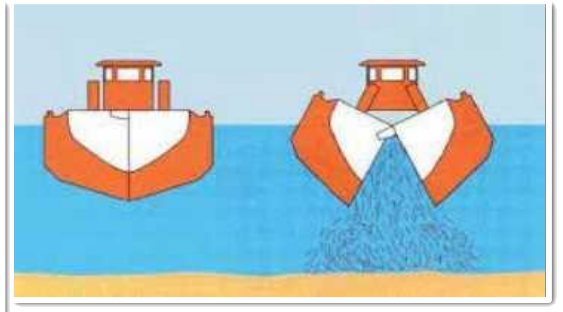
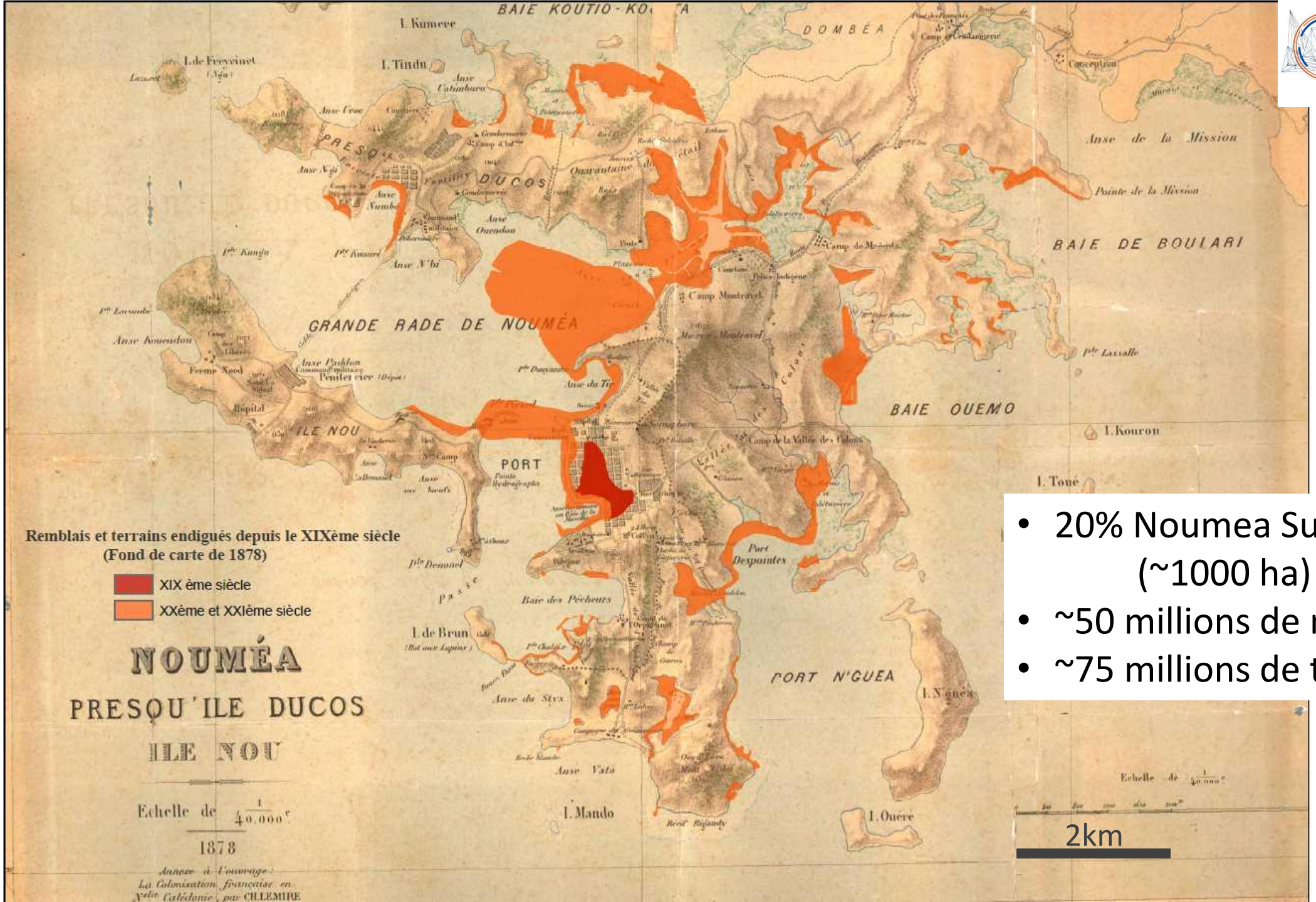
- **Sandblasting** → SLAND
- **Land filling** >>>
- **Road subgrade layer** >
- Trench backfill
- Supplementary Cementitious Material
- **Aggregates**
  - Concrete → SLAND (NF P18-545 – EN 12620, RCNC standard) →
  - Road
  - Asphalt
  - **Concrete armour units**
- **Coastal protection strategies** →



Over 100 years experience

Since 1992

NF EN 206



- 20% Noumea Surface area (~1000 ha)
- ~50 millions de m3
- ~75 millions de tonnes

Thank You for your attention

CNRTEC
Centre du Nickel