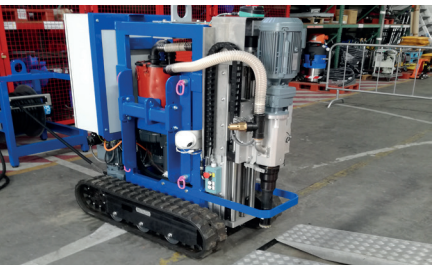
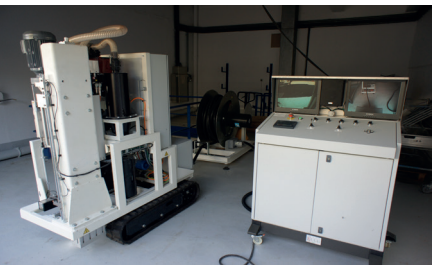
RODSY (ROver Drilling SYstems) et RASCO² (RAdiological Scanner for COncrete COre)

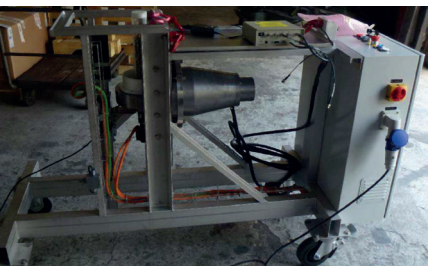
Concrete remote drilling and in-situ measurement systems



RODSY30 rover



Control centre of the RODSY10+ rover



RASCO² scanner system

Scope

Two rover drilling systems are proposed to sample concrete remotely in semi-automatic mode:

- **RODSY30**: rover allowing the drilling of a single drill-core 30 cm long
- **RODSY10+**: rover designed to drill 5 drill-core samples of 10 cm long each during the same operation

Simplicity and reliability of operations:

- These systems allow drilling core remotely in irradiating and/or contaminated areas
- The drilling operations are dry avoiding the management of contaminated effluents

Security and safety of operations:

- The remote control of the drill, whether manual or programmed, eliminates the exposure risk to the operators
- The main vacuum is used to both remove the cuttings and cool the drill
- The systems have been designed to eliminate the risk of contamination of the area from cuttings
- The lack of water is favourable to avoid the criticality risk in a U/Pu environment

RASCO²: a mobile device for in-situ analysis

- Automated scanning system to determine the contamination profile of a drill-core by gamma spectrometry
- Processing software to visualize the 3D distribution of the contamination within the structure of a building

Advantages

- SEMI-AUTOMATIC DRILLING SYSTEMS
  Positioning of the systems in remotely-operated irradiated/contaminated areas
  Automated drilling sequence
- EASY TO OPERATE
  Easy to operate and maintain systems
- SAFETY
  Contamination risk eliminated
- CONTAMINATION AND EXPOSURE RISK
  System remotely controlled by the operator
  Cuttings radioactivity levels checked before recovery
- PERFORMANCE
  In-situ concrete core analysis

Key data

Dimensions (in drilling position):

- RODSY10+:
  - L = 1665 mm, w = 750 mm, H = 1925 mm
  - Weight ~ 750 kg
- RODSY30 :
  - L = 1500 mm, w = 750 mm, H = 1595 mm
  - Weight ~ 600 kg

Drill core size:

- Length: 100 mm (RODSY10+) or 300 mm (RODSY30)
- Diameter: 50 mm

Remote analysis:

- 50 m to 100 m depending on the length of the power and control cable

Dry drilling time:

- between 10 and 15 min for 10 cm of core

Automated drilling systems enabling dry drilling free of contamination risk

Control centre of the RODSY30 rover

Power and control cable of the RODSY10+ rover

Core storage on the RODSY10+ rover

Our offer

Provision of services or sale of products customized to the needs of our customers:

- **Single drill-core**: inspection of limited access areas for in-depth analysis of the contamination penetration depth
- **Multiple drill-cores**: sampling and analysis of drill-cores over large areas (e.g. room, cell) to study by extrapolation the distribution of the contamination, while limiting the measurements
- **Radiological characterization**: analysis of concrete drill-cores using a mobile gamma spectrometry scanning system

Patented solution (French patent # FR3027833):

- the drilling tool comprising both the recovery and holding drill-core systems on the drill; and the vacuum and cooling system,
- the devices incorporating this tool,
- the process implemented for these devices.

Options

Programming sample locations

Resin injection to preserve the drill-core cohesion

Possible developments

Integration of larger diameter drill-cores

Oblique and horizontal drilling

Contact us to discover all possible solutions provided by both RODSY and RASCO² systems.

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